



## NEXT-BIM Explorer - ASSISTANCE - STEP BY STEP



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<https://www.next-bim.com/>  
<https://www.next-bim.com/tutorials>

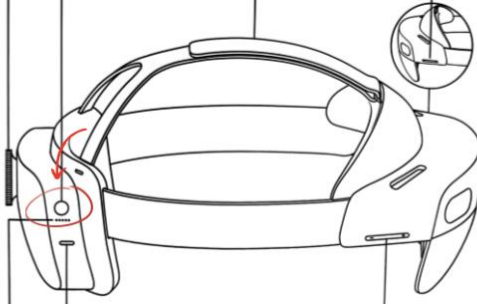


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## 1 / First steps:

- Turn on your Hololens2 headset using the circular button on the back right hand side.

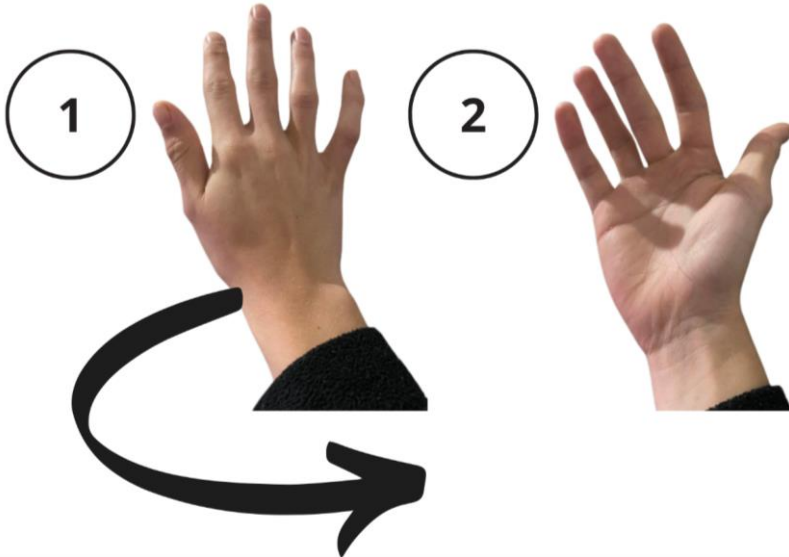


- Set up an account :  
<https://learn.microsoft.com/fr-fr/hololens/hololens2-start>  
<https://learn.microsoft.com/fr-fr/hololens/hololens2-basic-usage>
- Opening the windows menu



Gestures in NEXT-BIM Explorer:

Open a menu: Put your hands in front of you and open your hand in front of you



**Click in a menu:** Click by pointing your finger or the ray on the button.

**Click using a function/tool:** Perform a pinch with two fingers. Open your thumb and index finger and bring them together to make a click (see photo)





### Opening a file :

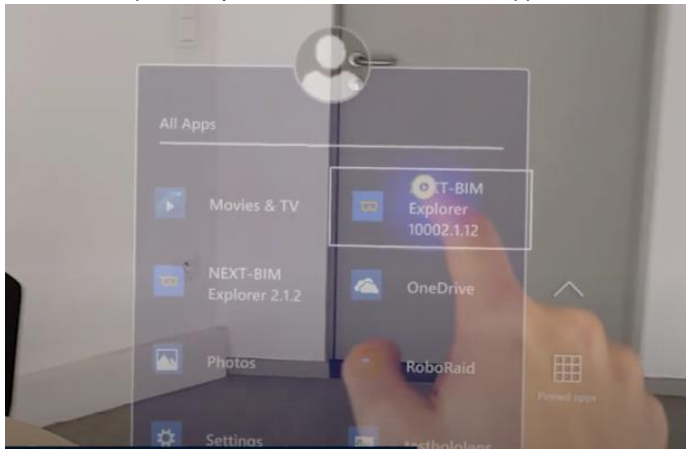
- With your hand turned towards you, use one of the two techniques below to open the main menu (clicking your wrist or putting your pointer finger and thumb together - you should see a blue homepage with multiple widgets).



- Click on "all apps" using your pointer finger.

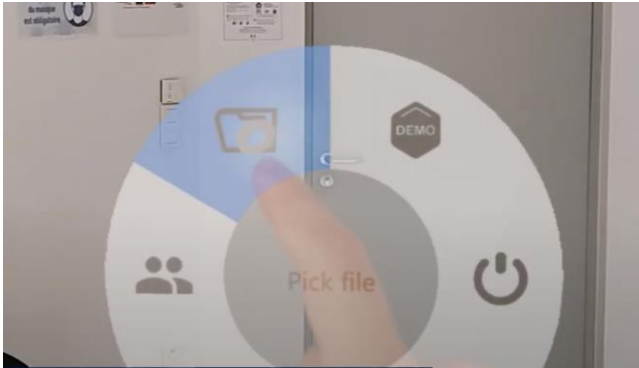


- Open the NEXT-BIM Explorer application by clicking on it with your finger - The app will open and you will see a circular menu appear.





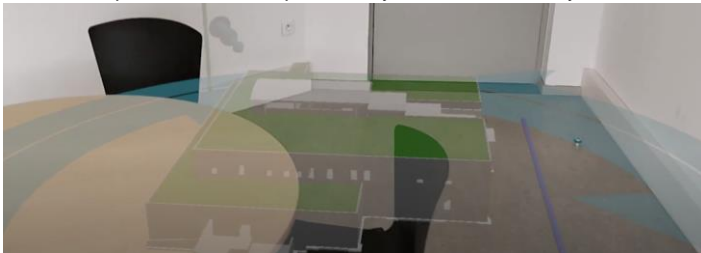
- Once the circular menu has appeared, click on the file icon to open a file



- Choose and click on the file you wish to open.



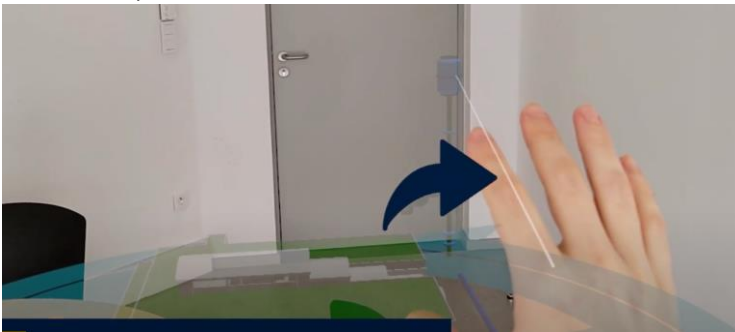
- The tabletop model should open once you have selected your file.



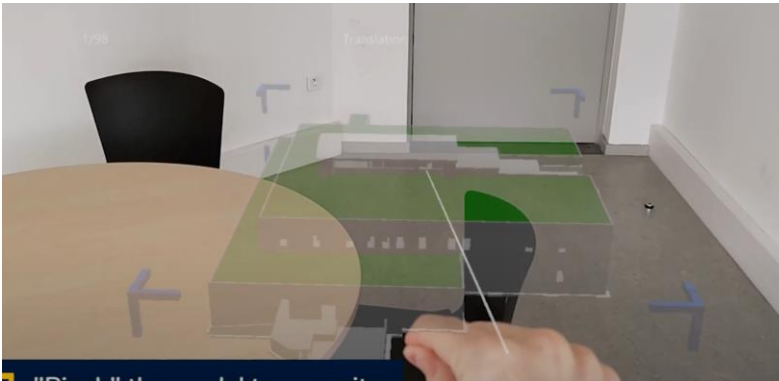


### **Basic controls in tabletop mode :**

- A ray (in the form of a white line) extends from your arm and hand, this will be how you control the explorer.



- To move the model, pinch your thumb and pointer finger together to grab the model. You can then place your model on a support (a table for example) for the best view of tabletop mode. The place the model, simply let go of your pinched fingers.



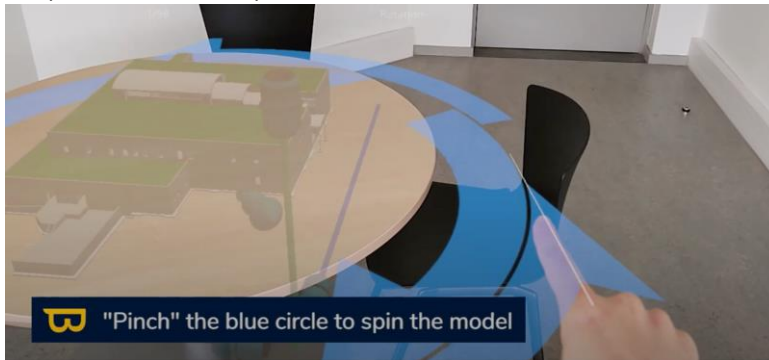




- Turn your hand in front of you, palm facing you. A circular menu will appear.

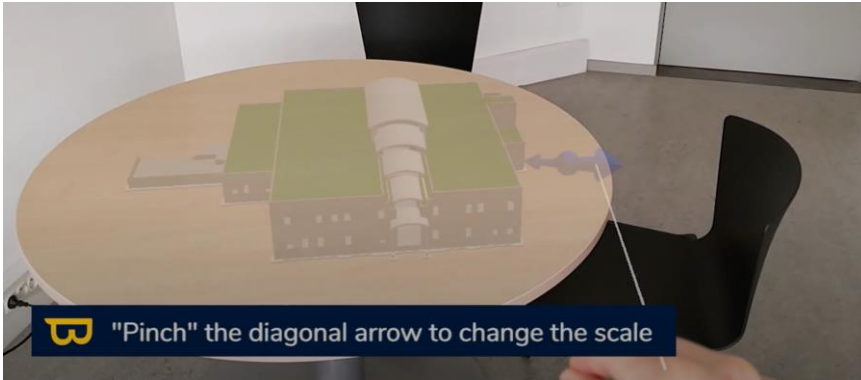


- The big blue circle arrows spin/rotate the model. Point and aim your ray at the blue circle and pinch the arrows to spin the model clockwise or counterclockwise.





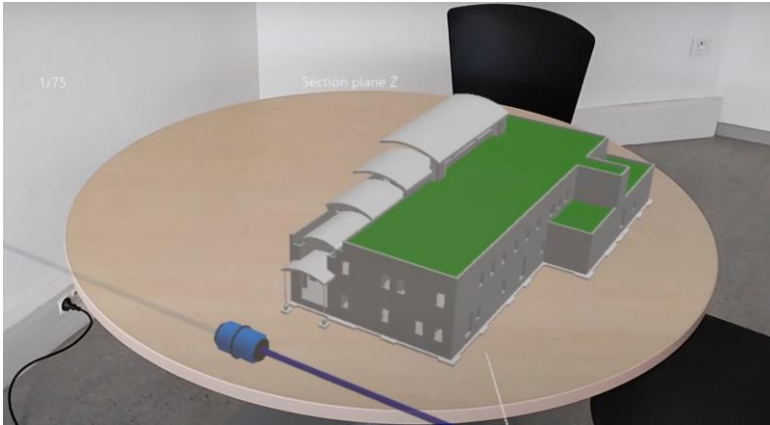
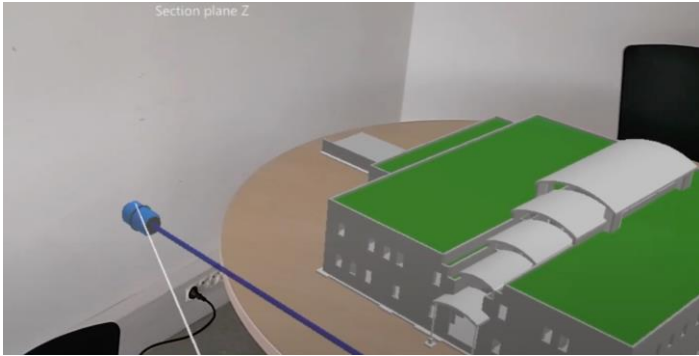
- The diagonal blue pin changes the scale size of your model. Simply pinch it and drag up or down to change the scale of your model.



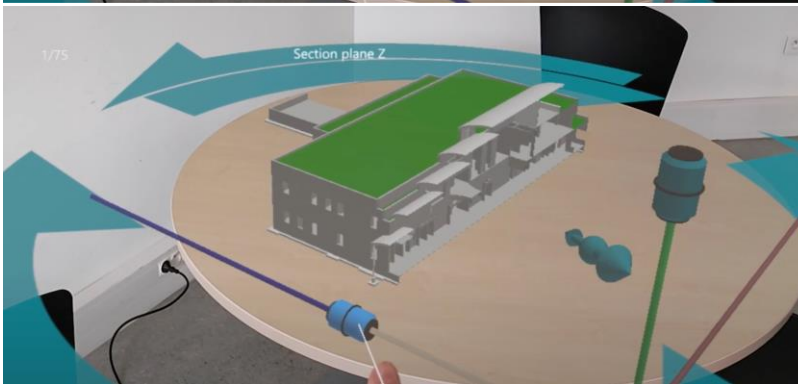
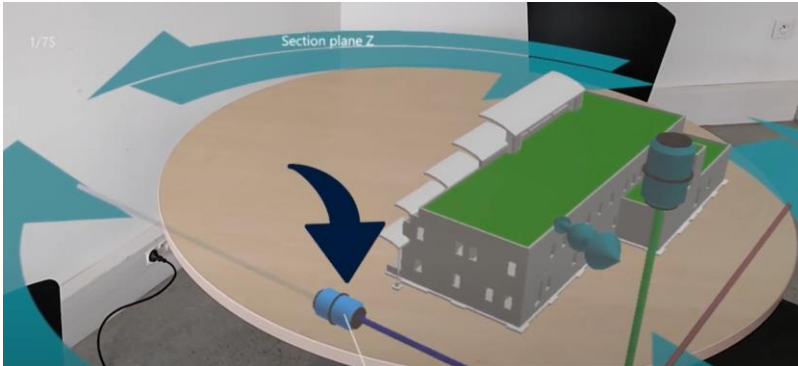
- You can physically move around the model as well, just walk around it whilst keeping the headset facing the model.



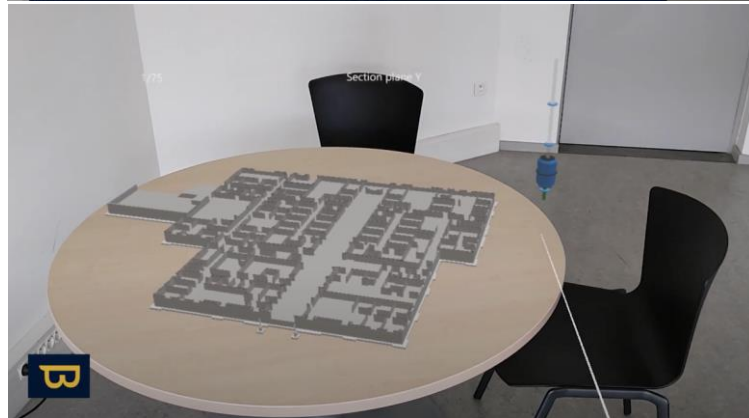
- The horizontal cursors (on a blue or red line) cut the model. Use the same pinching method to cut your model as needed



- To invert the cutting plane, simply click on the cursor itself with your pointer finger.

