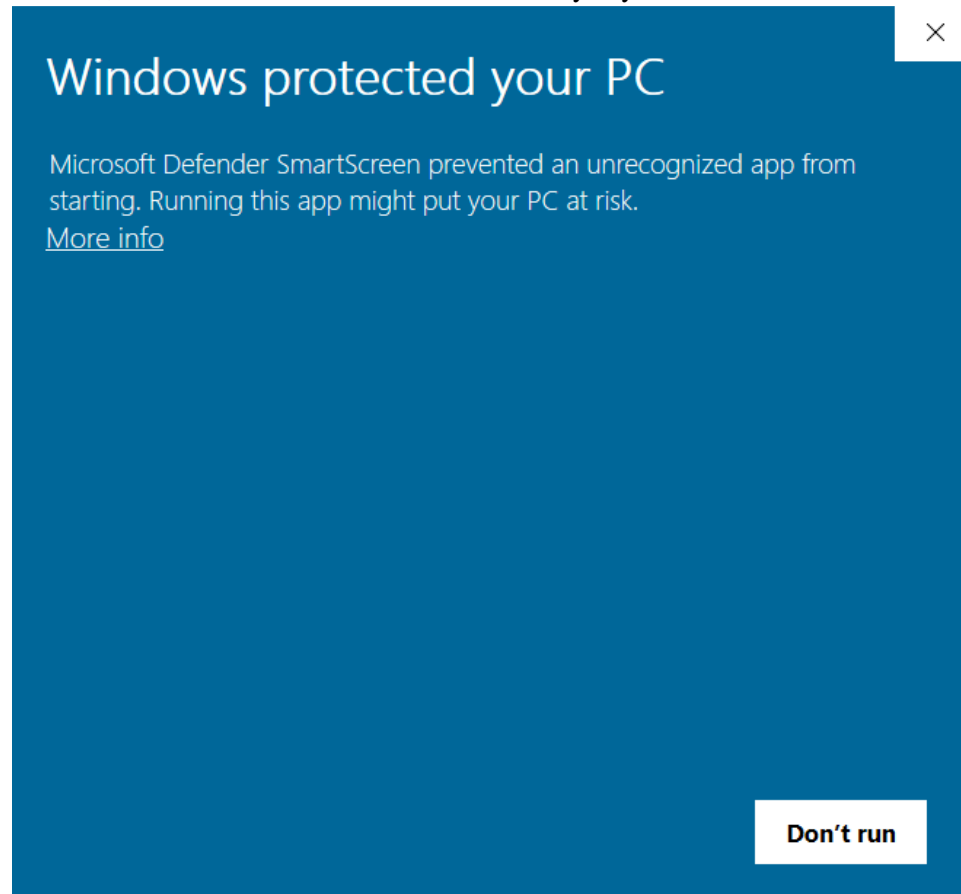




Hanwha
Revit Plugin
and Revit Family file

INSTALLATION

After downloading the .msi file, make sure that Revit is not open prior to running the installer. Then, double-click on the file (or right-click and then select Open) to start the installation process. If your computer security opens up the following window, select “More Info” then select Run Anyway.

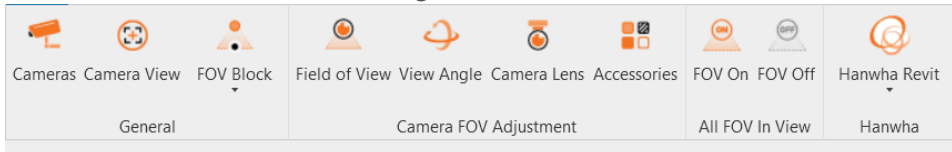


Follow the installer instructions to complete installation.

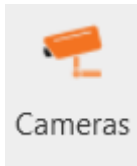
Once the Installer has completed, you can then open the Revit software. During the initial open, a pop-up window will ask if you would like to load the Hanwha Plugin to Revit. Select **Always Load** as the option in the window.

HANWHA TOOL BAR

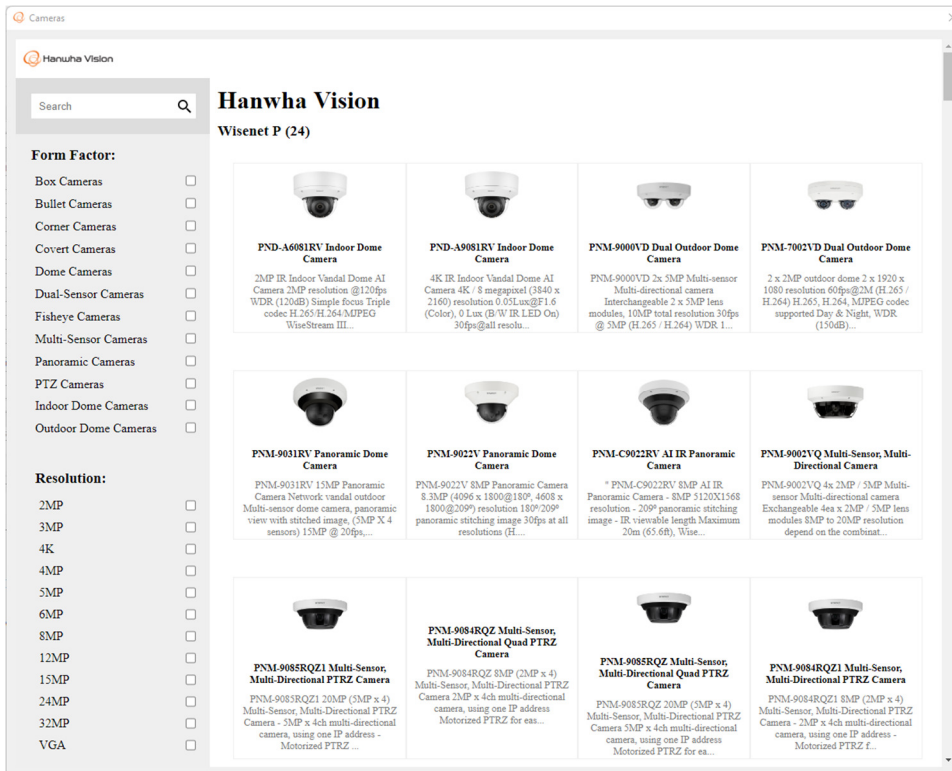
A “Hanwha” tab will appear after installation of the Hanwha Vision Plugin. The tool bar will have the following tools:



Cameras



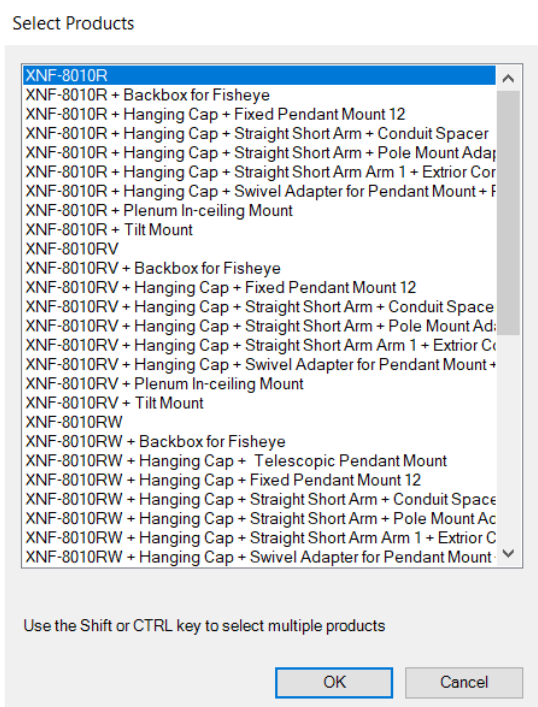
This tool will open a window to select Hanwha Vision Cameras. There will be filters on the left side with a search bar to help users determine the correct camera for their application.



To download a camera into the Revit project once selection has been made, place the mouse pointer over image of camera, where a Download button will appear.

After download is complete, a pop-up window will come up asking the user if they desire Inches or Metric units for the Revit family. An additional pop-up will ask if the user desires a Face-Based or Non-Hosted Revit Family.

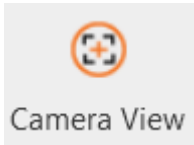
Once those selections are made, the list of models and accessories will come up for the user's selection.



After selecting the desired models, click on **OK** to load.

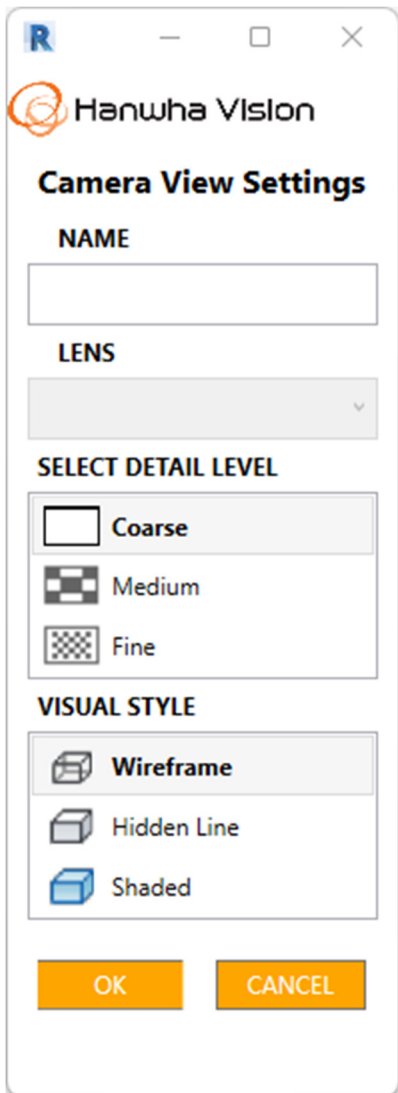
The Component command will automatically be activated and the user will be able to start placing camera in their project.

Camera View



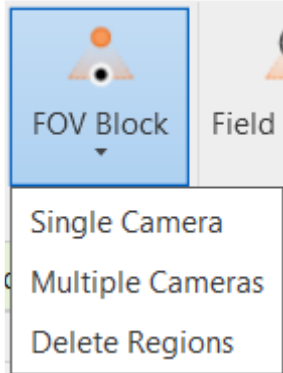
The Camera View Tool will create a 3D view in the Revit project from the perspective of the camera selected.

A window will come up with the ability to create a Name for the view, select Detail Level, and choose a Visual Style of view. If the user does not desire to select settings, default settings will be selected for the view and a name will be assigned.



Camera views will be created for the camera and stay updated as the camera moves or changes settings.

FOV Block



Note: The Field of View Block tool works in Floor Plan views only.

This tool will create 2D Filled Regions in plan showing a camera's visual coverage. If there are components or structures that block the camera's view, the 2D filled region will not fill the area after the block.

Multiple regions will be created using D.O.R.I. standards. Each region will be named according to their respected region coverage:

Detection

Observation

Recognition

Identification

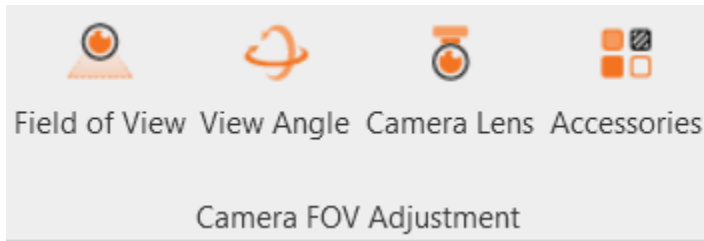
There are two options for this tool:

Single Camera: Use when evaluating one camera

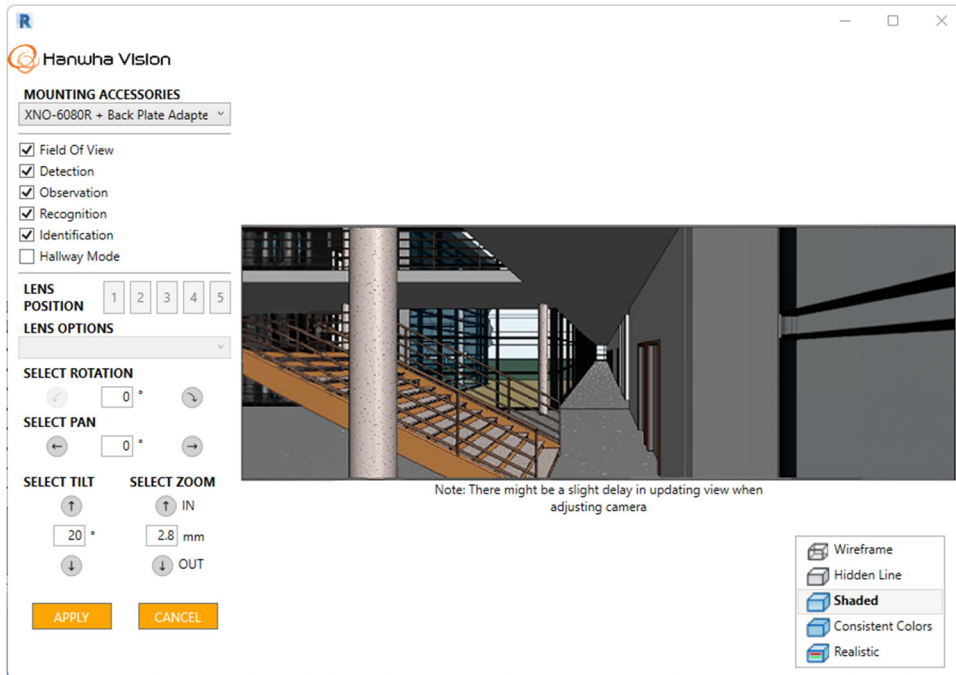
Multiple Camera: Use when evaluating two or more cameras. In areas where two or more cameras have overlap coverage, an additional region will be created to show the overlap coverage

Use the "Delete Regions" option in the dropdown to delete all the regions in view once the evaluation is complete and regions are no longer needed.

Camera FOV Adjustments



These sets of tools will help the user determine the correct accessories, angles, lens, and FOV settings for the camera.



Mounting Accessories:

A dropdown of models with accessories. To change accessories, simply select another option from the dropdown then press Enter on the keyboard.

FOV options:

A set of checkboxes to help you turn on and off FOV settings for camera. All changes will only be noticeable in floor plan views where FOV is visible.

Select Rotation:

Change the rotation of a camera by entering a desired rotation degree in field. Use the Counterclockwise and Clockwise buttons to rotate the camera incrementally. Changes selected here will show in a preview 3D perspective view.

Select Pan:

Ability to change the pan by entering a degree value in the field. Use the Left and Right arrows to pan the camera incrementally.

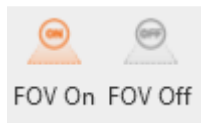
Select Tilt:

Ability to change the tilt by entering a degree value in the field. Use the Up and Down arrows to tilt the camera incrementally.

Select Zoom:

Ability to change the zoom by entering a mm value in the field. Use the Up and Down arrows to zoom the camera incrementally.

All FOV In View

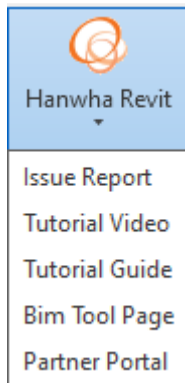


These 2 buttons will allow you to control the FOV geometry of all cameras in the current view open.

FOV On: makes FOV geometry visible

FOV Off: hides FOV geometry

Additional Resources



These dropdowns are quick links to additional resources to assist the user with any questions or comments they might have.

Revit Family Instructions:

Loading families into a project:

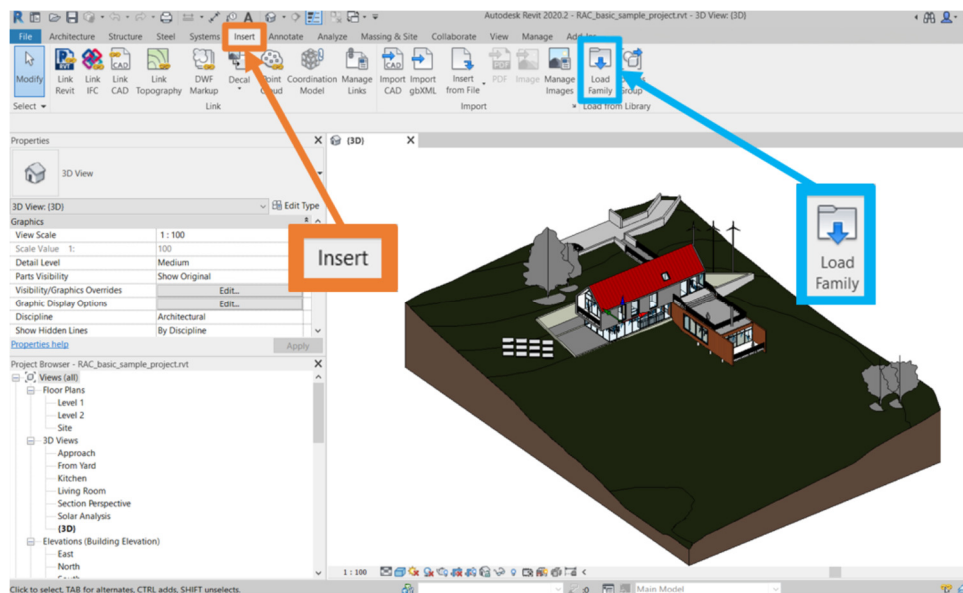
To use Hanwha Camera families is necessary to load the families into a project, this can be achieved in two different ways, from a file that has been downloaded and it's on your computer or on an external source (pen drive, external hard drive, etc), or using the Revit Hanwha plugin.

Hanwha families will have two (2) files per model, the Revit Family file (.rfa) and the type catalog (.txt), both will have the same name with the only difference being the file type.

