BIMBMS

Using the viewer

To access the demo, an account *must* be requested at**:** https://demo.bimkeeper.com

The demo can be accessed at: https://demo.BIMBMS.com/demos/basics-3d

This demo-instance is only intended for use with this particular demo. The focus of the demo is on this subject only. This means the navigation shows only what the user might need. Some features might not work for this reason. The first demo (basics) can be checked for a broader perspective of all the features BIMBMS offers. For more detailed information, the BIMBMS manual can be referenced, or IRP can be contacted at: contact@bimkeeper.com.

Contents

1 Introduction

The 3D viewer is a complex feature that offers users a wide range of possibilities, including the ability to:

- View multiple types of data linked to elements of a building.
- View a building or complex in multiple ways, using multiple camera modes (perspective, orthographic, 2D and first-person mode).
- Place furniture or other objects inside or outside a building.
- Perform checks on models. This feature allows for checking the model of a building for various purposes, including:
- Counting the number of spaces within a building.
- Calculating the combined area size of multiple spaces.
- Checking if the floor height is within the required constraints.
- Ensuring that specific properties of a building have certain values.
- Measuring the distance between two points.
- Create requests for repair, maintenance, or other purposes.
- View the "Solar study". This feature allows users to see the effect of sunlight on the building on a specific date and time.

In BIMBMS, the 3D viewer can be divided into a “building management viewer” (also referred to as the “configurator”) and a “sales viewer”. More information on these viewers can be found here: building management viewer & sales viewer.

It is also important to note that the 3D viewer is not a separate application, but rather a part of BIMBMS itself. This means that all data shown in the viewer is also present in the application's data layer. For example, a request created inside the 3D viewer can be found in the requests overview (under the “Technical” -> “Requests” tab). The reverse is also true: references to elements in the application point to the actual corresponding element in the 3D viewer. This does not apply only to requests, but to all data in BIMBMS.

2 BIM, IFC and Textures

Building Information Models contain 3D geometry, measurements, physical properties, materials, connections, and many other relevant building data. These models are often created by professionals, like architects and specialized offices such as the IRP office in India. This is achieved with advanced computer-aided design (CAD) software such as Autodesk Revit or Graphisoft ARCHICAD. The internal BIM file formats of these software applications are often proprietary, but most offer the possibility to export the models into the IFC format. IFC stands for Industry Foundation Classes, an open (ISO 16739) exchange format for Building Information Models. BIMBMS works with IFC files, so it does not matter in which application the modelling is conducted.

Naturally, the level of information, detail, performance, and quality of the model provided in BIMBMS entirely depends on the modelling process and/or IFC export options in the used modelling software. For use with long term maintenance plans, providing proper measurements (dimensions, areas) and classifications of elements is absolutely required.

BIMBMS has implemented many optimizations to be able to quickly load and render large models (including large complexes and IFC's of several hundred MB's). It is one of the fastest web-based viewers available. Still, for smooth performance in WebGL and not to exceed browser memory limits, care must be taken not to export too much detailed geometry.

Note: The terms IFC models and BIM models are used interchangeably in this document.

As shown in the following example, the 3D viewer is also capable of rendering textures on all sorts of complex-shaped 3D models:

Figure 1: BIM Model in BIMBMS 3D sales viewer

3 Building Management Viewer

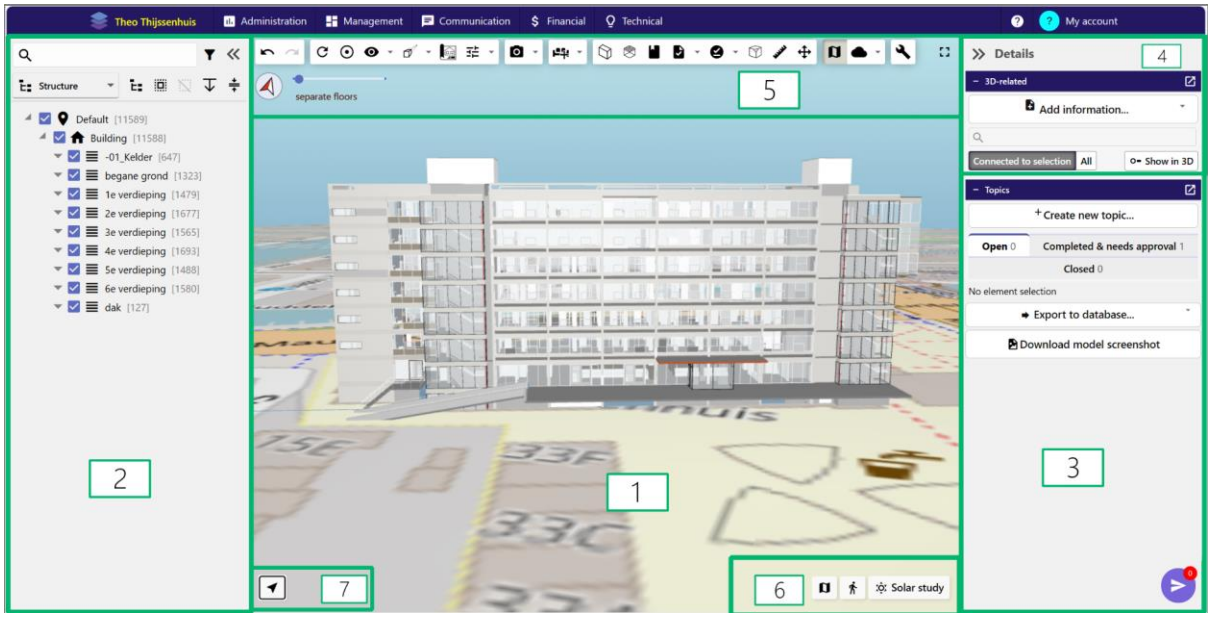


Figure 2: The 3D viewer

After loading a model in the viewer, a 3D view of the model will be presented **(1)**, as well as a left **(2)** and a right **(3)** panel.

- The 3D view **(1)** can be navigated with a mouse or touch controls.
    - To center the camera on an object, click on it with the mouse.
    - To rotate the view, hold and move the left mouse button.
    - To pan the view, hold and move the right mouse button.
    - To zoom in, the scroll wheel can be used, or by holding the middle mouse button.

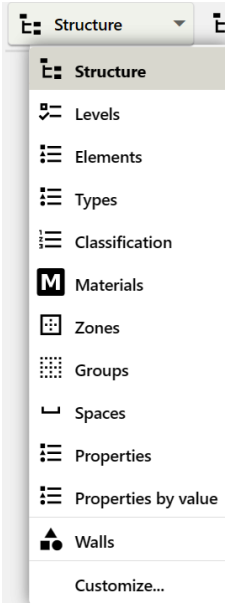


Figure 3: Eleven different options to search for elements within a complex including a custom made one

    - The left pane **(2)** represents the selection of visible elements in the building. Here users can select elements, switch them on or off or navigate towards them. There are eleven different categorizations, with additional custom made categorizations, which can be used to search for elements within the complex.

- The first tab (“Structure”) lists all the model elements that are presented.
- The second tab (“Levels”) specifically lists the floors of a building, these can be turned on or off. For example, when only a specific floor of a building needs to be viewed.

Figure 4: Building with only four floors enabled

- The third tab (“Elements”) shows a list of specific parts of the building such as walls, beams, doors and more.

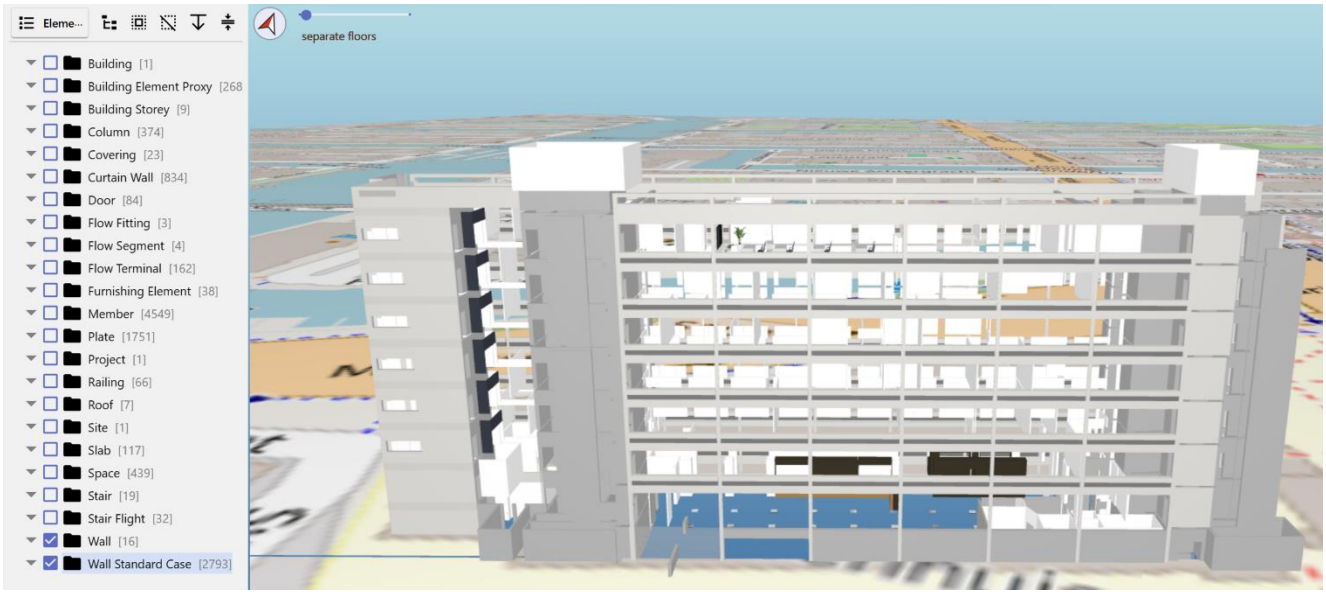


Figure 5: Building with only the elements ‘Wall’ and ‘Wall Standard Case’ enabled

