



Software for Architecture,  
Engineering and Construction

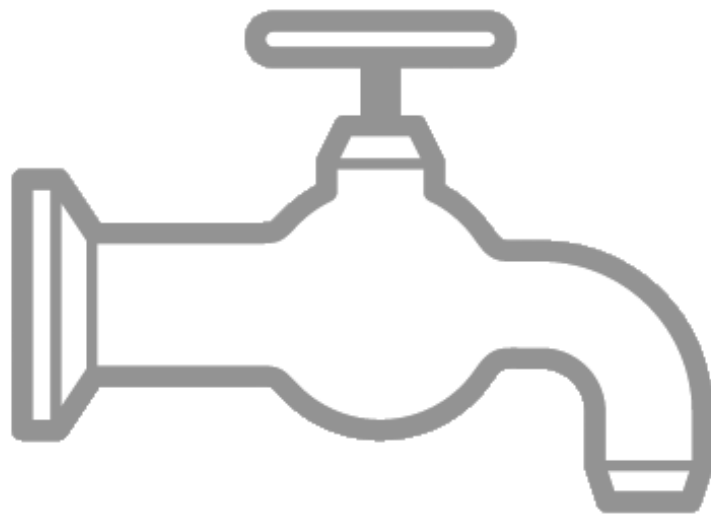


# CYPEPLUMBING Water Systems

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**User's manual**

*Design of water supply installations*





# Contents

<b>1</b>	<b>Introduction .....</b>	<b>3</b>
<b>2</b>	<b>Initial Setup and Starting a Project .....</b>	<b>3</b>
<b>3</b>	<b>CYPEPLUMBING Water Systems Interface.....</b>	<b>4</b>
<b>4</b>	<b>Design Area.....</b>	<b>6</b>
<b>5</b>	<b>Floor Plan Navigation .....</b>	<b>7</b>
<b>6</b>	<b>Design and Installation Menu.....</b>	<b>8</b>
6.1	Project Section .....	8
6.2	Water Supply Section.....	10
6.3	Hot Water Production Section.....	12
6.4	Consumptions Section.....	13
6.5	Pipes Section.....	15
6.6	Label Section .....	16
6.7	Edit Section.....	18
6.8	Calculation Section.....	23
6.9	3D View Section .....	26
6.10	BIM Model Section .....	27
6.11	Auxiliary Toolbar.....	28
<b>7</b>	<b>3D BIM Model Viewer.....</b>	<b>30</b>
<b>8</b>	<b>Results - Reports and Drawings .....</b>	<b>31</b>
8.1	Reports.....	31
8.2	Drawings.....	31
8.3	Export.....	32
<b>9</b>	<b>Conclusion and Contact.....</b>	<b>32</b>

# 1 Introduction

Thank you for choosing CYPE and CYPEPLUMBING Water Systems. CYPEPLUMBING Water Systems is a program created for the design and analysis of potable water supply installations. This system is integrated in the Open BIM workflow via the BIMserver.center using the IFC standard. CYPEPLUMBING Water Systems can perform a partial or complete design installation of any building type. In this program, there are predefined equipment configurations as well as the option for users to create their own custom equipment configurations. Users can design a water system installation in a 2D workspace with 3D viewing; conduct automated calculations and checks based off predefined or custom installation configurations; graphically analyze the results; and obtain various drawings, diagrams, and result reports.

Throughout the remainder of the manual, more in-depth tutorial videos and descriptions of navigating the CYPEPLUMBING Water Systems can be found.

# 2 Initial Setup and Starting a Project

This section of the manual is to show how to initially start a project and begin using CYPEPLUMBING Water Systems. Begin by having CYPEPLUMBING Water Systems downloaded, a BIMserver.center account, and an accessible IFC file model.

The first step is to open CYPEPLUMBING Water Systems. Next, connect to BIMserver.center on the far right side and sign in if needed by following the prompted steps. Once signed in, a new project can be created and an IFC file can be imported. To continue working on a file, select **File Manager** under File. Otherwise, to start a new project, select **New...** under File, choose where the file will be saved under Browse, and give the file a name and description if desired. After continuing, a screen will appear regarding BIMserver.center. Here is where a new project within BIMserver.center can be created by selecting **Create new project** or a project can be continued by clicking on **Select project**. After the desired project is selected or created, the next screens that appear are import settings and installation code parameters by country that can be adjusted as needed. Following the completion of these screens, the IFC file should appear in CYPEPLUMBING Water Systems and editing can begin.

It is encouraged to view this tutorial video on initial setup and starting a project if there are still any questions or a visual guide is needed.



[INITIAL SETUP AND STARTING A PROJECT \(2 MINUTES AND 9 SECONDS\)](#)

### 3 CYPEPLUMBING Water Systems Interface

The CYPEPLUMBING Water Systems interface comprises of four main areas: The *Design Area*, *Floor Plan Navigation*, *Design and Installation Menu*, and *3D BIM Model Viewer*. Pictures of each of the main areas, outlined in red, are below. All four sections are explained in greater detail throughout the remainder of this manual.

