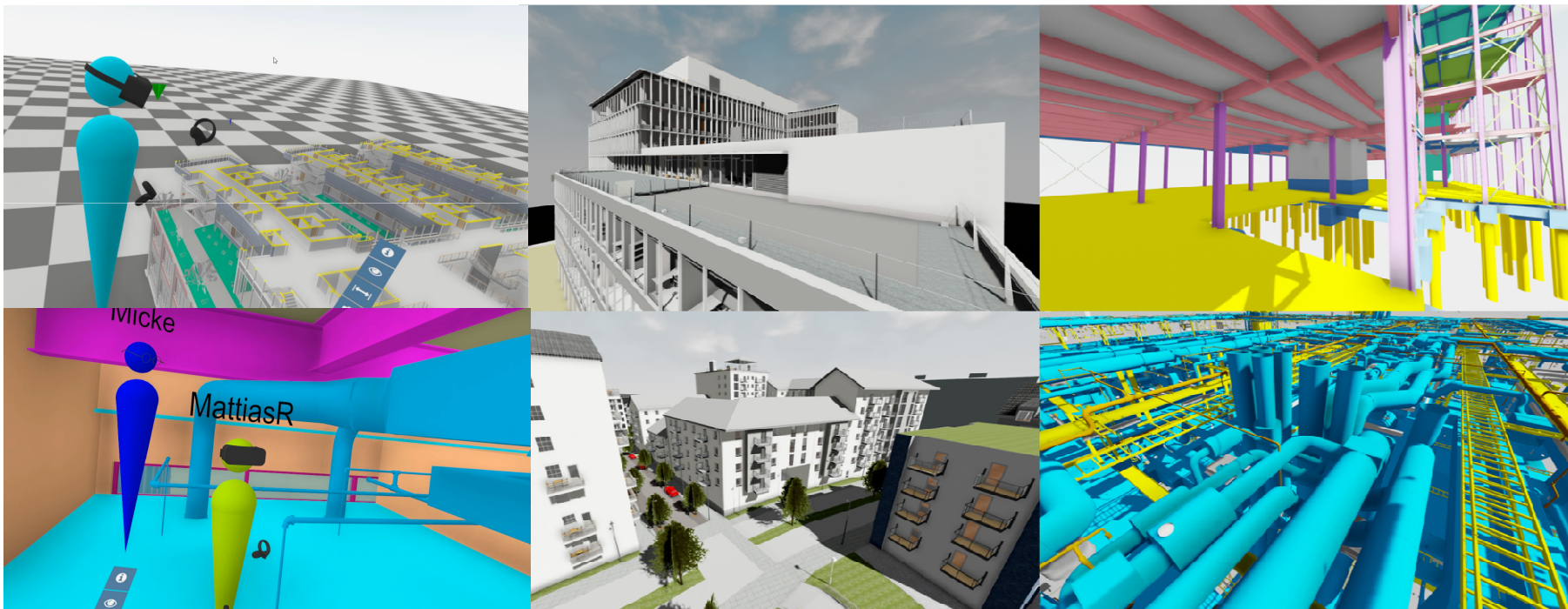


BIMXplorer v1.7.2

Quick Start Guide



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21. Sub-models | Filters

22. Show/hide objects

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25. Measure distance

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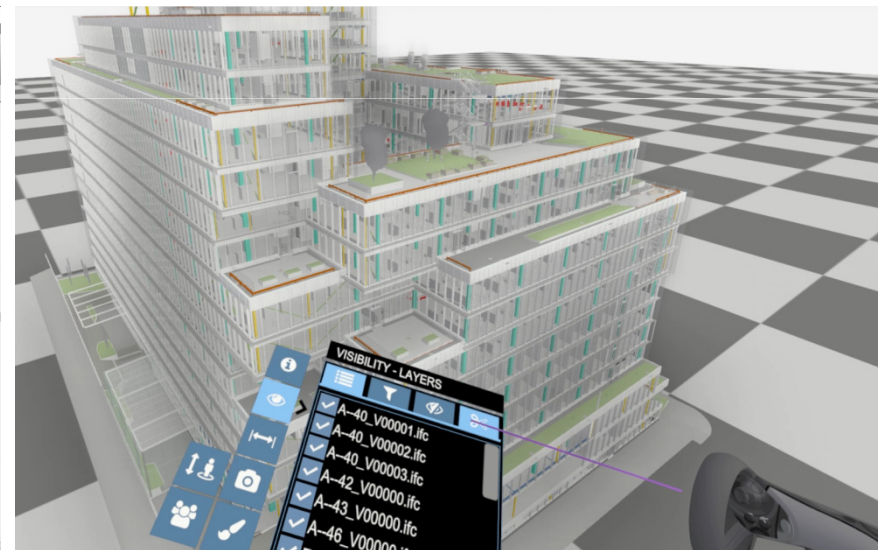
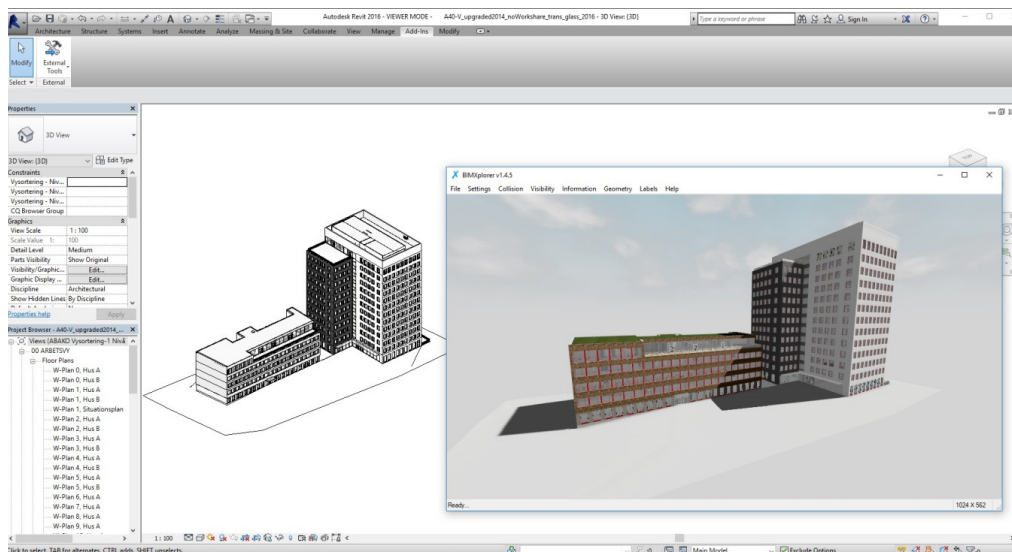
27. Snapshots

28. Multi-user

1. INTRODUCTION

BIMXplorer is a standalone 3D/VR-viewer that can import IFC-, SketchUp, and 3DS-models ...or be used as a viewer **Addin** in **Revit**.

BIMXplorer supports **Oculus (Rift, Quest)** and **HTC Vive, HP Reverb, etc. (OpenVR)** but can also be used without an HMD in "Desktop-mode" (ordinary computer screen and navigation using mouse and keyboard).



2. INSTALLATION

Desktop | VR



SYSTEM REQUIREMENTS:

Windows 10/11 (8/8.1 might work in Desktop, but maybe not with Oculus VR)

"Gaming-type" GPU - **For VR a NVIDIA GPU is required**

Recommended GPU: NVIDIA GTX 1080 or better

- Un-zip the downloaded file in a temporary folder.
- If Revit is installed, make sure it is NOT running.
- Run *setup.exe*. This will install BIMXplorer and the Revit Addin.

Default installation folder is "*C:\Program Files\VIZCODE\BIMXplorer v1.7.2*"

Revit Addin-files will be added in "*C:\ProgramData\Autodesk\Revit\Addins\20XX*"

(Log-files, etc. will be found in "*C:\Users\TheCurrentUser\AppData\Roaming\BIMXplorer\172\config*")

2.1 INSTALLATION - LICENSE

Desktop | VR

Go to www.bimxplorer.com or contact license@bimxplorer.com for information about licenses.

Installation on a new computer will start a 30-days trial.
(Click *Trial Run*)

Enter *User* and *Password* and click
Initialize Floating License

BIMXplorer Licensing

This is a 30-day trial version of BIMXplorer. Once the trial period has expired, you will need a license in order to use it. Go to www.bimxplorer.com or contact license@bimxplorer.com in order to get information on how to obtain a license.

Licensing Options

Floating License

User:

Password:

Initialize Floating License

Proxy Settings (Optional):

Server:

Port:

User:

Password:

Node-Locked License

Trial Running

Days to end trial period: 22 Day(s)

2.2 INSTALLATION – VR

Additional software is needed for VR!

For Oculus (Rift, Rift S, Quest, Quest 2)

Go to www.oculus.com/setup

Follow the instructions

To connect the Quest 1/2 to a computer use:

Oculus Link (cable) or

Oculus Air Link (wireless)

OCULUS RIFT S

Du kan ladda ned och installera VR-programvaran på en rad olika typer av stationära eller bärbara datorer. Anslut ditt headset till datorn så blir det enkelt att konfigurera och anpassa utrustningen. Bläddra bland våra populäraste VR-titlar på din dator, i Oculus-appen eller i virtual reality-miljön.²

LADDA NED PROGRAMVARAN

Oculus Link

För att spela Oculus Rift-innehåll på Quest 2 installerar du appen Oculus på en kompatibel speldator och ansluter sedan ditt headset med hjälp av Oculus Link-kabeln eller liknande USB 3-kabel av hög kvalitet.

LADDA NED PROGRAMVARAN

For HTC Vive (Alt. #1: Installation with Vive)

Go to <https://www.vive.com/eu/setup/>

Follow the instructions



Individual setup

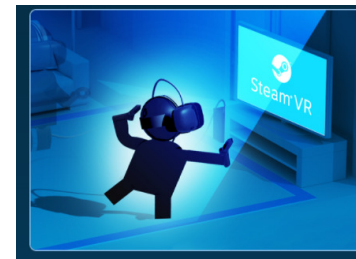
Organization setup

For HTC Vive (Alt. #2: Installation without Vive)

Go to https://support.steampowered.com/steamvr/HTC_Vive/

Follow the instructions

(This will install Steam and SteamVR)



HTC Vive installationsguide

Detta är alternativa installationsinstruktioner för HTC Vive. För att få tillgång till HTC:s programvaror såsom Vive Home, Vive Overlay och telefontjänster, gå till [HTCs hemsida](#) för det officiella installationsprogrammet för HTC Vive. Du kan även se en film med installationsanvisningar [här](#).

Några saker innan vi börjar:

- Se till att din dator är redo för VR.
- Uppdatera dina grafikdrivrutiner till den senaste versionen: [NVIDIA-drivrutiner](#), [AMD-drivrutiner](#)

For HP Reverb

Run the HTC Vive installation first (Alt #2) (This will install Steam and SteamVR)

Then install *Windows Mixed Reality for SteamVR*:

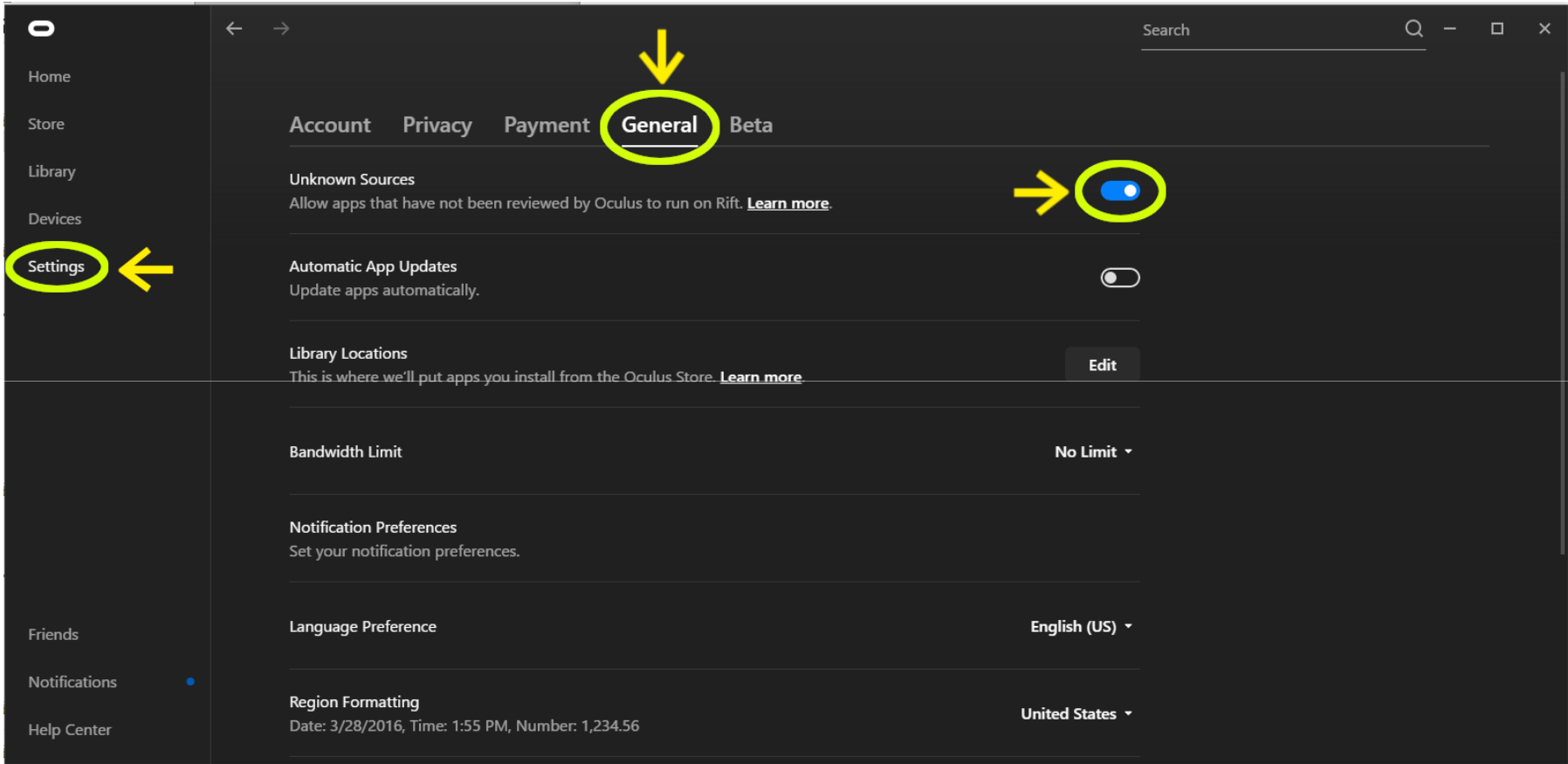
https://store.steampowered.com/app/719950/Windows_Mixed_Reality_for_SteamVR/

Follow the instructions



2.3 INSTALLATION – VR Oculus

Setting for Oculus:
Allow "Unknown sources"



3. VR vs DESKTOP

Desktop | VR

Desktop-mode:

The model is displayed on the computer screen. Navigation and interaction using mouse and keyboard.

VR-mode:

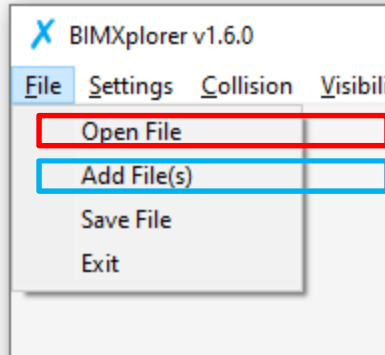
The model is displayed in VR (HMD) and on the computer screen. Navigation and interaction using the VR controllers.

- If a VR-headset is connected when BIMXplorer is started, *VR-mode* is activated!
- This guide will present *Desktop-mode* first, and then *VR-mode*

4. IMPORT/OPEN MODEL

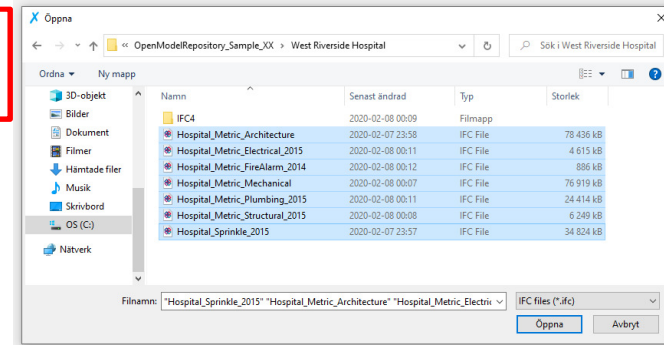
IFC, SketchUp, or 3DS-file(s)

Desktop | VR

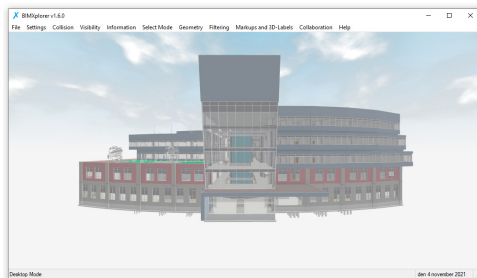


Select one or multiple files.
Will replace current model/scene

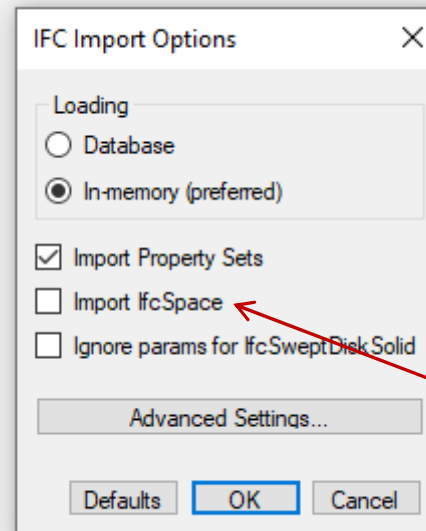
Add one or multiple files
to current model/scene



Select one or multiple files



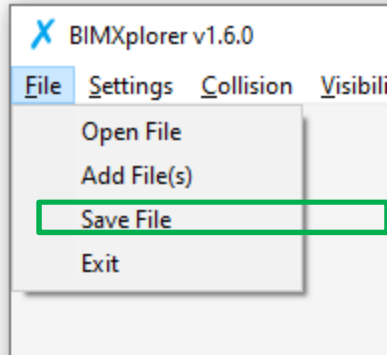
After import the viewpoint/camera is placed so that the whole model becomes visible



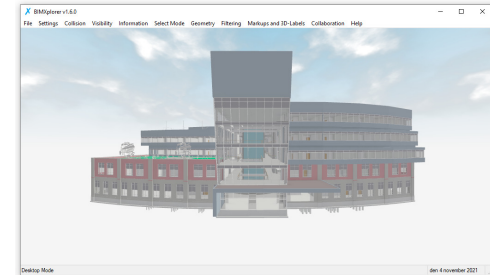
Tick if spaces (geometry) should be imported as well