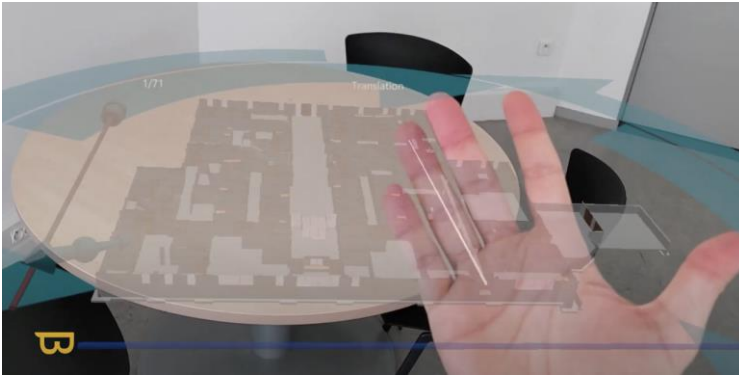


- The vertical cursor cuts the model vertically, allowing you to remove floors. Simply pinch and drag as seen for the horizontal cursors to view the inside of your model.



## 2 / Using immersive mode :

- Open the menu (turn your hand palm facing up)



- Select 'immersive mode' from the menu (icon resembling a pin).



- Using your ray (extension of your arm/hand) position the blue circle wherever you wish to immerse yourself. If you are on site, make sure to cut your model according to your



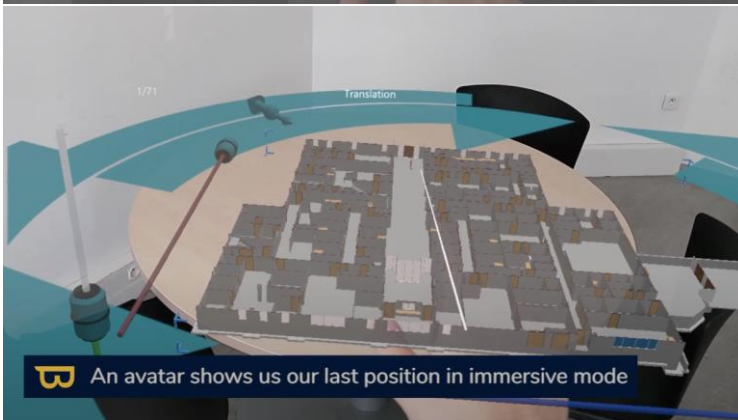
- on-site position (your current floor).



- Perform a quick click with your pointer finger and thumb (similar to a pinch) You'll be automatically teleported to the immersion point in front of you.



- To return to tabletop mode, open the menu and select tabletop mode (icon resembling a wheel) An avatar shows you your last position in immersive mode.



- The model keeps the orientation of tabletop mode, so whenever you rotate the model, your immersive mode will also be rotated.

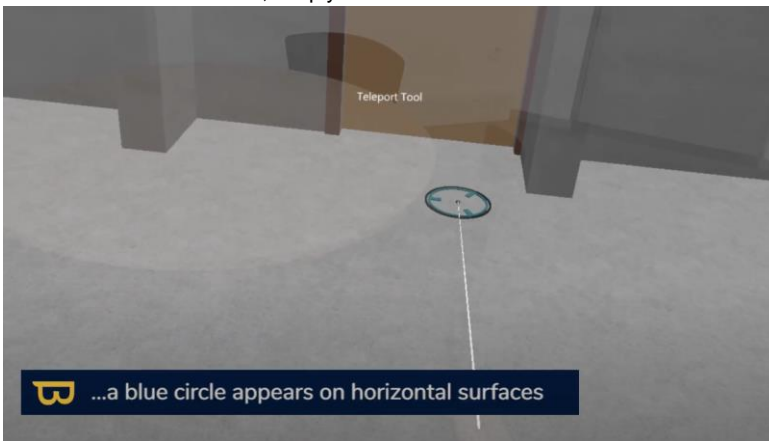




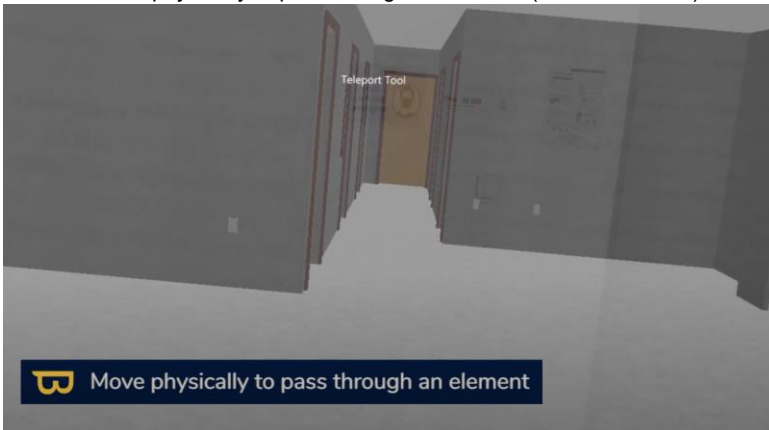
### Moving around in immersive mode :

You can set your immersive mode in the settings. The display distance, loading only of the current floor, display of the minimap etc... (see "settings in immersive mode")

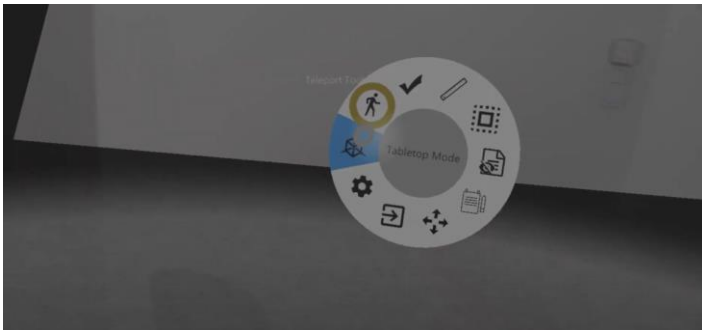
- At the end of your ray, you'll see a blue circle appear on horizontal surfaces. To teleport to the location of the circle, simply click on it.



- You can move physically to pass through an element (a door, a wall...)



- To change location in immersive mode, open the menu and hover over the tabletop mode icon.

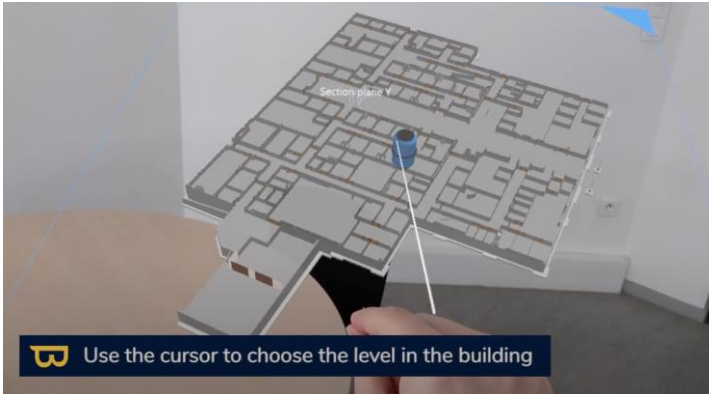


- Select 'relocate' in the menu (icon resembling a pin). A miniature version of your model will appear.

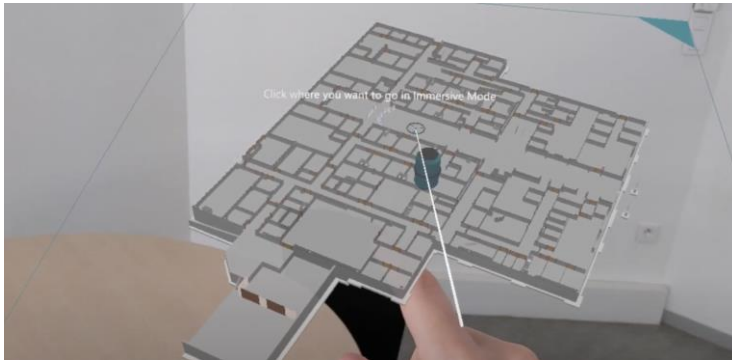




- Use the blue vertical cursor to choose the level/floor of the building you wish to relocate to by sliding it up or down.



- In the same way as going into immersive mode, position and click the blue circle at the end of your ray to immerse yourself at the desired location.

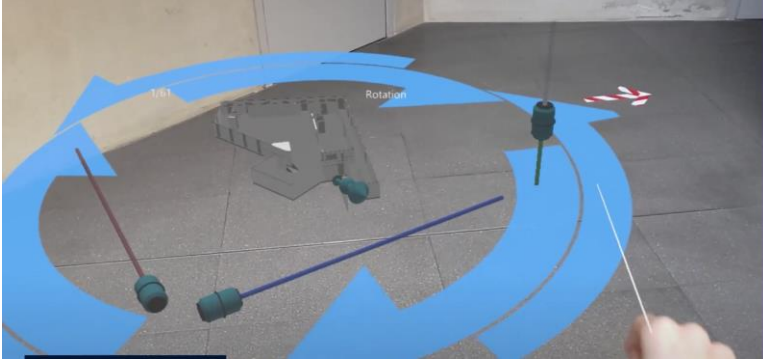


**The Teleportation Tool is usable only when model alignment has not been done (in a meeting room for example). Once model alignment has been performed, you can only move around physically.**



### **3 / Model alignment on your real environment :**

- Rotate your tabletop model so that its orientation matches the real building.



- Open the menu (turn your hand palm facing up).
- Immerse yourself in the approximate physical location you are in (as seen previously in the 'using immersive mode' chapter).



- To ensure your model lines up accurately, use the 'two wall snap function'.

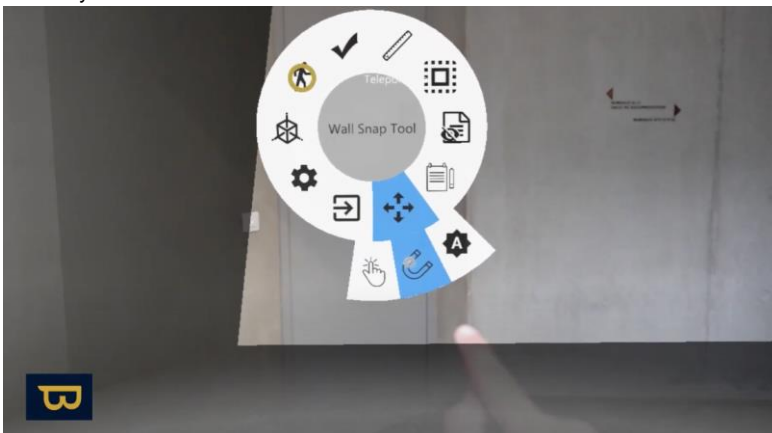
**Two wall snap function :**

- Open the menu (turn your hand palm facing up).

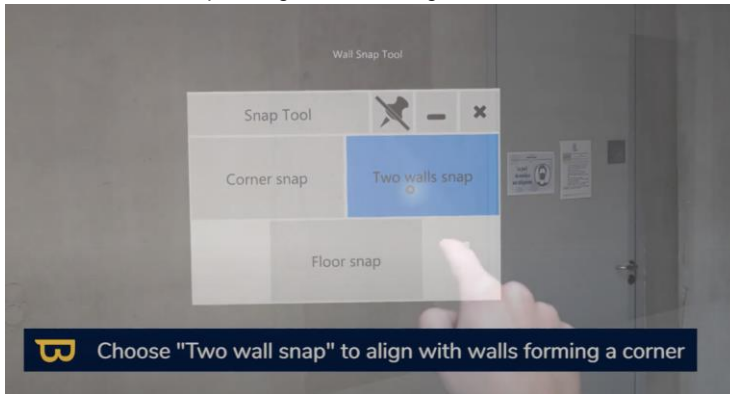
- Select 'model adjustments' (icon with 4 arrows).



- Select the wall snap tool (icon resembling a magnet). The wall snap tool will appear in front of you.



- Select 'Two wall snap' to align walls forming a corner.

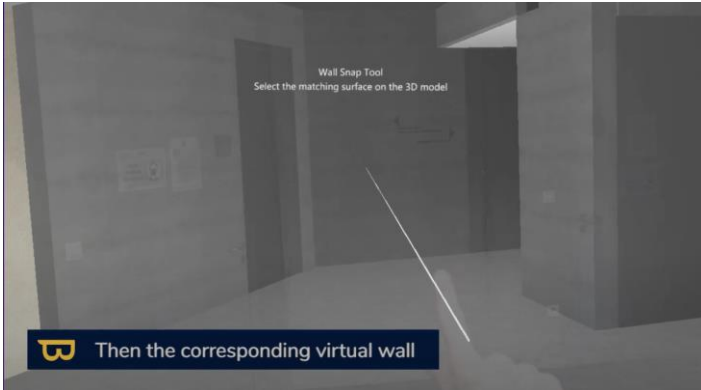


- Click the real first wall on the scanned mesh (the wall in your real environment) using a quick pinch motion.





- Then click the corresponding virtual wall.



- Repeat this process with the second wall. The snap is complete.

**The automatic and continuous alignment tool will continuously align the model.  
If you notice a drift when you are moving, stand still and allow time for the tool to realign.**





#### **4 / Using the visibility tool :**

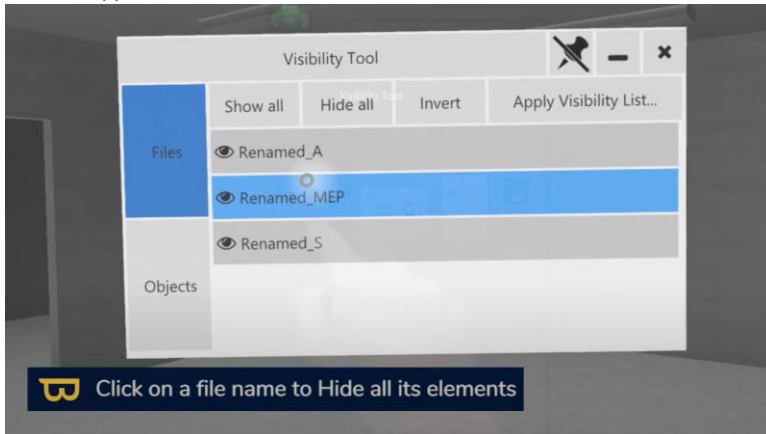
##### ***Hiding/showing by file :***

- Open the menu (turn your hand palm facing up).
- Select the “visibility” tool from the menu (icon resembling a piece of paper with an eye).  
The visibility tool will appear in front of you.