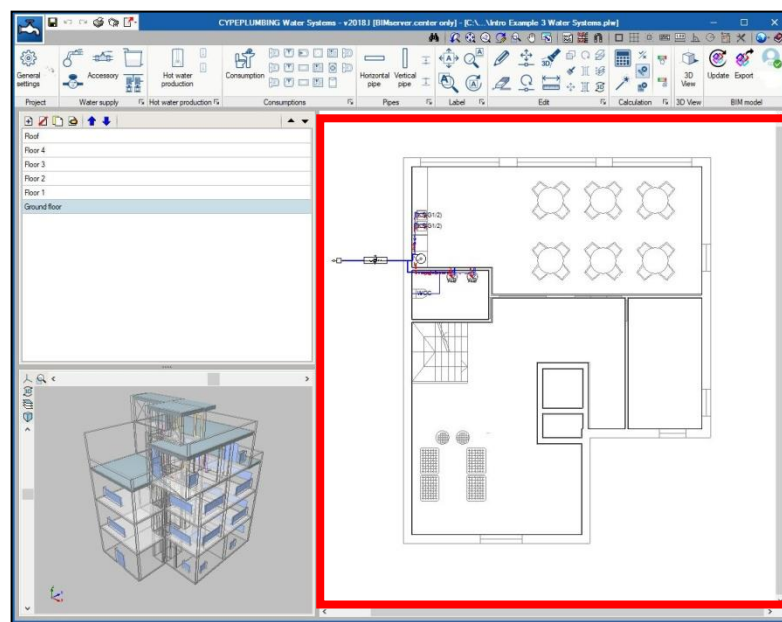


Figure 1 – Design Area

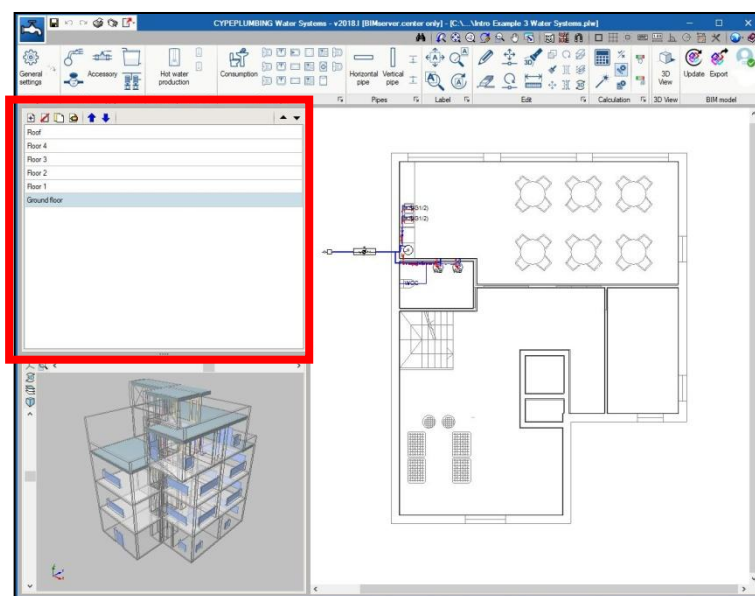


Figure 2 – Floor Plan Navigation

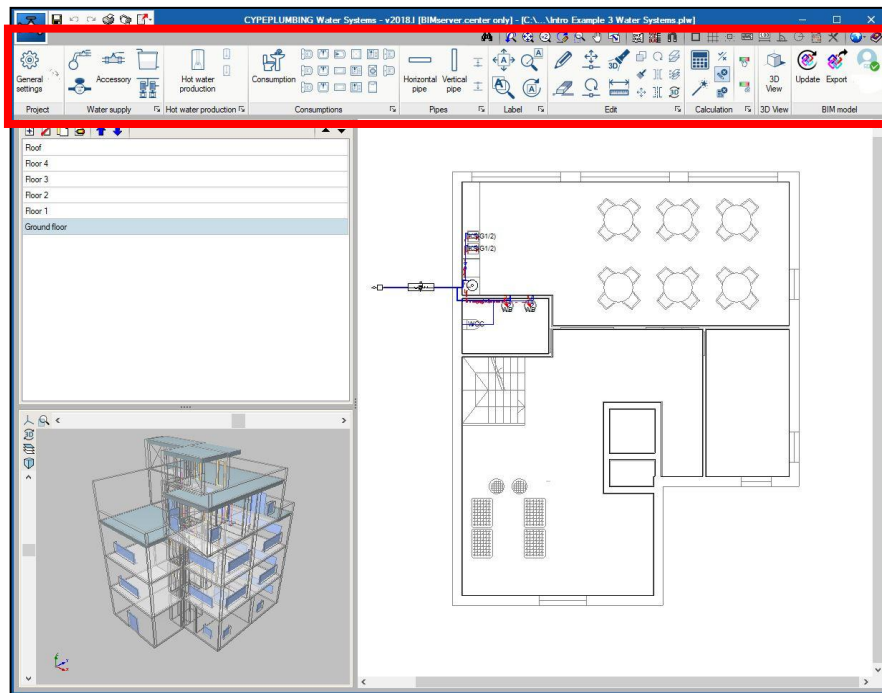


Figure 3 – Design and Installation Menu

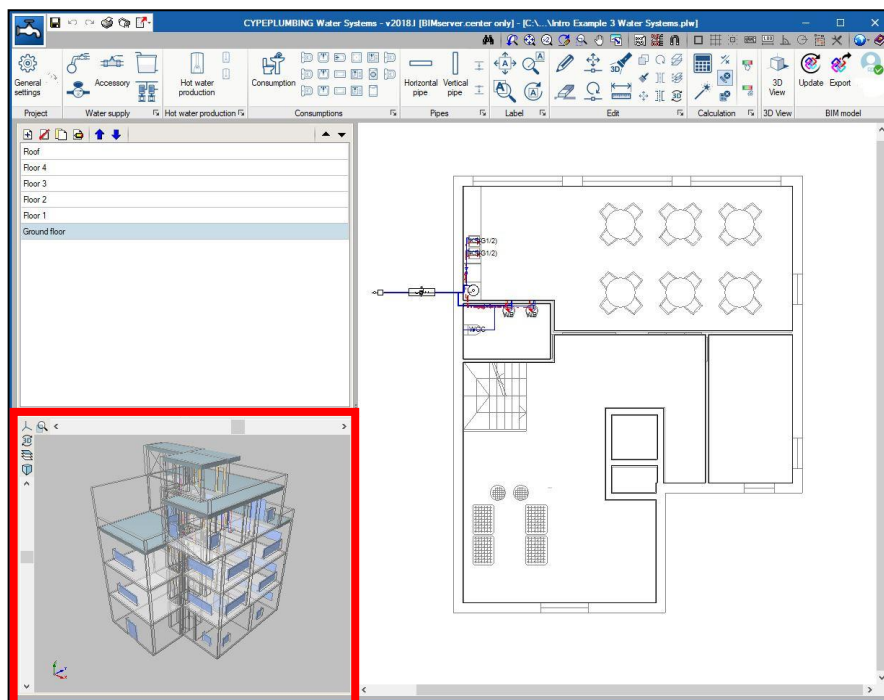


Figure 4 – 3D BIM Model Viewer

## 4 Design Area

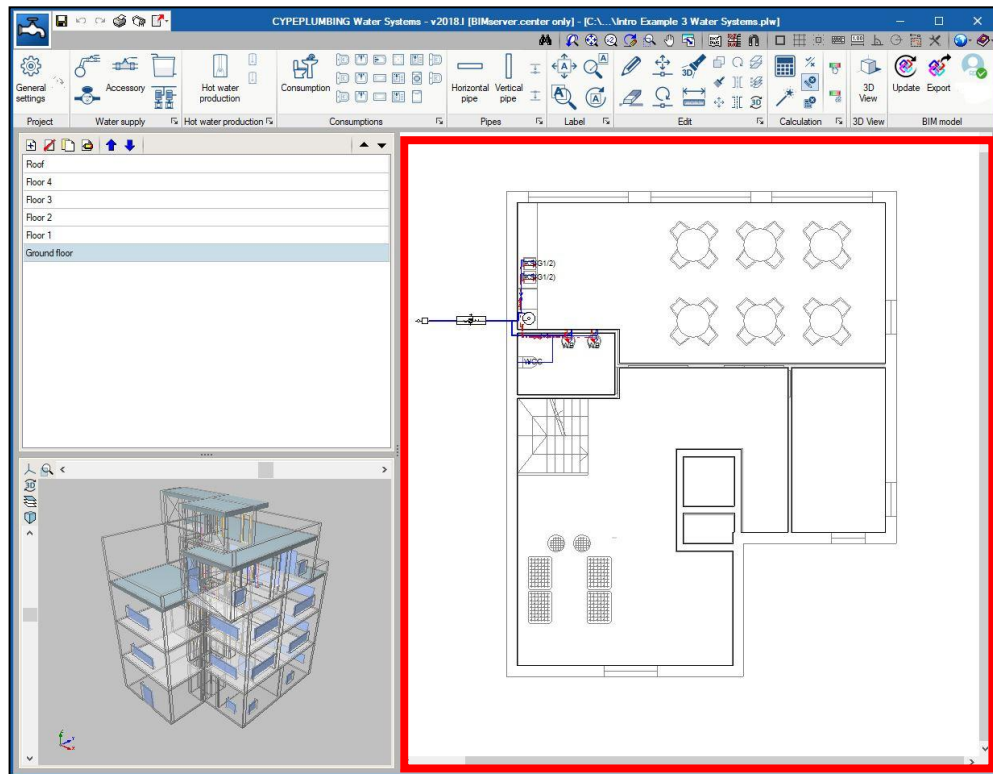


Figure 5 – Design Area

The Design Area of the interface is the central area (outlined in red above) in the CYPEPLUMBING Water Systems. This section is the location for the design and editing of the model. The design of the water system installation is done in 2D through this area of the interface. The other three interfaces of the Water Systems software are used to adjust and view aspects of this area. The *Design and Installation* Menu is to make design changes and edits, the *Floor Plan Navigation* is to adjust floor plans for the *Design Area*, and the *3D BIM Model Viewer* is to view a mockup of the design.

When working in the *Design Area*, there are several general navigation techniques. To select icons and other buttons within this software, a left click is used. A left click is also used to select any items within the *Design Area*. A right