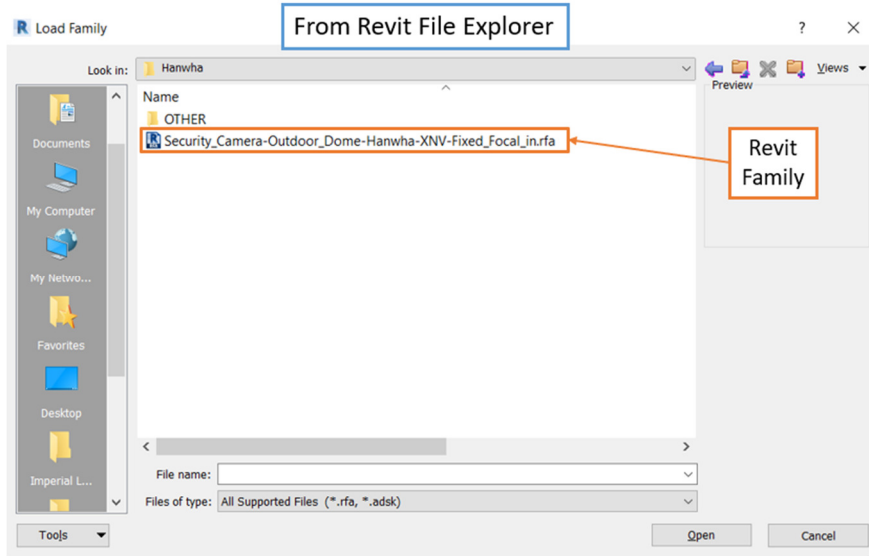
a) From a downloaded file:

Step 1: Download the file from BIMsmith Market or from Hanwha website, remember that there will be two files per model (.rfa and .txt)

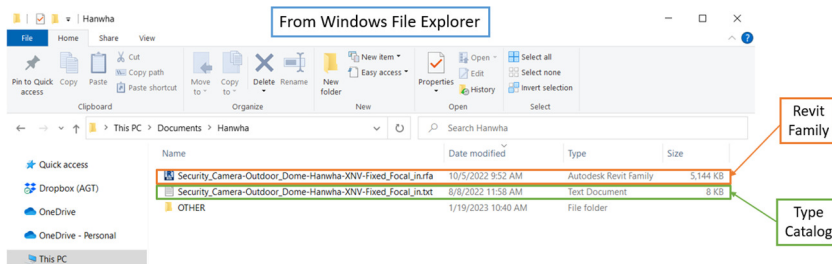
Step 2: Open your Project in Revit and go into the “Insert” tab, then click into the “Load Family” icon and the file explorer window will open.



Step 3: Once the file explorer is open, search for the file location of the family we want to load into the project. The image below shows the family file from the window that will open after clicking on “Load Family”.

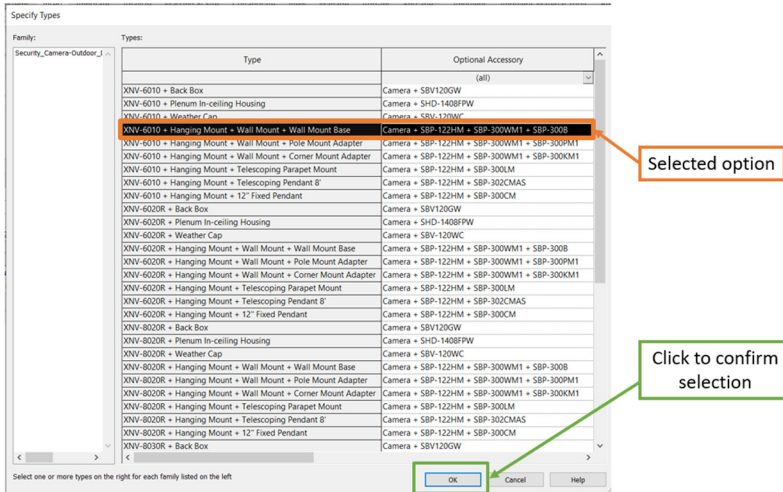


Note: Is important in order for the type catalog to work, that both files (.rfa and .txt) are in the same location, the type catalog (.txt) is not going to be visible in the window opened by Revit, so it's necessary to check this before trying to load the family in the project. The Image below shows the files from the windows file explorer.



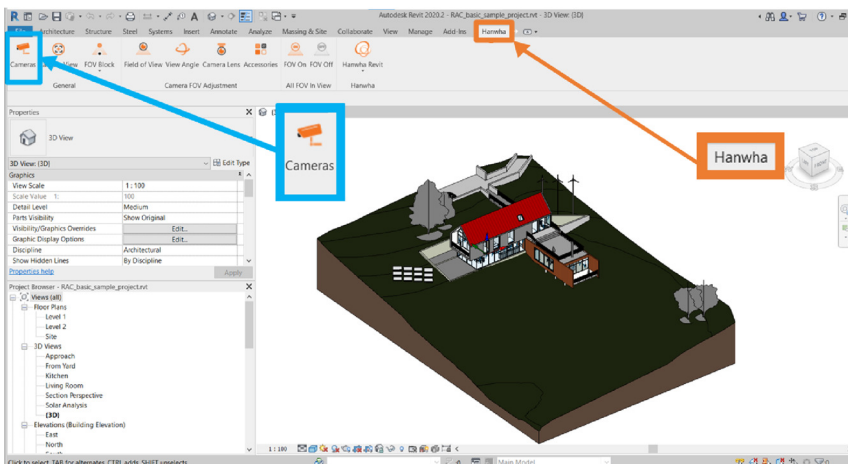
Step 4: Click on the Family file and a window will emerge, this window contains all the options available for the model we have chosen, when clicking in one of the option the row will become black. We can select multiple options by holding “Ctrl” at the same time we select the option.

Once the options are selected, we need to click on the icon “OK” to confirm the selection, the family along with the desired types will be loaded into the project.