5. SAVE MODEL

After import, save as .bmx-fil (BIMXplorer's own file format)



Save model/scene as a .bmx-file



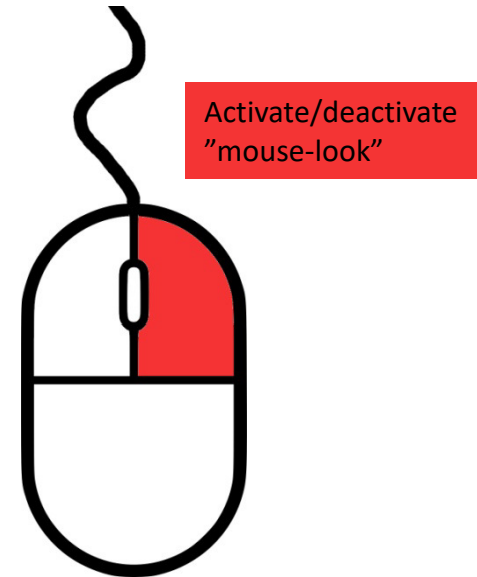
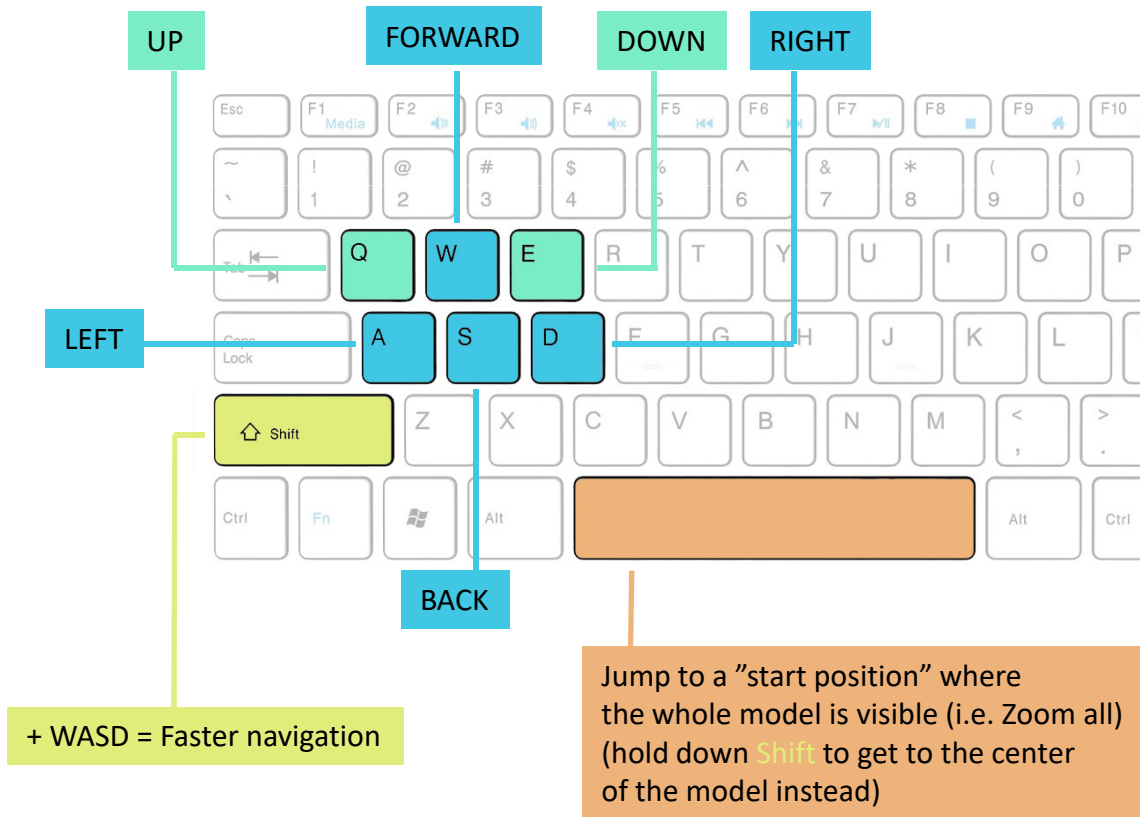
A .bmx-file is MUCH faster to open than a IFC-file

6. NAVIGATION

Right-click in order to activate/de-activate "mouse-look"

With "mouse-look" active:

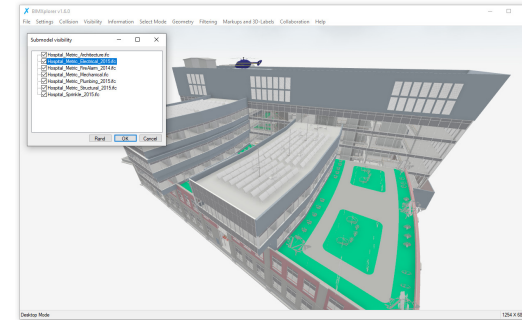
- Move mouse to look around
- Press/hold keys (W,A,S,D, etc.) to move



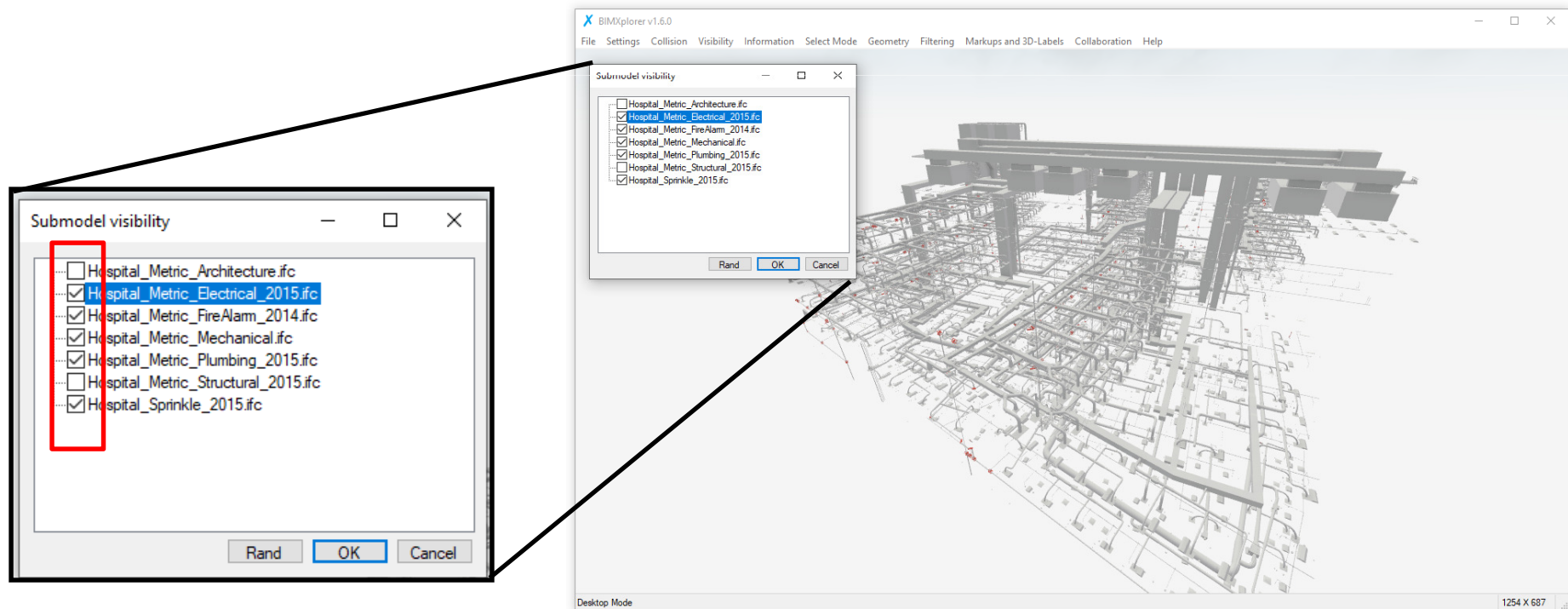
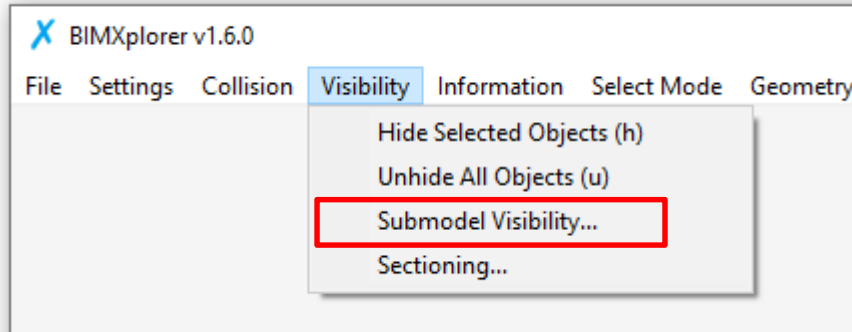
7. SHOW/HIDE SUB-MODELS

Each IFC-file (discipline) becomes a sub-model

Desktop



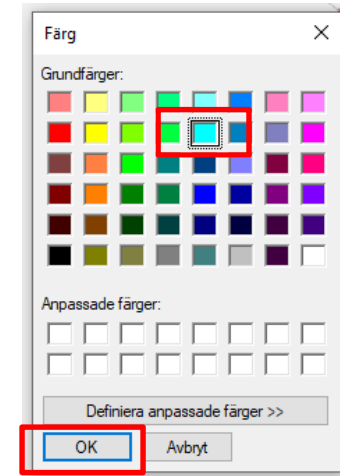
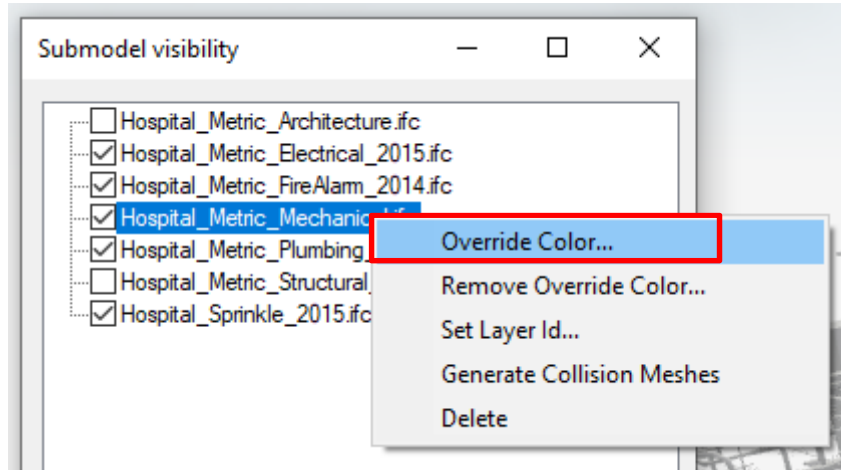
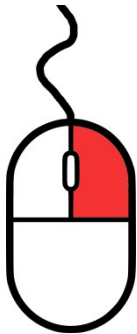
All sub-models (disciplines) visible



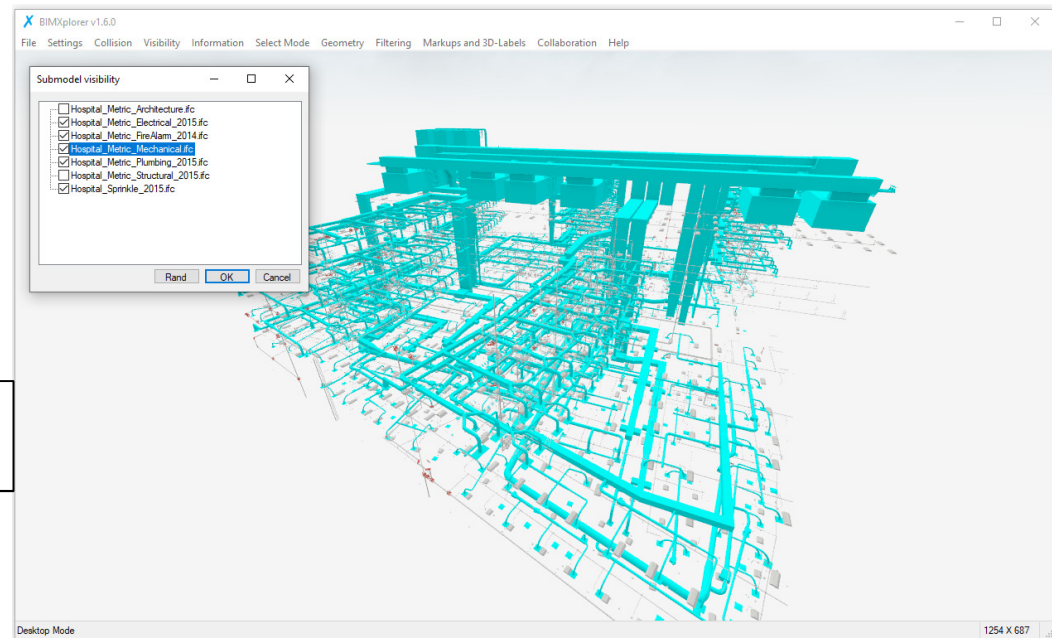
Only MEP visible (Arch and Struct hidden)

8. COLOR-CODE SUB-MODELS

Right-click at the sub-model...



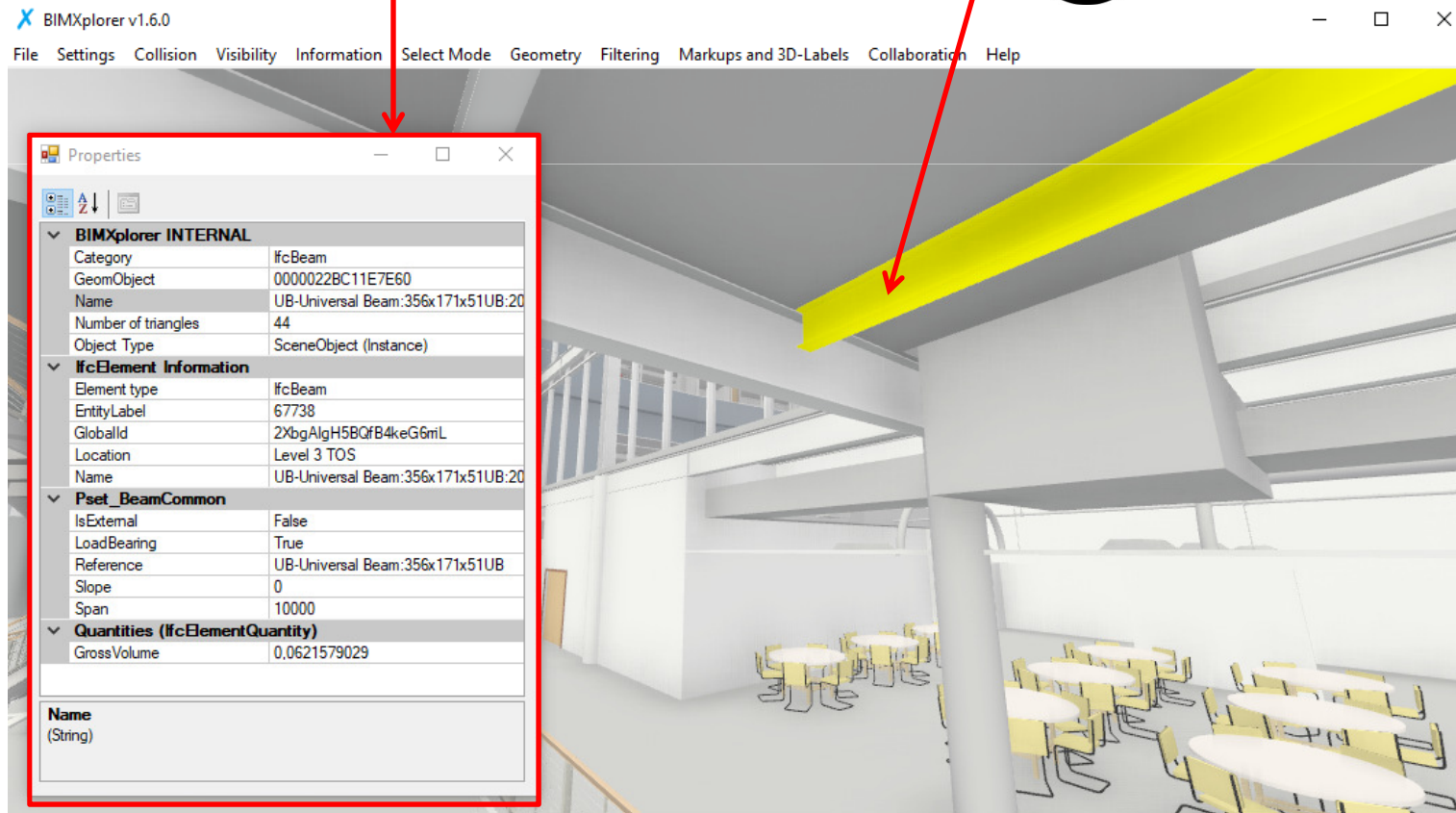
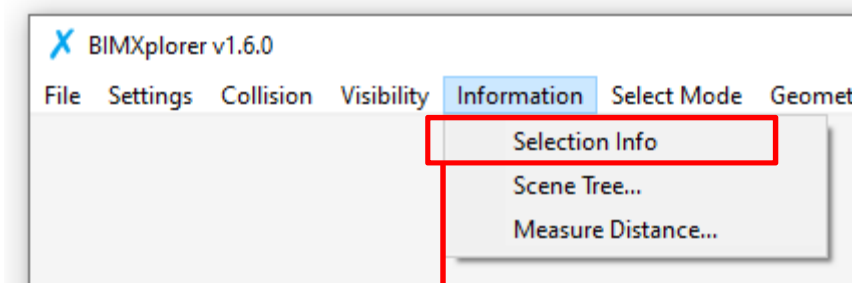
In order to reset color:
Right-click and choose "Remove Override Color..."