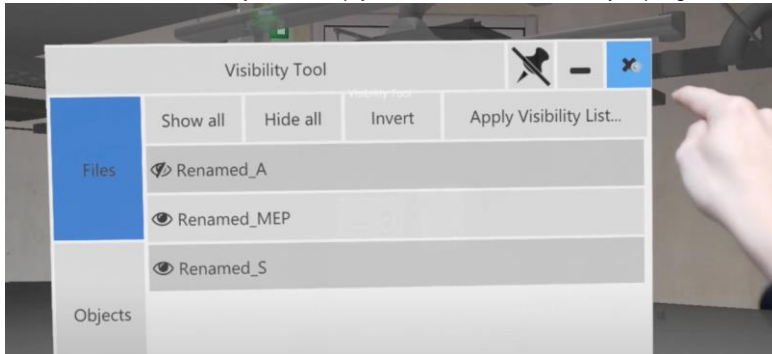




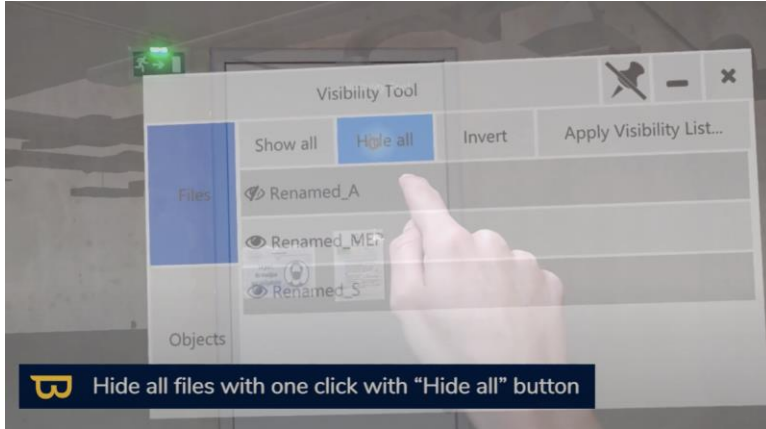
- To hide a file, click on a file name to hide its elements using your pointer finger. The eye icon will appear crossed out on the selected file.



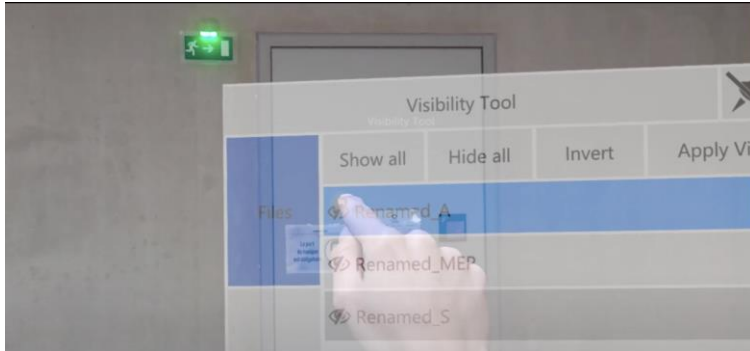
- To exit out of the visibility tool, simply click on the X in the very top right corner.



- To hide all files at once, simply click on the 'hide all' button in the top left corner.

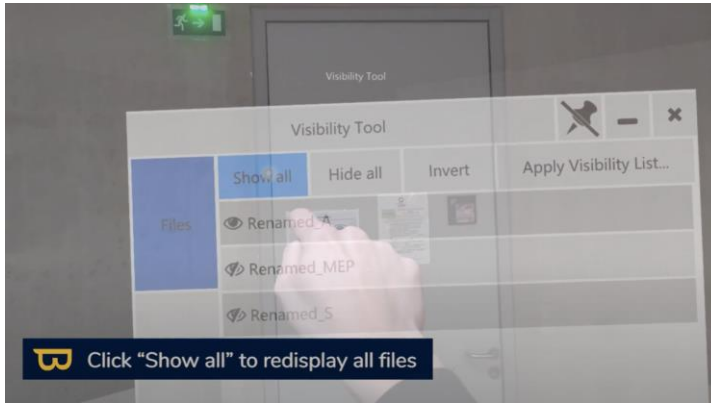


- To show a file that has been hidden simply click on it again.





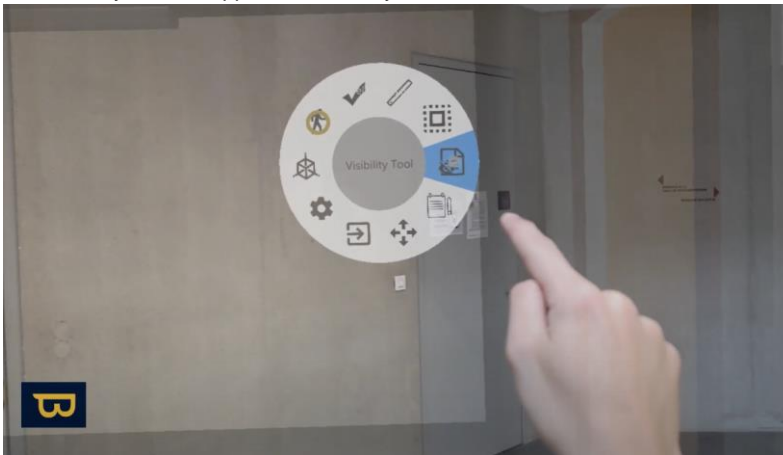
- To show all files at once, click on the 'show all' button in the top left corner.



**IMPORTANT :** When you hide a file, you unload the file from the application. This means that the performance can be improved but also that the continuous alignment no longer takes into account the objects in this file to realign the model.

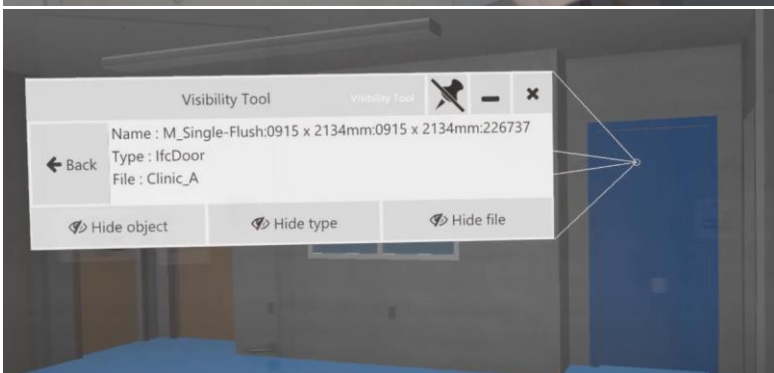
#### ***Hiding/showing by object :***

- Open the menu (turn your hand palm facing up).
- Select the "visibility" tool from the menu (icon resembling a piece of paper with an eye). The visibility tool will appear in front of you.

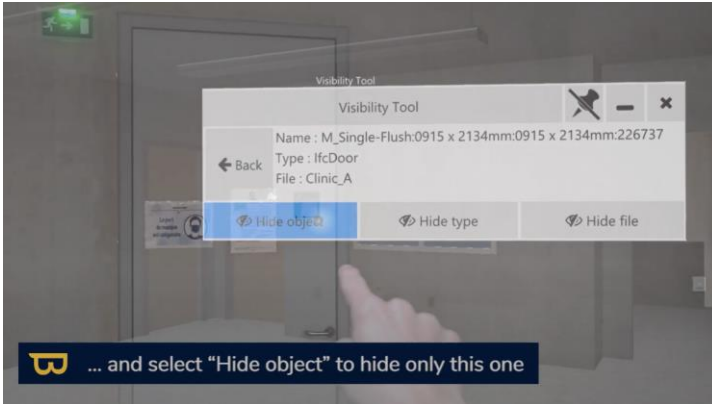




- Position and click on an object to display its contents on the visibility tool (A door, a wall...)



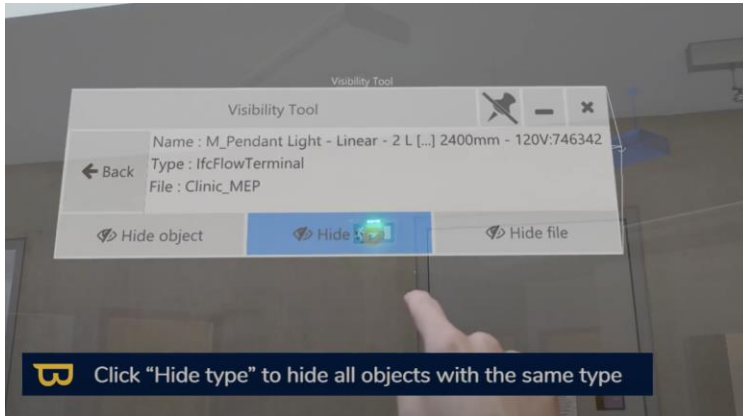
- Select 'Hide object' in the lower right corner to hide only this object. The object will disappear in front of you.



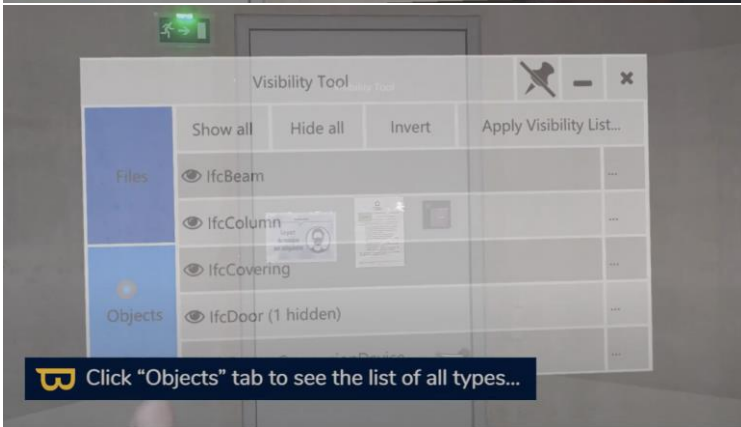
- To hide all objects with the same type, simply perform the same maneuver and click 'Hide type'. **(When we refer to 'type', we mean the IFC class - all NEXT-BIM**



references to 'type' = IFC class)



- To see the list of all object types, open the menu and select the visibility tool. Click on 'objects' on the lower left hand side.

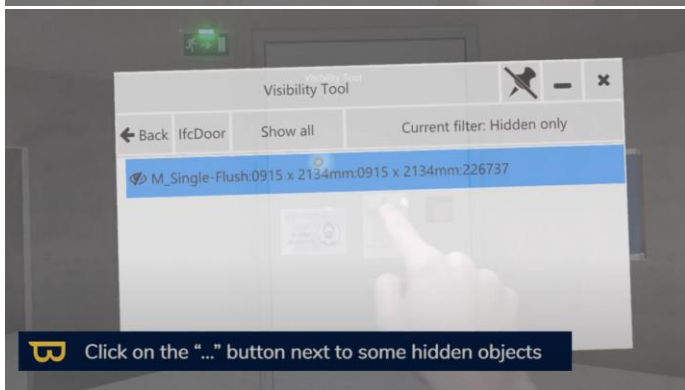
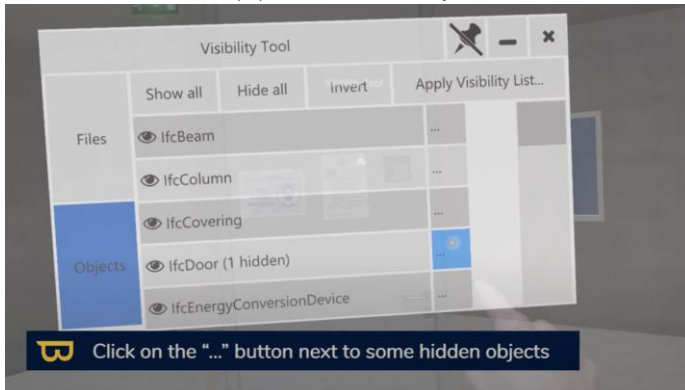


B Click "Objects" tab to see the list of all types...

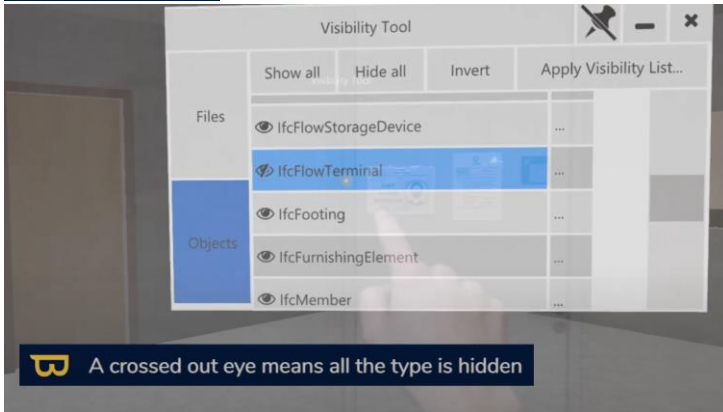




- Click on the three dots (...) next to hidden objects to show them.

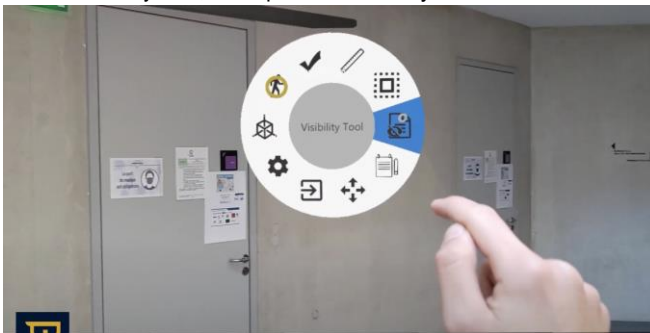


- A crossed out eye means that all the objects of that type are hidden. Simply click on the type to show them again.