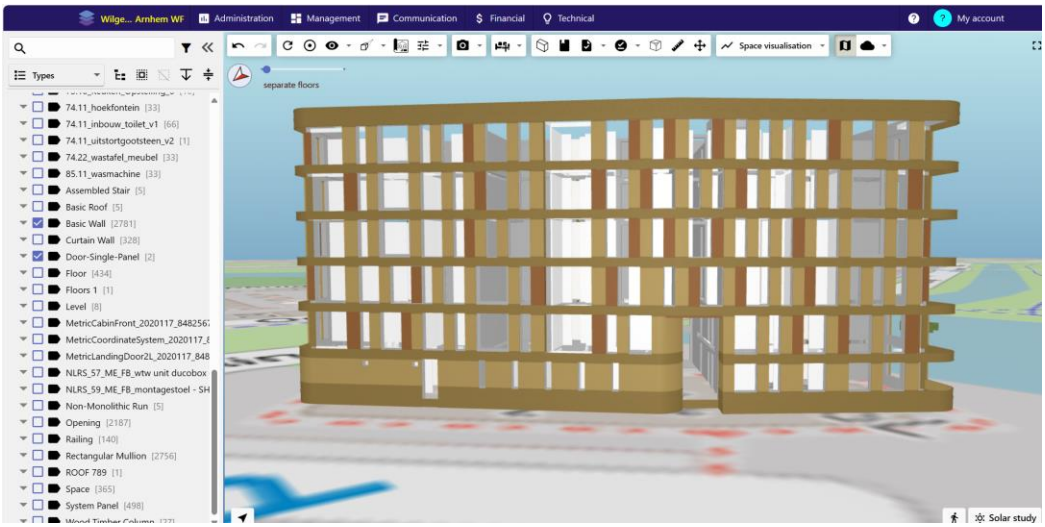


Figure 6: Building with only elements of type doors and basic wall enabled

- The fourth tab (“Types”) shows a list of elements categorized by their element type. There can be multiple levels of element types, and they can be turned on or off by level. To hide all elements except a specific category, right click and select “Hide others”. This can be done for a main category (for example “Glass”), or a subcategory (all glass with a specific brand or dimension).
- The fifth tab (“Classification”) is similar to the previous tab, but instead categorizes elements by their classification. For example, the NL/SfB standard.

Figure 7: Elements selected by classification

- The sixth tab (“Materials”) lists all elements categorized by their materials.
- The seventh tab (“Zones”) shows elements grouped by Zones if this data is defined in the IFC. These represent collections of elements and/or spaces. For example, all spaces belonging to a specific apartment can be grouped to a zone.
- The eight tab (“Groups”) shows elements grouped by Groups. Most of the time these are general groups. Systems can also be found at the Groups tab.

- The ninth tab (“Spaces”) shows spaces based on function. For example, a living room or a kitchen.
- The tenth tab (“Properties”) shows the attributes of the elements of a building.
- The eleventh tab (“Properties by value”) also shows the attributes of the elements of a building but grouped by value.

- To create a custom tab simply click on “Customize..” after which the following screen appears. Here previously made custom screens can be seen as well as the option to import a pre-made tree (In JSON format) or create a new custom tree.

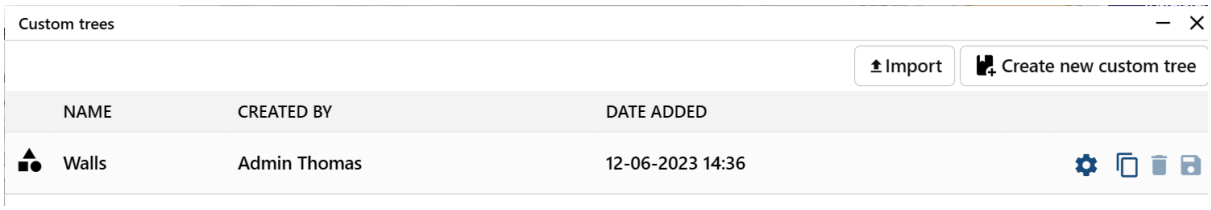
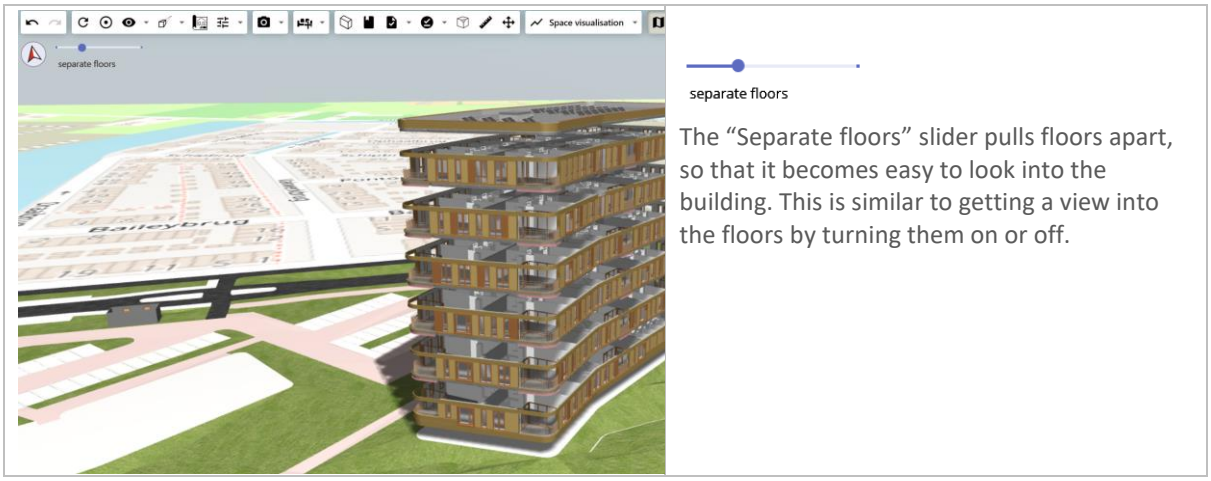
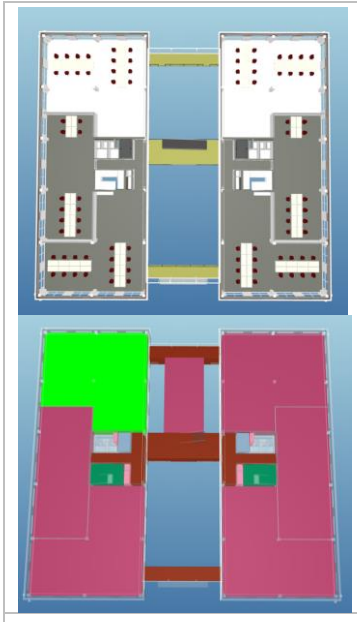


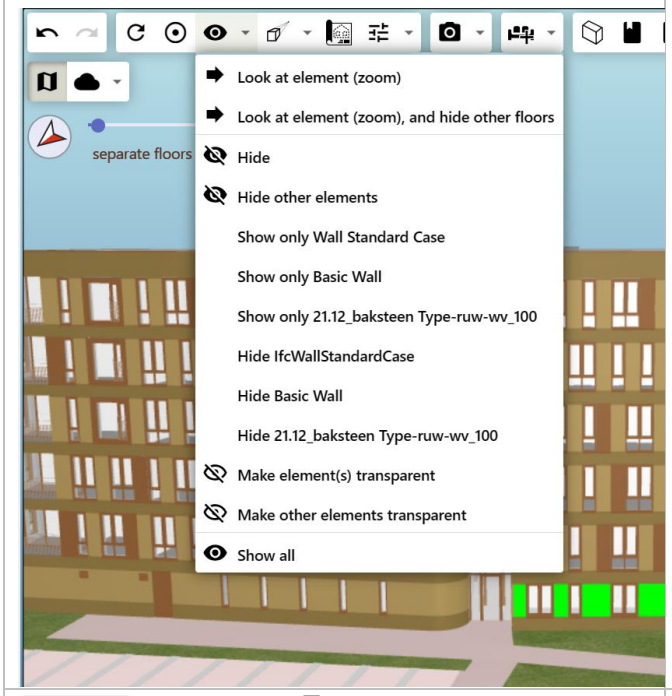
Figure 8: Custom trees management menu.

- The right pane **(3)** shows information specific to the currently selected element(s). This consists of the name, its type/IFC class, classification and measurements. The number of elements with the same type, IFC class, or classification is visible on the right. Additional information can also be viewed, such as the unique id and *all* properties defined in the IFC such as dimensions, etc. When having multiple elements selected, only information common to the selection is shown.
- At the top of the right pane **(4)** is the documentation pane. This shows additional information (text, hyperlinks, files) connected to the specific element. For example, an operating manual for a boiler. This additional information comes from the BIMBMS database, not the IFC. Documentation can be added using the “Add information…” button. This feature will be explained in the next section.
- The toolbars **(5), (6) and (7)** hold some useful tools and advanced functionality:





The “Spaces” icon toggles spaces on or off. This allows users to view, select and link information to spaces. The spaces menu changes the buildings in space blocks. Each type of space has its own color. By clicking on a certain space, the selected space becomes highlighted.



The “eye” icon is used for showing and hiding elements and making them transparent. **This menu can also be accessed by right clicking an element (in the viewer or left sidebar.)**

“Show all” resets the visibility of all elements.

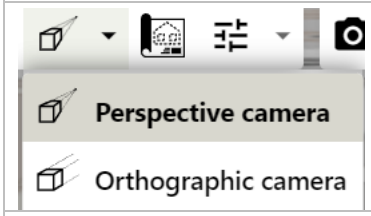
“Hide” just hides this element.

“Hide others” hides all elements *except* this element.

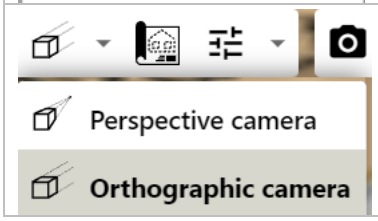
Next, it is possible to show or hide only elements with the same IFC class, main type, or sub type as the selected element.