click, however, is used to exit a current task or to access the popup window if there are settings available for the icon in use. The scroll wheel of the mouse moves the view in or out. Lastly, the center scroll wheel pans the *Design Area*'s window when pressed and the mouse is moved simultaneously.

A brief tutorial video on basic navigation techniques within the *Design Area* can be viewed in the link below.



[DESIGN AREA \(55 SECONDS\)](#)

## 5 Floor Plan Navigation

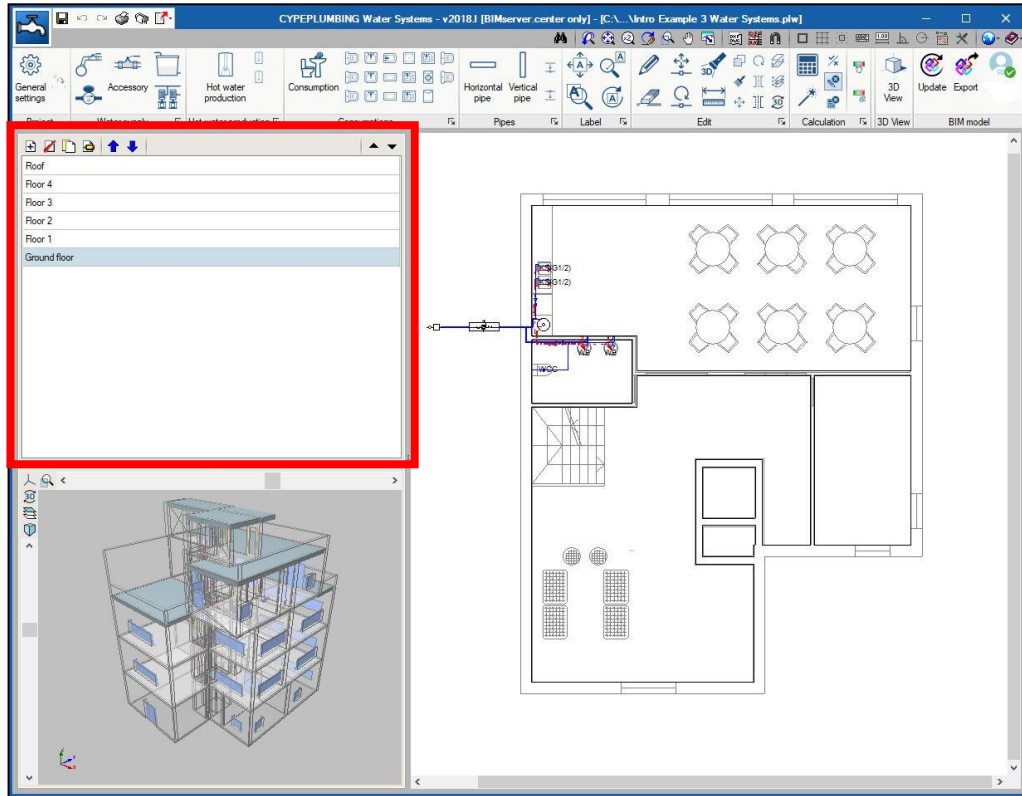


Figure 6 – Floor Plan Navigation

The Floor Plan Navigation area of the interface is the middle left toolbar (outlined in red above) in the CYPEPLUMBING Water Systems. This section serves as the location for information and navigation through floor plans, individual floor levels, and the related settings. In this area of the interface, it is possible to move between floors, rearrange the order of floor plans, add or delete floor plans, duplicate floor plans, and lastly edit the floor plans such as the elevation and the height of installation. The video link below provides a brief walkthrough on this section and how it pertains to the interface and the model.



[FLOOR PLAN NAVIGATION \(40 SECONDS\)](#)