9. SHOW OBJECT PROPERTIES

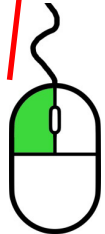
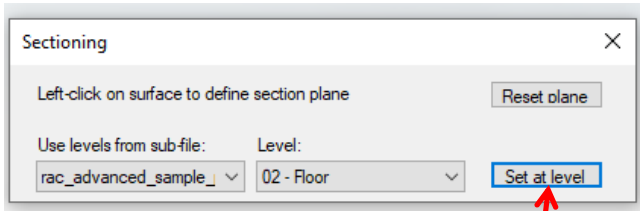
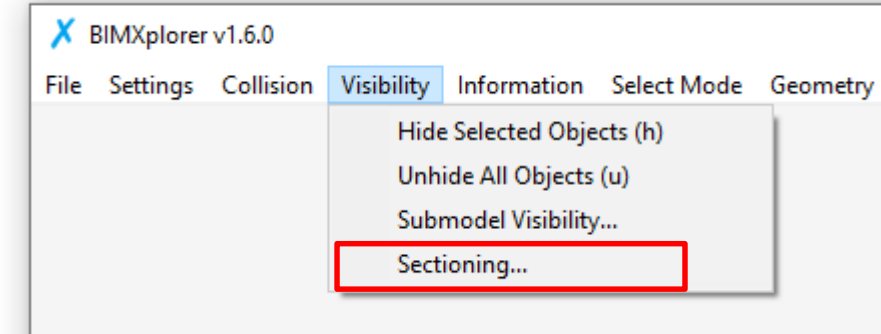
Left-click on object (when mouse-look is NOT active)

(Press Esc to "de-select")



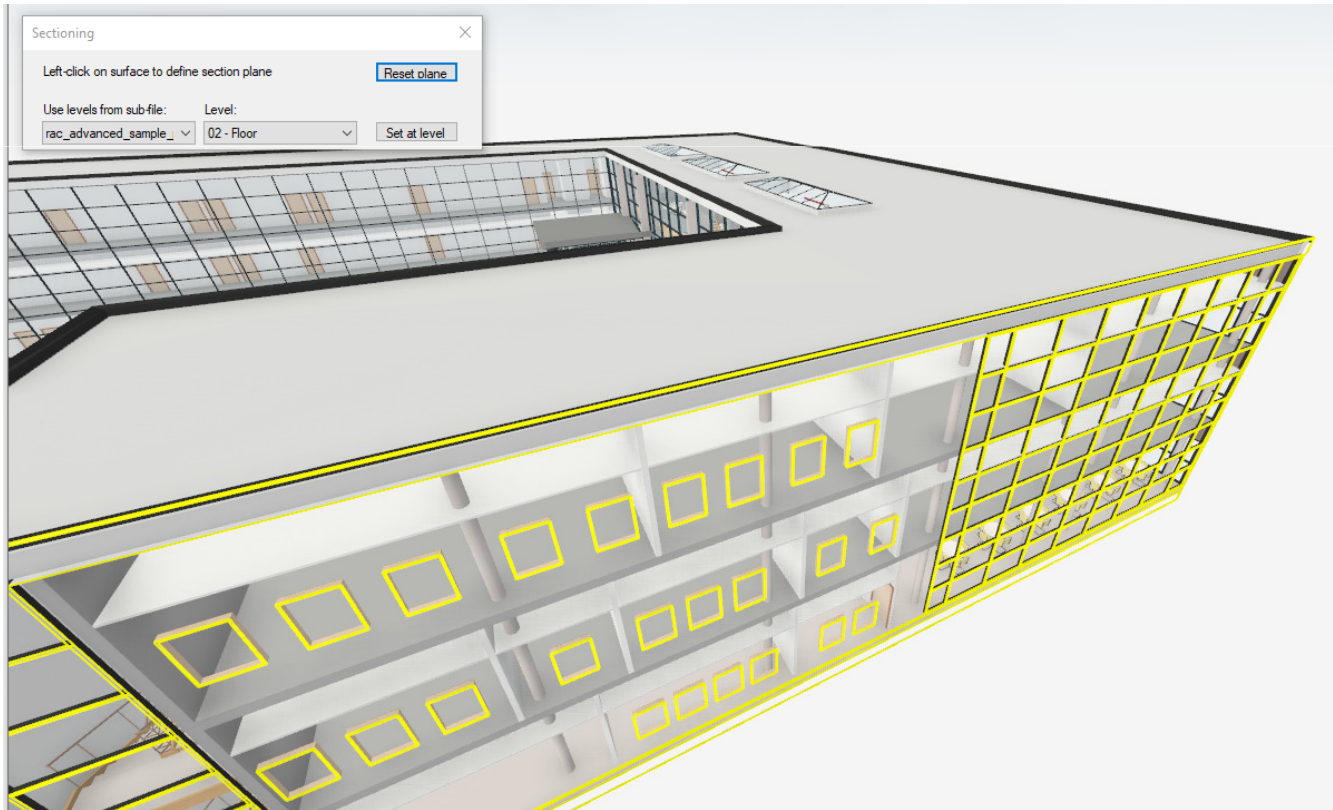
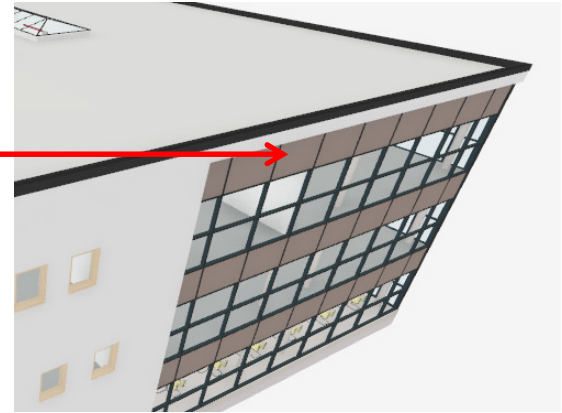
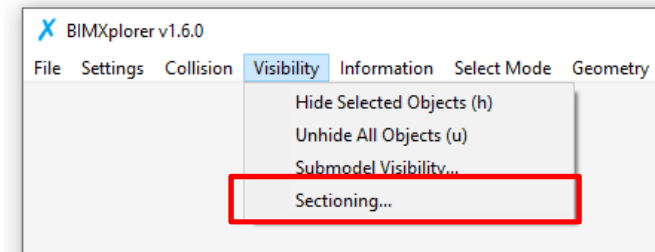
10. CREATE SECTION PLANE – ALTERNATIVE #1

Choose level/floor



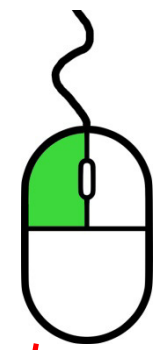
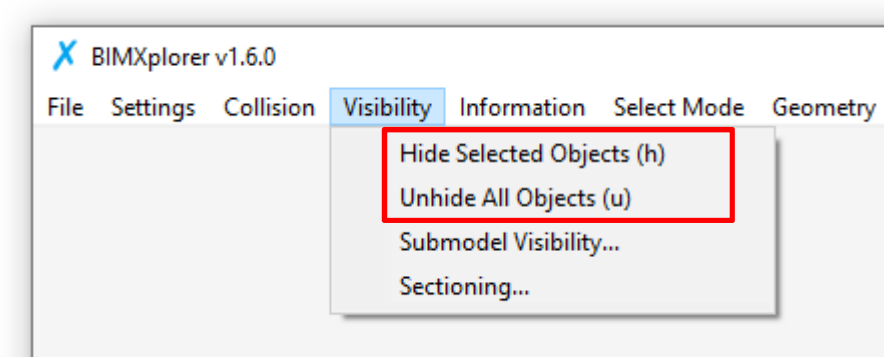
10.2 CREATE SECTION PLANE – ALTERNATIVE #2

Left-click on a surface
(Click "Reset plane" in order to remove section plane)



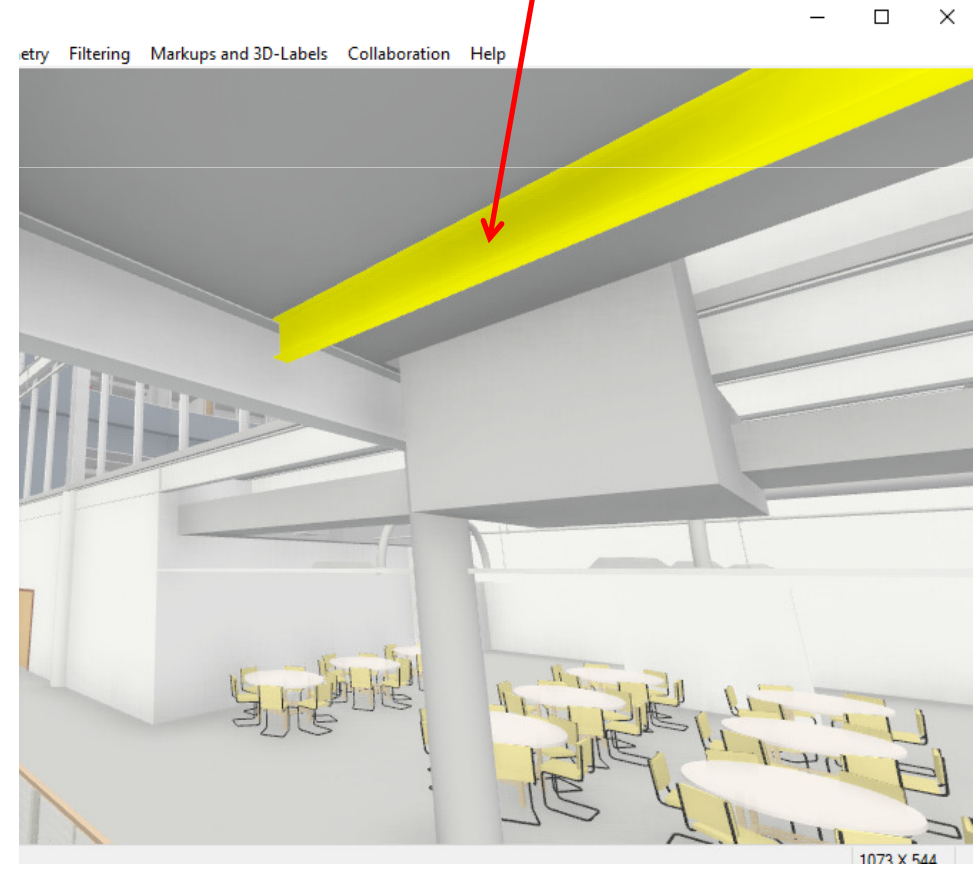
11. SHOW/HIDE OBJECT

Left-click to select object



In order to hide:
'Hide Selected Object' or press 'h' on keyboard

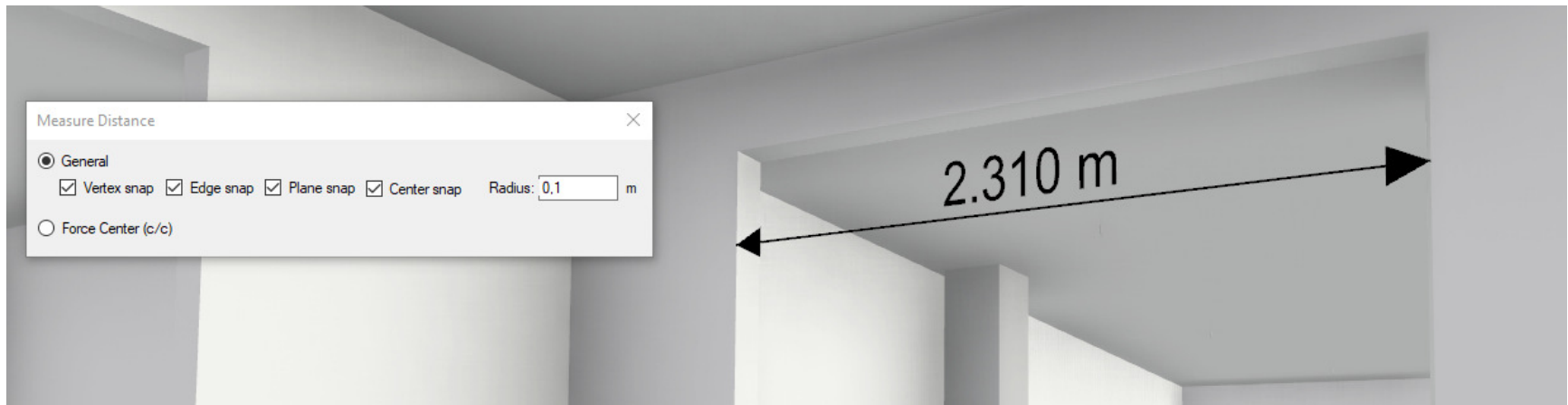
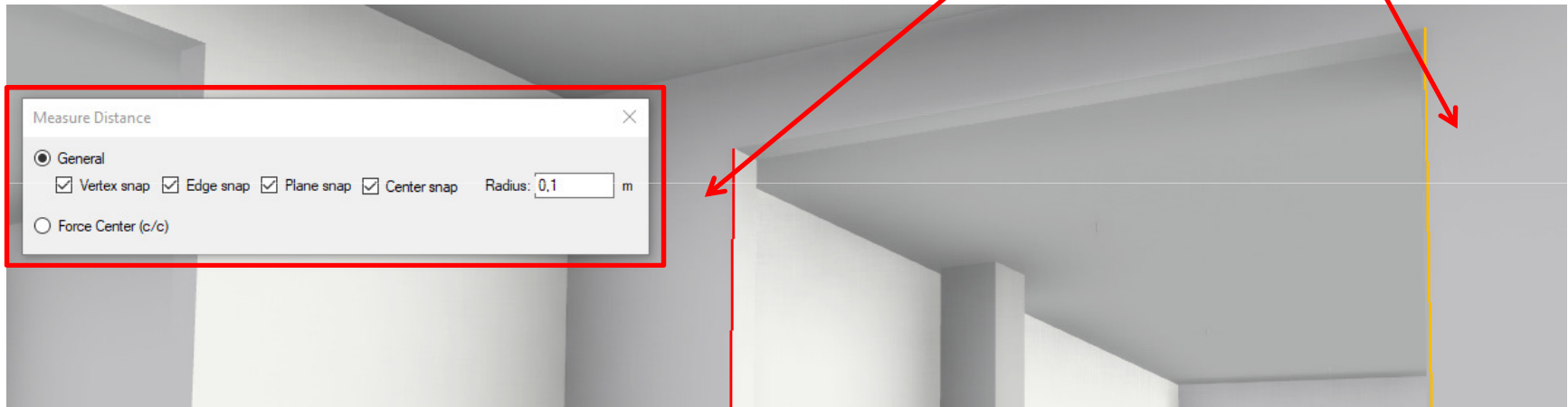
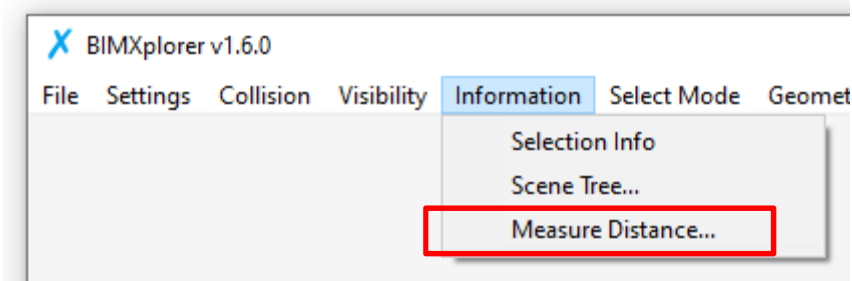
To show everything:
'Unhide All Objects' or press 'u' on keyboard



12. MEASURE DISTANCE (1/3)

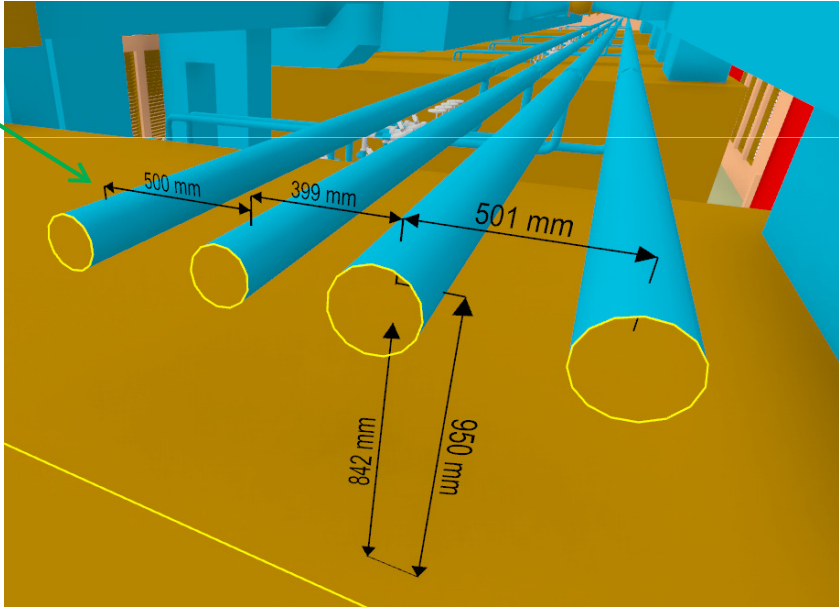
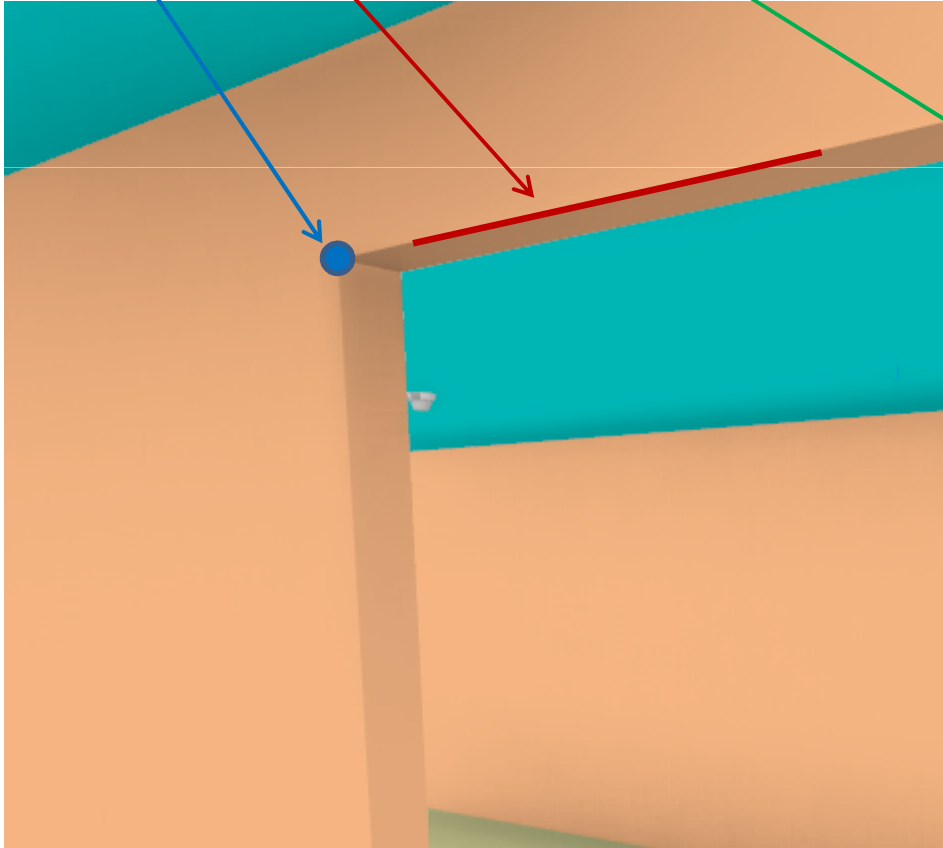
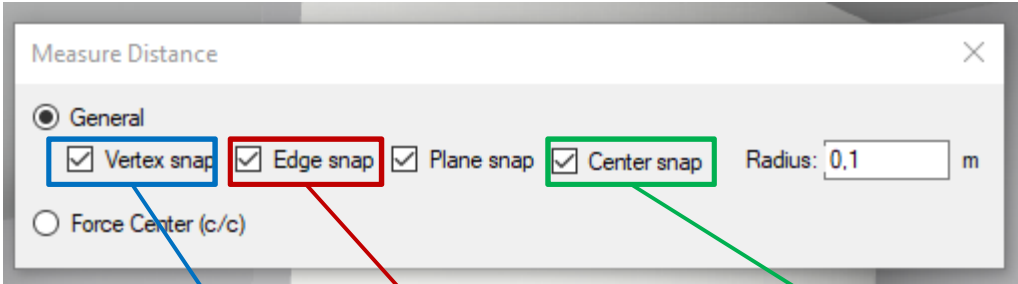
Left-click to choose first and second vertex, edge, or surface/plane