Similar to hiding elements, it is also possible to make an element (or other elements) transparent.

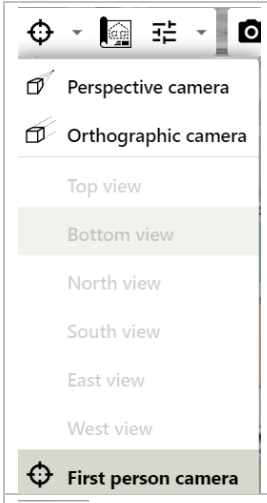
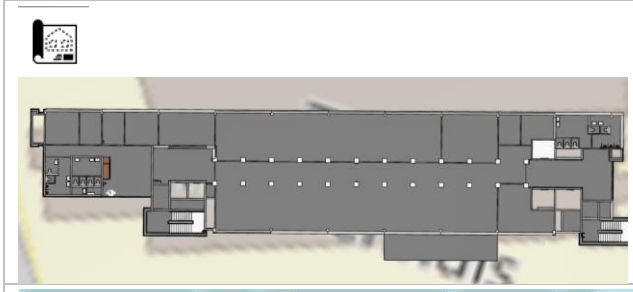
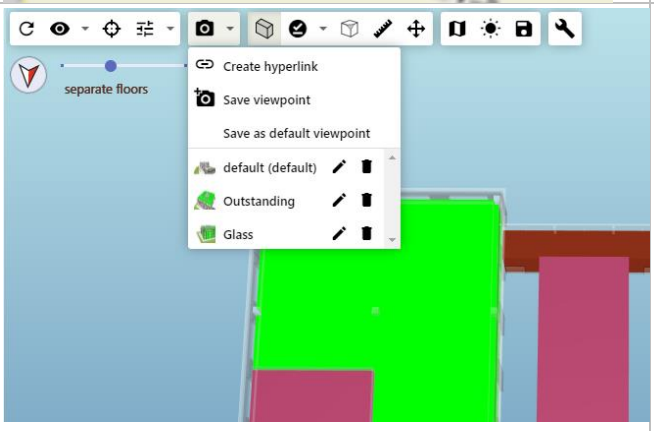
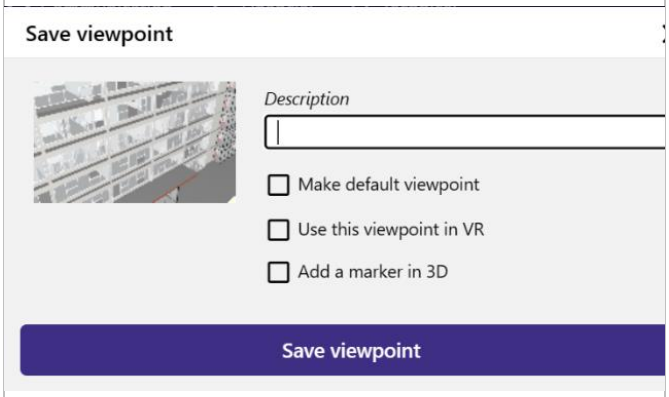
The “Look at element” buttons centre and zoom the camera to the specific element.

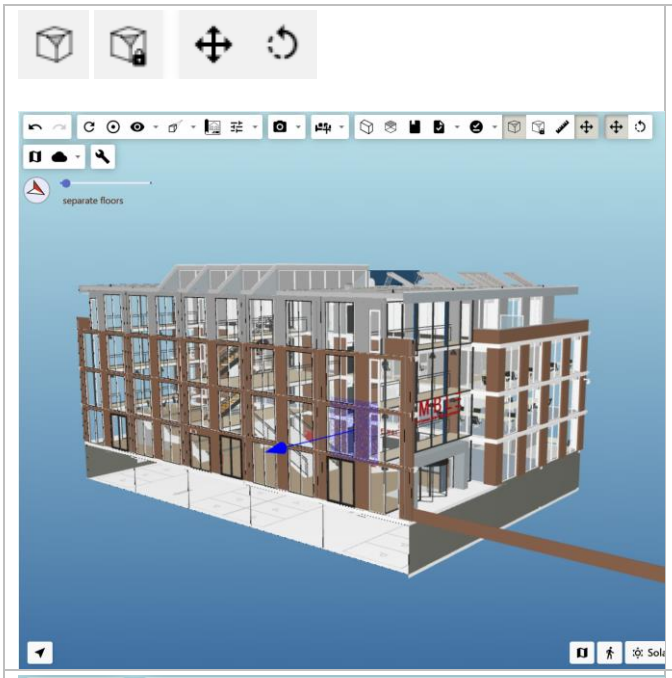
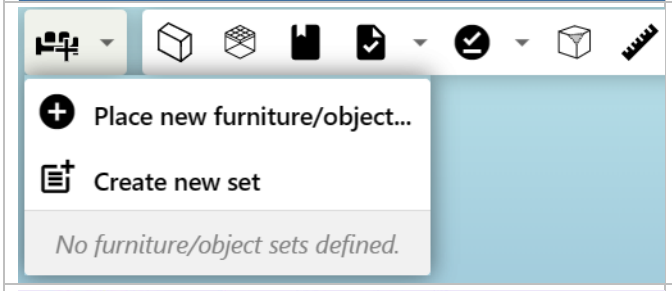
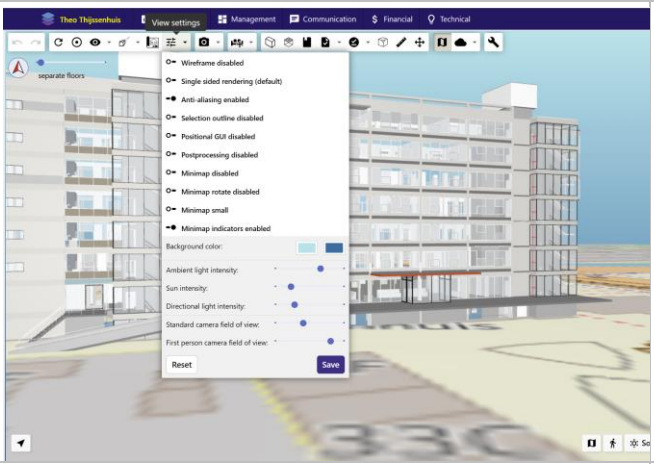
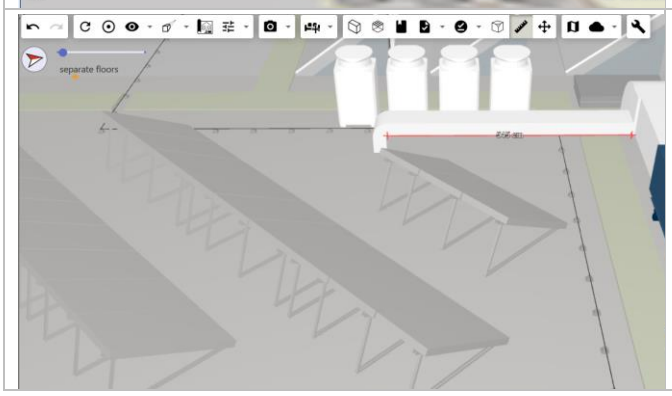


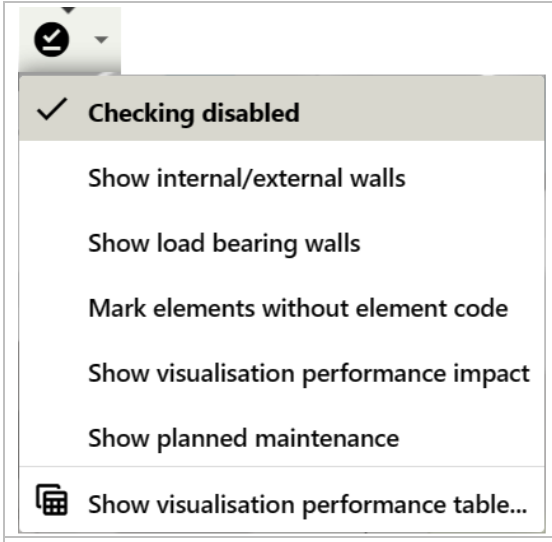
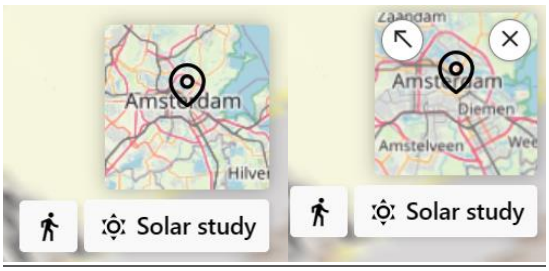
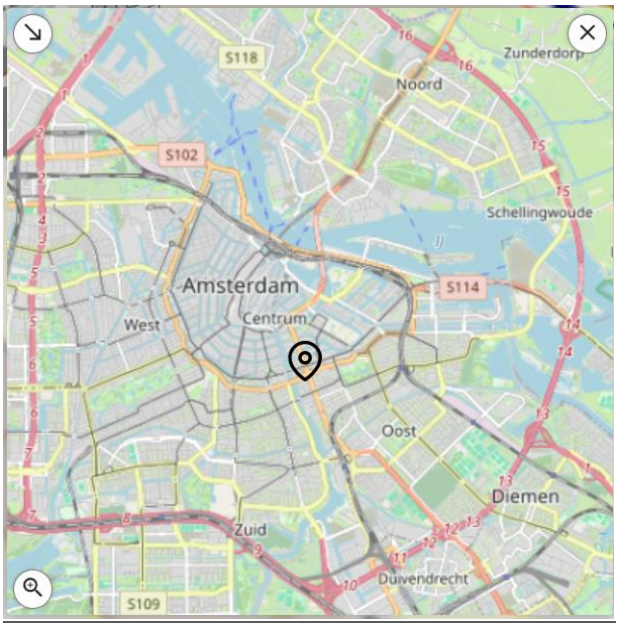
There are multiple camera modes available in the 3D viewer. On of these is the “Perspective camera”. This is the default camera and will be used when the model is opened.