## 6 Design and Installation Menu

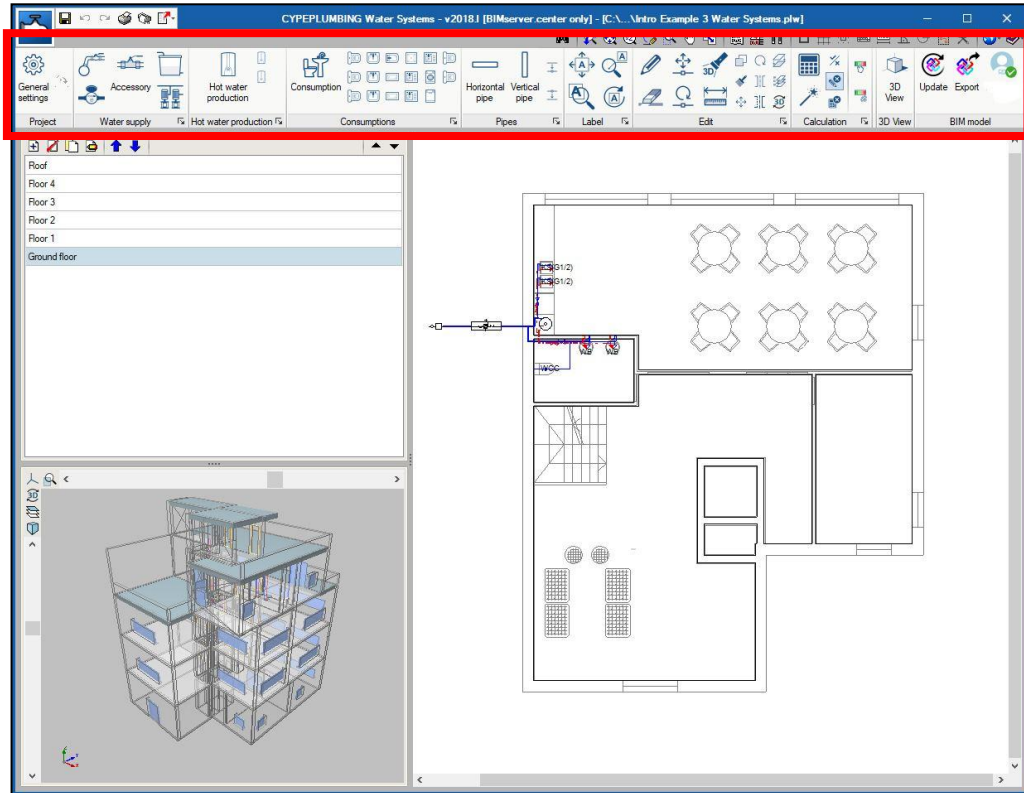


Figure 7 – Design and Installation Menu

The Design and Installation Menu is the top toolbar (outlined in red above) in the CYPEPLUMBING Water Systems. This toolbar serves as the location for most of the necessary design tools, settings, and calculations. This menu is utilized in most actions when designing and analyzing a water system installation.

The *Design and Installation* Menu is divided into multiple sections. These sections are: *Project*, *Water Supply*, *Hot Water Production*, *Consumptions*, *Pipes*, *Label*, *Edit*, *Calculation*, *3D View*, *BIM Model*, and lastly there is an *Auxiliary* Toolbar. Detailed descriptions and tutorial videos on each of these sections can be viewed below.

### 6.1 Project Section

The *Project Section* of the *Design and Installation* Menu is the location where most initial installation design options can be configured. In the *General Settings* tab, a popup appears on screen that adjusts analysis and drawing options, material and equipment selection, design and checks to be carried out, and installation codes by country. It is recommended



to go into the *General Settings* and go through each settings box to confirm the defined options are the desired options before beginning the project. A tutorial video has been provided below which provides a more in-depth explanation of the *Project* Section and the *General Settings* tab.



Figure 8 – Project Section

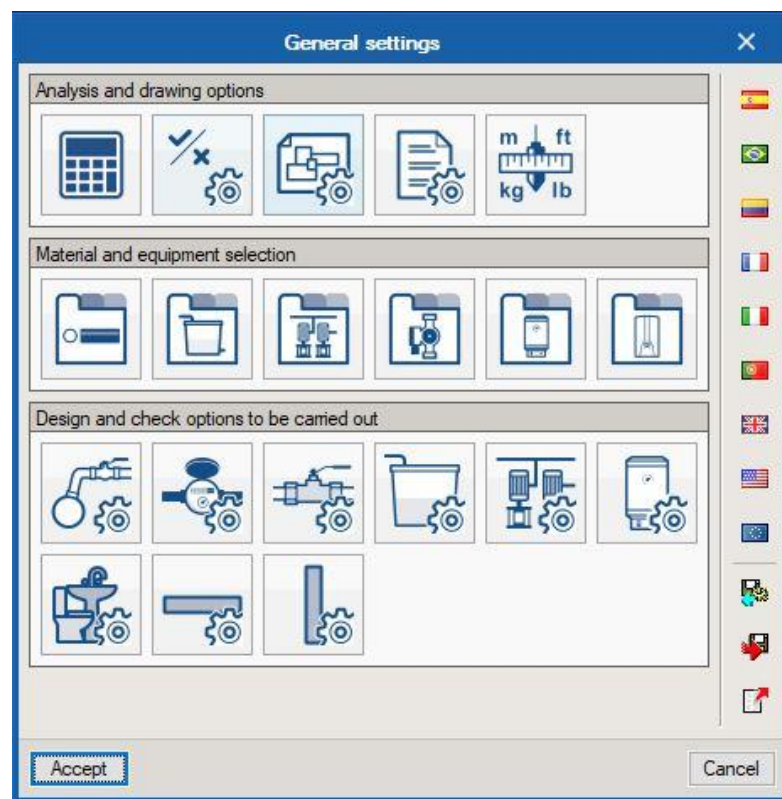


Figure 9 – Project Settings General Settings



[PROJECT SECTION \(3 MINUTES AND 43 SECONDS\)](#)

## 6.2 Water Supply Section

The *Water Supply* Section is the location within the toolbar to access all water supply equipment and to install, design, and adjust its settings. In this section, design additions and setting adjustments for supply connection points, meters, accessories, tanks, and pump systems are made. A tutorial video explaining the features and icons of this section can be viewed by following the link below.



Figure 10 – Water Supply Section



[WATER SUPPLY SECTION \(5 MINUTES AND 40 SECONDS\)](#)

### ***Supply Connection Point***

A supply connection point can be added to the design by clicking on the icon, verifying the supply information, and left clicking in the design to place the equipment. The information that is able to be viewed when selecting the icon is the general data of the equipment, any checks to be verified, the 3D installation arrangement, and the label. When placing the equipment in the design, a toolbar will appear on screen with various arrows. Select the appropriate arrow to rotate the equipment to the proper orientation to be placed in the installation.



Figure 11 – Supply Connection Point Icon

### ***Meter***

A meter can be added to the design by clicking on the icon, verifying the meter information, and left clicking in the design to place the equipment. The information that is able to be viewed when selecting the icon is the general data of the equipment, the meter information, and the label. When placing the equipment in the design, a toolbar will appear on screen with various arrows. Select the appropriate arrow to rotate the equipment to the proper orientation to be placed in the installation.



Figure 12 – Meter Icon

## ***Accessory***

An accessory, such as a valve, can be added to the design by clicking on the icon, verifying the accessory information, and left clicking in the design to place the equipment. The information that is able to be viewed when selecting the icon is the type of accessory, the general data of the equipment, the 3D installation arrangement, and the label. When placing the equipment in the design, a toolbar will appear on screen with various arrows. Select the appropriate arrow to rotate the equipment to the proper orientation to be placed in the installation.



Figure 13 - Accessory Icon

## ***Tank***

A tank can be added to the design by clicking on the icon, verifying the tank information, and left clicking in the design to place the equipment. The information that is able to be viewed when selecting the icon is the general data of the equipment, any checks to be verified, the 3D installation arrangement, and the label. When placing the equipment in the design, a toolbar will appear on screen with various arrows. Select the appropriate arrow to rotate the equipment to the proper orientation to be placed in the installation.



Figure 14 - Tank Icon

## ***Pump System***

A pump system can be added to the design by clicking on the icon, verifying the system information, and left clicking in the design to place the equipment. The information that is able to be viewed when selecting the icon is the type of pump system, the general data of the equipment, the 3D installation arrangement, any checks to be verified, and the label. When placing the equipment in the design, a toolbar will appear on screen with various arrows. Select the appropriate arrow to rotate the equipment to the proper orientation to be placed in the installation.