Desktop



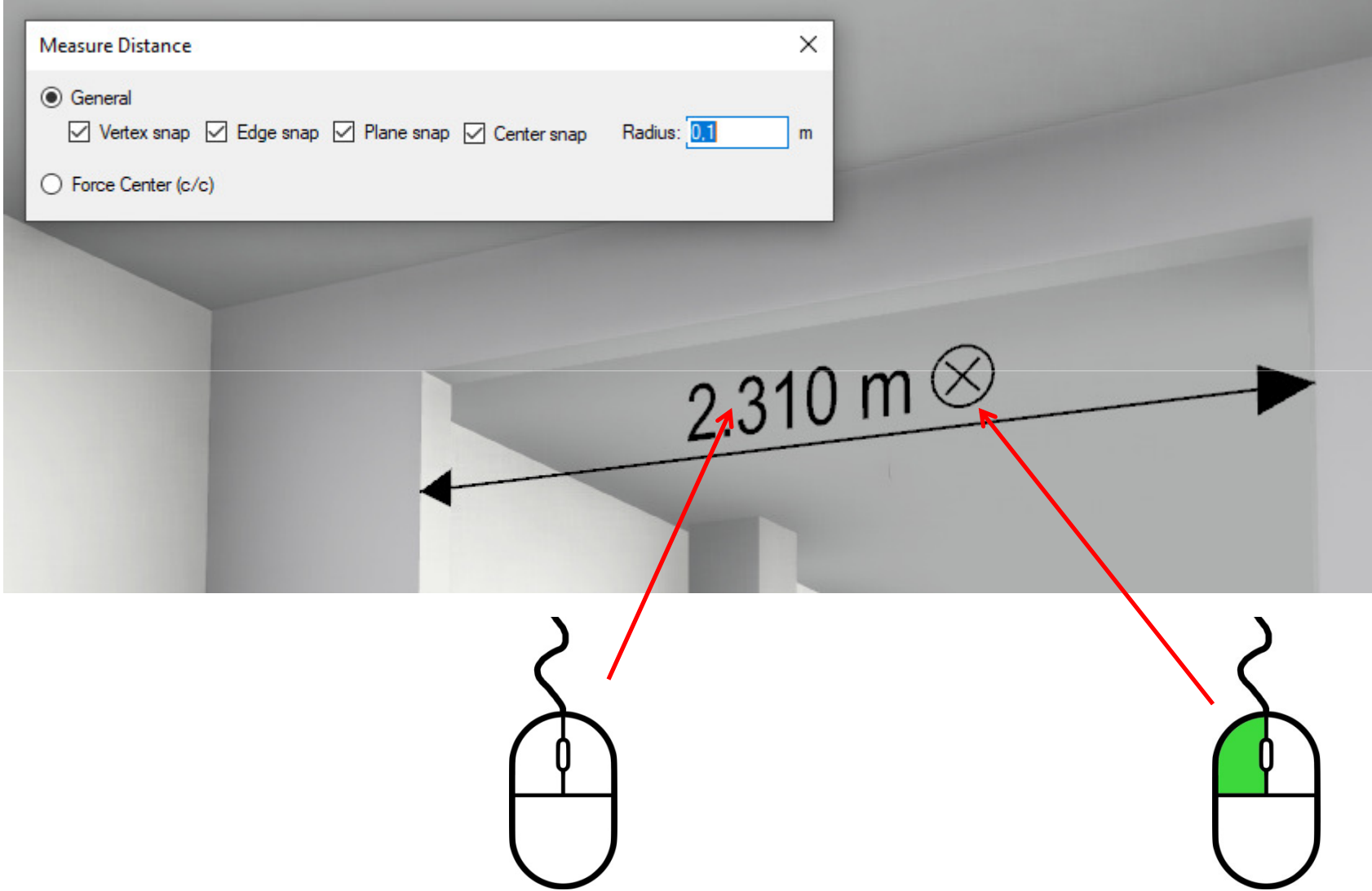
12.2 MEASURE DISTANCE (2/3)

Vertex, edge, surface/plane, or center (c/c)



12.3 MEASURE DISTANCE (3/3)

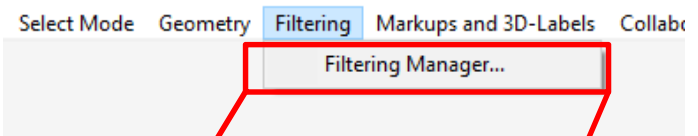
Remove a measurement by hovering over the distance
...and then left-click at the cross



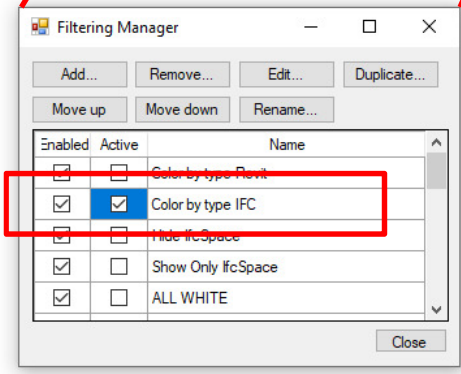
13. FILTERING

Set color and visibility on objects based on their properties

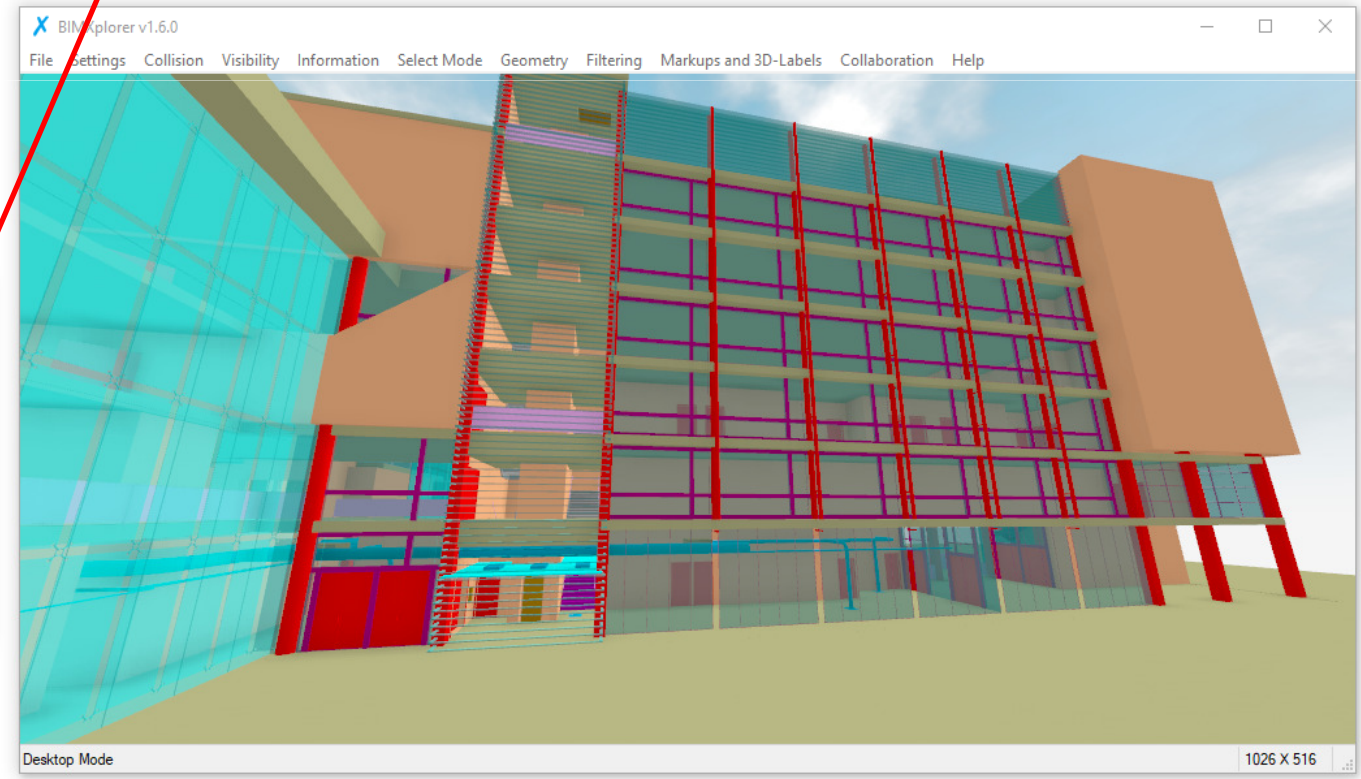
More instructions on how to *create* filters later in this guide!



Original colors from IFC-file →



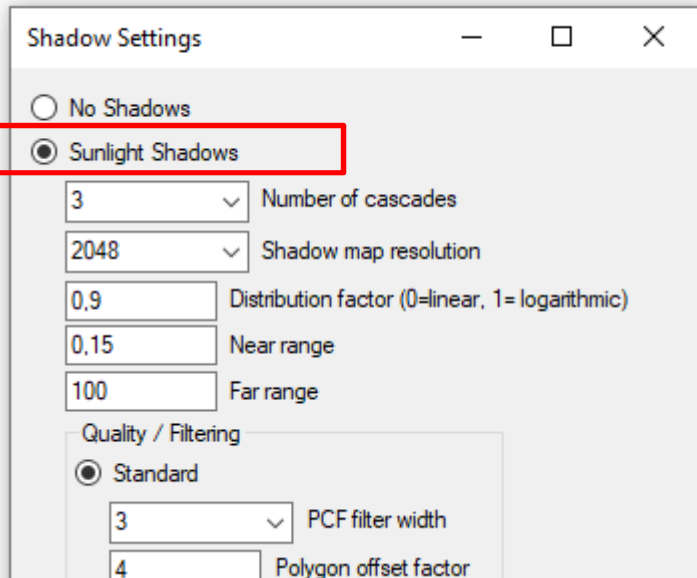
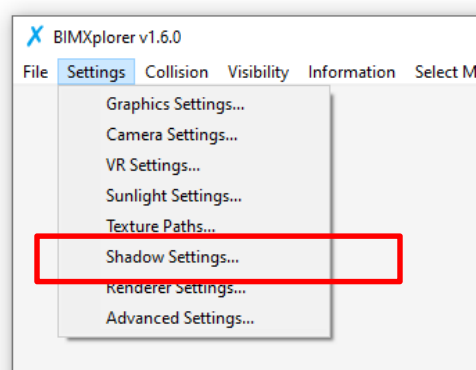
Tick to activate filter!



14. SHADOWS



In the present version (1.7.2) this effect is limited to models/scenes with less than ~270,000 objects (due to a bug that will be fixed...)



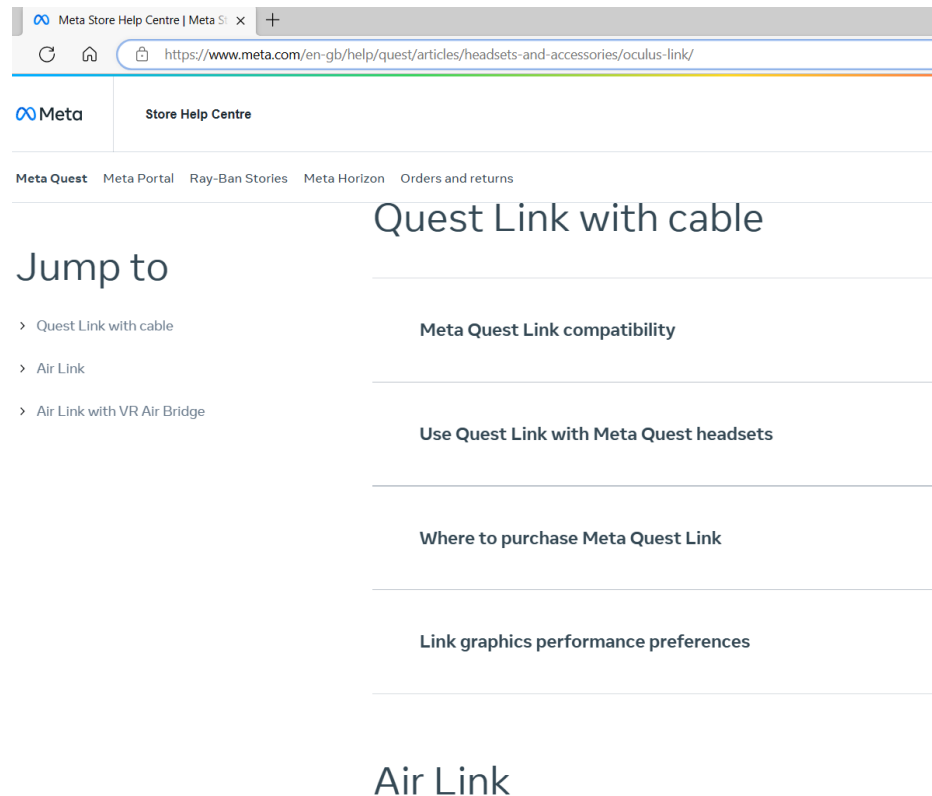
15. Virtual Reality (VR) – Oculus and Vive

For Oculus Rift, Oculus Rift S, HTC Vive, or HP Reverb:

- Make sure that the HMD-specific software is installed according to section 2.2 in this guide.
- Connect the HMD and make sure everything works (i.e. You can enter the "Home-position" in the specific system)
- Start BIMXplorer, make sure it says *VR-mode* in lower left corner

For Oculus Quest och Oculus Quest 2 (Aktivera Link eller Air Link):

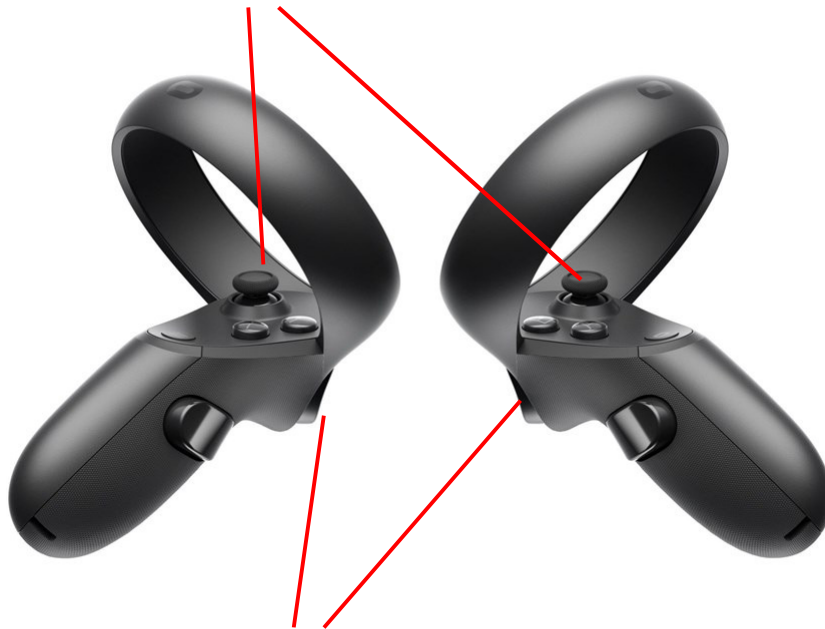
<https://www.meta.com/en-gb/help/quest/articles/headsets-and-accessories/oculus-link/>



- When everything works, start BIMXplorer, make sure it says *VR-mode* in lower left corner

Oculus (Rift or Quest)