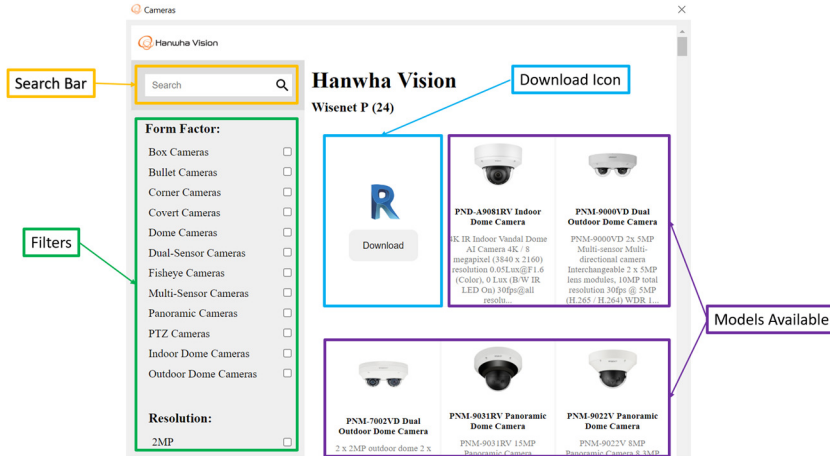


b) From Revit Hanwha plugin:

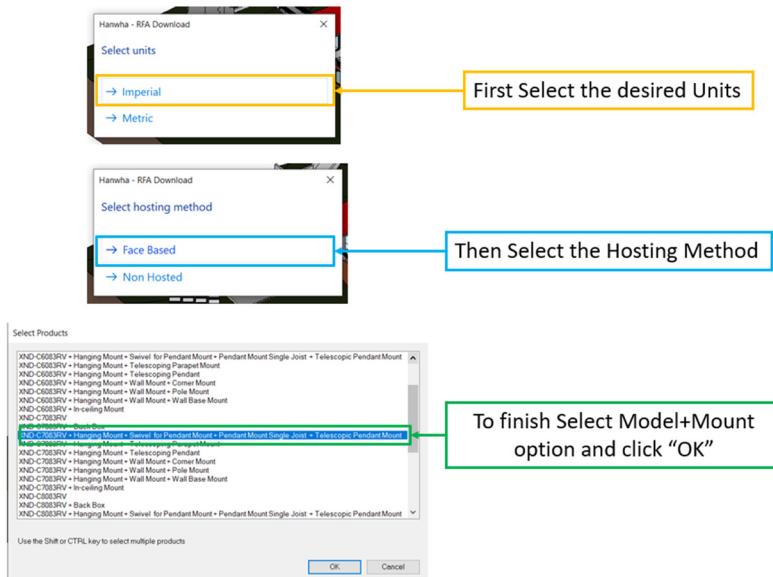
Step 1: Go into the “Hanwha” tab on Revit and then click on the “Cameras” Icon, a window will open displaying a microsite with the available models from Hanwha.



Step 2: Inside the microsite, there are different options to search for the desired model, we can use the available filters or the search bar. Once the camera is found, click on “Download”.



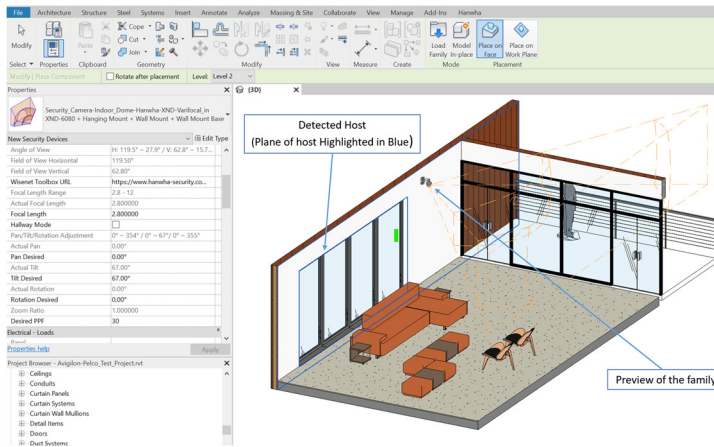
Step 3: A series of windows will appear as we select the desired options. The first window will ask for Units, then we need to select the mounting method and finally, we need to select the Camera + Mount option, after that click on “OK” and the family will be loaded into the project.



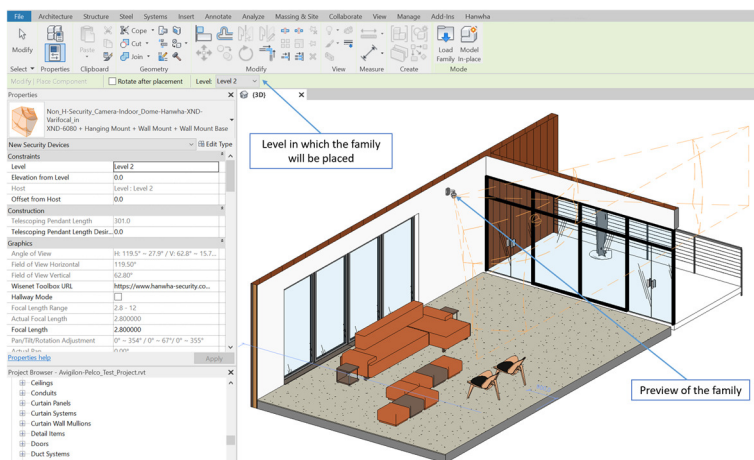
Family Options:

Hanwha camera families are divided into two options, that depends on the host the families will have once placed on a project, the options are:

- **Hosted families:** These families will detect a surface that can be for example a wall or roof and will orient perpendicular to the surface of that host. The file name for this families will start with “Security...rfa”.