Figure 15 - Pump System Icon

## Drop Down Tab

In the *Water Supply* Section, there is a drop down tab in the bottom right corner of the section. When selecting the tab, a window appears allowing adjustments to any water supply equipment settings as well as additions to any custom water supply equipment that is not currently preloaded into CYPEPLUMBING Water Systems. It is recommended to view the tutorial for this section for a more detailed, visual explanation.



Figure 16 – Drop Down Tab

## 6.3 Hot Water Production Section

In the *Hot Water Production* Section, the installation, design, and setting adjustment for the hot water production equipment can be completed. Hot water production units and setting adjustments of those units are done from this section. A video explaining the features and icons of this section can be viewed from the link below.

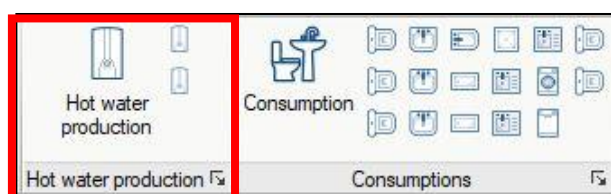


Figure 17 – Hot Water Production Section



[HOT WATER PRODUCTION SECTION \(2 MINUTES AND 27 SECONDS\)](#)

### Hot Water Production

This icon allows for the addition of a hot water production unit to the design. The type of water heater, the specifications and general settings, and viewing of any checks that will be performed are chosen from this icon. To add a unit, select the icon, verify the type of unit and settings, and left click in the design the desired location to place the equipment. When placing the equipment in the design, a toolbar will appear on screen with various arrows. Select the appropriate arrow to rotate the equipment to the proper orientation to be placed in the installation.



Figure 18 – Hot Water Production Icon

## Water Heater and Instant Water Heater Shortcut

These next two icons act as shortcuts for adding hot water production units to the design. Place the cursor over the icon to view which shortcut is available. Simply click on the icon to add the selected unit to the design. These two icons do not display any checks to be consulted or any 3D installation arrangement options. To verify or change those, the installation of these units must be done through the main **Hot Water Production** icon.



Figure 19 – Hot Water Production Shortcut Icons

## Drop Down Tab

By selecting the drop down tab from the bottom right corner of the section, a window appears allowing for the adjustment to any hot water production equipment as well as the addition of any custom hot water production equipment that is not currently preloaded into CYPEPLUMBING Water Systems. It is recommended to view the tutorial for this section for a more detailed, visual explanation.



Figure 20 – Drop Down Tab

## 6.4 Consumptions Section

The *Consumptions* Section is the location of the installation, design, and configuration for all water consumption equipment. There is a main consumption icon to access all consumption units as well as many shortcut icons to specific units. A video explaining the features and icons of this section can be viewed from the link below.

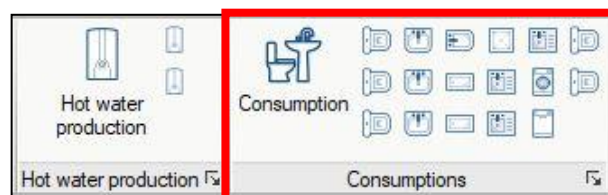


Figure 21 – Consumptions Section



[CONSUMPTIONS SECTION \(2 MINUTES AND 4 SECONDS\)](#)

## Consumption

The main consumption icon is selected to choose the type of consumption, adjust any general data, and verify any checks that will be performed. To add a unit, select the icon, verify the type of unit and settings, and left click in the design the desired location to place the equipment. When placing the equipment in the design, a toolbar will appear on screen with various arrows. Select the appropriate arrow to rotate the equipment to the proper orientation to be placed in the installation.



Figure 22 – Consumption Icon

## Consumption Equipment Shortcut

The smaller icons to the right in this section correspond to shortcuts for select consumption equipment. These icons bypass any popup windows and do not display any general data or checks. Rather, after selecting the icon, the equipment is placed right into the design. If any changes or information about the consumption unit needs to be viewed, click on the large **Consumption** icon instead.

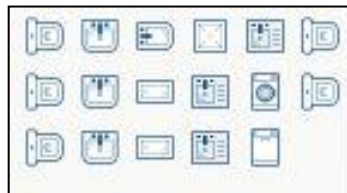


Figure 23 – Consumption Equipment Shortcut Icons

## Drop Down Tab

By selecting the drop down tab from the bottom right corner of the section, a window appears allowing for the adjustment to any consumption equipment as well as the addition of any custom consumption equipment that is not currently preloaded into CYPEPLUMBING Water Systems. It is recommended to view the tutorial for this section for a more detailed, visual explanation.

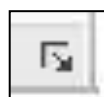


Figure 24 – Drop Down Tab

## 6.5 Pipes Section

To the right of the *Consumptions* is the *Pipes* Section of the *Design* and *Installation* Menu. The *Pipes* Section is where horizontal and vertical pipes can be installed and their settings altered if needed. Also in this section is where an insertion point can be added or pipes can be joined. A video explaining the features and icons of this section can be viewed from the link below.

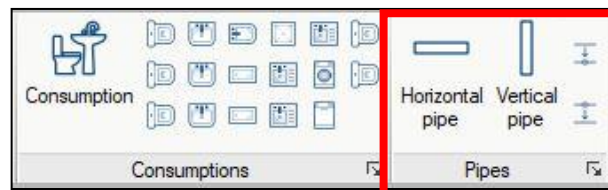


Figure 25 - Pipes Section



[PIPES SECTION \(4 MINUTES AND 9 SECONDS\)](#)

### ***Horizontal Pipe***

Select this icon to add a horizontal pipe to the design. A popup window will appear where the type of pipe can be configured. This configuration allows for the selection of whether the pipe carries hot or cold water, viewing of the general data of the pipe, establishing the 3D configuration, and viewing any checks that will be made by the software. After accepting the conditions in this window, the pipe can be added to the installation by left clicking.

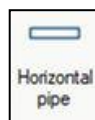


Figure 26 - Horizontal Pipe Icon

### ***Vertical Pipe***

Select this icon to add a vertical pipe to the design. A popup window will appear where the type of pipe can be configured. This configuration allows for the selection of whether the pipe carries hot or cold water, viewing of the general data of the pipe, establishing the 3D configuration, and viewing any checks that will be made by the software. After accepting the conditions in this window, the pipe can be added to the installation by left clicking.

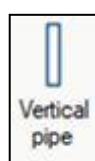


Figure 27 - Vertical Pipe Icon

## Insert Point

The **Insert Point** icon, located in the top right corner of this section, is selected when an existing pipe wants to be split into sections. New pipes can also be branched from this new insertion point. To insert a point, select the icon, click on the exact location to place the point within the desired pipe, move the cursor outside of the pipe to confirm the location, and click a second time on the desired location to place the insertion point.