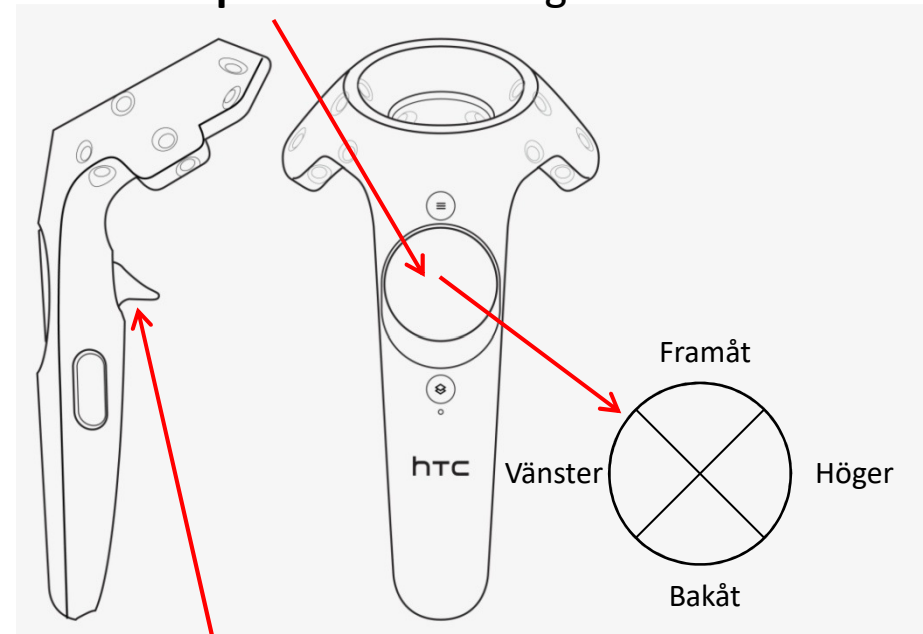
Joystick: Use for navigation



Trigger: Use for interaction with the menu (tools palette) and the tools

HTC Vive

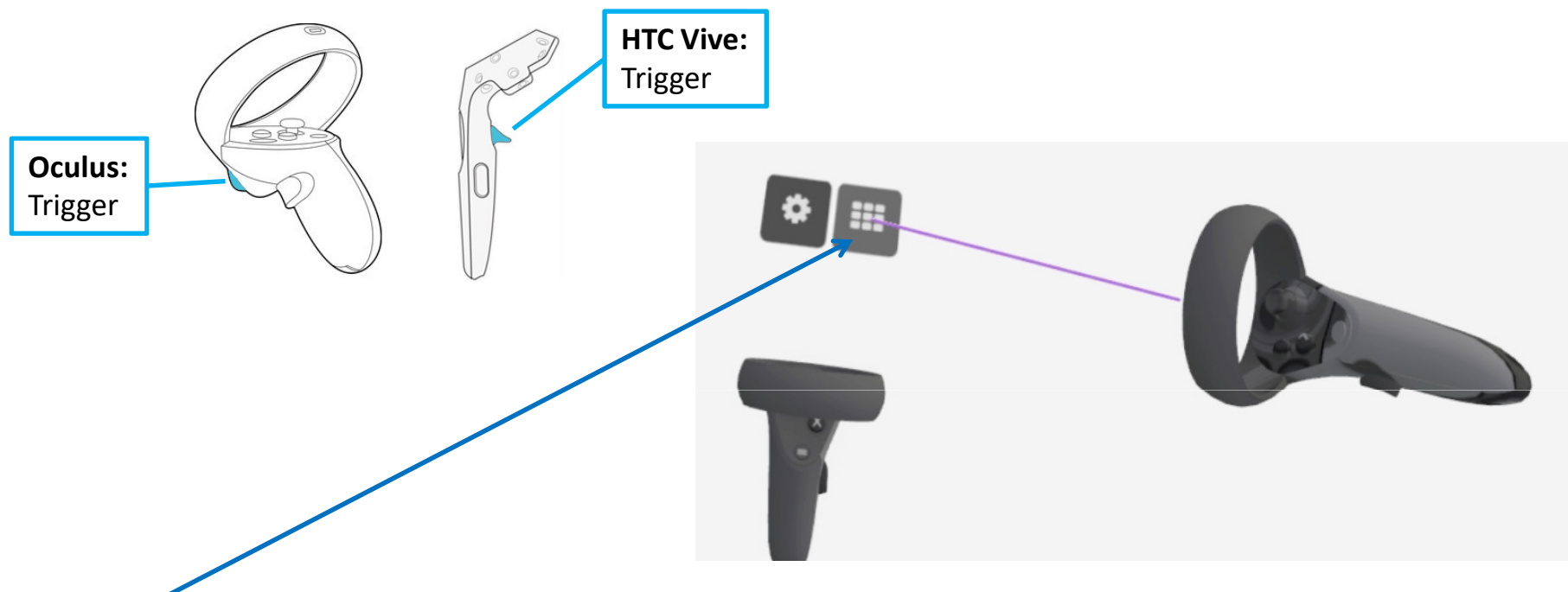
Touchpad: Use for navigation



Trigger: Use for interaction with the menu (tools palette) and the tools

17. VR-menu (1/2)

Use **trigger** to interact with the menu. In order to "click" the buttons in the menu:
The actual "click" happens when the trigger is released (i.e. *press* and then *release* the trigger)



Initially, the whole menu is not visible

In order to open/close menu:

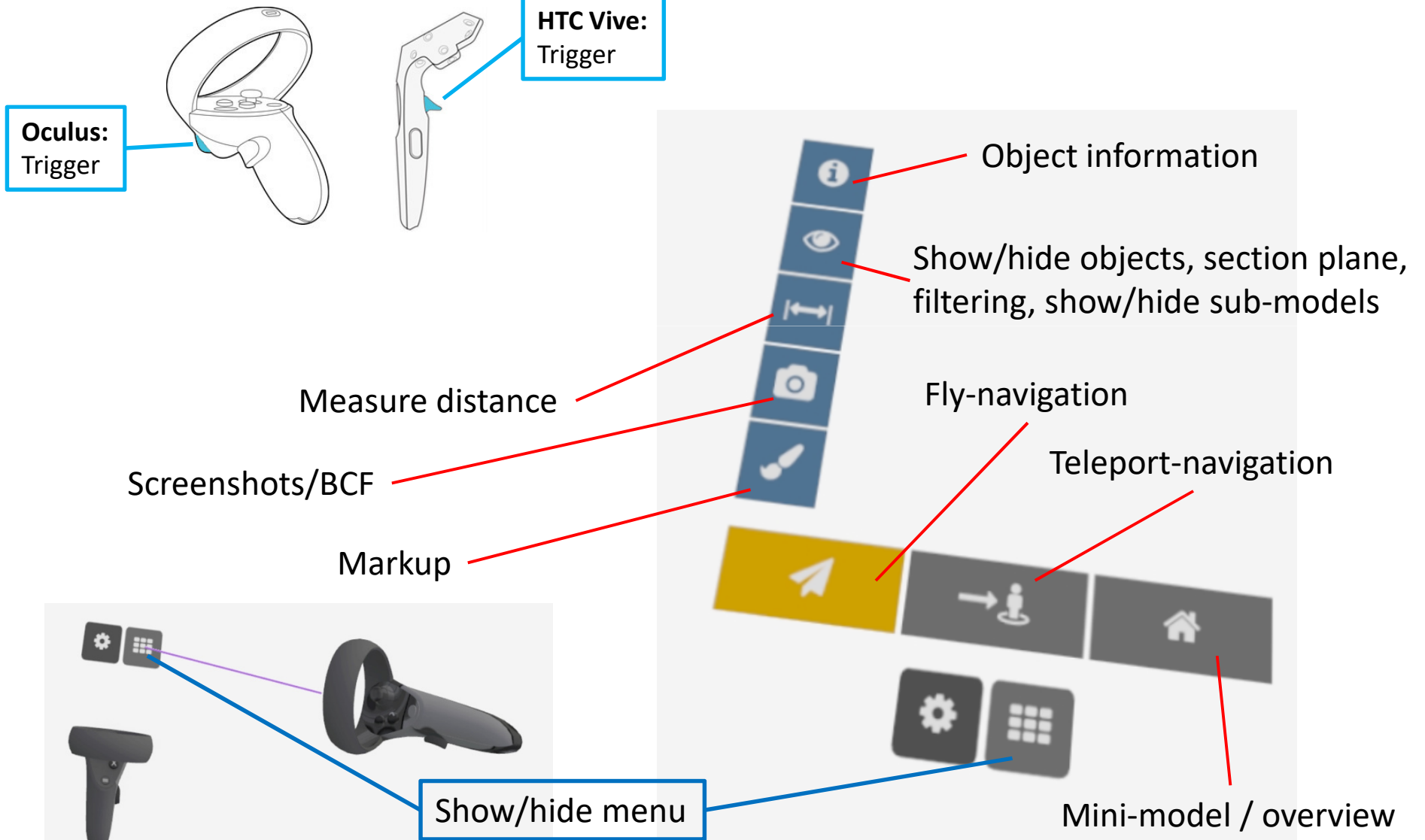
- Use the controller and "aim" or hover (point without pressing trigger) towards the buttons, a purple ray becomes visible
- Click with the trigger (press/release) on the button with 3x3 boxes

(Sometimes it is easier to hold the controller near the menu)

17.2 VR-menu (2/2)

VR

Use **trigger** to interact with the menu. In order to "click" the buttons in the menu:
The actual "click" happens when the trigger is released (i.e. *press* and then *release* the trigger)



18. VR – NAVIGATION

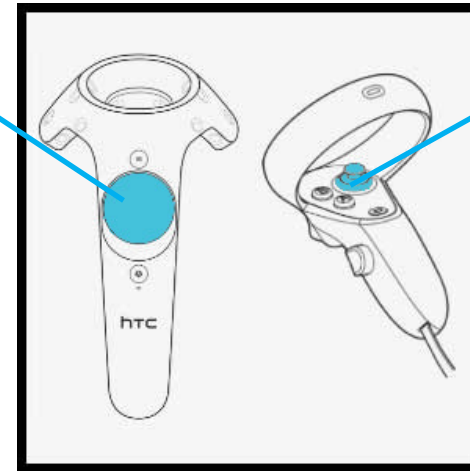
VR

Fly-navigation:

Use joystick or trackpad. Forward, back, left, right will take you in the direction you look. Use *both left and right controller* in order to fly faster



HTC Vive:
Trackpad



Oculus:
Joystick

Teleport-navigation:

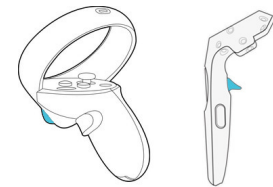
- Press and hold joystick forward (same principle with Trackpad)
- Aim at the location you want to go to (A red ray means that you can't go there)
- Release joystick to teleport to chosen location



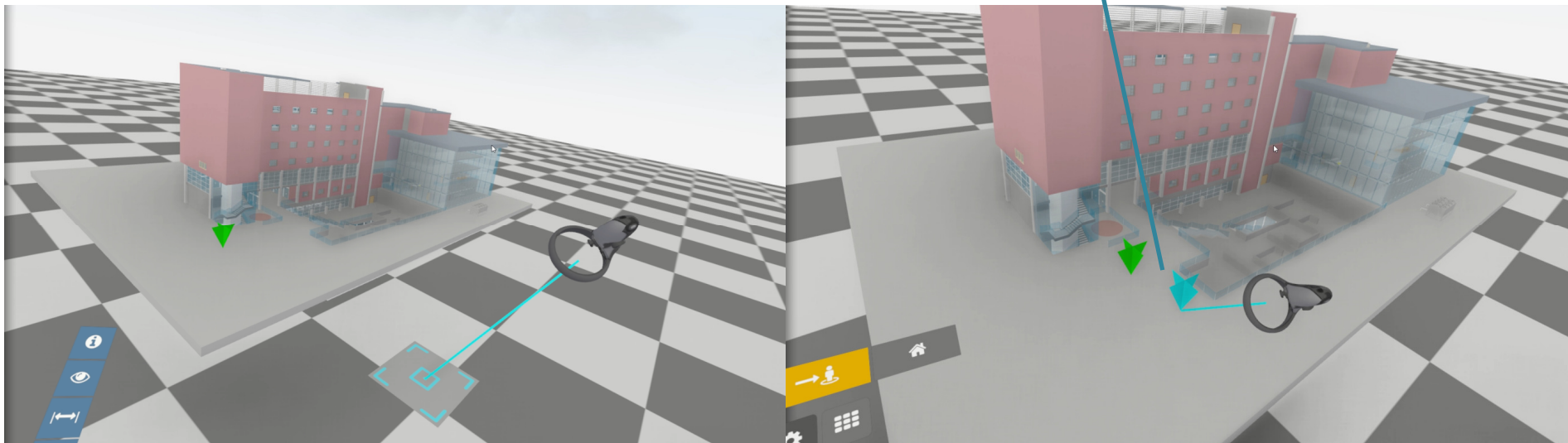
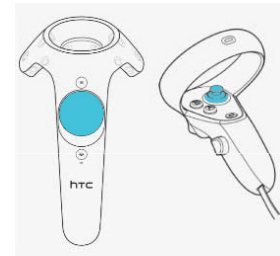
19. VR – MINI-MODEL

A miniature version av the model/scene for overview and navigation

Click at the house icon in order to switch between the mini-model and the fullscale model.
A green arrow will indicate where you are in the fullscale model.



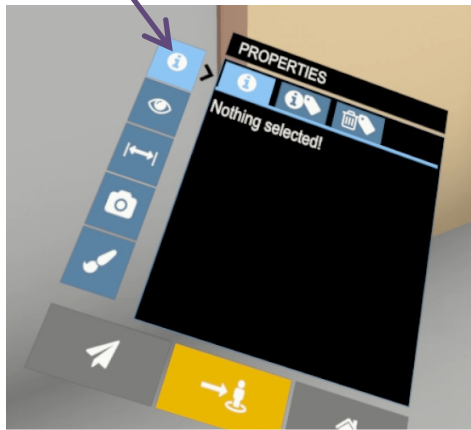
NOTE: Teleport navigation has to be active in order to be able to "jump into" the mini-model (and end up at that location in the fullscale model)



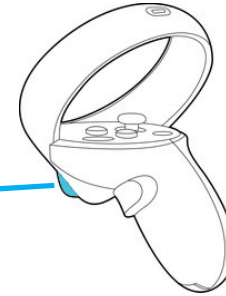
20. VR – OBJECT PROPERTIES (1/2)

VR

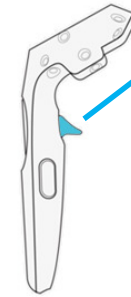
Use trigger and click on the information icon



Oculus:
Trigger



HTC Vive:
Trigger



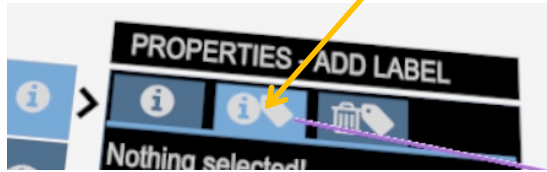
Select object by "shooting at it" using the trigger (i.e. ray select)
Click on the arrows to cycle between different PropertySets (grouping of properties)



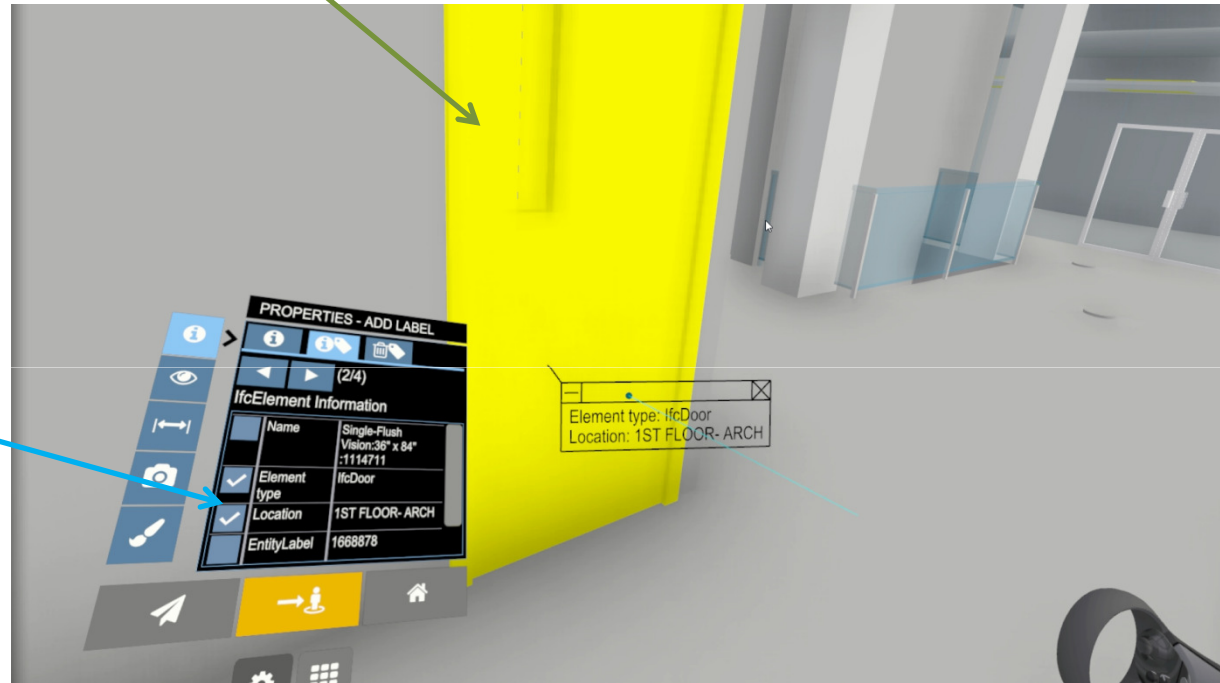
20.2 VR – OBJECT PROPERTIES (2/2)

VR

The second tab allows you to place a label with information



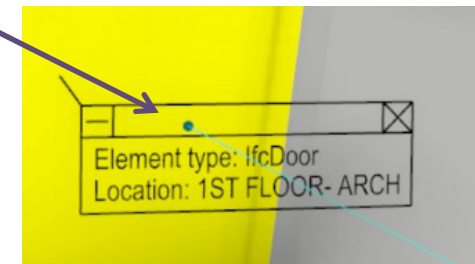
1. Select object using the trigger (i.e. ray select)



2. Choose (tick) which properties to show on the label



3. Aim/hover at the top bar of the label until a dot is shown, then hold down the trigger to grab and move the label to change its position