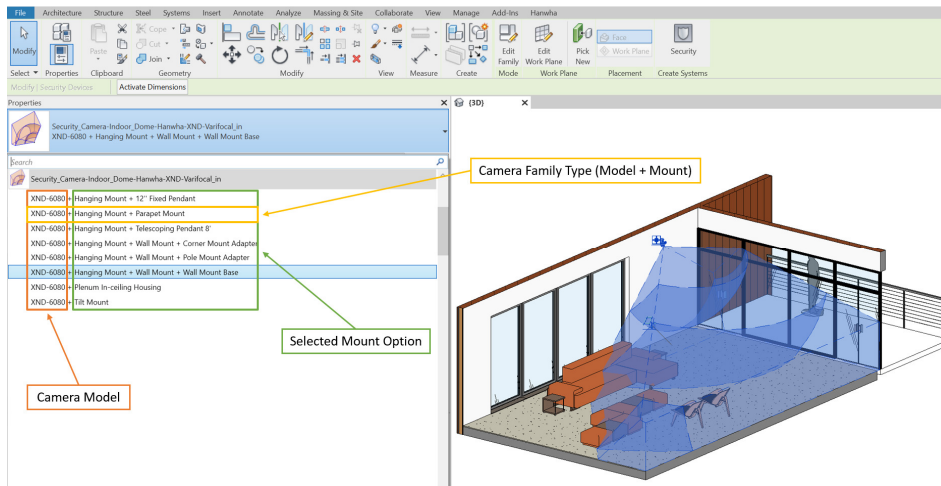
- **Non-Hosted Families.** These families don't need a host to be placed and will automatically orient depending on the desired mount. The file name for this families will start with “Non-H...rfa”.



Each option will have two versions that will depend on the units the user will use in their project depending on their location, those options are:

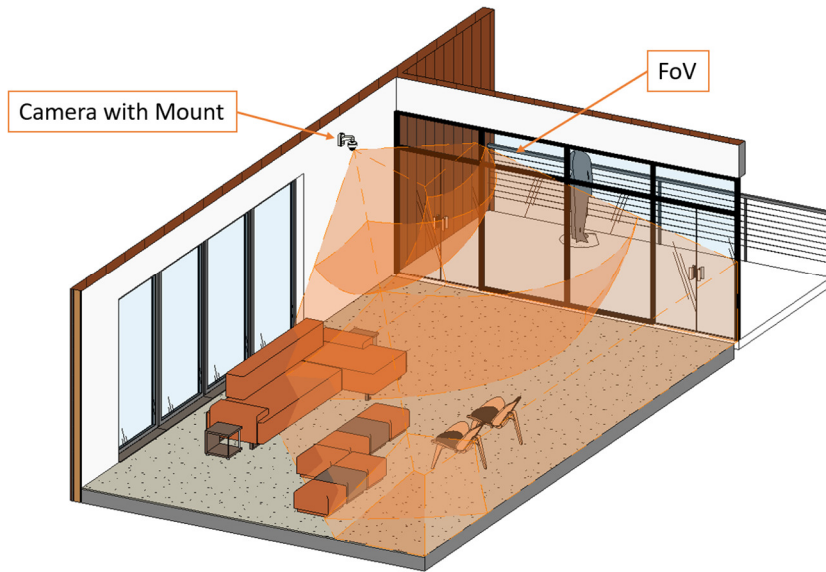
- Imperial: These versions use Imperial Units inside the family and the file name will end in "...in.rfa".
- Metric: These versions use Metric Units inside the family and the file name will end in "...mm.rfa".

The Cameras will have family types, that will vary depending on the Model and Mount chosen by the user, allowing the user to only load the necessary types and keeping the project from having unnecessary types loaded.



Family Elements and Parameters:

Families will have 2 main elements, the camera with the respective mount depending on the chosen model and the FoV (Field of View) geometry. Each mount will depend on the loaded type, and the type name will show the model and mount selected.



The user will be able to adjust the desired Pan, Tilt, Rotation, Focal Length among other parameters, those modifications to each parameter values will be reflected on the FoV orientation and shape and can be adjusted from the plugin or from the family properties panel in the Revit project.

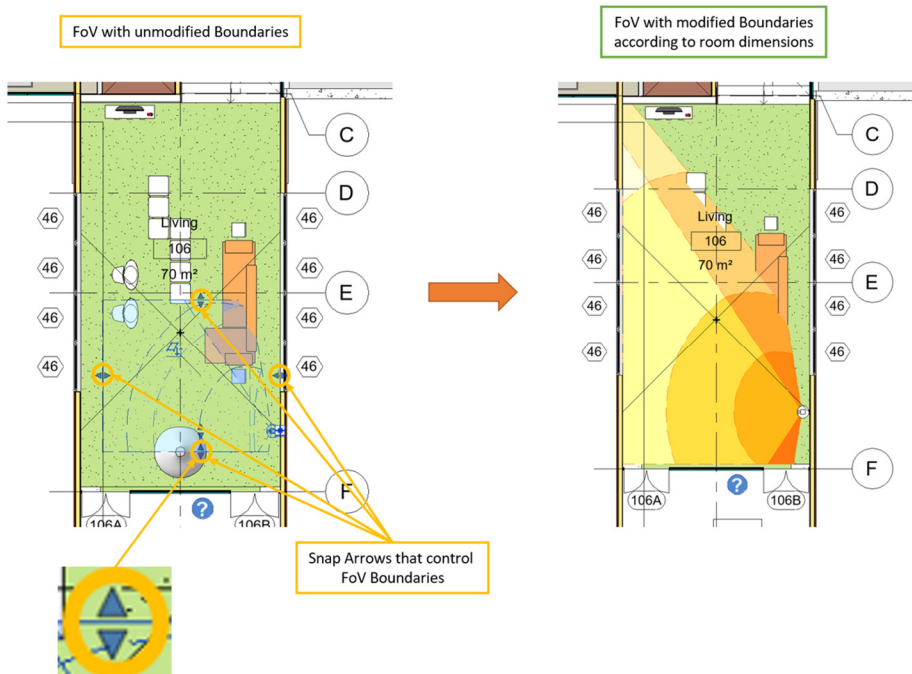
Camera FoV (Field of View):

The FoV of the cameras represents the area that the camera can cover, this geometry will appear as an Orange Volume and will display the ranges that the camera can cover depending on the specifications per model.

FoV Boundaries:

Adjusting the boundaries of this element can be achieved with snap arrows that will appear on plan, ceiling or section views. With these snap arrows, the FoV can adjust depending on limits that walls, ceilings and floor defines when the camera is placed in a space.