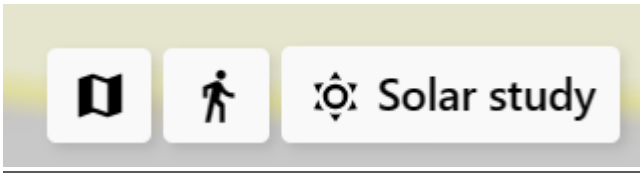


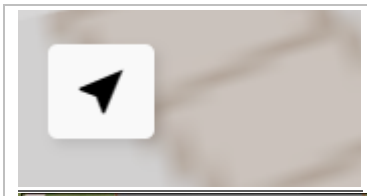
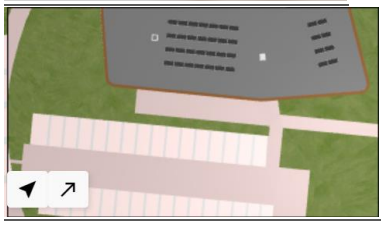
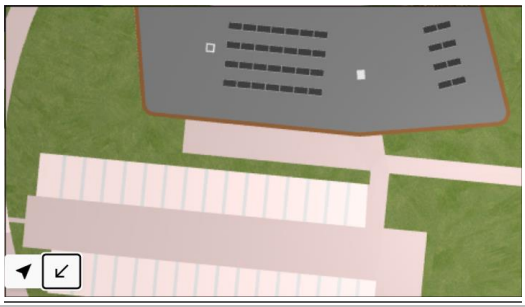
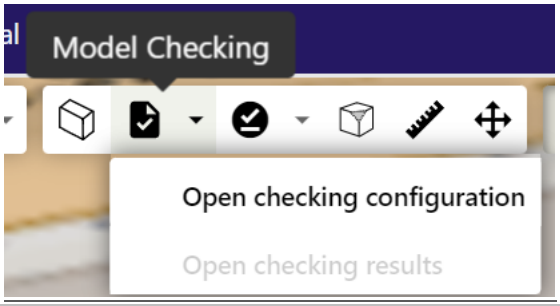
The orthographic camera is another camera mode. In this projection mode, an object's size in the rendered image stays constant regardless of its distance from the camera.

	The crosshair icon switches to first person camera mode. This allows users to linearly move (fly) through a building. Users can look by moving the mouse and move by pressing the WASD or arrow keys. With the “page up” key the camera will move 1 floor upwards and with the “page down” key the camera moves 1 floor downwards. First person mode can be exited by pressing Esc.
	The look from top (2D) functionality creates a live “floorplan” like image of the model. While in this view all the other features can still be used.
 	The viewpoint menu is used to switch to and manage viewpoints. A viewpoint stores the current view (position, rotation) and element selection. “Create hyperlink” creates a sharable link with the current viewpoint. This can be for example given to an installer or contractor, so they can see what element needs to be repaired, with all relevant information at hand. “Save viewpoint” opens a dialog to save the viewpoint in the database, together with a screenshot. It is possible to mark a viewpoint as default, so it will be opened when the model is loaded. Next, a list of viewpoints for the current model is shown. Switch to the viewpoint by clicking it. They can also be edited or removed by using the two icons on the right.

	The sectioning tool can make a cross section of a building, to view the insides at a specific position and angle. To use the tool, first select a side of an element to start sectioning (for example, a side of a wall or a side of a roof). This decides the initial position and axis of the sectioning plane. The sectioning plane can be moved by dragging the on-screen arrows (red, green, blue). By clicking “Rotation”, the sectioning plane can be rotated to another angle. Click on “Translate” to be able to move the sectioning plane again. The sectioning in-place can be locked in place by clicking the sectioning lock icon. To stop sectioning, press the sectioning button again.
	BIM models can also be decorated with smaller 3D models such as furniture or plants. A library of furniture/objects can be accessed here. There is also the functionality to create sets of models.
	The view settings menu allows for tweaking some display options in the viewer, such as lighting, background color and wireframes.
	The measure menu allows one to measure specific points. It is possible to not only measure length, but also surfaces. Measuring can be done by clicking on a point and clicking on another point to create a measuring line. Multiple lines can be made by holding CTRL and clicking.

	The checking menu allows you to check certain things about the model. Like performance impact and checking walls.
  	Located at the bottom right of the viewer **(6)** is the “Show area map” icon. Pressing this enables a map of the area in the bottom right of the viewer. Pressing the “Close” icon at the top right of the area map disables it. By left clicking the area map or pressing the “enlarge” icon at the top left enlarges the area map. After the map has been enlarged, this icon reduces the area map instead. By using the scroll wheel or pressing the left mouse button twice the area map can be zoomed in further.

 	By pressing the “Zoom in & center” icon the area map zooms in and centres to the building currently being viewed.
	The “Explore” icon can be found at the bottom right of the viewer. This allows users to linearly move (fly) through a building like the first person camera. The functionality between the two features are the same as well
	The “Solar study” icon enables the user to see the effects of sunlight on the building on a specific date and time when pressed.

  	Located at the bottom left of the viewer **(7)** is the “Show minimap” icon. When the minimap is enabled the arrow to the right of the minimap icon toggles a larger version of the mini map. To disable the minimap, simply press the mini map button again.
	For more information on the model checking functionality please reference this manual.

3.1. Multiple selection and element export

It is possible to select multiple objects in the viewer, and to export the information of the selection to a CSV spreadsheet.

To select multiple elements, hold the Ctrl key while selecting elements with the left mouse button in the 3D view. Keep holding the Ctrl key to add to the selection. It is also possible to select multiple elements by clicking a floor, element type, classification, or zone in the left panel. In that case, all elements with the same floor, type, classification, or zone will be selected.

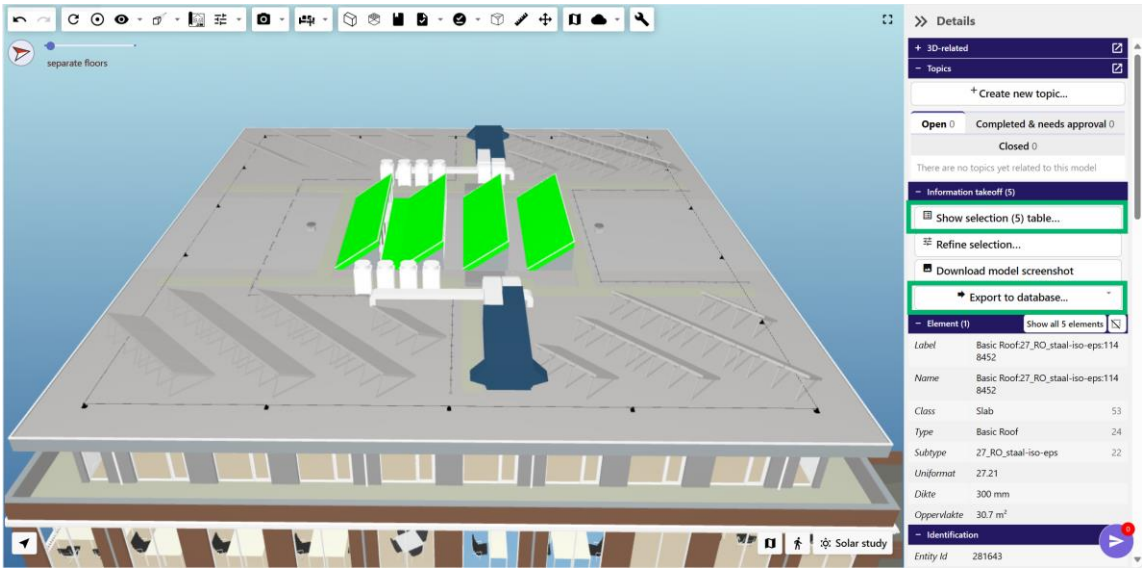


Figure 9: Exporting a selection of elements

To export the selected elements to CSV, press “Show selection” and afterwards press “Export to CSV” to download the CSV file in the right side bar.

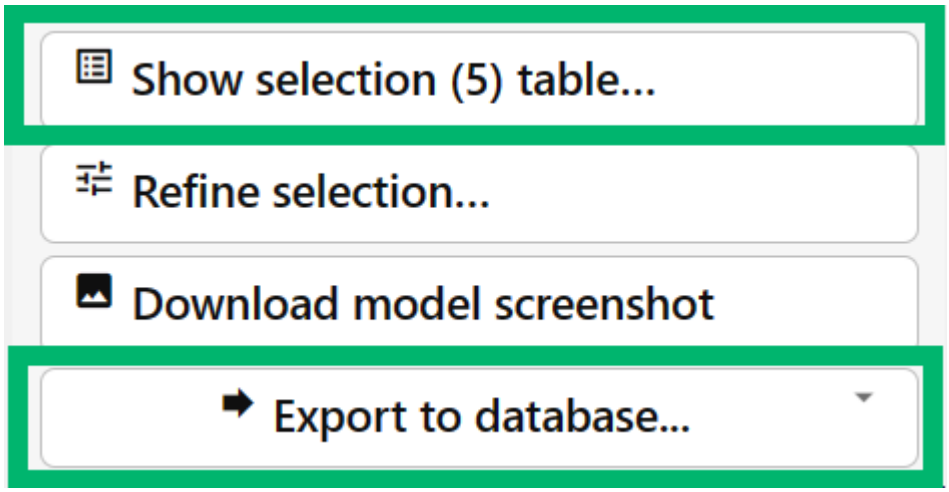


Figure 10: The buttons to either show or export a selection of elements

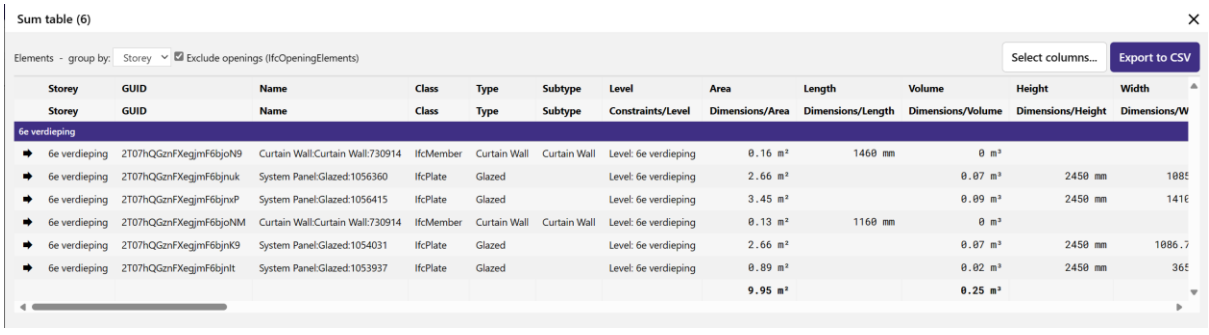


Figure 11: The Sum table

To export to database, click on “Export to database…” and afterwards press on “Export zones to units…”