21. VR – SHOW/HIDE SUB-MODELS + FILTERING

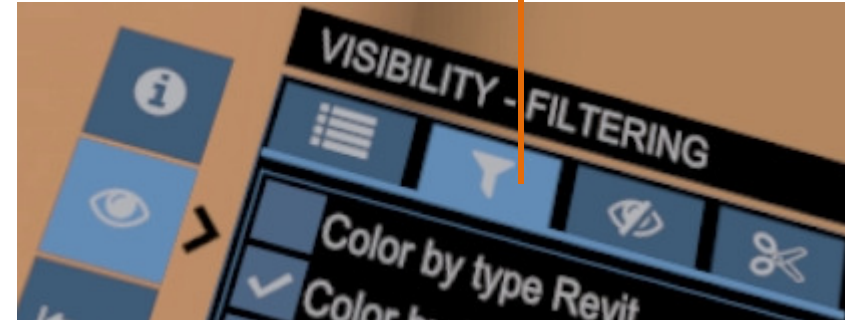
VR

Visibility icon

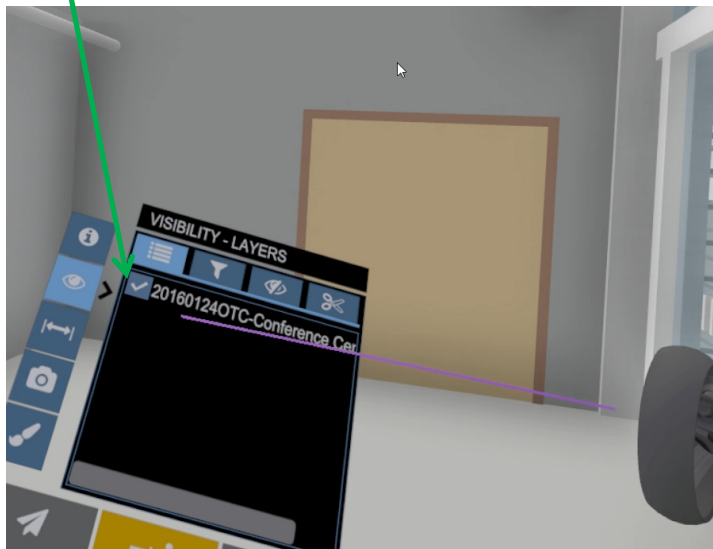


Show/hide sub-models

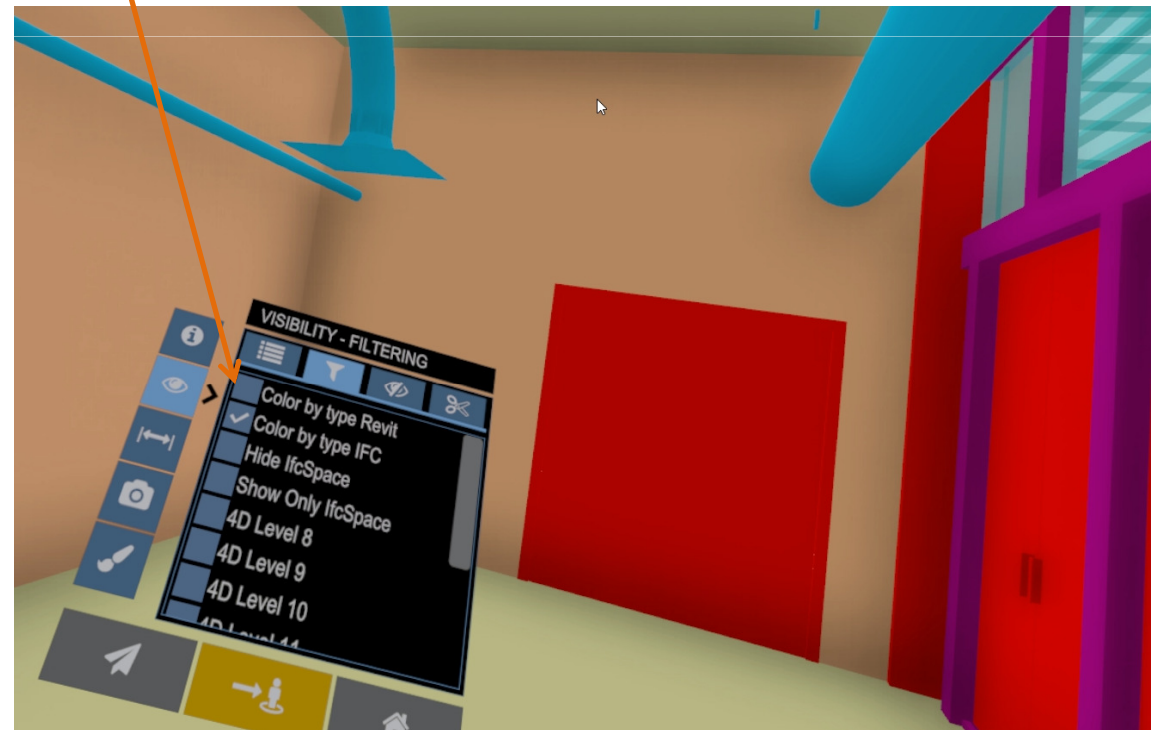
Filtering



Tick to show/hide sub-models



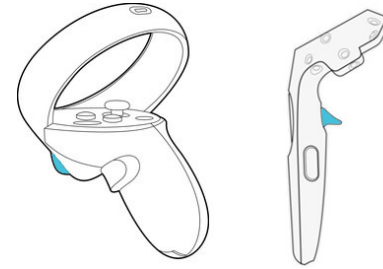
Tick to activate filter (color-coding)



22. VR – SHOW/HIDE OBJECT

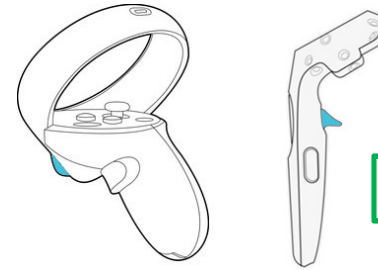
VR

Select object with the trigger



23. VR – SECTION PLAN (SELECT SURFACE)

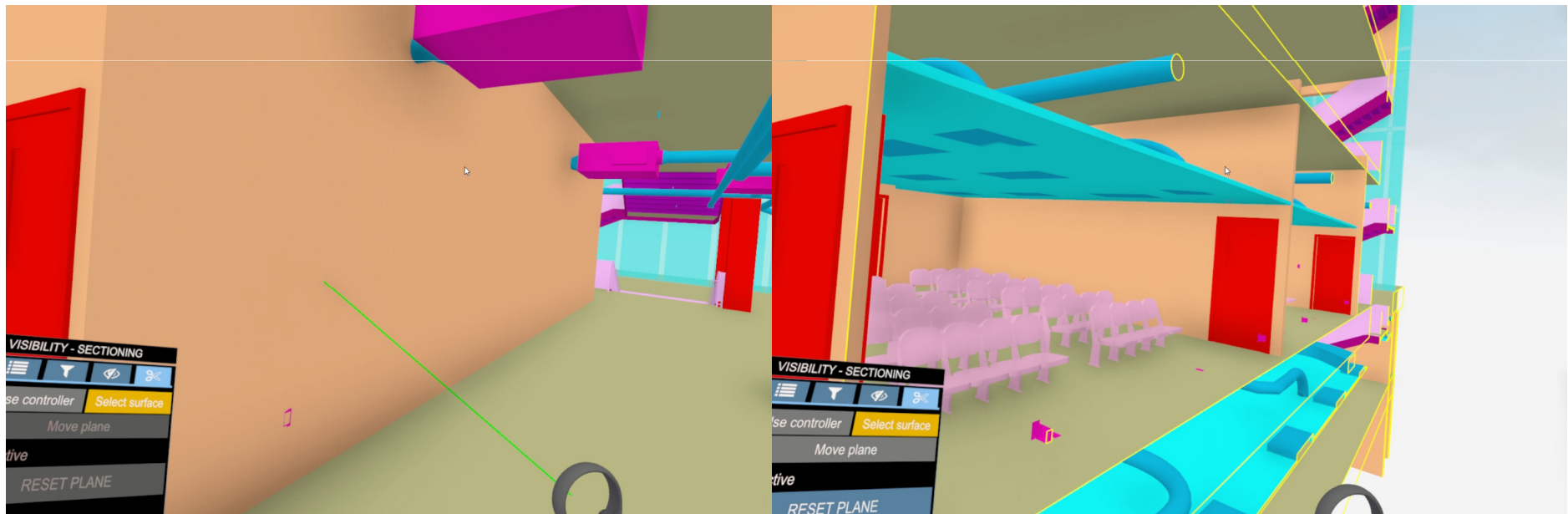
VR



Use trigger



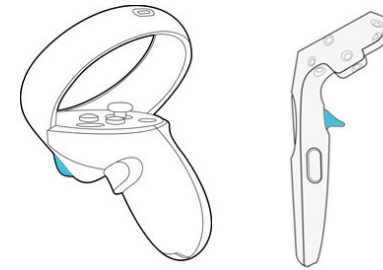
Define section plane by selecting a surface



Use trigger to select ("shoot" at) a surface in order to define a section plane there

23.2 VR – SECTION PLANE ("CUT" USING VR-CONTROLLER)

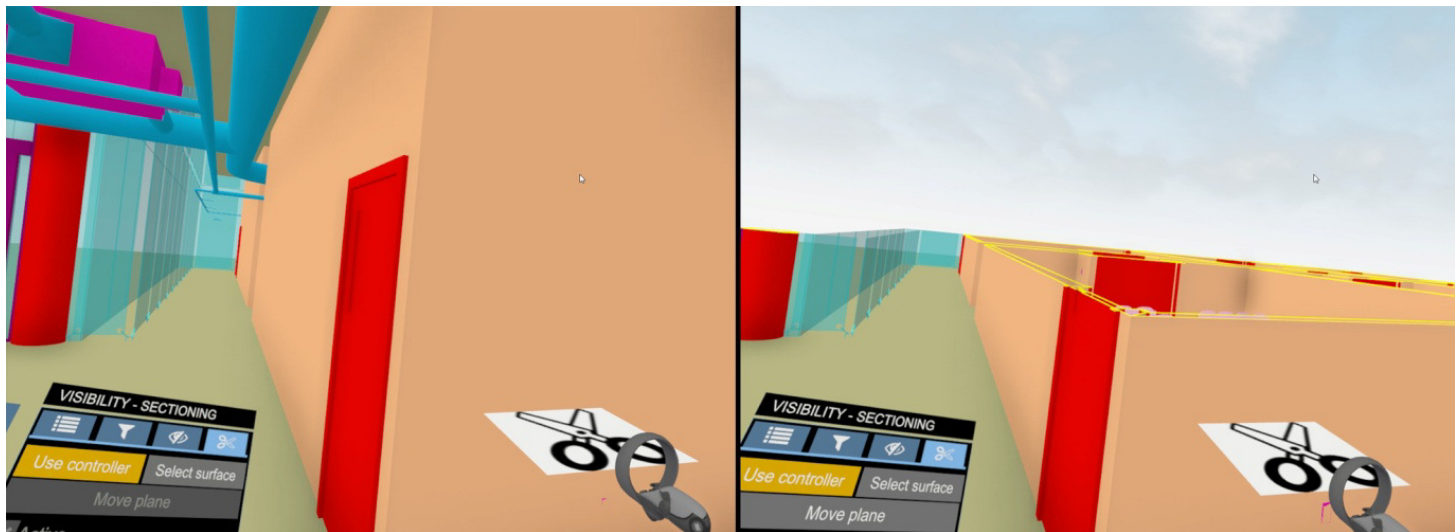
VR



Use trigger



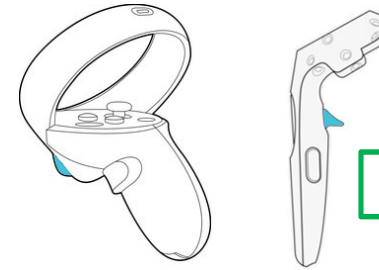
Define section plane using the VR-controller



Press and hold the trigger in order to (realtime) "cut" the model using the controller. Release the trigger to make the section plane permanent.

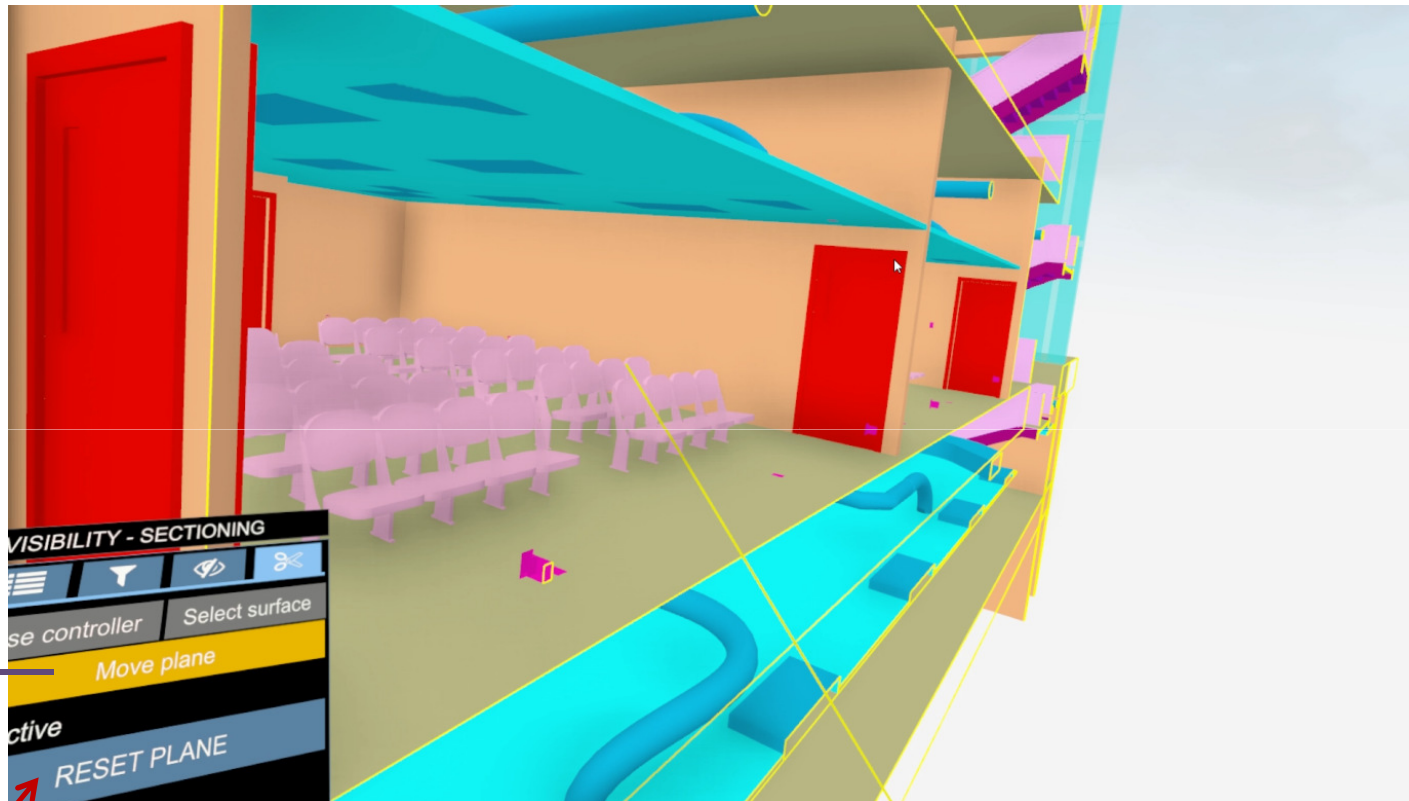
23.3 VR – MOVE SECTION PLANE

VR



Use trigger

1. Click "Move plane"



2. "Aim" (hover, don't press trigger) towards the section plane
3. Press and hold the trigger in order to grab and move the section plane

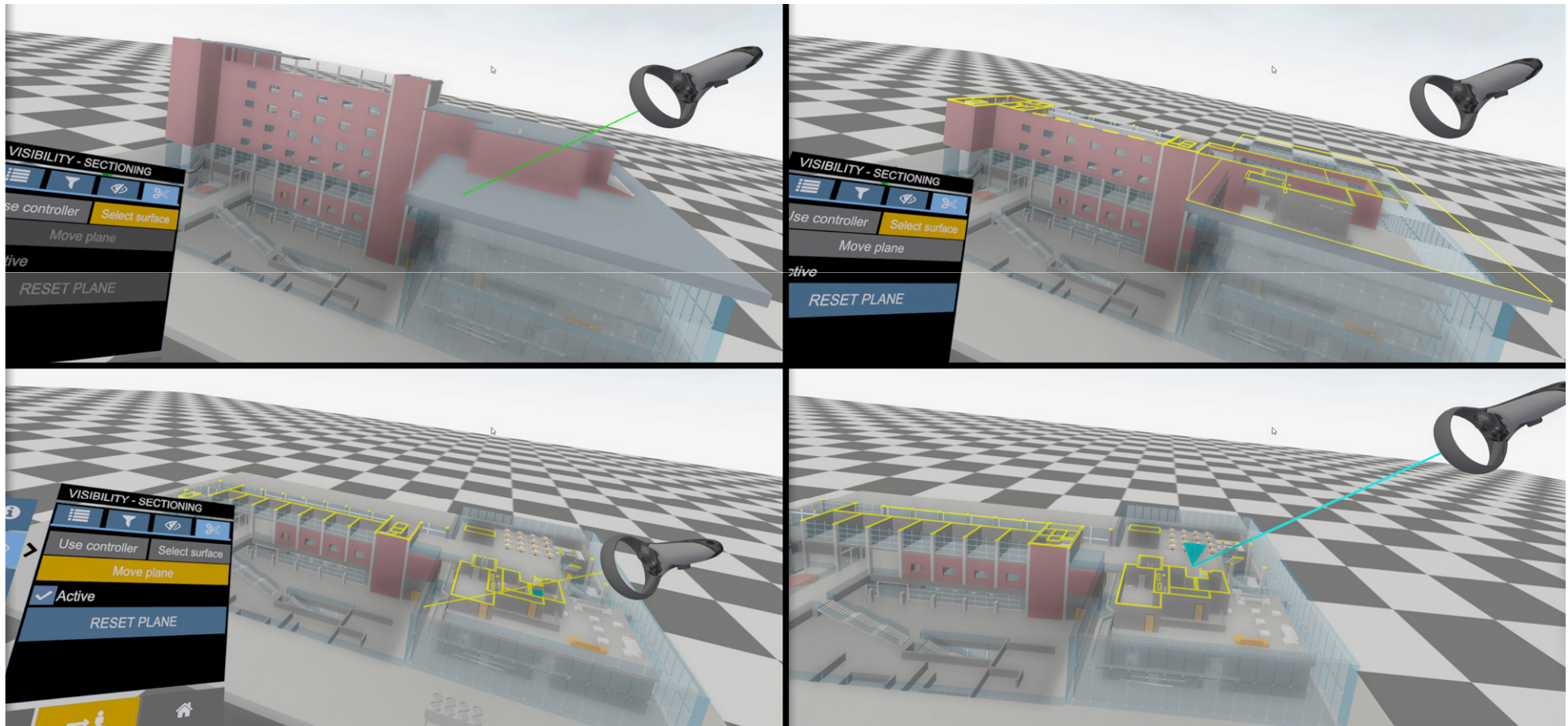
Click "RESET PLANE" in order to remove/delete it

24. VR – SECTION PLANE AND MINI-MODEL

VR

- Section plane works in exactly the same way in the Mini-model
- Use a section plane in order to "jump in" at a specific floor/level