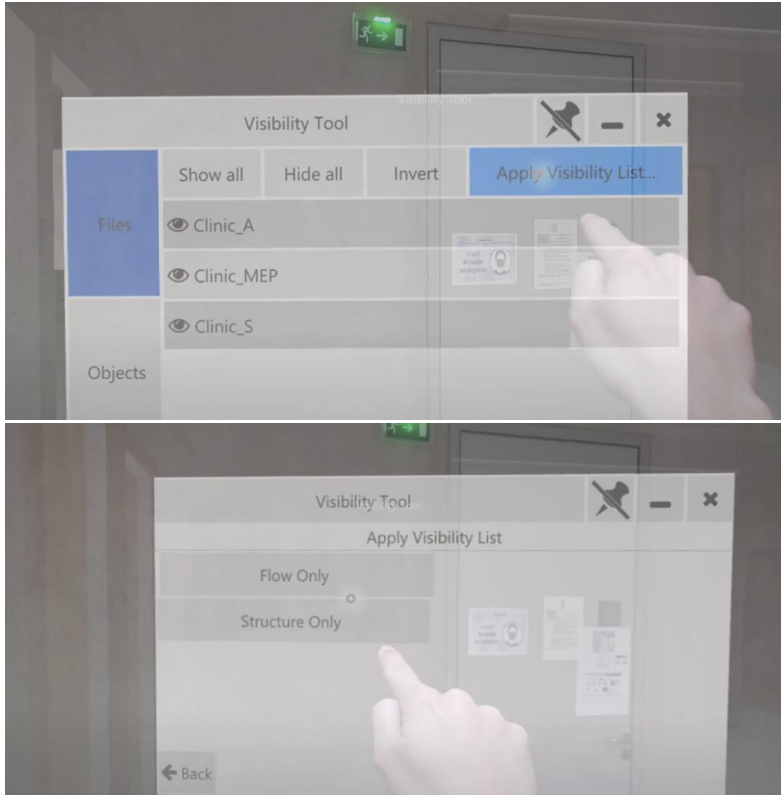


### Visibility lists :

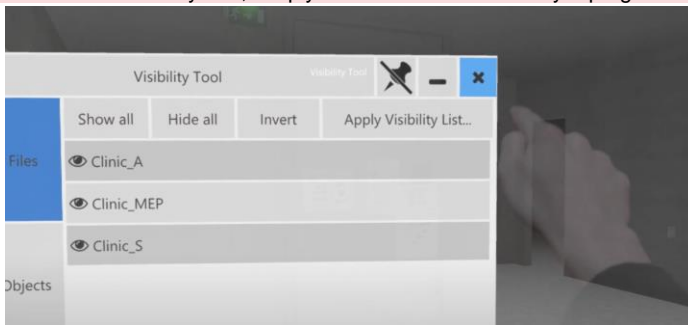
- Visibility lists can be created in the NEXT-BIM Configurator and used with the visibility tool.
- To use visibility lists, first open the 'Visibility tool'



- Click on 'Apply visibility list' in the upper right corner and select the desired list (flow only/structure only).



- To exit out of the visibility tool, simply click on the X in the very top right corner.



**Commenté [1]:** Il faudra qu'on intègre la notion de charger ou télécharger un fichier en relation au recalage continu, je t'expliquerai en appel

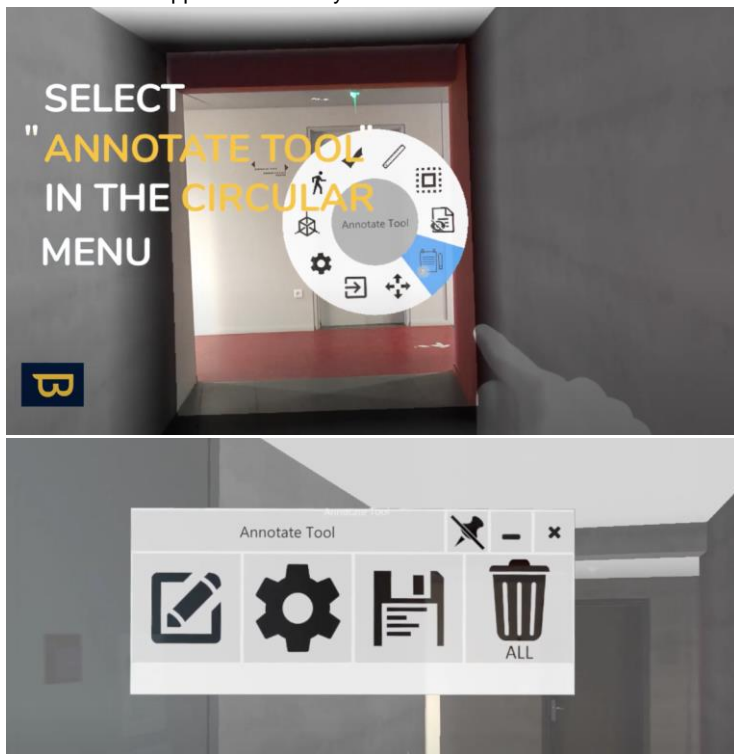


## 5 / Using the Annotation tool :

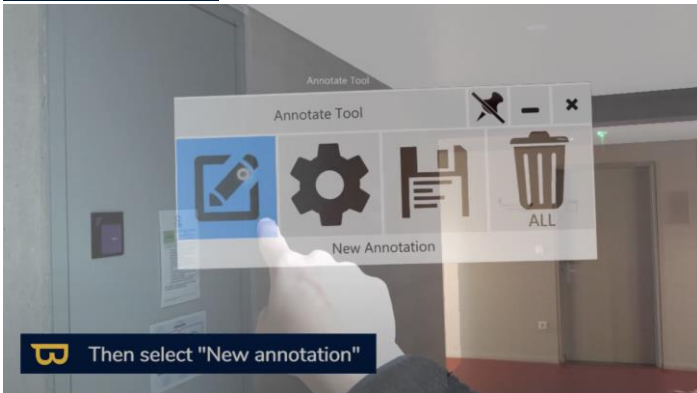
Using the NEXT-BIM Configurator, you will create lists of predefined annotations, users and statuses.

### *Placing annotations :*

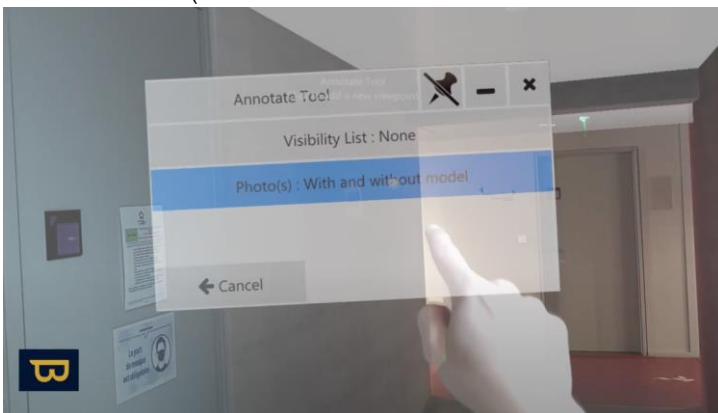
- To place an annotation, first open the menu (turn your hand palm facing up).
- Select the 'annotate tool' in the menu (icon resembling a pen and paper). The annotate tool will appear in front of you.



- Select "New annotation" (icon resembling a pen on paper) on the left hand side with your pointer finger.

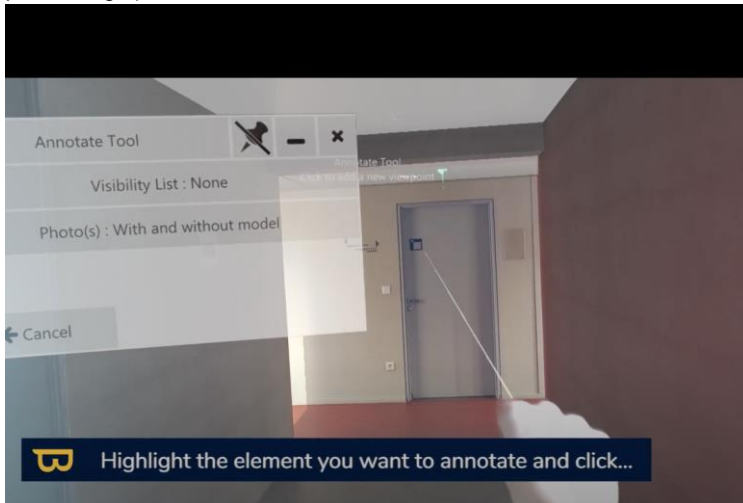


You then select the desired photo mode - 'No photo' / 'With and without model' / 'With model' / 'Without model' ... (For this demonstration we have selected the 'with and without model')

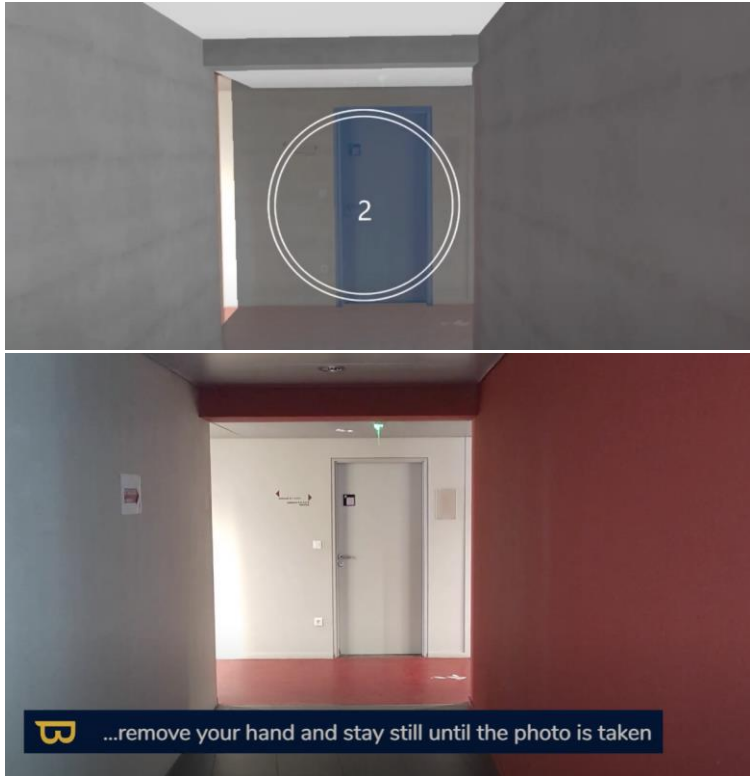




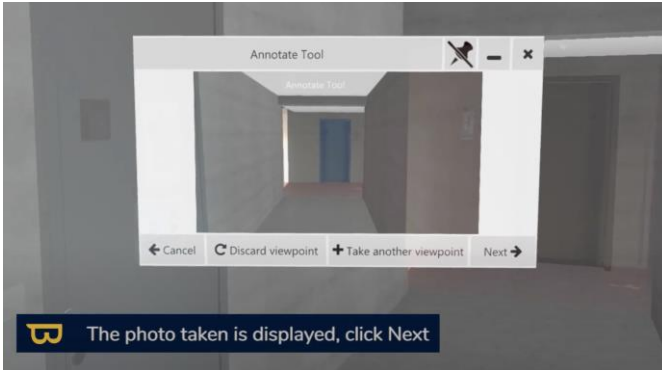
- Select the element you want to annotate with your ray and click (using your thumb and pointer finger).



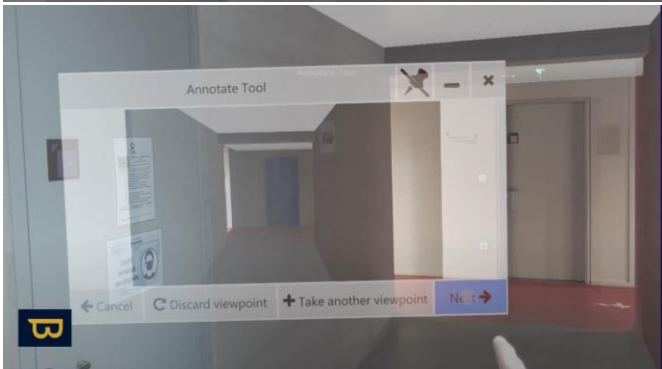
- Remove your hand and stand still as the headset takes the photo - a countdown will appear whilst the photo is being taken.



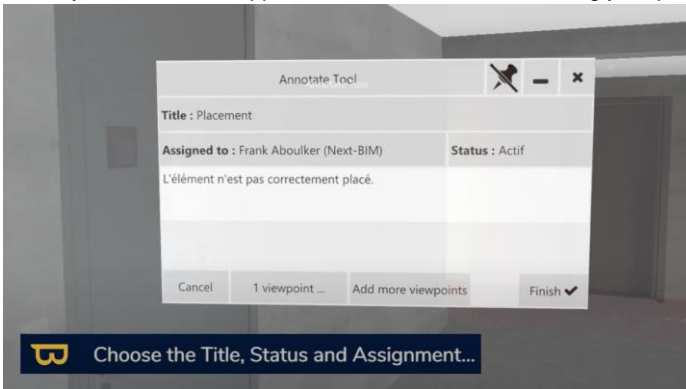
- The annotate tool will then automatically appear again in front of you with the displayed photo - Simply click next to continue. You also have the option to discard and start again, or to take another viewpoint photo if desired.



**B** The photo taken is displayed, click Next



- Select your Title on the upper left hand side as desired using your pointer finger.



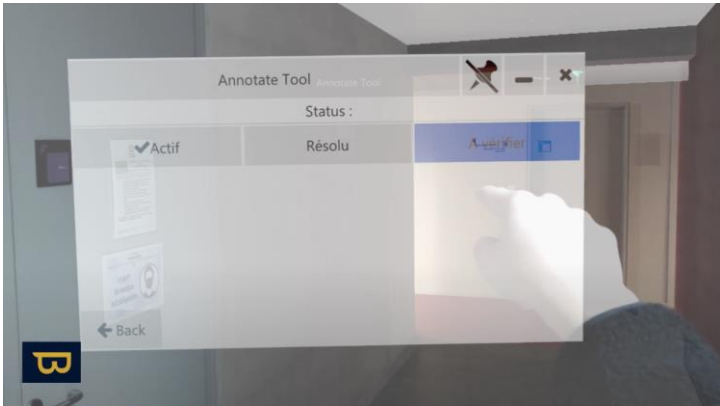
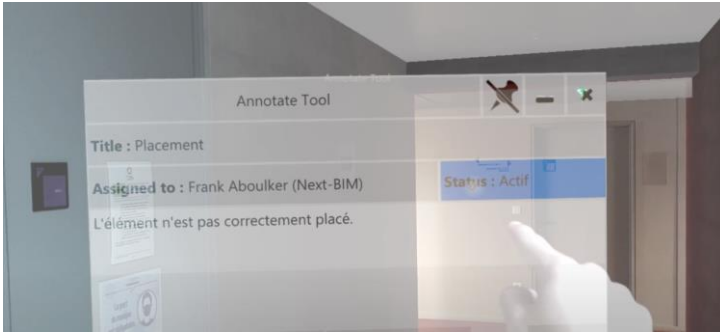
**B** Choose the Title, Status and Assignment...

- Select the recipient below the title as desired.

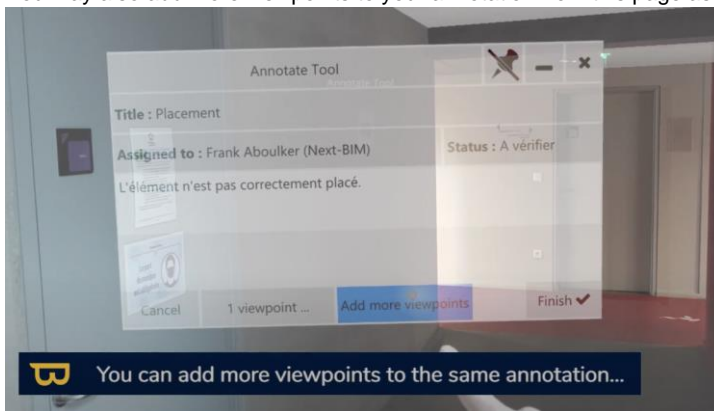




- Select the Status (Active, resolved, to be checked) - locate beside the "Assigned to" box - as desired.