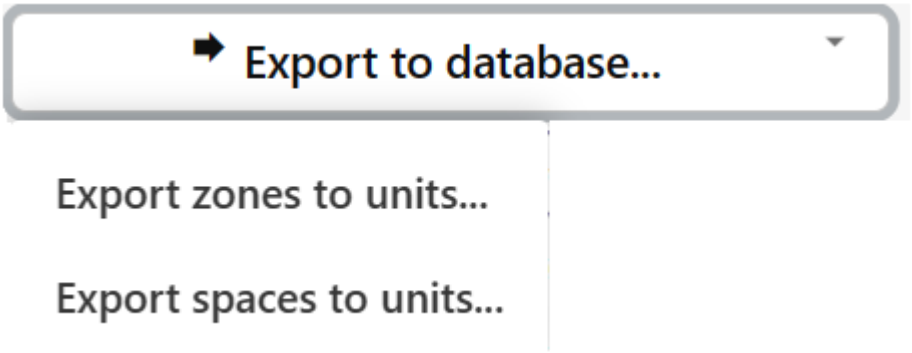


Figure 12: The options after pressing “Export to database…”

Afterwards fill in the Source and Optional regex + goup. If everything is filled in correctly press “Export” to successfully export it to the database

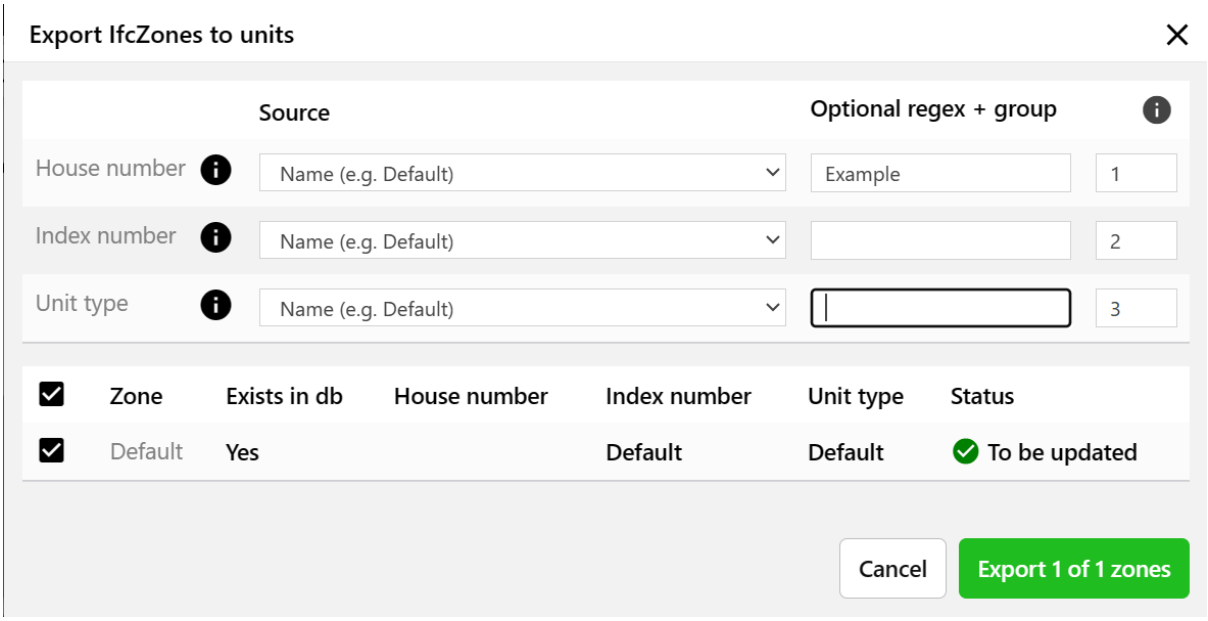


Figure 13: Export IfcZones to units screen.

3.2. Adding 3D-related data

By clicking “Add information” **(4)** and afterwards pressing “Add note…”, documentation can be added that is related to a BIM model. Next, a dialogue will be presented:

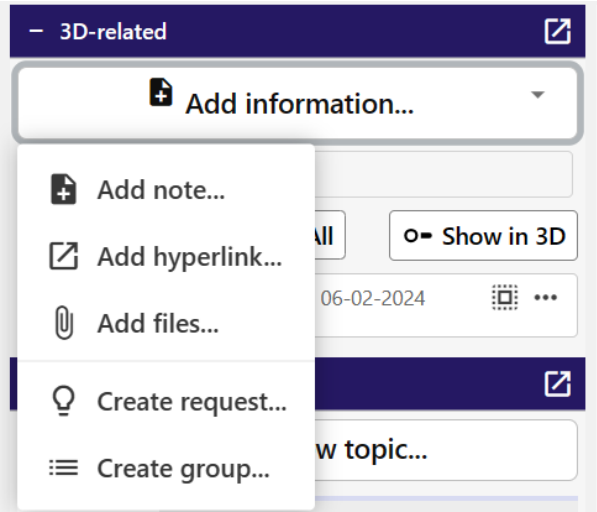


Figure 14: Adding 3D-related data to an element

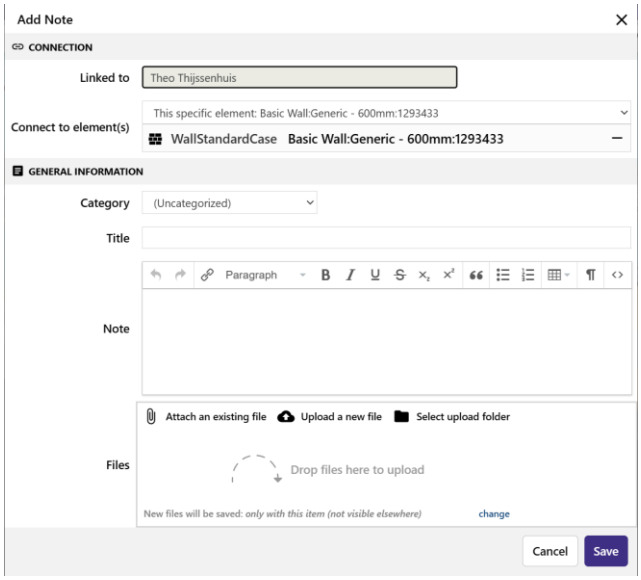


Figure 15: Adding the 3D-related data

First, enter a short title for the added information. For example, “Technical manuals”.

Next, decide on which level the information connects to:

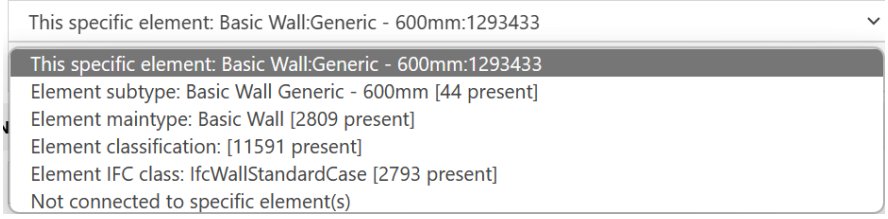


Figure 16: Selecting on what level the information should be connected to

The possible ways to connect the information are:

- Only this specific element
- To the specific main- or subtype indicated by the architect
- If available, the classification code. For example, NL-SfB (Dutch), but others are supported as well
- The IFC class of the element

Next, either free text can be added (including an URL/link), or files can be added.

Finally, decide under which tab to put the added information, or create a new tab. This tab will be a subtab under “3D-related” on the complex detail page. There can be as many tabs added as needed.

Added information can be accessed in two ways. Firstly, clicking an element in the viewer will show the information that is connected to it, in the top of the right toolbar **(4)**.

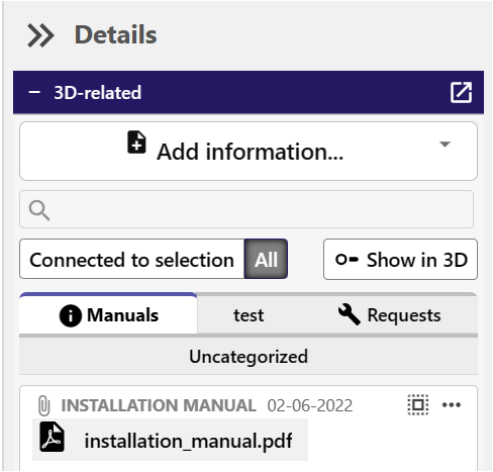


Figure 17: Added installation manual to an element

It is also possible to view all added 3D-related information on the complex details page, under the “3D-related” tab.