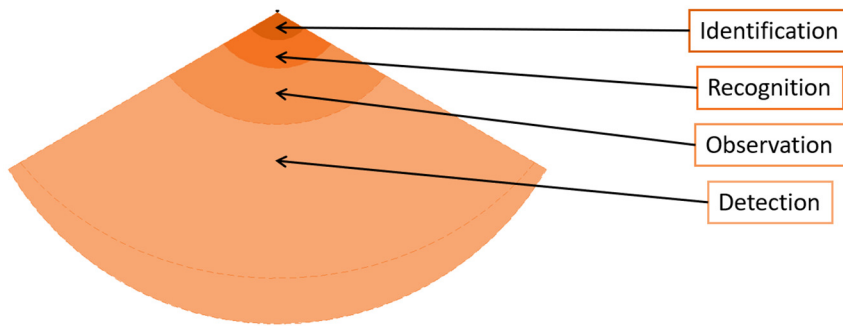
This can be achieved by dragging the snap arrows to the desired distance or by aligning the geometry sides using the align tool in Revit.



FoV Ranges.

This element also indicates a visual representation of each range that the camera can achieve depending on the specifications of each sensor. Hanwha FoV element will allow you to see the following ranges:

- Detection Range
- Observation Range
- Recognition Range
- Identification Range

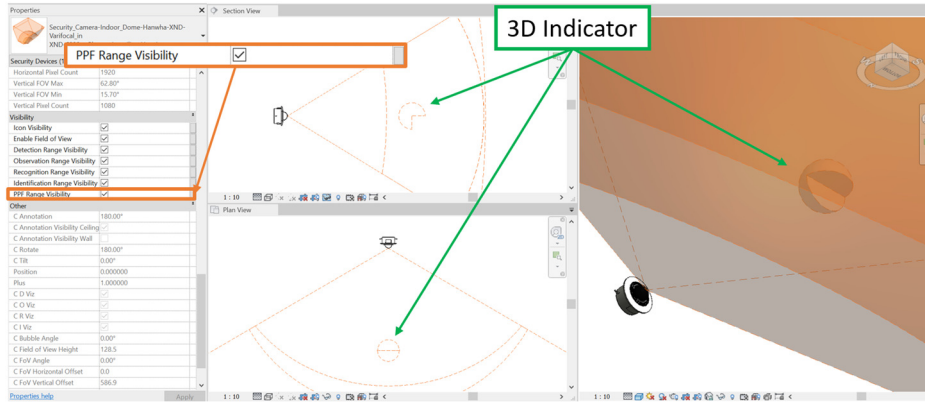


The distance from the origin point to these ranges can be seen on the “Model Properties” section of the family after it is selected.

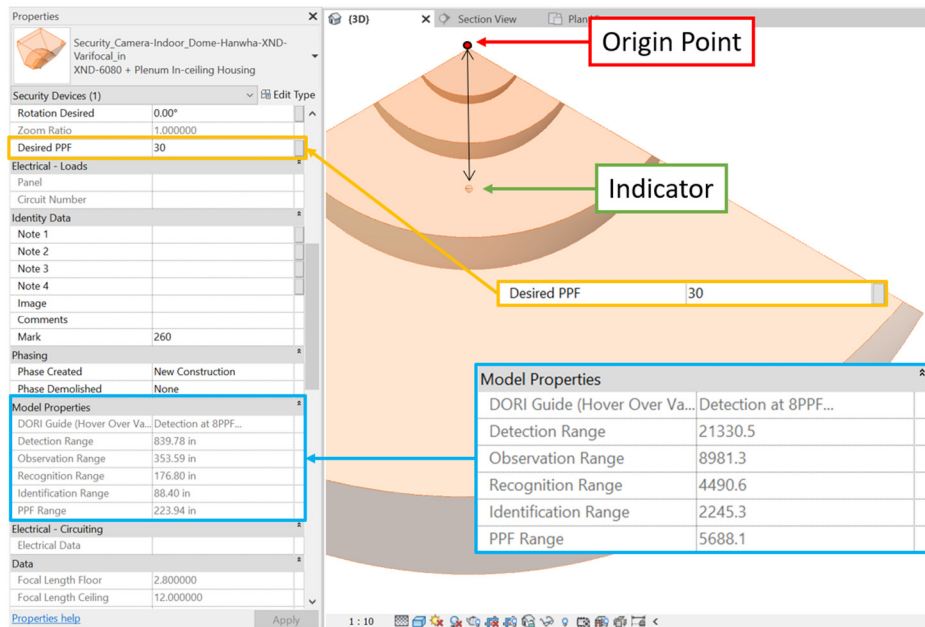
The screenshot shows a software interface with a camera model and its properties. The 'Model Properties' section is highlighted, showing a table of range values. An orange box highlights the 'Range' column in the table, and an arrow points from this box to the 'Model Properties' table.

Model Properties	
DORI Guide (Hover Over Value To See Ranges)	
Detection Range	21330.5
Observation Range	8981.3
Recognition Range	4490.6
Identification Range	2245.3
PPF Range	1422.0

Inside the FoV of the cameras, there is a 3D indicator that can be turned on/off by a parameter called “PPF/PPM Range Visibility”, this indicates in which of the above-mentioned ranges does the camera FoV is, depending on the Pixel Per Feet/Meters value that the user determines.



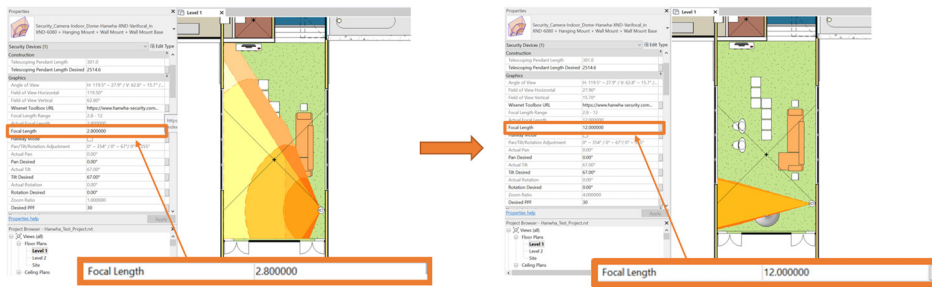
This value can be modified with the parameter “Desired PPF/PPM”, altering this value will automatically change the position of the indicator. The exact distance from the Origin Point to the Indicator is displayed in the “Model Properties” section, in the parameter called “PPF/PPM Range”, comparing this value with the other ranges values determines in which range the indicator is at, with the current Pixels Per Feet/Meters.