Define section plane using the trigger



Move plane up/down using the trigger

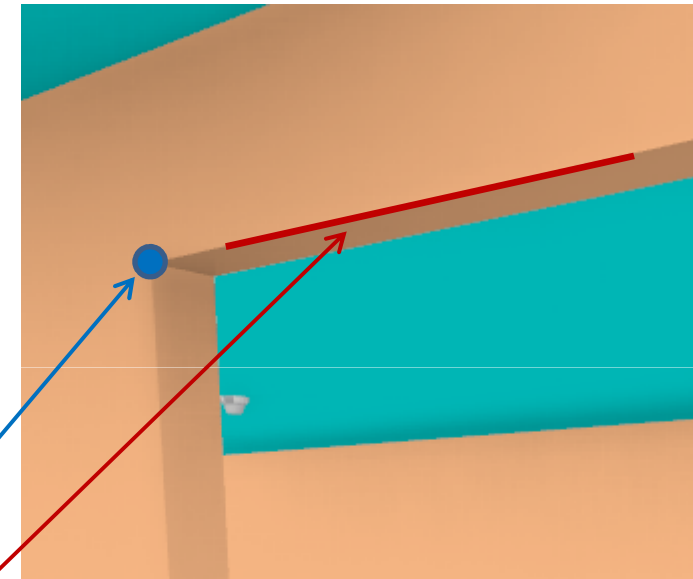
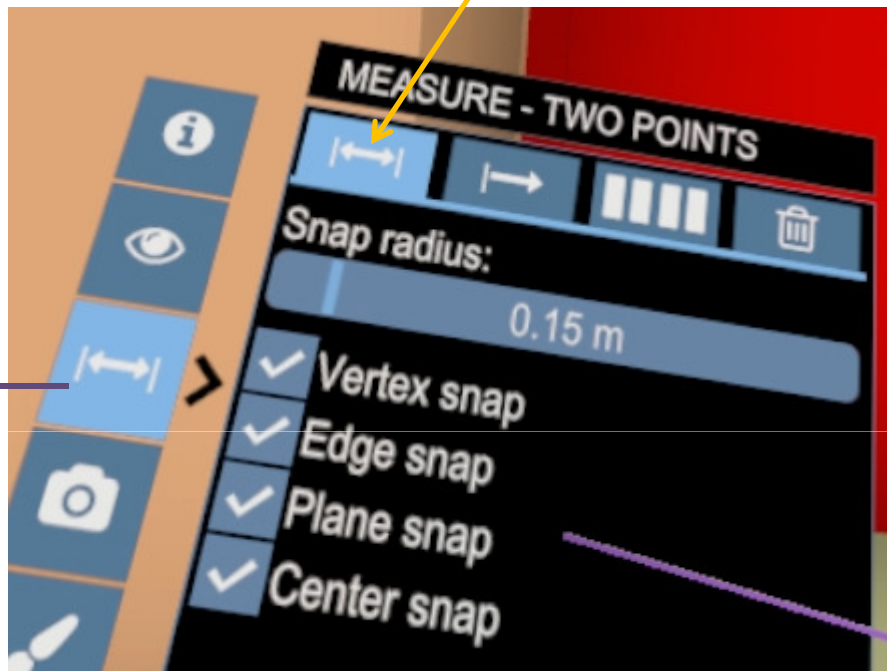
Jump into fullscale model using joystick/trackpad

25. VR – MEASURE DISTANCE (SNAPPING)

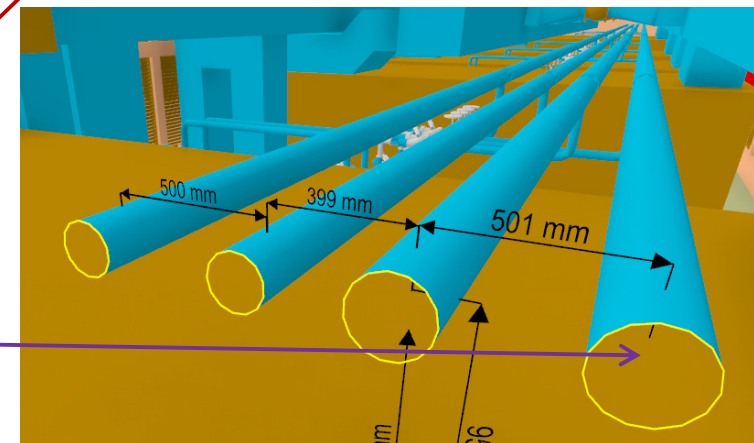
VR

"Measuring tools"

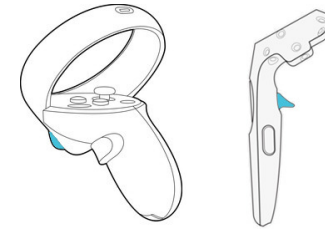
Measure between two points



- **Vertex:** Will snap to corners/vertices
- **Edge:** Will snap to edges
- **Plane:** Will snap to the plane represented by the surface
- **Center:** Will snap to centerlines of pipes and rebars



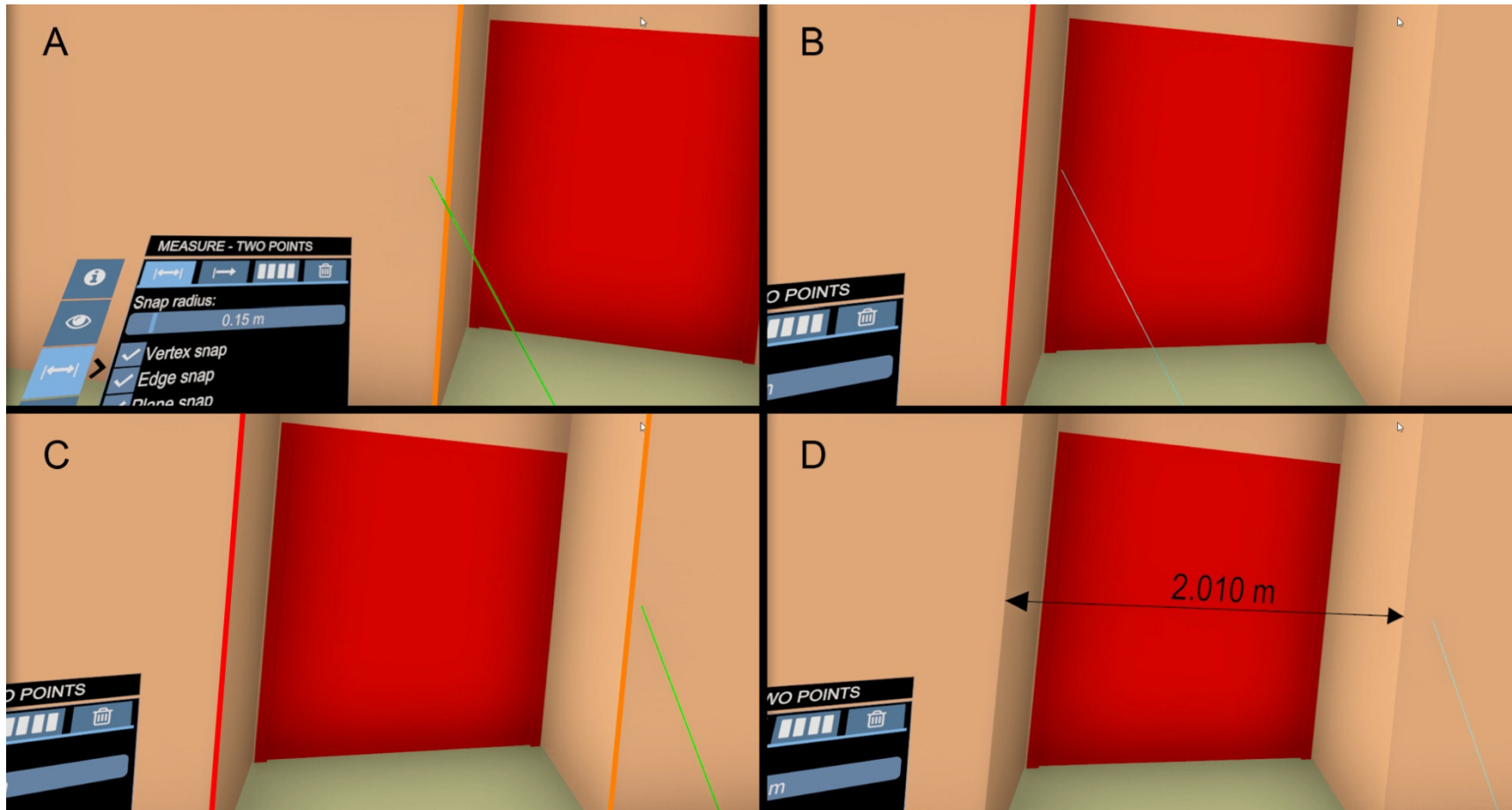
25.2 VR – MEASURE DISTANCE



VR

A: Press and hold trigger and point near an edge to get snapping suggestions (orange)

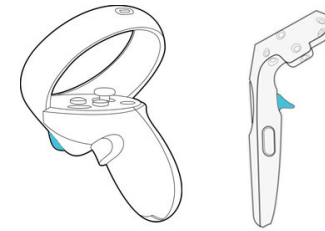
B: Release the trigger in order to select the edge. The edge is now the first measure-point (röd)



C: Press and hold the trigger again and point near the second edge to get snapping suggestions (orange)

D: Release the trigger in order to select the edge as the second measure-point and create the dimension

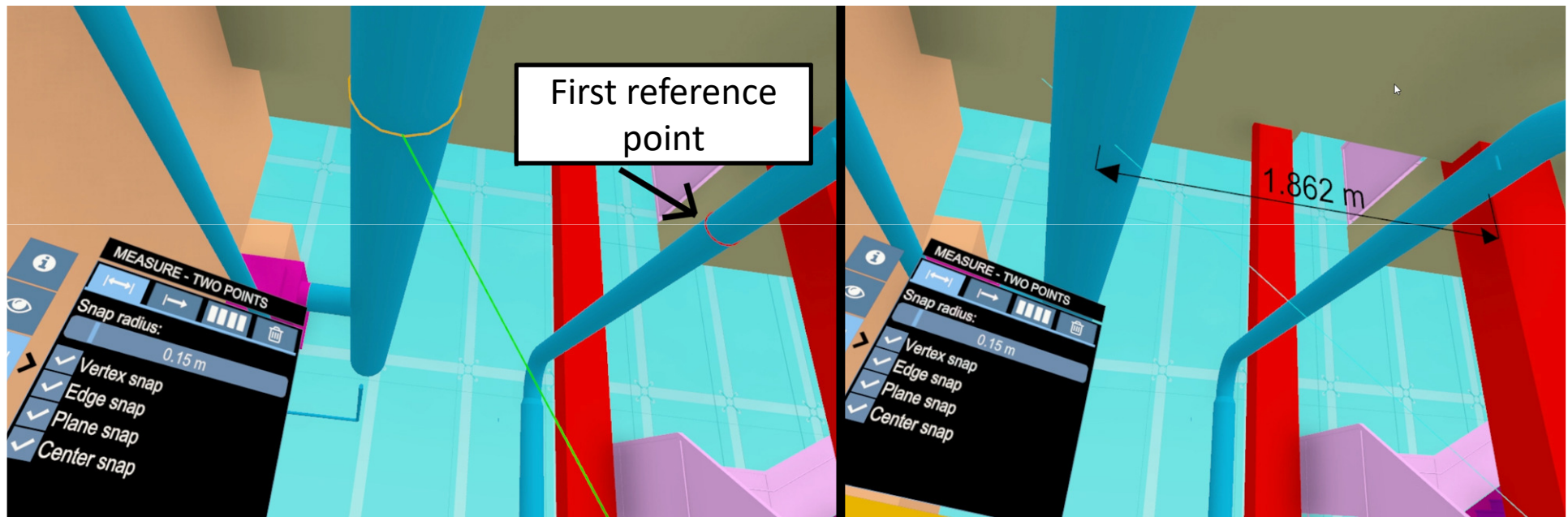
25.3 VR – MEASURE DISTANCE (CENTER, C/C)



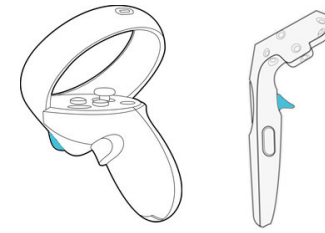
VR

Press and hold the trigger and point at a pipe or rebar to get suggestions on a centerline (orange)

Release the trigger in order to select that centerline



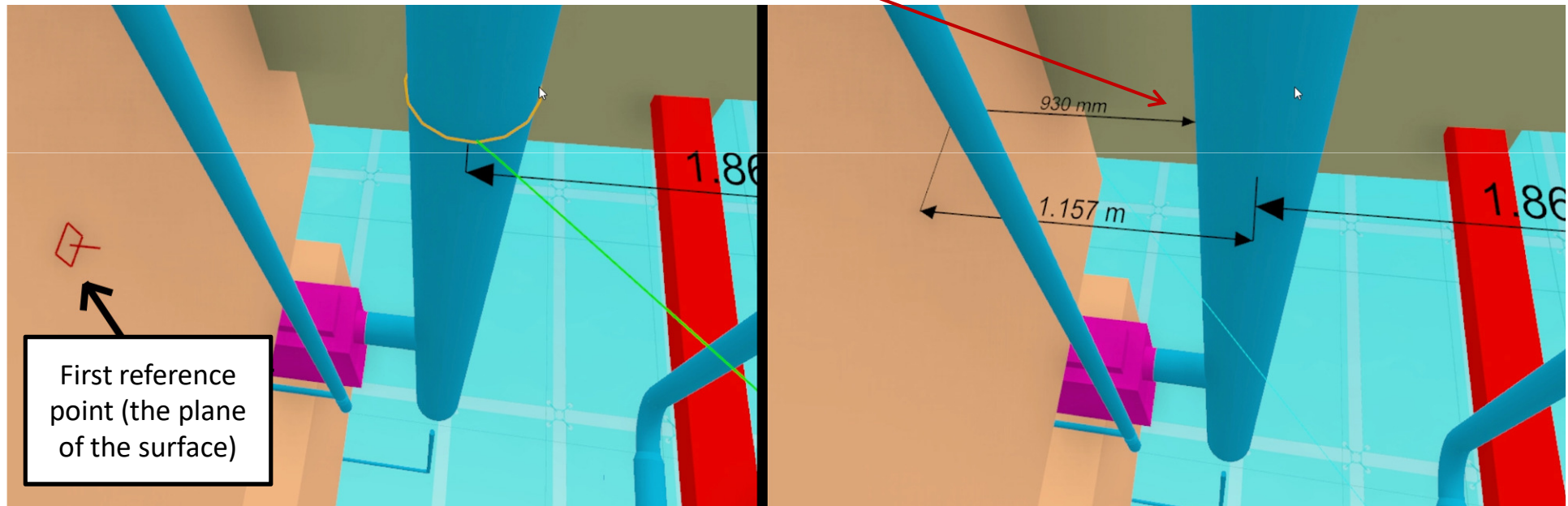
25.4 VR – MEASURE DISTANCE (CENTER, C/C)



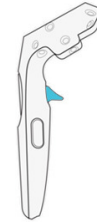
VR

"Center-vs-surface" will create two dimensions:

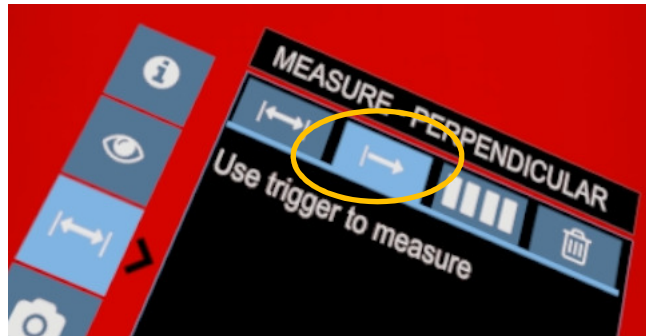
1. Surface (i.e. plane) to centerline
2. Surface (i.e. plane) to exterior of pipe



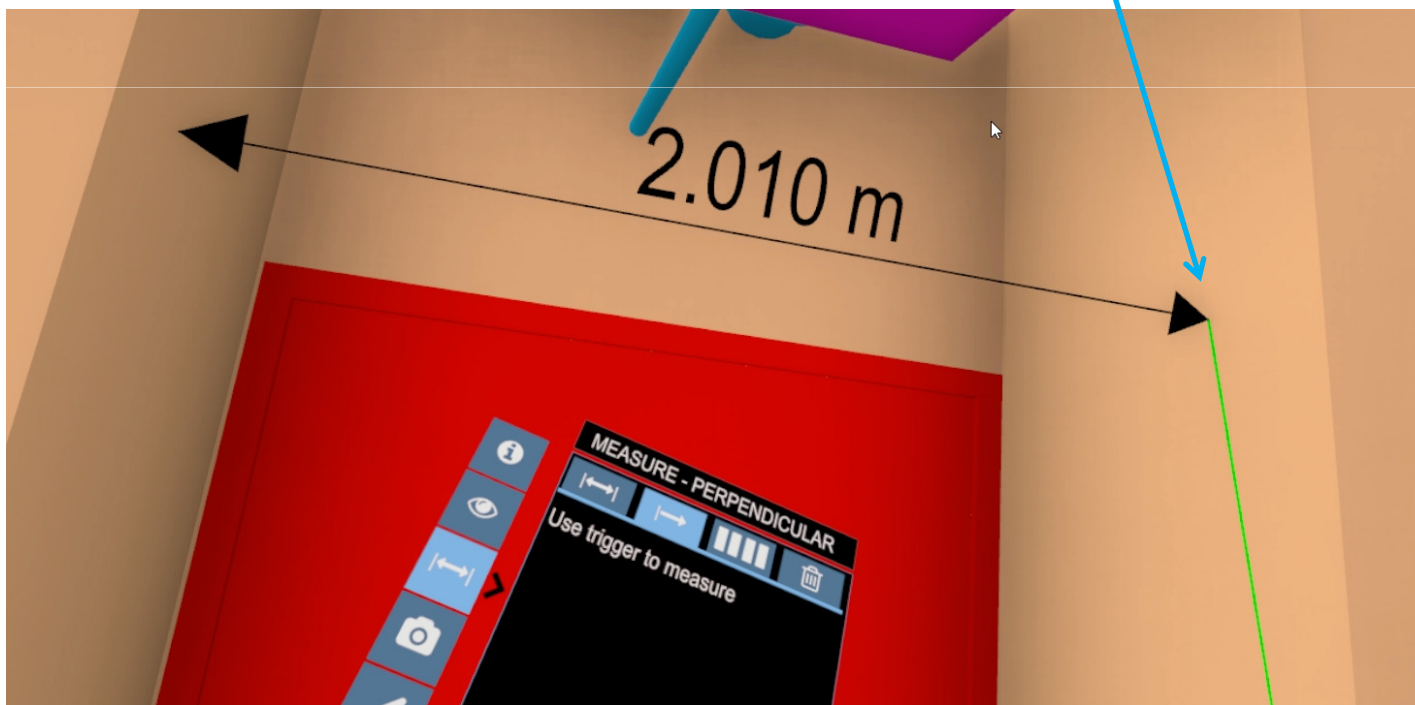
25.5 VR – MEASURE PERPENDICULAR DISTANCE FROM SURFACE



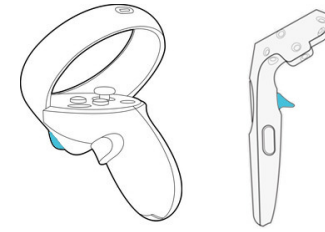
VR



Press and hold the trigger to see a perpendicular distance against the closest surface. Release in order to make the dimension permanent.