Figure 28 – Insert Point Icon

## Join Elements

The **Join Elements** icon, located in the lower right corner of this section, is selected when two separate, yet touching, pipes are to be joined into a single pipe. Simply select the icon and click on the two pipes to be joined.



Figure 29 – Join Elements Icon

## Drop Down Tab

By selecting the drop down tab from the bottom right corner of the section, a window appears to adjust any piping equipment as well as add any custom piping equipment that is not currently preloaded into CYPEPLUMBING Water Systems. It is recommended to view the tutorial for this section for a more detailed, visual explanation.



Figure 30 – Drop Down Tab

## 6.6 Label Section

Changes and modifications to labels within the installation can be done by utilizing the tools in the *Label* Section of the *Design* and *Installation* Menu. A video explaining the features and icons of this section can be viewed from the link below.



Figure 31 – Label Section



[LABEL SECTION \(1 MINUTE AND 46 SECONDS\)](#)



## Move Tag

In the top left of the *Label* Section is the **Move Tag** icon. This icon moves the current installation labels to a desired location when selected. When selecting this icon, all available labels appear with a box in them. Left clicking on the available boxes moves the label to the desired location.



Figure 32 – Move Tag Icon

## Show/Hide Tag

In the bottom left of the *Label* Section is the **Show/Hide Tag** icon. This icon, as the name suggests, hides or shows selected labels in the model. After pressing this icon to hide or show labels, labels can be selected individually by left clicking on the labels or multiple can be selected at once by holding a left click to drag a box around multiple labels.



Figure 33 – Show/Hide Tag Icon

## Place or Remove the Reference Line of the Tag

In the top right is the **Place or Remove the Reference Line of the Tag** icon. When selected, this icon adds or removes a reference line to a label. If a reference line is added and the label is to be moved as well, the reference line will automatically adjust to any label movement. To add a reference line, select the icon, and left click on any present label. Sometimes the **Move Tag** icon needs to be utilized after adding a reference line to better view the line.



Figure 34 – Place or Remove the Reference Line of the Tag Icon

## Rotate Tag

In the bottom right is the **Rotate Tag** icon. This tool rotates a desired label a specified amount in the model when selected. To use this tool, select the icon, left click on an available label, and lastly rotate the label to the specified position.



Figure 35 – Rotate Tag Icon

## Drop Down Tab

By selecting the drop down tab from the bottom right corner of the section, a window appears to adjust labeling settings such as what appears on the screen and how installation equipment is labeled. It is recommended to view the tutorial for this section for a more detailed, visual explanation.



Figure 36 – Drop Down Tab

## 6.7 Edit Section

The *Edit Section* of the *Design and Installation* Menu is where to adjust existing components of the water system installation. A brief explanation of each icon is explained, but it is recommended to view the tutorial video below for a more in-depth explanation and a visual example of each.



Figure 37 – Edit Section



[EDIT SECTION \(7 MINUTES AND 26 SECONDS\)](#)

### *Edit*

The first icon is the **Edit** icon in the top left. This icon, when selected, allows for the viewing and editing of the properties of any selected element within the work area. After selecting the icon, left click on any element to view and edit its properties.



Figure 38 – Edit Icon

### *Delete*

Below that icon in the toolbar is the **Delete** icon. When selected, this tool deletes any selected element within the work area, with the exception of labels. To delete elements

from the design, select the icon, left click on the elements to be deleted, and right click once all desired elements have been selected and highlighted.



Figure 39 – Delete Icon

## ***Move***

To the right of the **Edit** icon is the **Move** icon. This tool moves any individual selected item in the work area with the exception of labels. To move an item, select the icon and move any element by left clicking on it. You can move elements at their connection points or at a place within the element.



Figure 40 – Move Icon

## ***Rotate***

Below the **Move** icon is the **Rotate** icon. This icon rotates any selected element a specified amount, with the exception of pipes and labels. To rotate an element, select the icon, left click on the element to rotate, move the cursor to the desired rotation, and left click to complete the rotation.



Figure 41 – Rotate Icon

## ***Illuminate 3D***

The **Illuminate 3D** icon is a tool that can be used to highlight one or more water system installation elements in the 3D viewer on the bottom left side of the software interface. To highlight the elements in orange in the 3D viewer, select the icon, then left click on any element or drag the left click to make a box around multiple elements. Once selected, the elements will automatically be highlighted in the 3D viewer.



Figure 42 – Illuminate 3D Icon

## ***Measure Lengths on Plan***

To measure lengths and areas within the design area of the software interface, the **Measure Lengths on Plan** icon is used. This icon measures any length by left clicking on a desired spot in the design area to begin an on-screen measurement. Left click each time a new point is to be made.



Figure 43 – Measure Lengths on Plan Icon

## ***Copy***

The **Copy** icon is selected when one or more elements in the design need to be copied. To copy an element or elements, select the icon and right click to view and adjust which elements are available to copy. Next, select the elements to be copied by left clicking and then right click once all the desired elements are selected. Left click again on the desired reference location and the copied item(s) should move with the mouse. The last step is to right click to finalize the copy.



Figure 44 – Copy Icon

## ***Assign***

The **Assign** icon is a tool used to view similar elements within the installation design. When selecting this icon, a popup appears with the option to select criteria, dimensions, and elevation. Any combination of these options can be selected. Once the desired options are chosen, an element in the design is selected and any matching element with the same parameters will appear orange alongside the originally selected element.



Figure 45 – Assign Icon

## ***Move a Selection of Objects***

The **Move a Selection of Objects** Icon is similar to the **Move** icon referenced above. The main difference is instead of moving one item at a time, you can select one or multiple items to move. To move a selection of objects, select the icon and choose the elements to

be moved by left clicking. Next, right click once all the desired elements are selected. Left click again on the desired reference location and the items to be moved should follow the mouse. Lastly, right click to finalize the move.



Figure 46 – Move a Selection of Objects Icon

### ***Rotate (Smaller Icon)***

The second, smaller **Rotate** icon is slightly different from the first one. This icon does not rotate elements around a connection point like the main rotate icon in the *Edit* Section. Instead, this icon rotates elements around a reference point. To rotate an element, select the icon and right click to view and adjust which elements are available to rotate. Next, select the elements to be rotated by left clicking and right click once all the desired elements are selected. Left click again on the desired reference location and the rotated item(s) should move with the mouse. Lastly, right click to finalize the rotation.



Figure 47 – Smaller Rotate Icon

### ***Symmetry (Copy)***

The first of the symmetry icons is the **Symmetry (Copy)** icon. When selected, this tool copies the selected elements and places them in the installation symmetrical to a defined reference line while keeping the originally selected elements. To symmetrically copy an element or elements, select the icon, right click to view and adjust which elements are available to copy, select the elements to be copied by left clicking, and then right click once all the desired elements are selected. Left click again and draw a reference line for the elements to symmetrically copy around, the copied items should move with the mouse, and lastly right click to finalize the symmetrical copy.