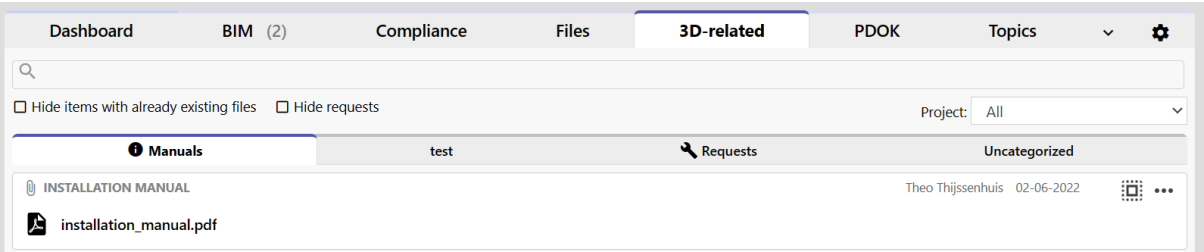


Figure 18: Viewing 3D-related information under the "3D-related tab"

4 Sales Viewer

IRP developed a module to facilitate the sale of (newly built) apartments in 3D. This allows potential customers to view the available apartments, their location, area, floor plan, pricing, etc. It is also possible to view a specific apartment in 3D.

Figure 19: Starting screen of the sales viewer

On the left side of the viewer, there is a panel with multiple tabs. In the bottom left of the panel dropdown menus with legal information regarding the complex

Figure 20: Legal information in the viewer

The initial tab shown, “Complex”, handles the enabling/disabling of specific floors.

Figure 21: A building with all floors enabled except for the fifth

The tab to the right “Homes”. Here there are numerous filters of interest to the user such as price, status and property type.

Figure 22: The Homes tab

The selected apartment will be shown in green, and additional information will be shown on the side (apartment type, number, floor, total surface area). Additionally, the floorplans can also be viewed.

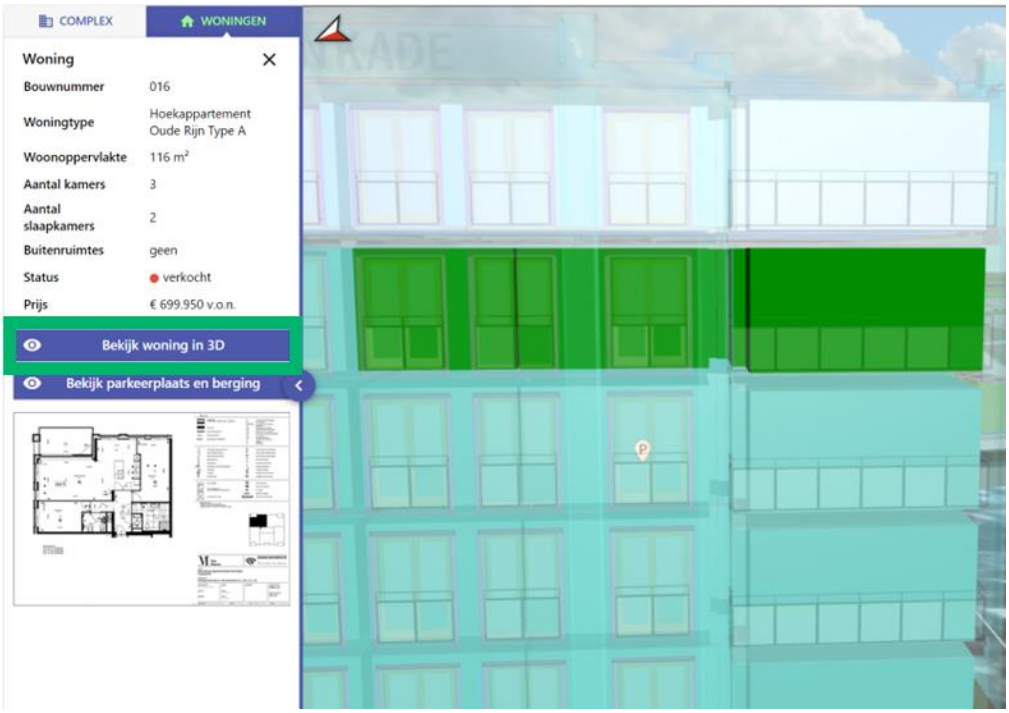


Figure 23: Viewing the details of a selected apartment

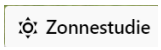
To get a better look at a specific apartment, press “View property in 3D” to view the apartment separately in the viewer.

Figure 24: Viewing a specific apartment in 3D

The sale viewer also has tools at the bottom of the screen.

Figure 25: The tools at the bottom of the screen

At the bottom right there are the “Show area map” and the “Explore” icon, which function identically to their 3D viewer counterpart. Next to it is the “Solar Study” icon shown with this icon.



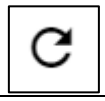
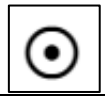
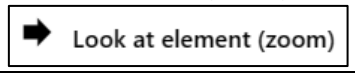
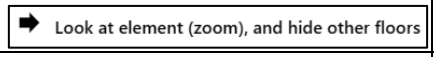
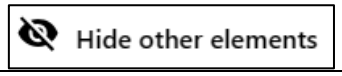
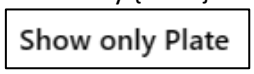
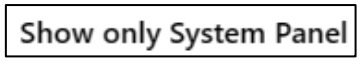
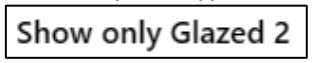
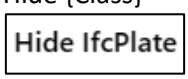
Pressing the icon activates the “Solar study” mode. This allows users to see the effect of sunlight on a complex during a specific time and date.

figure 26: A complex with “Solar study” enabled

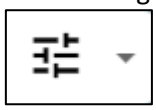
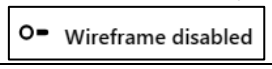
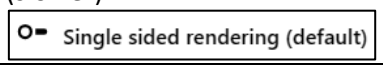
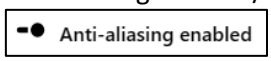
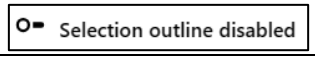
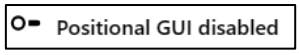
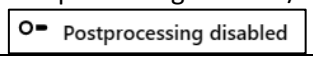
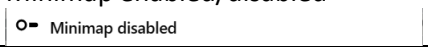
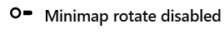
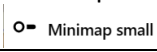
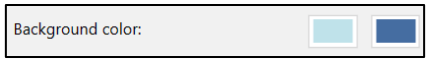
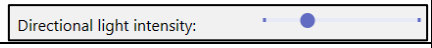
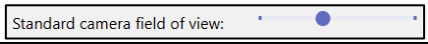
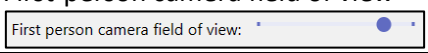
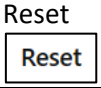
Additional information and a showcase of the feature can be found by watching the following (youtube.com) video.

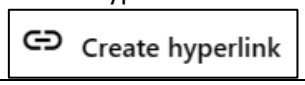
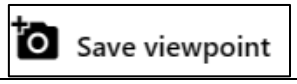
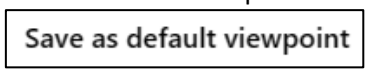
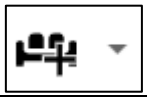
Appendix A: Overview of buttons (Building Management Viewer)

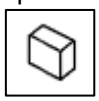
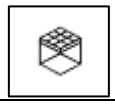
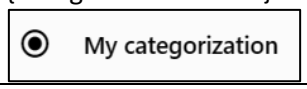
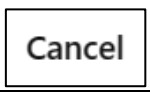
Main toolbar

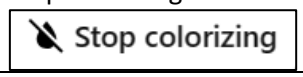
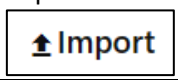
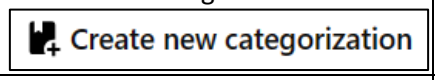
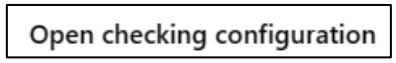
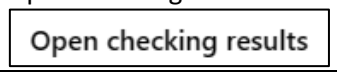
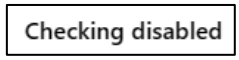
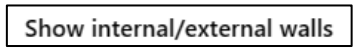
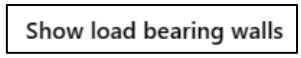
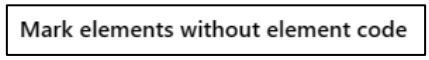
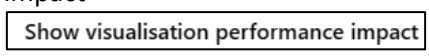
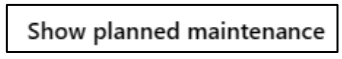
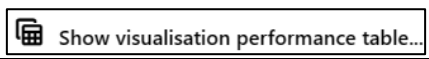
ID	Button name and icon (if applicable)	Description	Additional info
#1.001	Undo 	Cancels last action	Only clickable after performing an action (for example, when placing/removing an element)
#1.002	Redo 	Repeats last canceled action	Only clickable after undoing an action
#1.003	Reset 	Resets camera to initial viewpoint	
#1.004	Automatically center camera 	Camera centers on element that is selected	Camera does not center on an element that is already selected before this button is clicked on
#1.005	“Eye” icon 	Shows drop-down menu on mouseover (buttons #1.006 through #1.018)	
#1.006	Look at element (zoom) 	Camera looks at and zooms in on a selected element	Has no effect if clicked when no element is selected
#1.007	Look at element (zoom), and hide other floors 	Camera looks at and zooms in on a selected element, and hides floors above	See #1.006 notes
#1.008	Hide 	Hides selected element(s)	
#1.009	Hide other elements 	Hides all elements, except the selected element(s)	Hides all elements if nothing is selected
#1.010	Show only {Class} 	Only shows elements that belong to the same class as the selected element	Also works if multiple elements are selected, but only if the selected elements belong to the same class
#1.011	Show only {Type} 	Only shows elements that belong to the same type as the selected element	Also works if multiple elements are selected, but only if the selected elements belong to the same type
#1.012	Show only {Subtype} 	Only shows elements that belong to the same subtype as the selected element	Also works if multiple elements are selected, but only if the selected elements belong to the same subtype
#1.013	Hide {Class} 	Only hides elements that belong to the same class as the selected element	See #1.010 notes