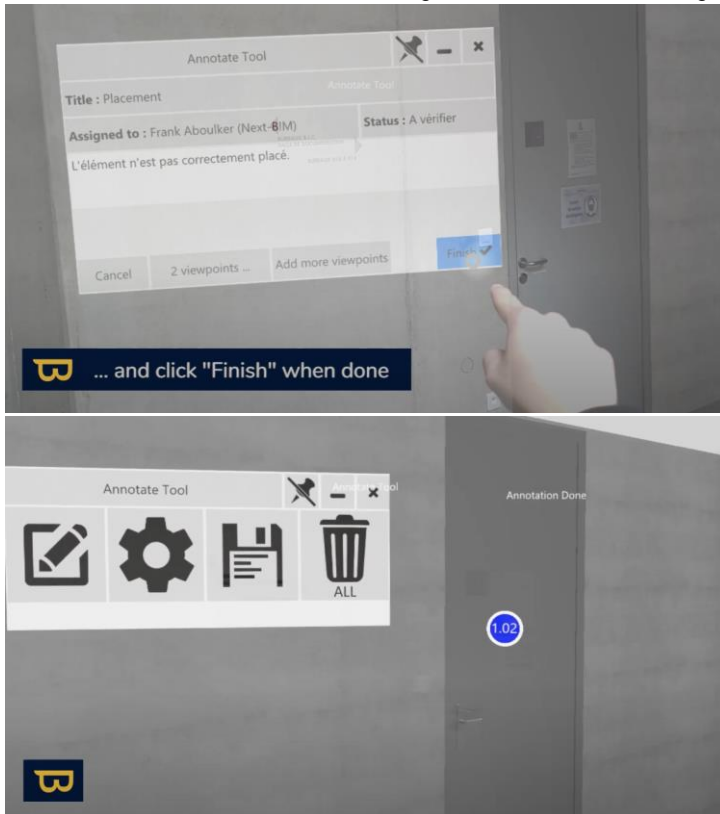
- You may also add more viewpoints to your annotation from this page as well.



**B** You can add more viewpoints to the same annotation...



- Once your annotation is complete, simply click the finish button on the lower right hand corner - a coloured badge will appear on the element you have annotated. The colour of the badge indicated the element's status - Blue = Active annotation / Green = resolved annotation. All of these elements are configurable on NEXT-BIM Configurator.

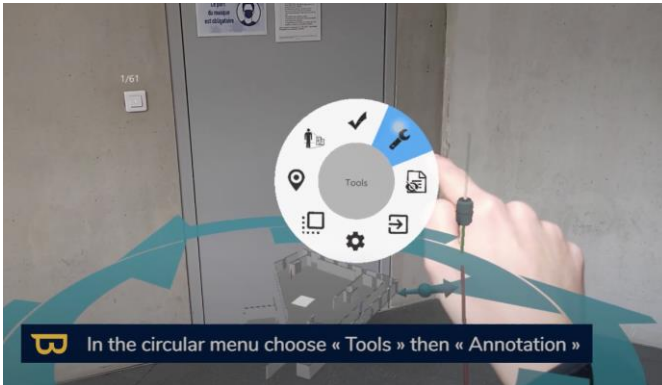


#### **Viewing annotations in tabletop mode :**

- Once annotations have been made, open your tabletop mode (as seen in 'Basic controls in tabletop mode').
- Once in tabletop mode, open your menu.



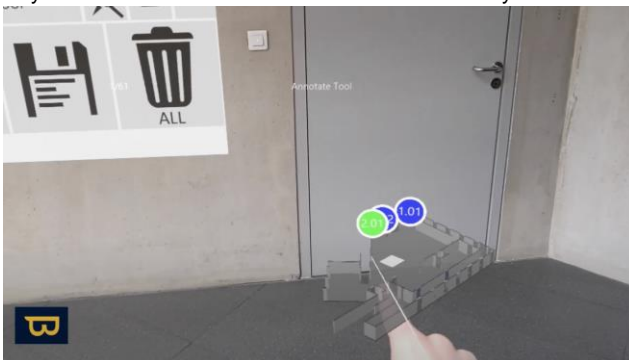
- Select 'Tools' (icon resembling a spanner).



- Then select 'Annotation' (icon resembling a pen and paper).

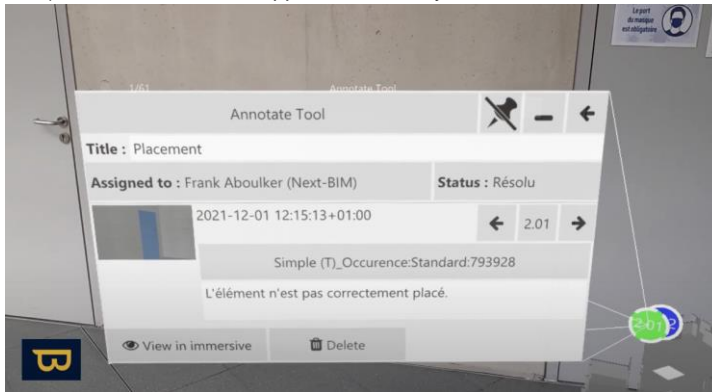


- Any annotations made will then become visible on your model.

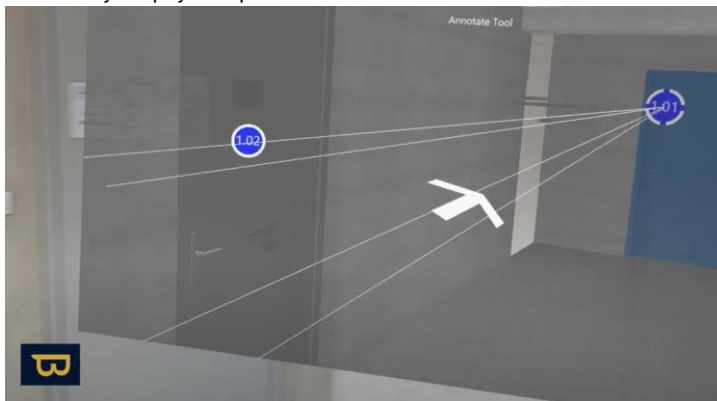




- To open an annotation, simply point and click using your ray (thumb and pointer finger click). The annotation will appear in front of you.



- You can choose to view the annotation in immersive mode, simply click the button on the bottom left hand side. Arrows and lines will indicate where the annotation is located based on your physical position.

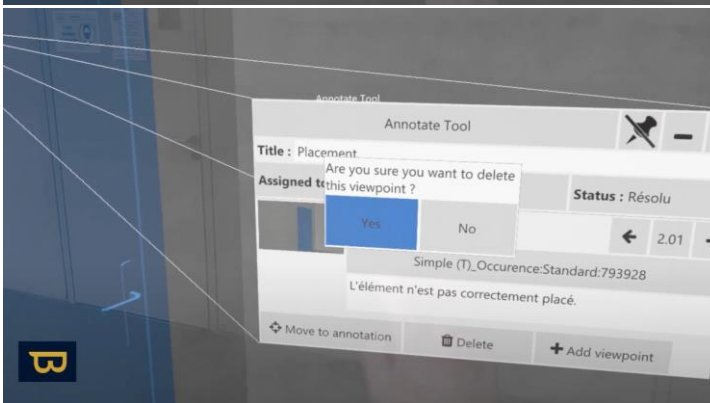
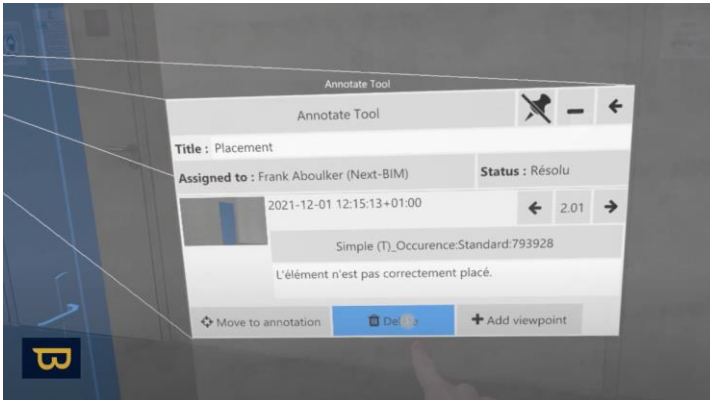


#### ***Deleting/ Changing an annotation :***

- You can change an annotation's status in the annotation tool, as mentioned earlier.



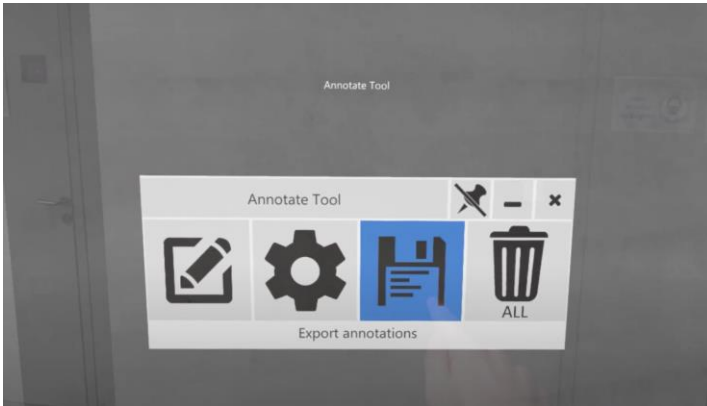
- To delete an annotation, simply open it and click 'delete' at the bottom of the screen.



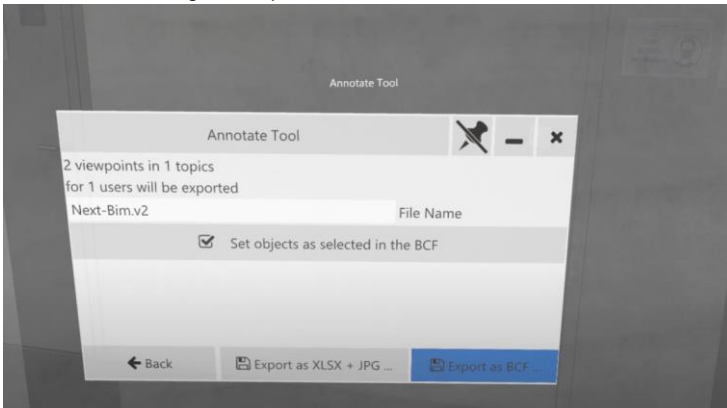


### Exporting annotations :

- To export your annotations, go into the annotation tool and select 'Export annotations' (icon resembling a file) using your pointer finger.



- You can select to export as an Excel file (.XLSX), a JPG file, or a BCF file (recommended - can be used on collaborative platforms), choose as desired - the annotations will begin to export.



**The box "set objects as selected in the BCF" will allow you to hide the rest of the model when importing your BCFs in your BIM collaborative platform.**



- Once the export is complete, the annotation tool will automatically reappear in front of you.

Once the export is complete, BCF files are available in the HoloLens 'pictures' folder. Find your HoloLens storage by connecting it to your PC using a USB cable. - Annotations can be used on openBIM management platforms.

## 6 / Viewing technical information :

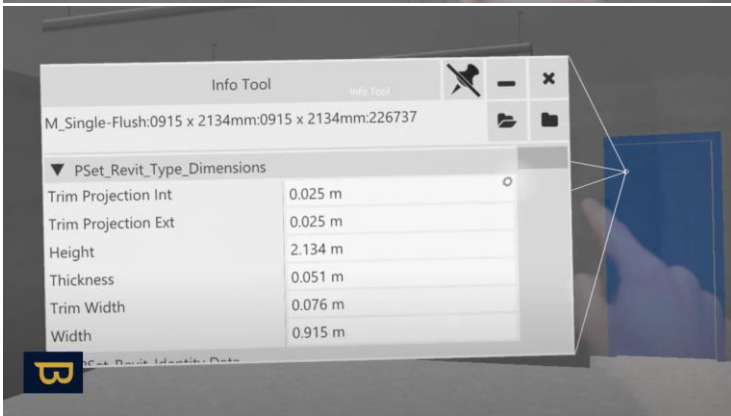
In the NEXT-BIM Configurator you can choose the properties (Pset) that you want to be displayed in the Explorer Info Tool.

- Open the menu and select the 'Info Tool' (icon resembling a "i")

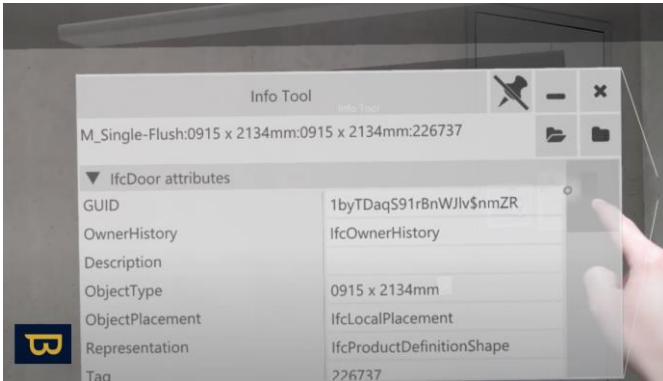
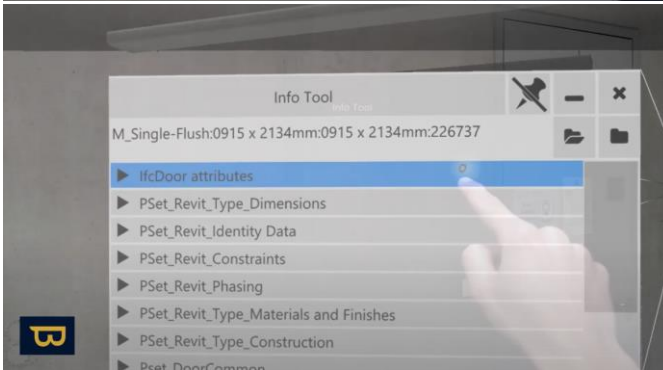
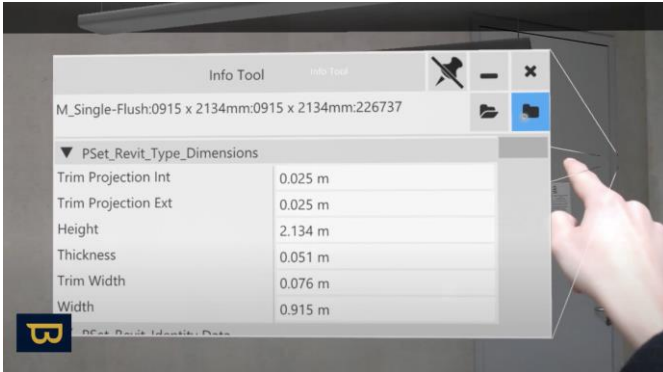


- Then select the desired element - point and click using thumb and pointer finger. The info tool will appear in front of you.