Figure 48 – Symmetry (Copy) Icon

## ***Symmetry (Move)***

The second of the symmetry icons is the **Symmetry (Move)** icon which is just below the other one in the *Edit* Section. When selected, this tool moves the selected elements and places them in the installation symmetrical to a defined reference line. To symmetrically move an element or elements, select the icon, right click to view and adjust which elements are available to move, select the elements to be moved by left clicking, and then right click once all the desired elements are selected. Left click again and draw a reference line for the elements to symmetrically move around, the items should move with the mouse, and lastly right click to finalize the symmetrical move.



Figure 49 – Symmetry (Move) Icon

## ***Copy on another Floor Plan***

The next icon, in the top right corner of the *Edit* Section is the **Copy on another Floor Plan** icon. This tool copies selected elements onto other floor plans within the model. When the icon is selected, a popup appears to confirm what elements are able to be selected to copy to another floor plan. Once the desired elements are selected from the popup window, select the actual elements in the model to be copied to another floor plan. After all elements are selected, right click, and select which floors to paste the elements.



Figure 50 – Copy on another Floor Plan Icon

## ***Layer Management in Drawings***

The **Layer Management in Drawings** icon hides or shows various layers in the Design Area interface. By selecting this icon, a popup window appears and the elements to be visible or hidden in the model are selected.



Figure 51 – Layer Management in Drawings Icon

## Redraw

The final icon is the **Redraw** icon. When selected, this icon automatically updates the 3D view in the lower left corner of the software interface when any change is made to the model. When this icon is turned on, the software may run slightly slower or take longer to update, but changes will be seen instantaneously.



Figure 52 – Redraw Icon

## Drop Down Tab

Lastly, in the *Edit* Section of *Design* and *Installation* Menu, there is a drop down tab in the lower right corner of the section. By selecting this tab, a window on the selection of elements appears. From this window, the possible elements to be selected when wanting to edit the model can be chosen.

## 6.8 Calculation Section

The *Calculation* Section is the area in the *Design* and *Installation* Menu to conduct an analysis on the current design. The icons within this section are able to automatically calculate various parameters, update the design as needed, and display visual representations of the data which are calculated from predefined codes and checks to be carried out. A brief explanation of each icon is explained below, but it is recommended to view the tutorial video for a more in-depth explanation and a visual example of each.



Figure 53 – Calculation Section



[CALCULATION SECTION \(3 MINUTES AND 50 SECONDS\)](#)

## Update Results

The **Update Results** icon is used when analysis on the design is to be carried out. This icon calculates and updates the results of the design based off the given or predefined parameters. The **Update Results** optimizes the current installation to meet all or the most defined checks. This icon does not adjust the design; rather, it only calculates the results on the current design. To automatically adjust the installation to best fit the design, see the next icon below.



Figure 54 - Update Results Icon

## Design

The **Design** icon optimizes the design to meet the installation requirements. When selected, this icon automatically updates and changes the design to best optimize the installation. It adjusts the unlocked equipment parameters as needed such as the installation height or the pipe diameter to meet all or most of the defined checks.



Figure 55 - Design Icon

## Consult Checks that have been Carried Out

The **Consult Checks that have been Carried Out** icon displays which checks for each item has been carried out successfully or unsuccessfully. After updating and optimizing the design using the two icons above, the checks are able to be viewed with this icon. After selecting the icon, place the cursor over any equipment icon to view any successful checks in green and any failed checks in red. A detailed report on each check for the installation equipment can be viewed by clicking on the equipment after this icon has been selected.



Figure 56 - Consult Checks that have been Carried Out Icon

## Edit

The **Edit** icon in the *Calculation* Section hides or shows warnings in the drawing when pressed off or on, respectively. These warnings appear with a warning symbol in the drawing when there is an issue with the design. A common warning from this icon is if



there is a part of the design disconnected. Once corrected and updated, the warnings should disappear.



Figure 57 – Edit Icon

## **Calculation**

The **Calculation** icon in this section hides or shows errors in the drawing when pressed on or off, respectively. These errors appear with an error symbol in the drawing when there is an issue with the checks being carried out in the design. The errors that appear can be accessed by clicking on the installation equipment with the error and the checks that are not met will be shown with the error symbol. To fix the errors, some design change may be needed.



Figure 58 – Calculation Icon

## **Graphical Analysis of the Results**

The top icon on the right hand side of this section is the **Graphical Analysis of the Results** icon. As the name suggests, this icon provides a graphical analysis of the results on screen in the design area of the interface. When selecting this icon, a window appears confirming the access to the graphical results. Once the box has been checked, select the type of graphical analysis to be displayed. CYPEPLUMBING Water Systems has graphical analysis capabilities for *Gross Flow*, *Flow*, *Simultaneity*, *Inlet Pressure*, *Pressure Loss of the Span*, and *Velocity*. Once the type of graphical analysis has been selected and accepted, the graphical analysis appears on screen.



Figure 59 – Graphical Analysis of the Results Icon

## **Graphical Analysis of the Results Settings**

The settings for the previous icon can be found with this icon, the **Graphical Analysis of the Results Settings** icon. When selected, a window appears to adjust the viewing settings for the graphical analysis. In the popup, there is an explanation on navigating how to view

specific ranges of the results. Once completed, the updated graphical analysis appears on screen.



Figure 60 – Graphical Analysis of the Results Settings Icon

### Drop Down Tab

The drop down tab in the lower right corner of this section is the location for general calculation settings. After selecting this tab, the water viscosity can be changed, it can be determined whether the calculated design will be based off the minimum diameter or the minimum available pressure requirement, and the simultaneity factor can be selected. There is a description within the window to assist in selecting the necessary settings.



Figure 61 – Drop Down Tab

## 6.9 3D View Section

In the *Design* and *Installation* Menu, the *3D View* Section is one of two locations within the software interface to view a 3D representation of the current model being designed. When selected, this icon opens up a new window with a full screen view of the model, which is different than the in-screen *3D BIM Model Viewer* in the lower left corner of the interface. Select the icon to navigate through a 3D visual of the model and view an updated representation of the water system installation by selecting the **Redraw** icon within the viewer. Various viewpoints and layers can be seen within this *3D View* Section. It is recommended to view the video below for a more in-depth, visual explanation of this section.



Figure 62 – 3D View Section



[3D VIEW SECTION \(1 MINUTE AND 49 SECONDS\)](#)

## 6.10 BIM Model Section

This section is related to the collaboration between BIMserver.center and CYPEPLUMBING Water Systems. In the BIM Model section, BIMserver.center users can connect to CYPEPLUMBING Water Systems, export the current water systems design to a new or existing BIMserver.center project, and update any changes that occurred in any files related to the water system installation. A video tutorial for this section can be found by following the link below.