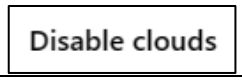
#1.014	Hide {Type} Hide System Panel	Only hides elements that belong to the same type as the selected element	See #1.011 notes
#1.015	Hide {Subtype} Hide Glazed 2	Only hides elements that belong to the same subtype as the selected element	See #1.012 notes
#1.016	Make element(s) transparent Make element(s) transparent	Makes selected element(s) transparent/opaque	
#1.017	Make other elements transparent Make other elements transparent	Makes all elements transparent, except for the selected element(s)	
#1.018	Show all Show all	Shows all elements	
#1.019	Perspective camera Perspective camera	Sets camera to “perspective” view mode. Shows drop-down menu on mouseover (button #1.019 through #1.027)	Button name is either “Perspective camera” or “Orthographic camera” depending on selected option.
#1.020	Orthographic camera Orthographic camera	Sets camera to “orthographic” view mode. Hovering over shows drop-down menu just as #1.019.	See #1.019 notes
#1.021	Top view Top view	Positions the camera above a building, looking down	
#1.022	Bottom view Bottom view	Positions the camera below a building, looking up	
#1.023	North view North view	Positions the camera to the north of a building, looking south	
#1.024	South view South view	Positions the camera to the south of a building, looking north	
#1.025	East view East view	Positions the camera to the east of a building, looking west	
#1.026	West view West view	Positions the camera to the west of a building, looking east	
#1.027	First-person camera First person camera	After placing the avatar icon somewhere on the screen, the position of the camera is set to wherever the avatar was placed, and the camera is set to first-person mode	First-person camera mode can be closed by clicking on “Stop”, pressing on the “Esc” key, or by clicking on the “Rotate” button (bottom right of the screen)
#1.028	Look from top (2D) 	Sets camera to 2D mode	2D mode can be closed by clicking on the “Perspective camera” button or pop-up at the bottom of the page

#1.029	View settings 	Shows drop-down menu on mouseover (buttons #1.030 through #1.047)	
#1.030	Wireframe enabled/disabled 	Toggles visibility of wireframe	
#1.031	Single sided rendering (default)/double sided rendering (slower) 	Toggles between single sided and double-sided rendering	
#1.032	Anti-aliasing enabled/disabled 	Toggles anti-aliasing	
#1.033	Selection outline enabled/disabled 	Toggles outline of selected elements	
#1.034	Positional GUI enabled/disabled 	Toggles visibility of positional GUI (containing data about the position, rotation, and scale of a building)	
#1.035	Postprocessing enabled/disabled 	Toggles postprocessing effects	
#1.036	Minimap enabled/disabled 	Toggles the minimap	
#1.037	Minimap rotate enabled/disabled 	Toggles minimap rotation	
#1.038	Minimap small/large 	Enlargens or reduces the size of the minimap	
#1.039	Minimap indicators enabled/disabled 	Toggles minimap indicators	
#1.040	Background color 	Sets background color, upper half and lower half can be set independent of each other	
#1.041	Ambient light intensity 	Sets intensity of ambient light	
#1.042	Sun intensity 	Sets intensity of sunlight	
#1.043	Directional light intensity 	Sets intensity of directional light	
#1.044	Standard camera field of view 	Sets field of view when using standard/third person camera	
#1.045	First-person camera field of view 	Sets field of view when using first-person camera	
#1.046	Reset 	Resets settings to default values	
#1.047	Save	Saves settings	Only clickable after at least one setting has been adjusted

	Save		
#1.048	“Photo” icon 	Shows drop-down menu on mouseover (buttons #1.049 through #1.055)	
#1.049	Create hyperlink 	Creates private/public shareable link	
#1.050	Save viewpoint 	Saves viewpoint (position and rotation of camera)	
#1.051	Save as default viewpoint 	Saves viewpoint (position and rotation of camera) and sets it as default	
#1.052	{Viewpoint name} 	Moves camera to the selected viewpoint	
#1.053	Edit viewpoint 	Opens menu to edit viewpoint properties	
#1.054	Delete 	Deletes a viewpoint	
#1.055	Reorder 	Adjusts the order of a viewpoint in the list when dragged up or down	
#1.056	“Furniture” icon 	Shows drop-down menu on mouseover (buttons #1.057 through #1.066)	
#1.057	Place new furniture/element 	Spawns a draft/model set to be placed inside or outside a building	If no draft/model set is selected, a pop-up appears asking the user to create new a set or select an existing one
#1.058	Create new set 	Creates a new draft/model set of furniture elements	
#1.059	{Draft/model set name} 	Toggles visibility of the draft/model set	
#1.060	Select this set 	Selects the specified set	
#1.061	Deselect this set 	Deselects the specified set	Button is only shown if a set has been selected (after clicking #1.060)
#1.062	Duplicate set 	Creates a copy of the specified set	
#1.063	Delete set	Deletes the specified set	

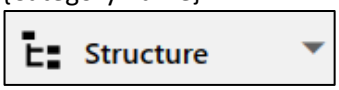
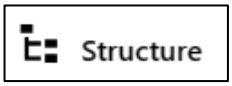
			
#1.064	Properties 	Accesses properties of the specified set	
#1.065	Merge these objects into current set 	Merges objects/elements of the specified set into the selected set	
#1.066	Save changes 	Saves changes made to the selected set	
#1.067	Spaces 	When enabled, buildings turn transparent and clicking certain areas of a building leads to a specific room being selected, instead of a single part	
#1.068	Hide ceilings/coverings 	Hides ceilings and turns it into a dense grid of points	
#1.069	Element categorizations 	Opens the menu for element categorizations, which can be used to visualize elements in a specific color, based on user defined rules (buttons #1.070 Through #1.079)	
#1.070	{Categorization name} 	Activates the respective categorization and applies it to the complex	
#1.071	Settings 	Shows the settings menu for the respective categorization	
#1.072	Duplicate 	Creates a copy of the respective categorization	
#1.073	Remove 	Opens a pop-up for confirmation of removal (buttons #1.074 and #1.075)	
#1.074	Remove categorization 	Removes the respective categorization	
#1.075	Cancel 	Cancels the removal of the respective categorization	
#1.076	Save 	Saves the respective categorization	Can only be clicked if the respective categorization is new, or if one or more settings of this categorization have been changed

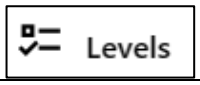
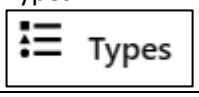
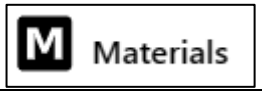
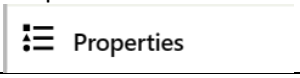
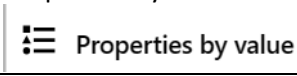
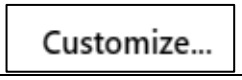
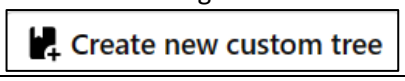
#1.077	Stop colorizing 	Deactivates any activated categorization	
#1.078	Import 	Opens a window for importing a categorization from a JSON file	
#1.079	Create new categorization 	Opens a menu for adding a new categorization	
#1.080	Model checking 	Shows drop-down menu on mouseover (buttons #1.081 and #1.082)	
#1.081	Open checking configuration 	Shows a pop-up menu to load or create a ruleset. Then, the user can perform checks on the 3D model	
#1.082	Open checking results 	Shows results for the last performed check	Only clickable if a check has been performed already
#1.083	Visual checking 	Shows drop-down menu on mouseover (buttons #1.084 through #1.090)	
#1.084	Checking disabled 	Turns off highlighting of certain areas of a building	
#1.085	Show internal/external walls 	Highlights internal/external walls of a building	
#1.086	Show load bearing walls 	Highlights load bearing walls of a building	
#1.087	Mark elements without element code 	Marks elements that do not have an element code	
#1.088	Show visualization performance impact 	Shows the degree to which the current visualization of a building model impacts performance of the system	
#1.089	Show planned maintenance 	Shows in what areas of a building maintenance is planned	
#1.090	Show visualization performance table 	Shows a table that specifies for each separate model what their impact is on the performance	
#1.091	Sectioning 	When enabled, the inside of a building can be viewed by dragging the mouse along the X-, Y- or Z-axis.	

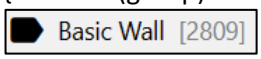
#1.092	Lock 	Locks the sections into place	Turning off sectioning automatically releases the lock
#1.093	Measure 	Enables the measuring tool, used to measure distances between two points	Clicking anywhere on the screen deletes the latest measurement
#1.094	Move or rotate object 	When enabled, opens a small menu for manipulating objects/elements (buttons #1.095 and #1.096)	
#1.095	Translate 	Allows moving of objects/elements	This is not the same button as #1.094, even though it has the same icon
#1.096	Rotate 	Allows rotating of objects/elements	
#1.097	Load/unload map 	Hides or shows area map under a building	
#1.098	Show clouds 	Shows drop-down menu on mouseover (buttons #1.099 through #1.101)	
#1.099	Disable clouds 	Hides clouds/skybox	
#1.100	{Clouds/skybox name} 	Shows selected clouds/skybox	
#1.101	Copyright 	Shows copyright information related to the specified clouds/skybox	
#1.102	Create request 	Shows pop-up menu to request a repair regarding the selected element	
#1.103	Fullscreen 	Toggles full screen mode	Located at the top right of the screen, separate from the main toolbar
#1.104	Separate floors 	Separates floors of a building, or moves them back together	Located under the main toolbar
	Show/hide minimap 	Shows/hides the minimap at the bottom left corner of the screen	Located at the bottom left of the screen

#1.105	Enlarge minimap 	Enlarges the size of the minimap	Appears next to the show/hide mini-map after the minimap has been enabled
#1.106	Reduce minimap 	Reduces the size of the minimap after it has been enlarged.	Replaces Enlarge minimap after the minimap has been enlarged
#1.107	Show area map 	Shows area map at the bottom right corner of the screen	Located at the bottom right of the screen
#1.108	Explore 	See #1.027 notes	
#1.109	Solar study 	Activates “solar study” mode. Allows users to see the effect of sunlight on a complex during a specific time and date	See #1.107 notes