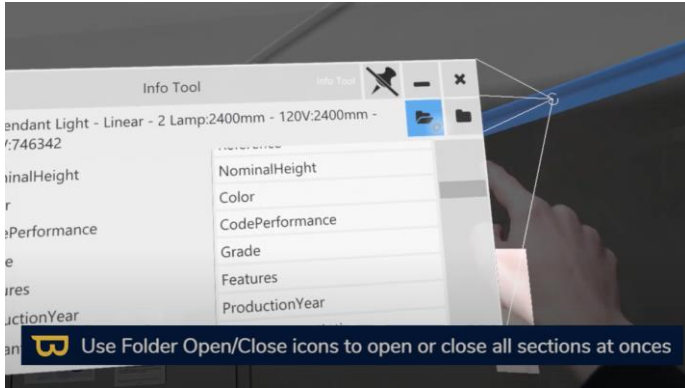


- Click on the (closed) folder icon in the top right corner - you will then be able to see all types and their information (by clicking on them).





- Use the open folder icon to open all sections at once.



- To bring an item's information closer to you, open the menu and select 'Bring panel to front' located underneath the circular menu - it will appear in front of you.





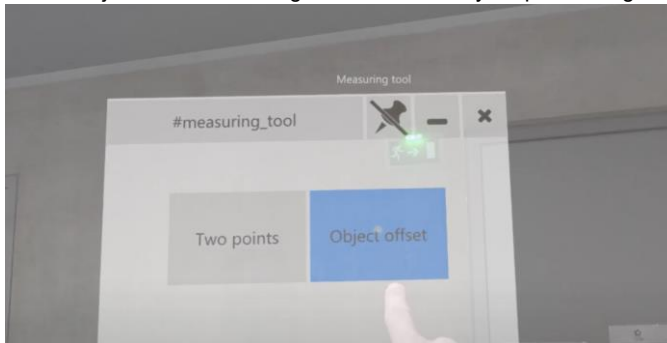
## 7 / Using the Measuring tool :

### **Object offset :**

- Open the menu and select the 'Measuring tool' (icon resembling a ruler).



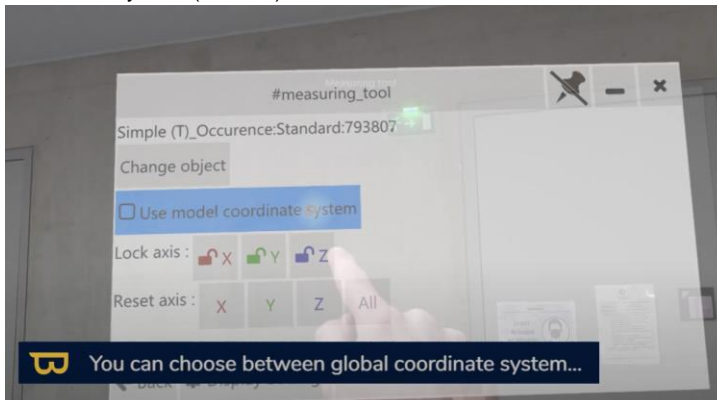
- Select 'object offset' on the right hand side with your pointer finger.



- Point and pinch the object, then drag and drop it to visually match its real placement.

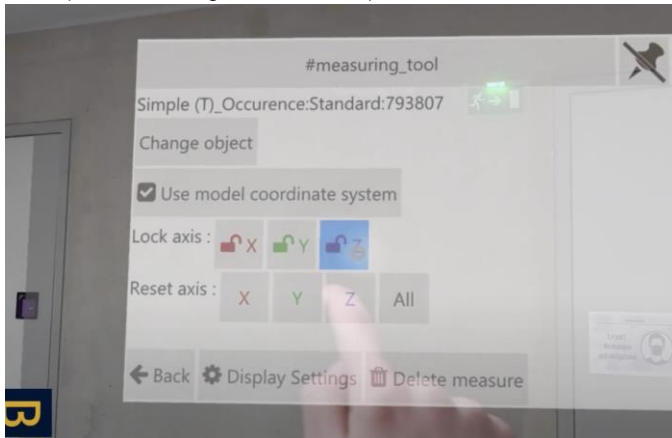


- You can now choose between the model coordinate system or the object coordinate system (tick box).



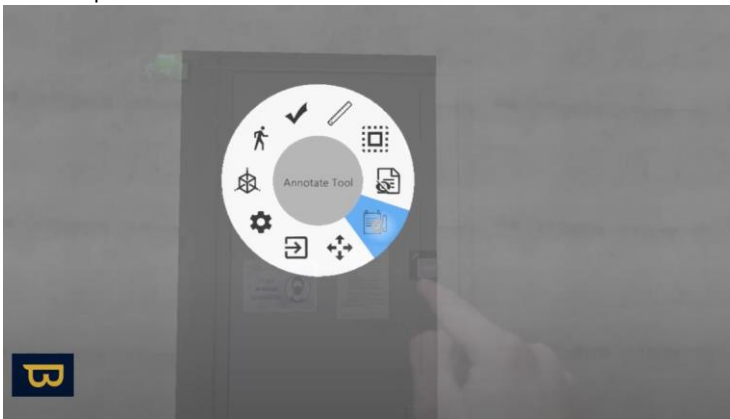


- To make element control easier, you can lock its movement using the 'lock axis' icons (red, blue and green lock icons).



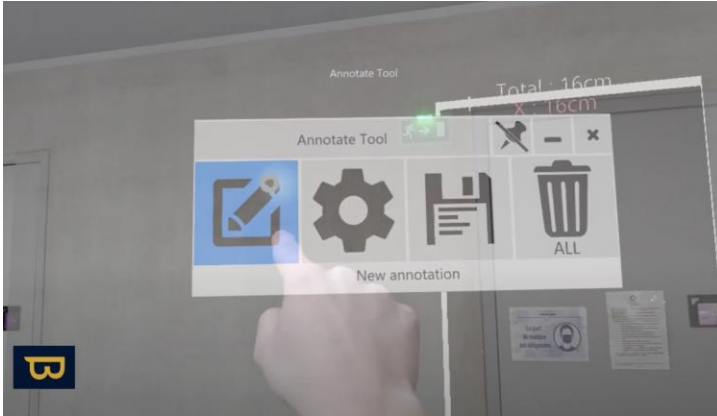
### **Measurements in annotations :**

- Open the menu and select the 'Annotation Tool' - as seen in the 'Using the Annotation Tool' chapter.

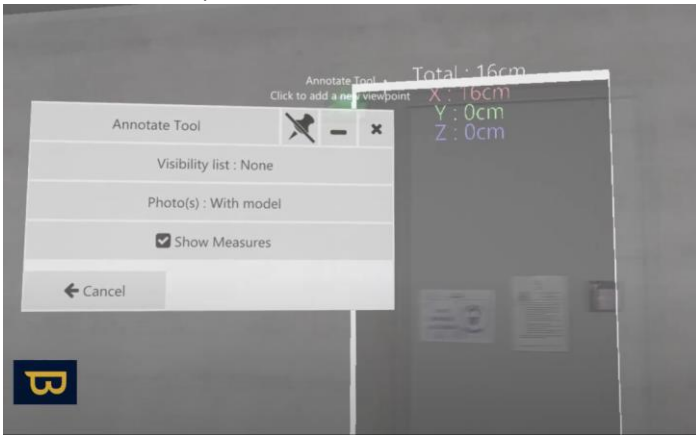




- Select 'New annotation' on the left hand side (icon resembling a pen on paper).



- If not already selected, tick the 'show measures' box. - Measurements appear on the annotation's photos and text.





## **8 / Using Settings :**

Settings tabletop mode :

Settings Immersive mode :

- Open the menu and select 'Settings' (icon resembling a cog).







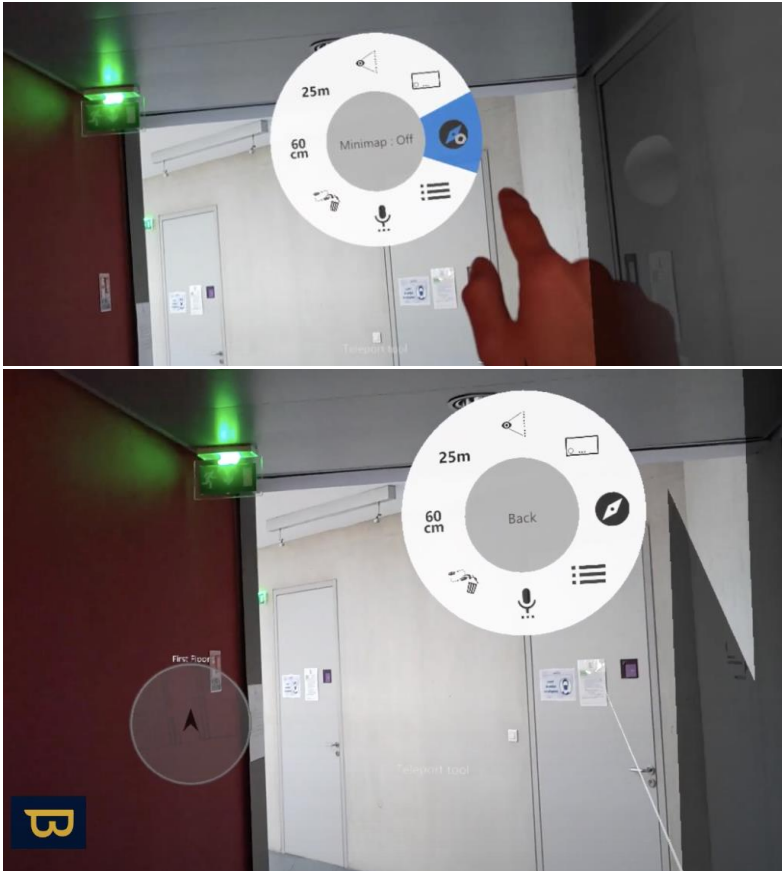
- In Settings, you can change your view distance to 15, 25 or 50 metres - making the view distance bigger can however sometimes affect the headset's performance !



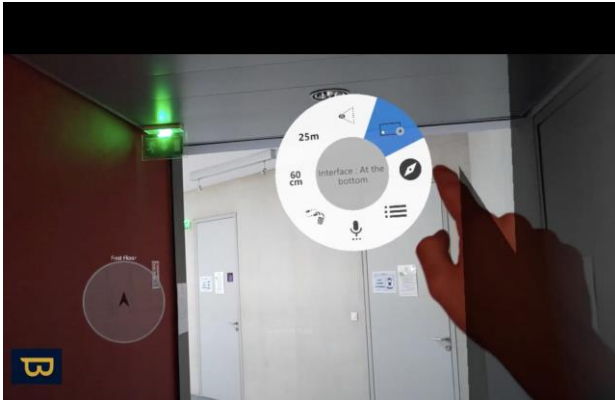
- You can also limit or remove the floor limit - however allowing all floors at once can also affect the headset's performance.



- You can toggle the minimap in settings. By turning the minimap on (clicking the icon once with your pointer finger), a small minimap will appear in the bottom left of your screen, indicating your current position in the building. Simply click the minimap icon again to turn it off.



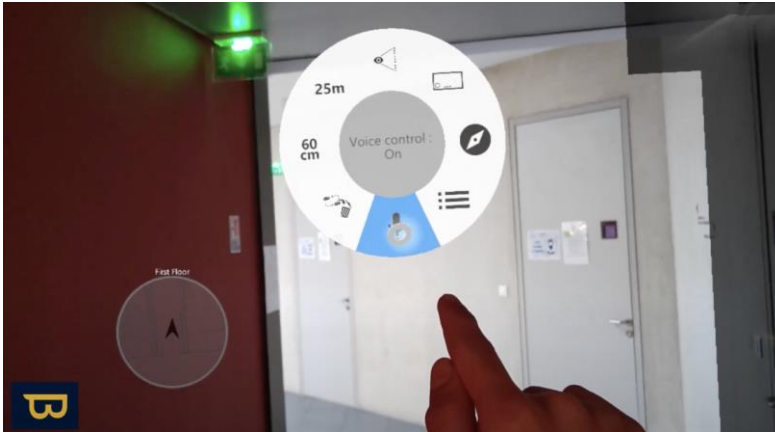
- You can also change the minimap location on your screen using the 'Interface' icon. Select the minimap position as desired by clicking on the interface icon (At the top / At the bottom).



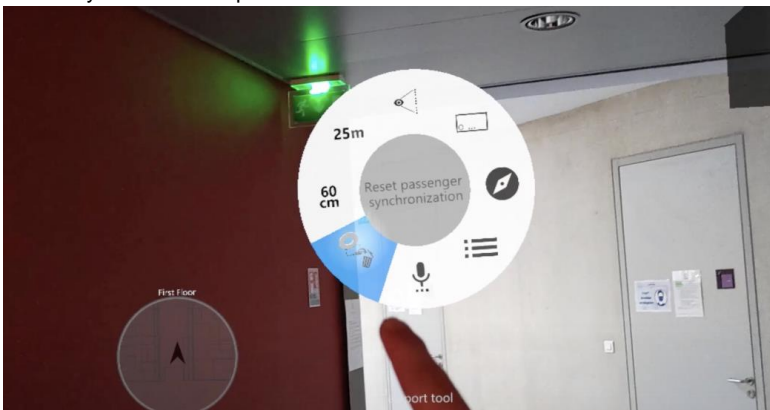
- You can activate voice commands in Settings. Simply click once on the 'Voice Commands' icon (resembling a list of lines) and a list of usable voice commands will appear on the lower right of your screen. Click the icon again to turn voice commands off



- The 'Voice Control' icon (resembling a microphone) controls the voice commands. If Voice control is off, voice commands are ignored - if it is on, they are executed.

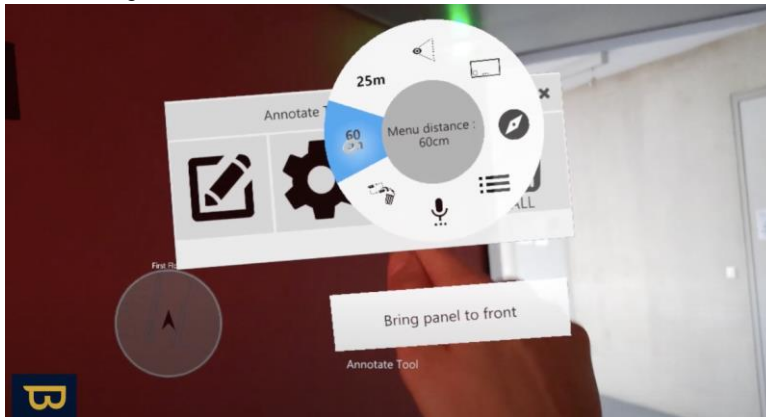


- There is also a 'Reset passenger synchronization' icon, to be used in collaborative mode should synchronization problems occur.