Focal Length adjustments:

Adjusting the Focal Length is done by modifying the value of the parameter called “Focal Length”, that can be achieved with the plugin or by going into the properties tab after selecting the family. Only varifocal cameras have the option to adjust Focal Length.

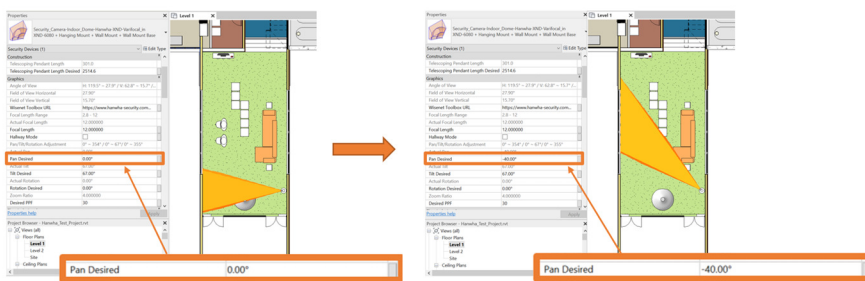
In the sample image, the camera Focal Length value goes from 2.8 (Left) to 12 (Right).



Pan adjustments:

Adjusting the Desired Pan is done by modifying the value of the parameter called “Pan Desired”, that can be achieved with the plugin or by going into the properties tab after selecting the family.

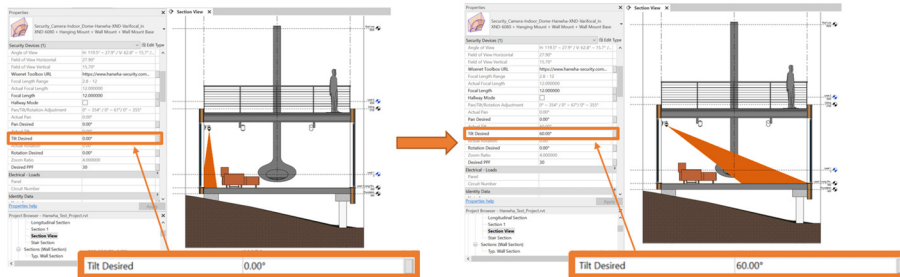
In the sample image, the camera Pan Desired value goes from 0 degrees (Left) to -40 degrees (Right).



Tilt adjustments:

Adjusting the Desired Tilt is done by modifying the value of the parameter called “Tilt Desired”, that can be achieved with the plugin or by going into the properties tab after selecting the family.

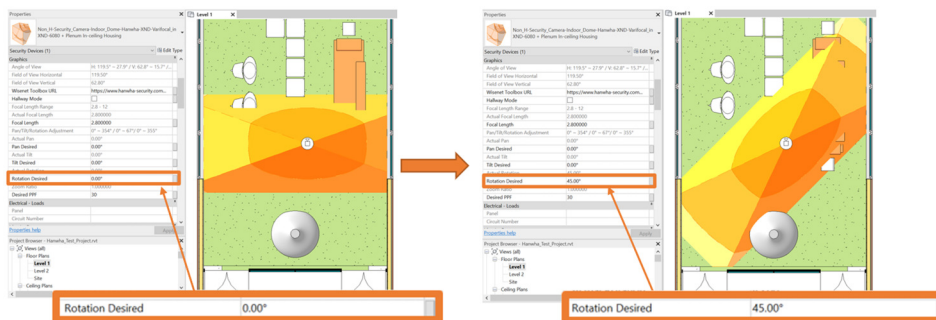
In the sample image, the camera Tilt Desired value goes from 0 degrees (Left) to 60 degrees (Right).



Rotation adjustments:

Adjusting the Desired Rotation is done by modifying the value of the parameter called “Rotation Desired”, that can be achieved with the plugin or by going into the properties tab after selecting the family.

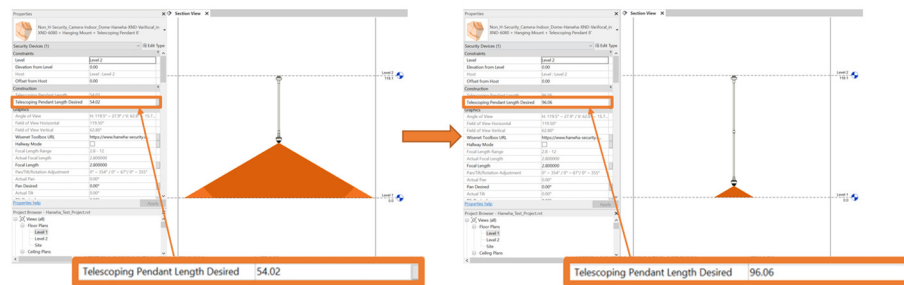
In the sample image, the camera Rotation Desired value goes from 0 degrees (Left) to 45 degrees (Right).



Telescoping Mount Length adjustments:

When a Telescoping Mount is loaded for the selected model, the mount allows the user to adjust its length by modifying the parameter “Telescoping Penda Length Desired”, from the properties panel when the family is selected in a project.

In the sample image, the camera Pan Desired value goes from 54.02” (Left) to 96.06” (Right).



Information contained inside the families:

Depending on the loaded model, inside the type parameters which can be accessed by selecting the family and then clicking on “Edit Type”, it will open a window that will display information regarding the camera that corresponds to the family. In the example below, the type properties show information like Aspect Ratio, Operating Temperature, Product Page URL, etc.