Left sidebar

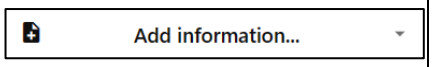
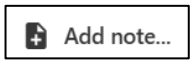
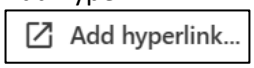
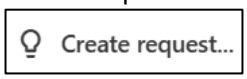
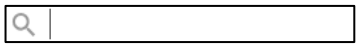
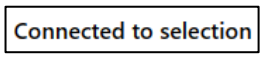
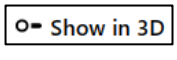
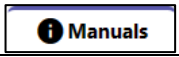
ID	Button name and icon (if applicable)	Description	Additional info
#2.01	Tree of building elements 	Expands the sidebar	This button only appears after the left sidebar has been retracted
#2.02	Retract 	Retracts the right sidebar	Gets replaced by 2.03 when the side bar is retracted
#2.03	Expand	Expands the right sidebar	
#2.04	“Search” icon & text field 	Filters elements of a building depending on search query	
#2.05	Advanced filter 	Opens the menu for filtering, which allows users to search for specific elements based on various parameters	
#2.06	{Category name} 	Shows a drop-menu containing categories to sort building elements on in the element tree (buttons #2.07 through #2.17)	
#2.07	Structure 	Shows a list of elements in a structural hierarchy	

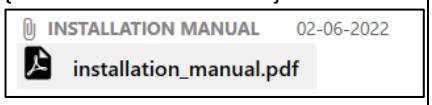
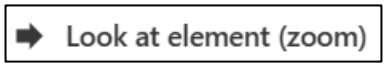
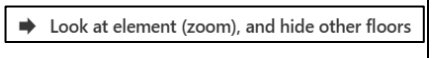
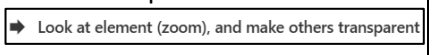
#2.08	Levels 	Shows a list of floors/levels	
#2.09	Types 	Shows a list of element types (for example wall, roof, door)	
#2.10	Classification 	Shows a list of classifications	
#2.11	Materials 	Shows a list of materials	
#2.12	Zones 	Shows a list of zones (which could consist of a group of spaces, for example)	
#2.13	Groups 	Shows a list of groups (for example a set of windows including frame)	
#2.14	Spaces 	Shows a list of spaces/rooms	
#2.15	Properties 	Shows a list of properties	
#2.16	Properties by value 	Shows a list of properties by value	
#2.17	Customize… 	Opens the menu for adding custom categories/trees (buttons #2.18 through #2.23)	
#2.18	Settings 	Shows the settings menu for the respective custom tree	
#2.19	Duplicate 	Creates a copy of the respective custom tree	
#2.20	Remove 	Removes the respective custom tree	After clicking this button, a confirmation pop-up is shown before it is removed
#2.21	Save 	Saves the respective custom tree	Can only be clicked if the respective tree is new, or if one or more settings of this tree have been changed
#2.22	Import 	Opens a window for importing a tree from a JSON file	
#2.23	Create new categorization 	Opens a menu for adding a new tree	

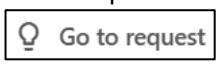
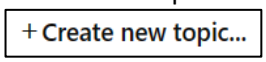
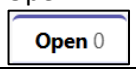
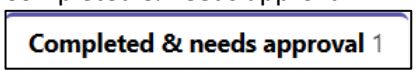
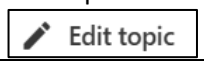
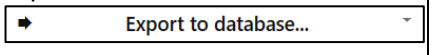
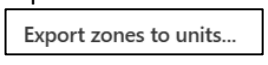
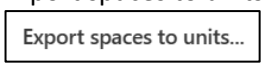
#2.24	Automatically select children 	Toggles whether all children of an element are also selected when clicking on an element (group) in the tree	
#2.25	Select all 	Selects all elements in the tree	
#2.26	Deselect all 	Deselects all elements in the tree	
#2.27	Scroll to selected element 	If an element in the list is selected, clicking this button will cause a list of all sub-elements (one level down in the hierarchy) to be expanded	Only has effect when something has been selected (when an element or group has been clicked on)
#2.28	Collapse all 	Retracts all lists, so that only elements in the top level of the hierarchy are shown	Has no effect if lists of sub-elements are retracted already
#2.29	{Element (group) name} 	Clicking an element (group) name highlights the selected element or group on the 3D model	There is an icon next to each element, depicting the type of the element (group)
#2.30	"Arrowhead" icon 	Retracts or expands an element group in the tree	
#2.31	Check box 	Clicking a checkbox next to an element name, will show/hide the relevant element in the 3D model	

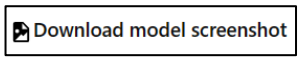
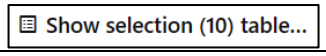
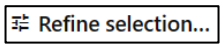
Right sidebar

ID	Button name and icon (if applicable)	Description	Additional info
#3.01	Properties and attached documentation 	Expands the sidebar	This button only appears after the right sidebar has been retracted
#3.02	Retract 	Retracts the right sidebar	Gets replaced by #3.03 when the sidebar is retracted
#3.03	Expand 	Expands the right sidebar	
#3.04	3D-related 	Expands or retracts 3D-related data	

#3.05	Topics 	Expands or retracts data on several topics (for example requests)	
#3.06	Add information 	Shows a drop-down menu on click (buttons #3.07 through #3.11)	
#3.07	Add note 	Adds a note to selected element(s) or to a building/complex if nothing is selected	
#3.08	Add hyperlink 	Adds a hyperlink, connected to selected element(s) or to a building/complex if nothing is selected	
#3.09	Add files 	Adds file(s) to selected element(s) or to a building/complex if nothing is selected	
#3.10	Create request 	Creates a request for selected element(s) or a building/complex if nothing is selected	
#3.11	Create group 	Creates a group consisting of selected element(s) or a building/complex if nothing is selected	
#3.12	“Search” icon and text field 	Filters information on a building depending on search query	
#3.13	Connected to selection 	Shows only information related to selected element(s)	Clicking on the button deselects “All” (button #3.14)
#3.14	All 	Shows all information on building	Clicking on the button deselects “Connected to selection” (button #3.13)
#3.15	Show in 3D 	Shows pinpoint icons on 3D model based on elements that contain additional information, like requests	
#3.16	{Document category} 	Shows all documentation in the chosen category	
#3.17	“Move to first page” icon 	Shows the first page of documents	Only visible when there is more than a certain amount of documentation in a certain category
#3.18	“Back arrow” icon 	Moves back one page	See #3.17 notes
#3.19	“Page number” text field 	Shows page that is specified in the text field	See #3.17 notes

#3.20	“Forward arrow” icon 	Goes forward one page	See #3.17 notes
#3.21	“Move to last page” icon 	Shows the last page of documents	See #3.17 notes
#3.22	{Documentation name} 	Shows details on a specific piece of documentation (title, date of creation, connected element(s))	
#3.23	Select elements 	Selects the elements that correspond with the respective documentation	
#3.24	More options 	Opens a drop-down menu with several options regarding a specific piece of documentation (buttons #3.25 through #3.34)	The options that are visible may vary based on the category of documentation
#3.25	Details 	Shows details on a specific piece of documentation, just as #3.22	
#3.26	Edit 	Opens a menu for editing values related to a specific piece of documentation	
#3.27	Duplicate 	Copies documentation with the added options to edit certain values	
#3.28	Show viewpoint 	Shows viewpoint related to the element that the document is connected to	
#3.29	Select elements 	Selects elements related to the respective documentation, just as #3.23	
#3.30	Look at element (zoom) 	Similar to #1.006, but instead of looking at the selected element in the 3D view, the camera looks at the element that the document is connected to	
#3.31	Look at element (zoom), and hide other floors 	Similar to #1.007, but instead of looking at the selected element in the 3D view, the camera looks at the element that the document is connected to	
#3.32	Look at element (zoom), and make others transparent 	Similar to #1.017, but instead of looking at the selected element in the 3D view, the camera looks at the element that the document is connected to	

#3.33	Go to request 	Opens the “Requests” page under the “Technical” tab outside of the 3D viewer, and shows a specific request in more detail	
#3.34	Delete 	Deletes a specific piece of documentation	
#3.35	Create new topic 	Creates a topic with a certain priority level for a building/complex	
#3.36	Open 	Shows topics that have not yet been taken care of	
#3.37	Completed & needs approval 	Shows topics that are completed but still require approval	
#3.38	Closed 	Shows topics that are completed and approved	
#3.39	{Topic name} 	Shows details about specific topic	
#3.40	Open viewpoint 	Opens viewpoint that belongs to the created topic	
#3.41	Pick up topic 	Assigns the topic to the current user	
#3.42	Approve and close topic 	Moves topic to the “Closed” category and removes it from “Completed & needs approval”	
#3.43	Black “Triple dot” icon 	Shows a drop-down menu containing options to edit or archive a specific topic (buttons #3.44 and #3.45)	
#3.44	Edit topic 	Shows menu to adjust data related to a specific topic	
#3.45	Archive topic 	Archives/deletes a specific topic	
#3.46	Export to database 	Shows a drop-down menu on click (buttons #3.47 and #3.48)	
#3.47	Export zones to units 	Exports zones to the “Units” tab outside of the 3D viewer, under “Administration”	
#3.48	Export spaces to units 	Exports spaces to the “Units” tab outside of the 3D viewer, under “Administration”	

#3.49	Download model screenshot 	Takes a screenshot and downloads it to the user's computer	
#3.50	Show selection {amount} table 	Shows a table containing data about the selected element(s)	Only appears if at least one element has been selected
#3.51	Refine selection 	Opens a menu to filter the selected elements on specific types, classes, or levels	Only appears if more than one element has been selected
#3.52	Temporarily modify color display 	Changes color of a specific element in the 3D model	This button can be found under the "Materials" and "Surface styles" properties, when an element has been selected

End of manual

For other inquiries, please contact IRP at contact@irp.nl