- If you wish to enlarge or make any menu screen smaller, simply click the 45, 60, 75cm icon to change its size.



## 9 / Using the checklist tool :

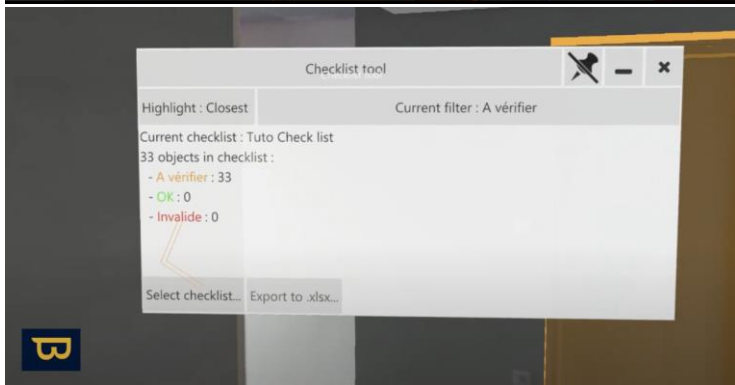
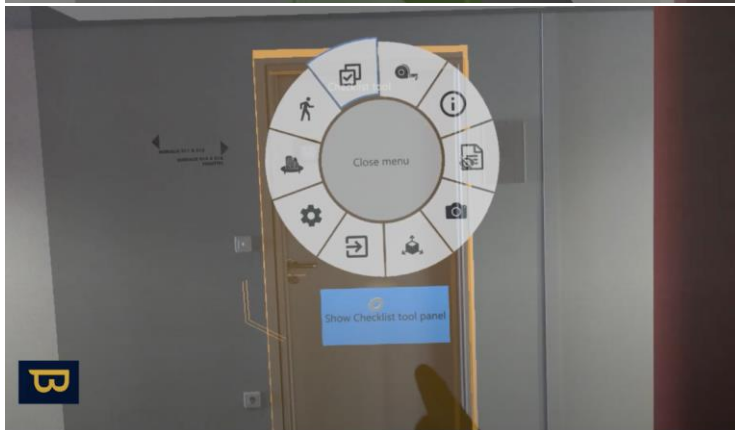
**Prior to using the checklist tool : - Prepare your list of objects using the NEXT-BIM Configurator OR Import your object lists into NEXT-BIM Explorer from an excel file (2 mandatory columns. Title of the first column : "GUID", import GUIDs into this first column. The second column, the title should be : "next-bim", "nextbim", "checklist", "next-bim checklist" or "nextbim checklist" to import the status of your objects).**

**The excel checklist file can be built from Revit using export plugins such as BIMLink or BIM One.**

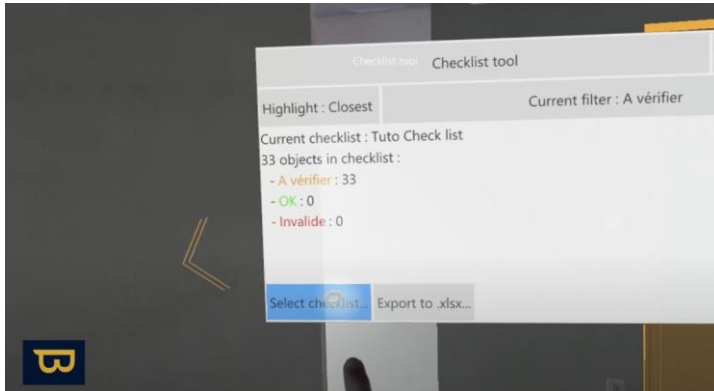
**Creating a checklist via an excel file is useful in order not to generate a new NBIM file at each checklist creation.**

**We recommend that you create your checklists by level AND display only the current floor by setting it in the "settings".**

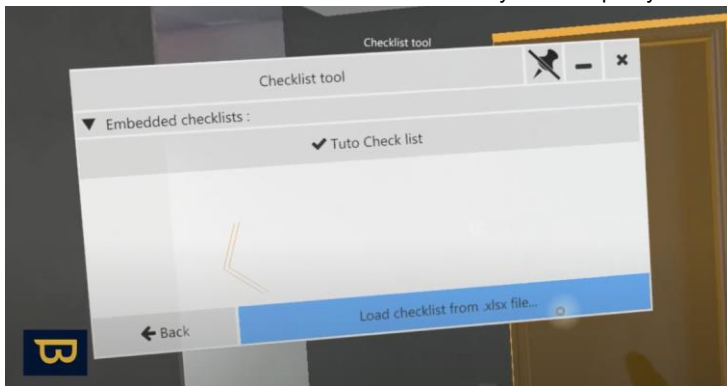
- Open your menu and select the 'checklist tool' (icon resembling two overlapping squares with a tick). The checklist panel may not immediately appear - simply open the menu again and click on 'show checklist tool panel' to access your checklists.



- All objects are in the default 'To be checked' status.
- Click on 'select checklist' in the lower right corner.

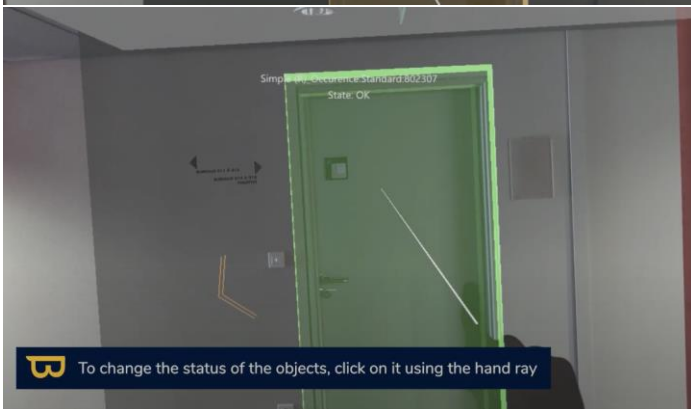


- Select 'Load checklist from xlsx file. This is where you will import your excel file.'



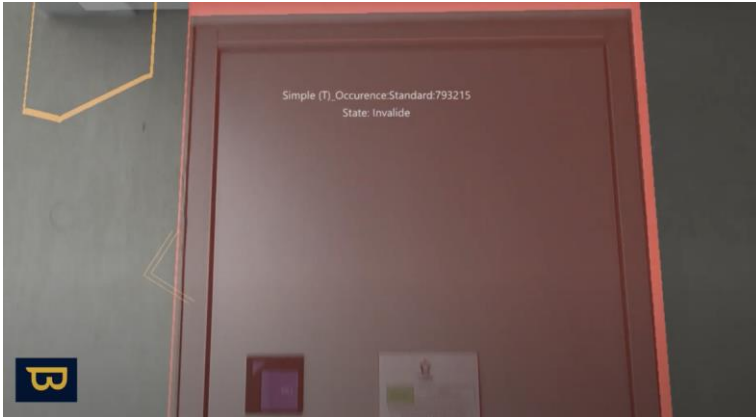
- To change the status of an object, point and click on it using your hand ray (quick pinch using thumb and pointer finger).



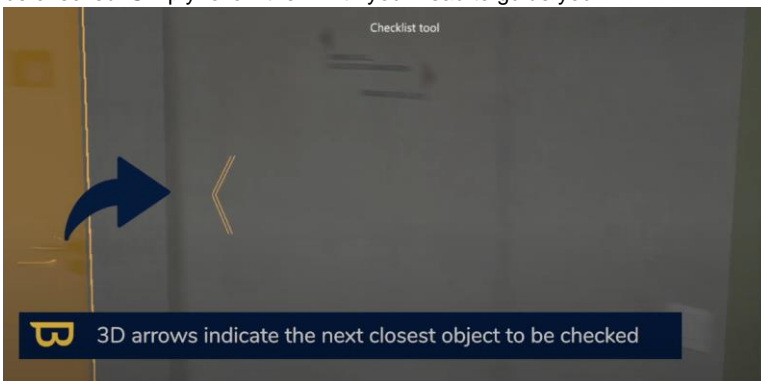




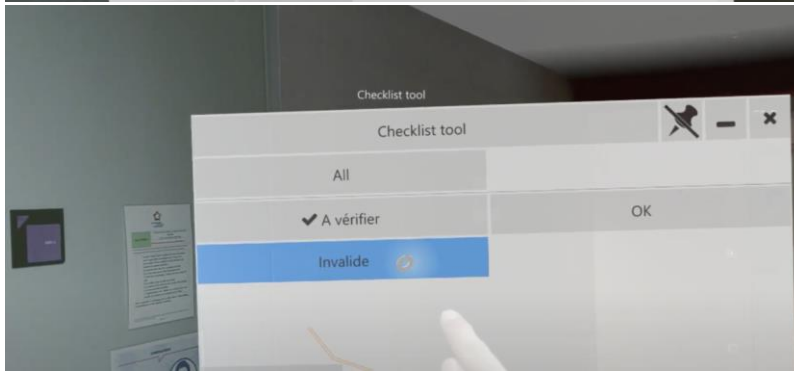
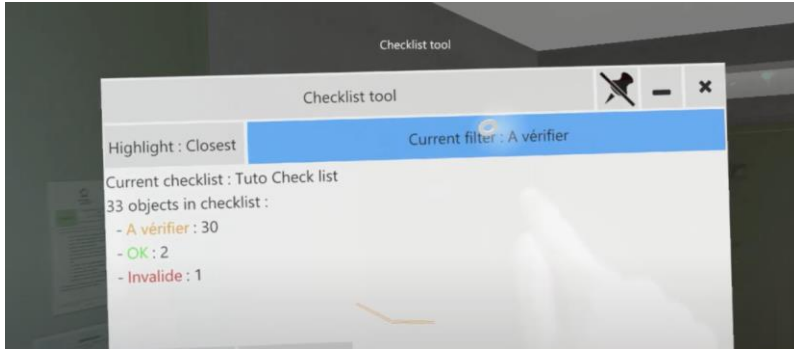
- After clicking on it, the object changes to the next status with the associated colour (green, orange, red) - this successive list is configurable in NEXT-BIM Configurator.



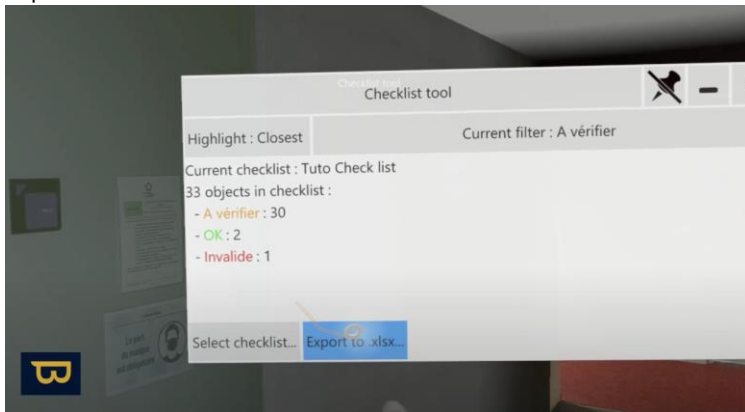
- You will see colored 3D arrows in front of you, these indicate the next closest object to be checked. Simply follow them with your head to guide you.

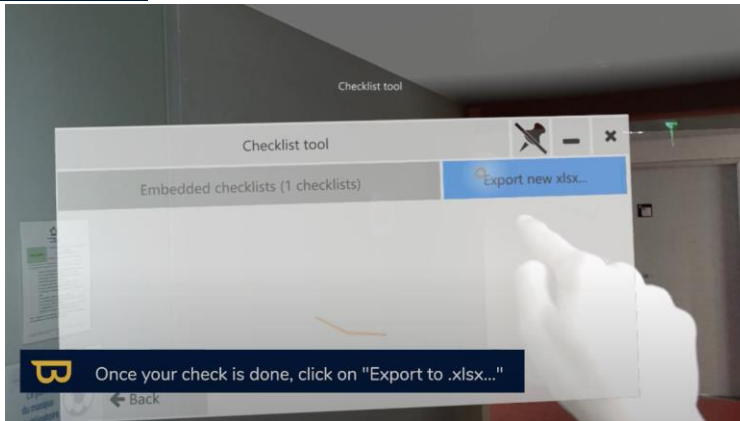


- You can choose to display only invalid (status) objects by clicking on 'current filter' and selecting as desired ('all' / 'to be checked' / 'invalid').



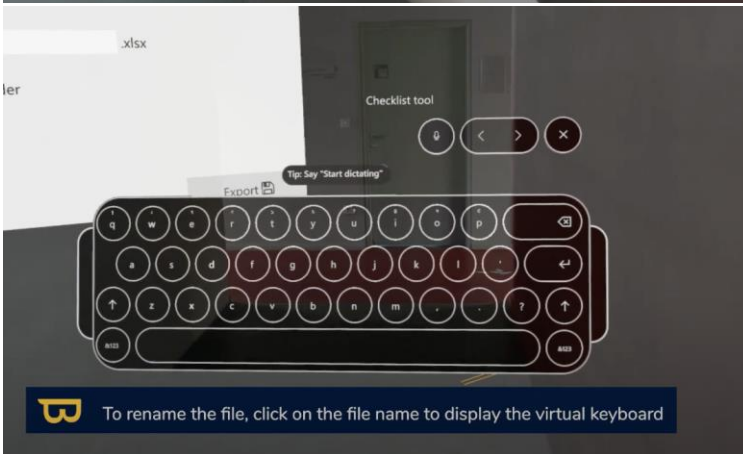
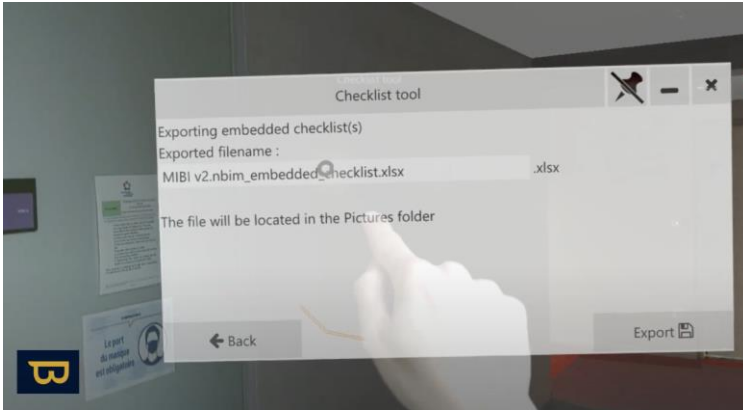
- Once your checks are done, click Export to .xlsx. In the bottom left corner. - Select Export new xlsx.