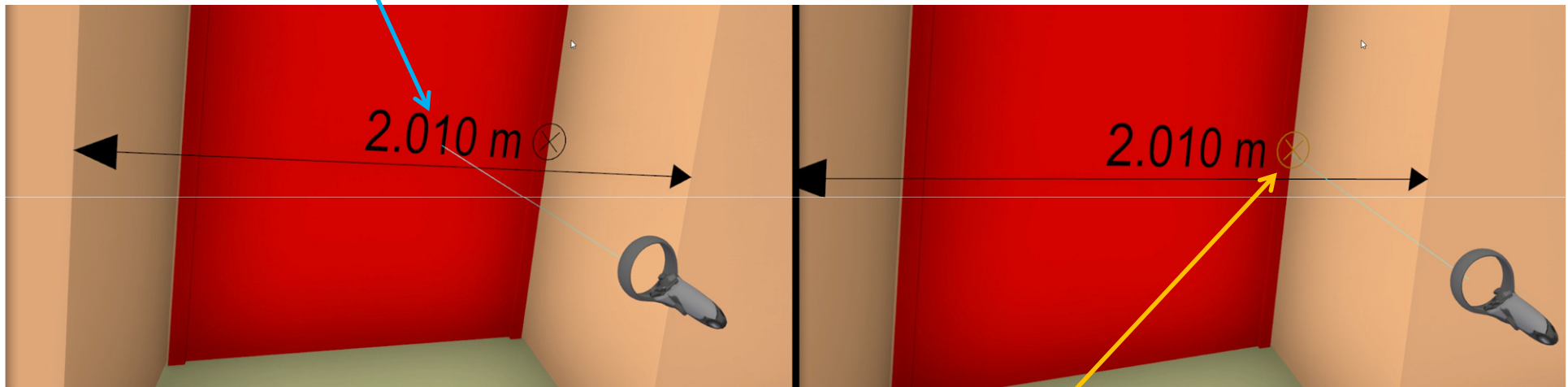


25.6 VR – REMOVE DIMENSIONING



VR

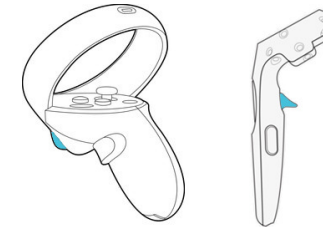
Aim/hover over dimensioning text (do NOT press the trigger) to show the delete icon (cross)



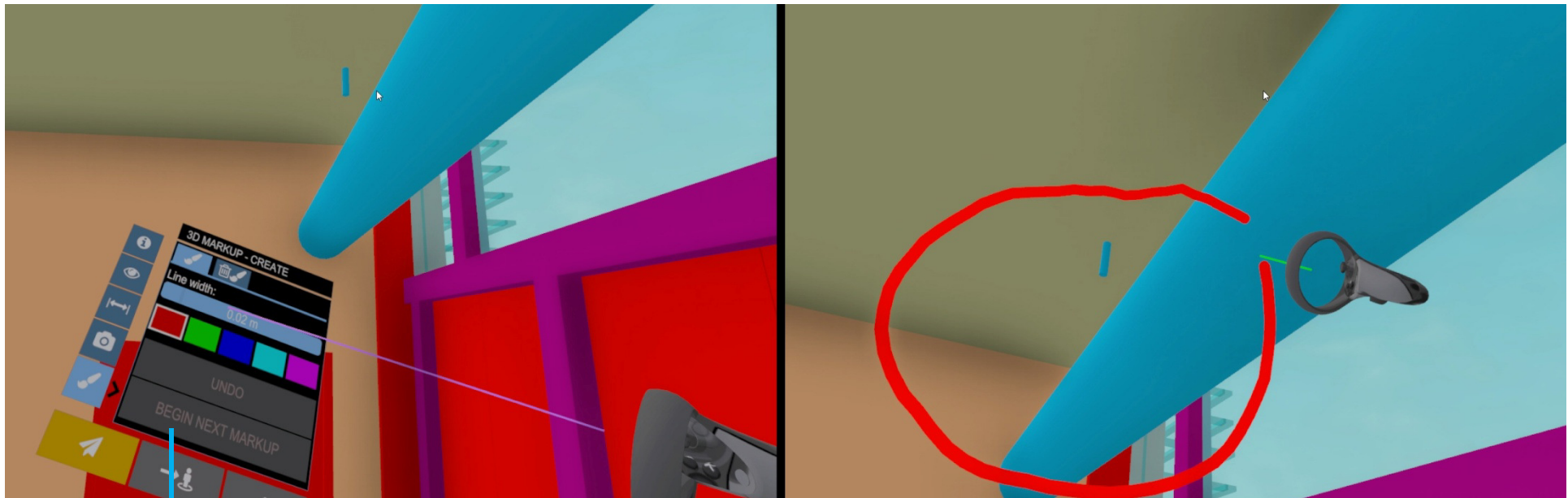
Use trigger to click on the cross in order to remove the dimensioning

26. VR – MARKUPS

VR

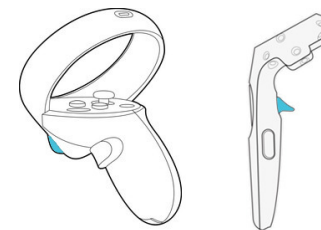


Press/hold the trigger to draw markups in 3D



Click "**BEGIN NEXT MARKUP**" in order to store/finalize the current markup, and prepare for a new one (with different color or thickness)

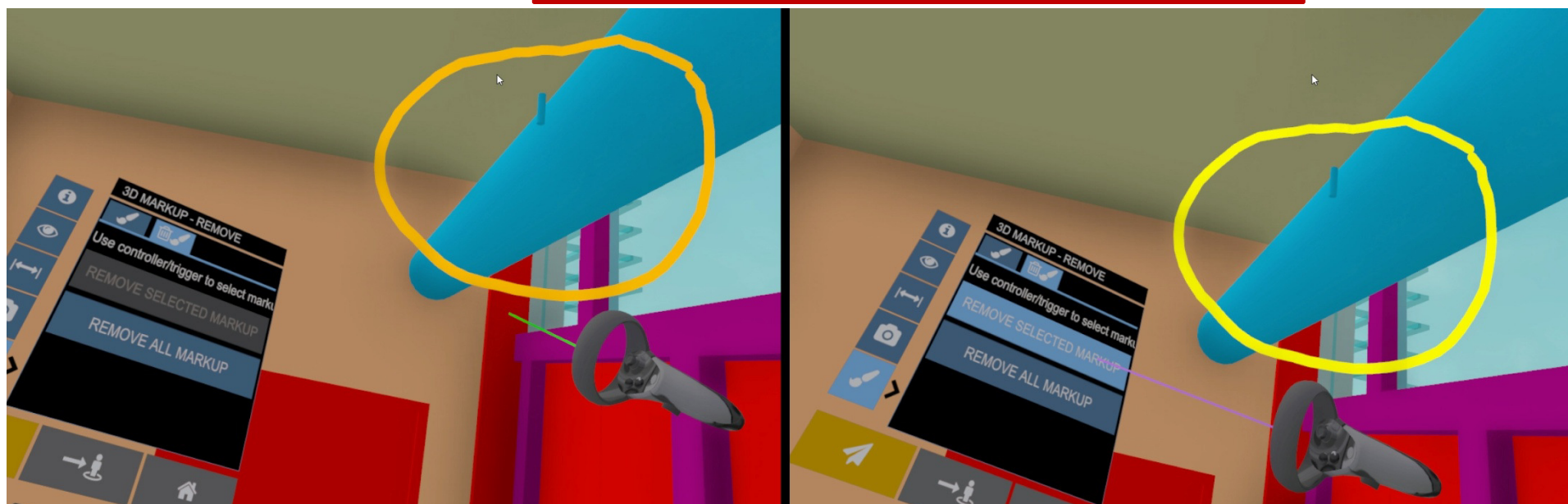
26.2 VR – REMOVE MARKUPS



VR



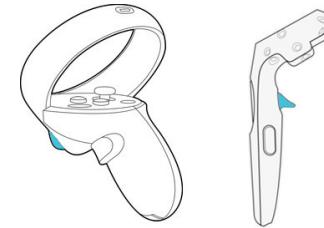
- Move the controller near/close to a markup.
- When the markup turns orange it is possible to select the markup by clicking (press/release) the trigger (it then turns yellow)
- Click "REMOVE SELECTED MARKUP" in order to remove



27. VR – SNAPSHOTS / SCREENSHOTS

VR

Aktivate the Snapshot Tool by clicking on the camera icon



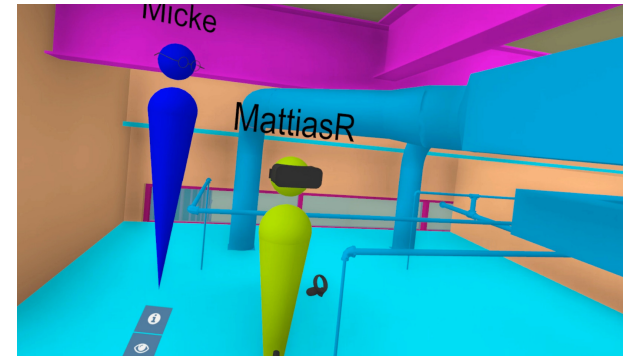
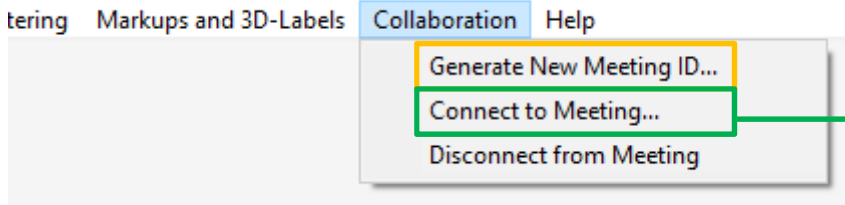
- Look at what you want a snapshot of (the view you see in VR will be the snapshot view)
- Click the trigger (the screen will go to black one time to indicate the snapshot)

The snapshots will be saved in a subfolder called *Screenshots* in the same location as the file that has been loaded.

Example: If you open the file `C:\temp\MyFile.bmx`, any screenshots will be placed in the folder `C:\temp\screenshots\`.

28. VR – MULTI-USER

Multiple users in the same VR-model



VR

The 'Meeting Settings' dialog box is shown, featuring two input fields: 'Meeting ID:' and 'Nickname:'. Below the fields are two buttons: 'Cancel' and 'Connect'. The 'Connect' button is highlighted with a blue border.

1. Agree on a meeting-ID, like *meeting456*

(1.1 ...or let BIMXplorer create one)

2. Open the same model on all clients

3. Choose "Connect to Meeting"

4. Enter *Meeting ID*

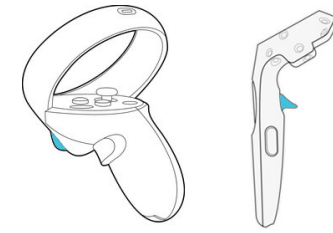
5. Enter *Nickname*

6. Click Connect

...and eventually you will see the following in the lower left corner

The screenshot shows a status message in the lower-left corner of the software interface: "Meeting room joined, we are now in multi-user mode".

28.2 VR – MULTI-USER



VR

Multi-user



Gather everybody (all the other users will teleport to your location)

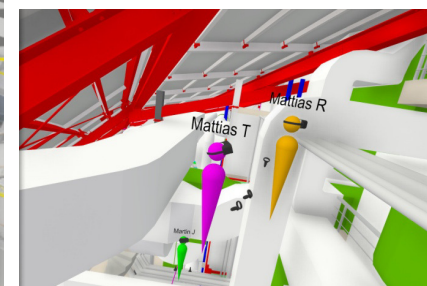
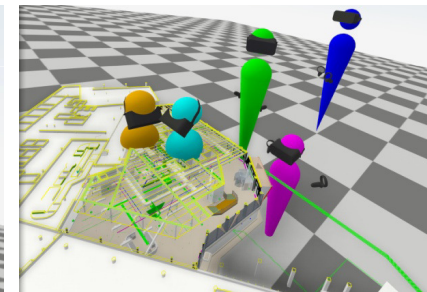
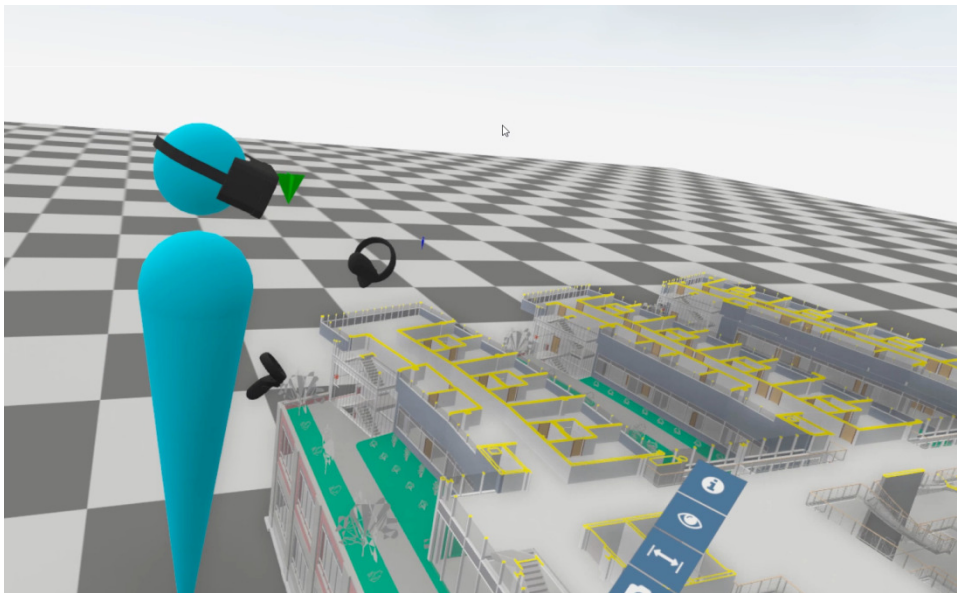
Teleport to another user

28.3 VR – MULTI-USER

VR

Functionality that will "affect" all clients/users:

- Create/move section-plane (minimodel and full scale)
- Dimensions/measurements
- Markups (will be sent when finalized. Leave tool or click "Begin next markup")
- Show/hide different disciplines/submodels
- Show/hide objects (hide/unhide)
- Gather everybody
- Move Mini-model

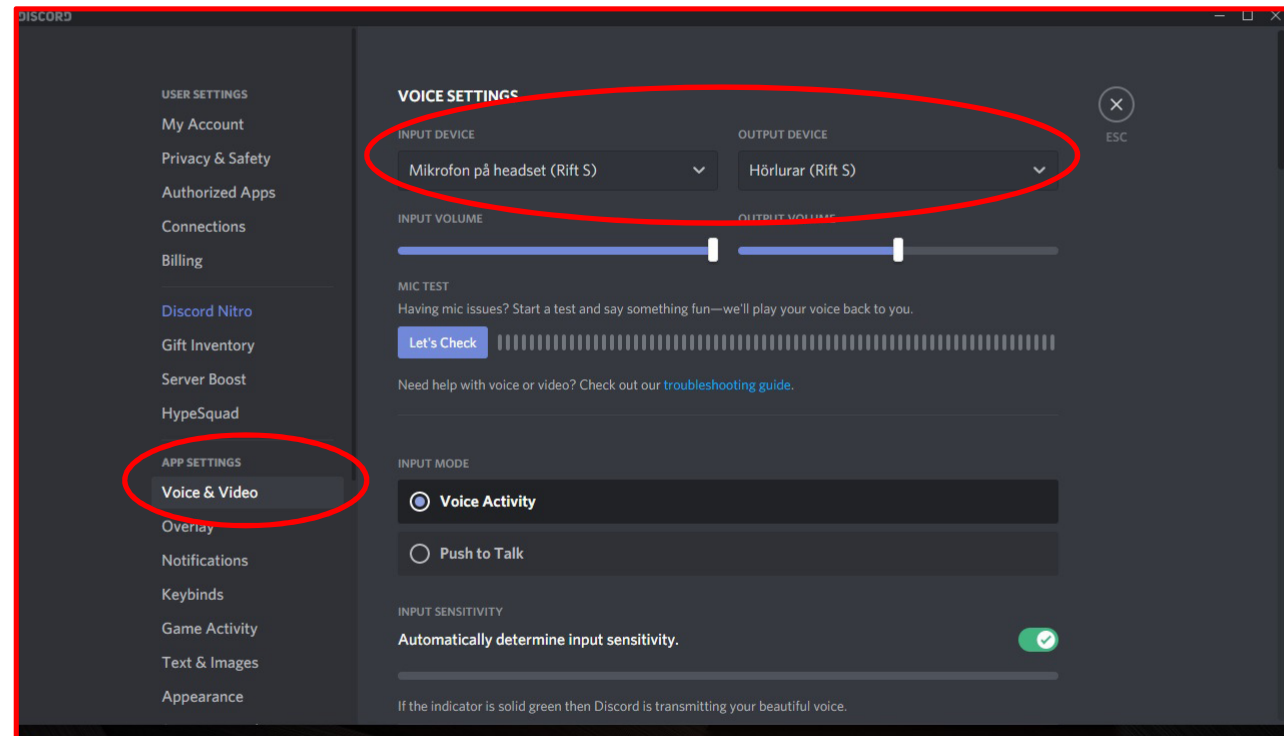
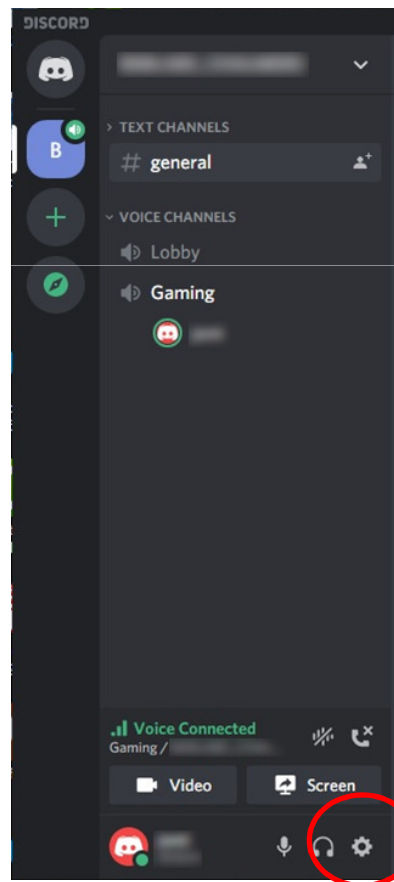


28.4 VR – MULTI-USER: Voice chat

VR

BIMXplorer has no in-built voice chat (yet...). Use Discord (<https://discord.com/download>), Teams, Zoom, etc. for this.

Example below for settings in Discord + Oculus Rift
(NOTE: This examples assumes that Oculus is connected and running)



Click the cogwheel