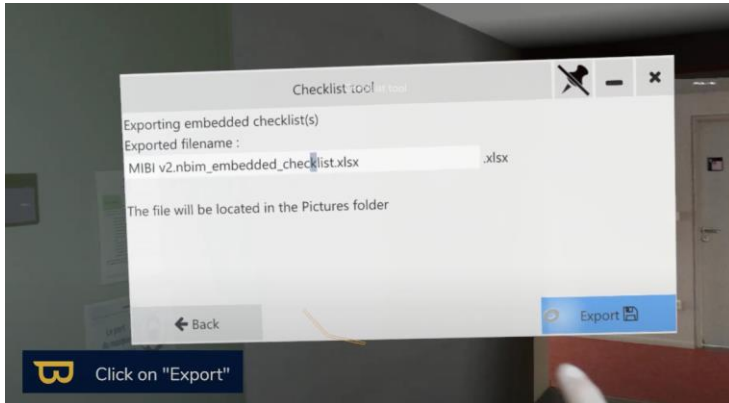


- To rename the file, click on the file name to display the virtual keyboard.





- Click on 'export'. Your file will be saved in the 'pictures' folder of the Hololens.

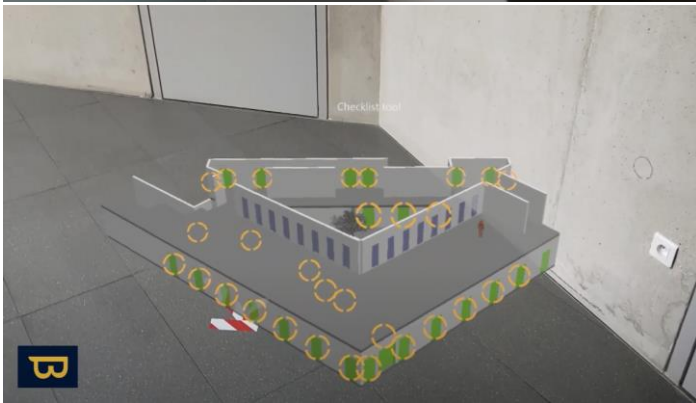
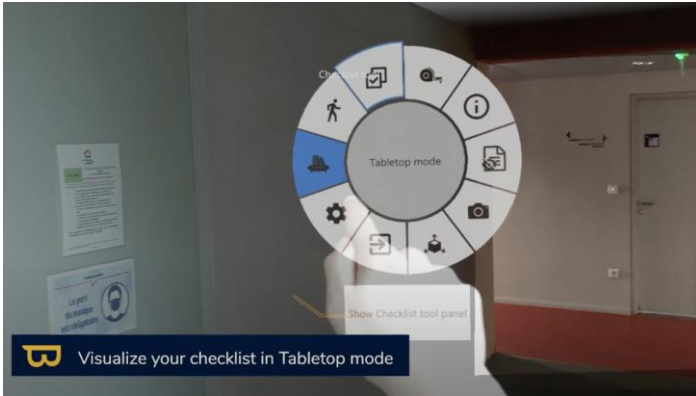




- Reintegrate the updated list of objects in your project using the plugin of your choice.

Object ID	Object Name	Next-BIM Checklist	Status
1	IFC_GUID	Simple (R)_Occurrence-Standard 802211	A vérifier
2	0MjHfPQEH8ARFVGG6SUY0Z	Simple (R)_Occurrence-Standard 802260	A vérifier
3	0MjHfPQEH8ARFVGG6SUY1K	Simple (R)_Occurrence-Standard 802062	A vérifier
4	0MjHfPQEH8ARFVGG6SUY2E	Simple (R)_Occurrence-Standard 802074	A vérifier
5	0MjHfPQEH8ARFVGG6SUY2Q	Simple (R)_Occurrence-Standard 802119	A vérifier
6	0MjHfPQEH8ARFVGG6SUY2L	Simple (R)_Occurrence-Standard 802452	A vérifier
7	0MjHfPQEH8ARFVGG6SUYCk	Simple (R)_Occurrence-Standard 802474	A vérifier
8	0MjHfPQEH8ARFVGG6SUYcg	Simple (R)_Occurrence-Standard 802513	A vérifier
9	0MjHfPQEH8ARFVGG6SUYDH	Simple (R)_Occurrence-Standard 802548	A vérifier
10	0MjHfPQEH8ARFVGG6SUYDk	Simple (R)_Occurrence-Standard 802307	OK
11	0MjHfPQEH8ARFVGG6SUYE3	Simple (R)_Occurrence-Standard 802359	A vérifier
12	0MjHfPQEH8ARFVGG6SUYE1	Simple (R)_Occurrence-Standard 802390	A vérifier
13	0MjHfPQEH8ARFVGG6SUYFM	Simple (R)_Occurrence-Standard 802419	A vérifier
14	0MjHfPQEH8ARFVGG6SUYFp	Simple (R)_Occurrence-Standard 80443	A vérifier
15	1HerENAGXADwDGCwqR9K4	Simple (T)_Occurrence-Standard 795215	Invalide
16	3AZasND4b4FVv4jG3p9dL	Simple (T)_Occurrence-Standard 795252	A vérifier
17	1Nn_49A54Uxnzy8OeUJY7	Simple (R)_Occurrence-Standard 795769	A vérifier
18	1Nn_49A54Uxnzy8OeUJZV	Simple (R)_Occurrence-Standard 795638	A vérifier
19	1Nn_49A54Uxnzy8OeUJa7	Simple (R)_Occurrence-Standard 795573	A vérifier
20	1Nn_49A54Uxnzy8OeUJb6	Simple (R)_Occurrence-Standard 795447	A vérifier
21	1Nn_49A54Uxnzy8OeUJd4	Simple (R)_Occurrence-Standard 795130	A vérifier
22	1Nn_49A54Uxnzy8OeUJ9	Simple (R)_Occurrence-Standard 794955	A vérifier
23	1Nn_49A54Uxnzy8OeUJku	Simple (R)_Occurrence-Standard 795684	A vérifier
24	1Nn_49A54Uxnzy8OeUJxN	Simple (T)_Occurrence-Standard 793722	A vérifier
25	279GVBDLT7WvhS5SWL6W1G	Simple (T)_Occurrence-Standard 793559	A vérifier
26	279GVBDLT7WvhS5SWL6W3b	Simple (T)_Occurrence-Standard 793528	OK
27	279GVBDLT7WvhS5SWL6W8Y	Simple (T)_Occurrence-Standard 813574	A vérifier
28	2MdtGd9YP9D0Cooq2EJY4	Simple (R)_Occurrence-Standard 799319	A vérifier
29	37MhHh8arDa8e2Nv6kqo8	Simple (T)_Occurrence-Standard 793583	A vérifier
33	3AZasND4b4FVv4jG3p9dX5	Simple (R)_Occurrence-Standard 804375	A vérifier
34	1HerENAGXADwDGCwqR9LJM		

- You can also visualize your checklist in tabletop mode, first open the menu.
- Select 'tabletop mode' - your checklist objects will appear as coloured circles on the model.



- You can filter the display of objects according to status in tabletop mode - simply perform the same steps as instructed for immersive mode.





## 10 / Using the Quick Target Re-alignment Tool :

The Quick Target Realignment tool is an additional feature designed to negate any drift effect in areas where continuous realignment lacks reference points, such as long corridors, large spaces without partitions or walls etc...

Targets can then be placed on the ground or on walls every 5-10 meters to maintain good accuracy in these areas.

The 3D model of the target elements in the BIM model is irrelevant as only the position of the element is used.

The targets can be added to an existing IFC or placed in a new IFC. they should be easy to select in Configurator, by using the term 'target' in the element name for example.

### *Our recommended procedure :*

- Model the 'virtual' targets using CAD software (Revit, Archicad etc.). their position (origin of the object) must be referenced to where the geometry is located.
- Place real targets on site in the form of stickers (see image) - markers correctly geo-referenced with an accuracy of 1-2cm (something that can be executed by a surveyor).

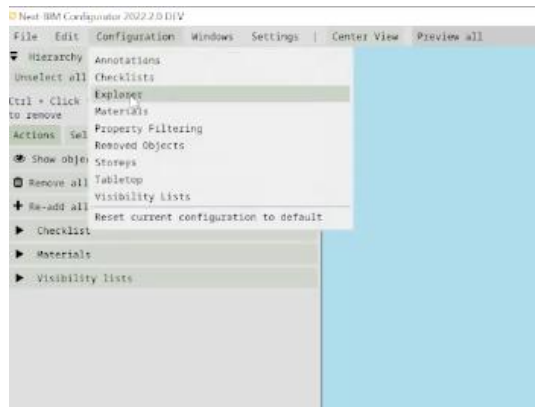
Target for AR - Please do not touch



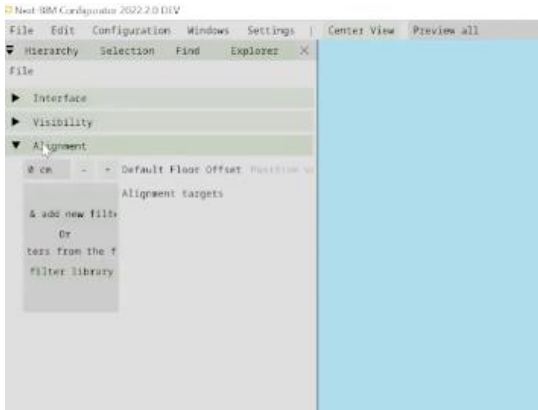


**On configurator :**

- Open your model in Configurator.
- Click the “Configuration” Menu



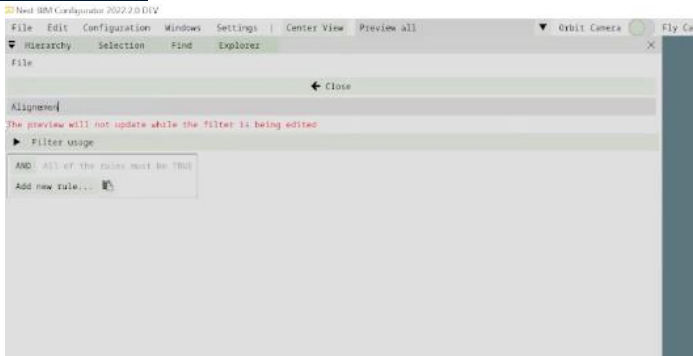
- Open the alignment window



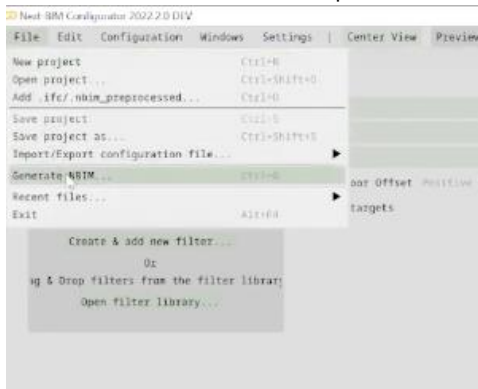
- Create & Add New Filter, Add a rule to sort your targets, for example with a name rule if you put "Targets" in the name or a file rule if you created a new .ifc file for these targets.

**PHOTO**

Also, rename your filter.

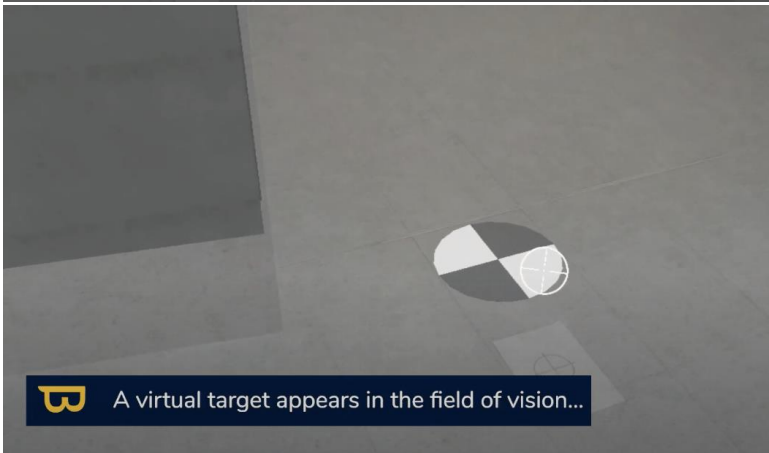
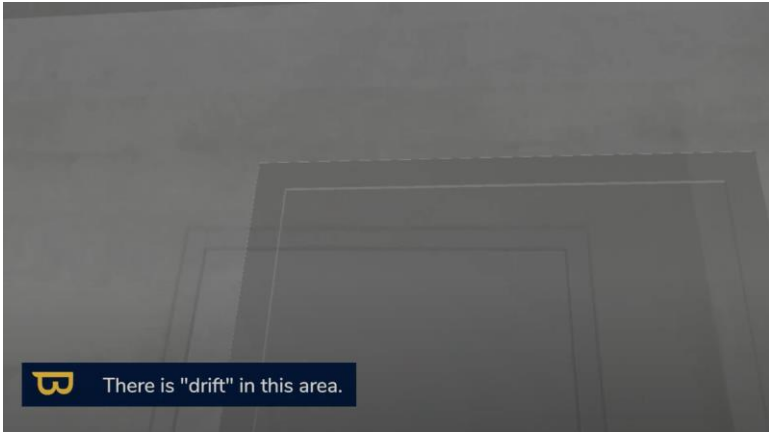


- Once your filter is created, you can generate your .nbim file and the functionality will be available in NEXT-BIM Explorer.

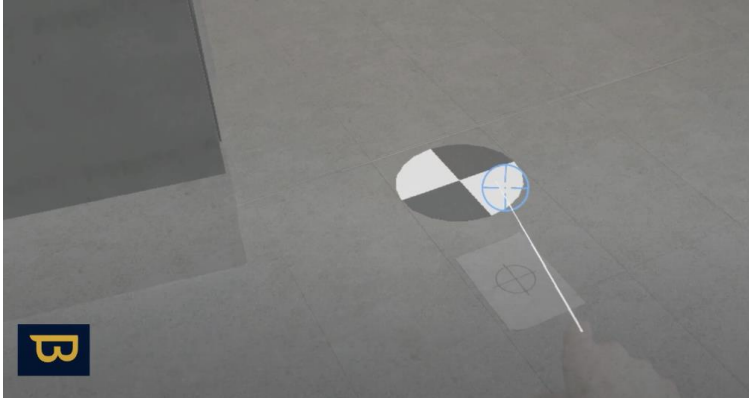


**On Explorer :**

- When you notice drift in an area (post usual alignment functions), search for your virtual target.



- Click on the virtual target to activate the 'Target Alignment' mode (using your thumb and pointer finger).



- Aim at the center of the nearby real target and click again (or use voice to say 'select') - the virtual model should now be aligned to the real one.