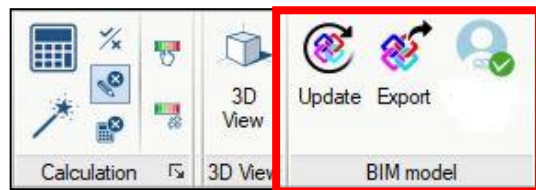


Figure 63 – BIM Model Section



[BIM MODEL SECTION \(1 MINUTE AND 58 SECONDS\)](#)

### *Update*

The *Update* icon is used when changes have been made to a file that affect the current water system installation. For example, if there have been changes made to the IFC file of the current water system being designed, and both files are connected *in* the same project in the BIMserver.center, a flashing warning sign will appear in the **Update** icon. To update the changes, click on the flashing warning **Update** icon, confirm the necessary information on the windows that appear, and the model should update to the most current design.



Figure 64 – Update Icon

### *Export*

The **Export** icon exports the current water system installation file to an IFC file that is connected to the BIMserver.center. By selecting this icon, completing the necessary popup windows, and exporting the file to the BIMserver.center, the file connects to the user's account and is updated in the project folder. Any requested quantities and reports can also be updated with the connected BIMserver.center account.



Figure 65 – Export Icon

### ***BIMserver.center User***

The **BIMserver.center User** icon is the icon that displays the current connected BIMserver.center user. To access the account on the BIMserver.center, select the icon and follow the link to the server. To instead sign in and connect an account, refer to the [Initial Setup and Starting a Project Section](#) of this manual.



Figure 66 – BIMserver.center User Icon

## 6.11 Auxiliary Toolbar

When working in the *Design Area*, a helpful toolbar is the *Auxiliary Tools* Menu. This toolbar is located at the top right of the entire system interface. It consists of five main sections: a search tool, window and viewing tools, template manager tools, object snap and object placement tools, and general configuration tools. Placing the cursor over these icons gives a description of each one. Below, there is a tutorial video explaining the *Auxiliary* Toolbar. It is recommended to view the video for a more detailed, visual explanation.



Figure 67 – Auxiliary Toolbar



[AUXILIARY TOOLBAR \(3 MINUTES AND 2 SECONDS\)](#)

### ***Search Tool***

The search tool on the far left of the *Auxiliary* Toolbar allows for the search and activation of all the available commands and options related to the water system installation.



Figure 68 – Search Tool

## Window and Viewing Tools

In the window and viewing tools area of the toolbar, from left to right, the previous view can be restored, a full view of the drawing can be displayed, a 2X zoom out can be done, the current view can be redrawn without modifying its current view, a highlight zoom can be performed, left click window panning can be turned on, and lastly the current view can be printed.



Figure 69 - Window and Viewing Icons

## Template Manager Tools

The template manager tools define and adjust the DXF-DWG templates that are visible within the *Design Area*. The three icons, from left to right, are a template view manager, a view selection by floor, and a template object snap.



Figure 70 - Template Manager Icons

## Object Snap and Object Placement Tools

The object snap and object placement tools assist in the general installation and design of the model. These various tools can make designing within the software easier. The tools within this section, from left to right, are object references, drawing grid, grid snapping, coordinate introduction, in-design dimensioning, orthogonal drawing, polar tracking, repeat of the last selection, and configuration.



Figure 71 - Object Snap and Object Placement Icons

## General Configuration Tools

In this section of the *Auxiliary Toolbar*, there are two icons, a configuration icon on the left and a help icon on the right. The configuration icon adjusts units, printers, text style, background color, automatic saving options, and drawings. The help icon is for the general software information such as program documentation and license information.



Figure 72 - General Configuration Icons

## 7 3D BIM Model Viewer

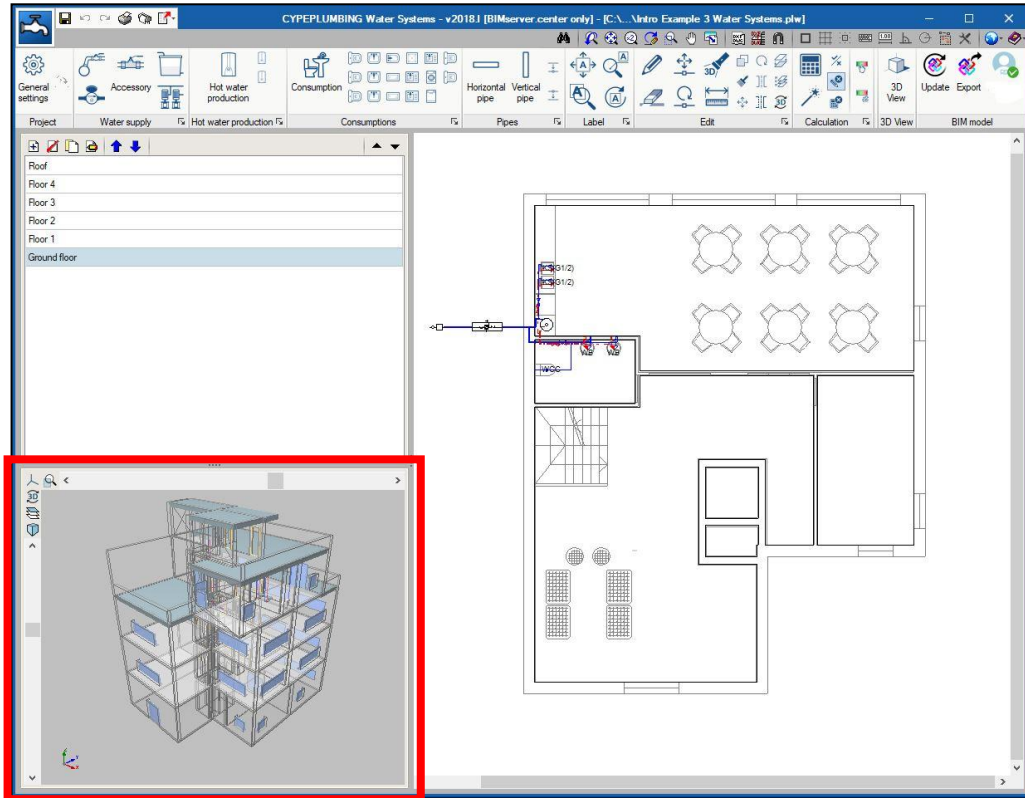


Figure 73 – 3D BIM Model Viewer

The 3D BIM Model Viewer area of the interface is the lower left area (outlined in red above) in the CYPEPLUMBING Water Systems. This section is the second of two locations for viewing the 3D model of the current installation. The first is the *3D View* in the *Design* and *Installation* Menu. This area of the interface is used to navigate through a 3D visual of the model and view an updated representation of the water system installation by selecting the **Redraw** icon within the viewer. After any adjustment or correction, the **Redraw** icon must be pressed to view the most updated version of the design unless the **Redraw** icon from the *Edit* Section is pressed on and the model automatically updates. Various viewpoints and layers can be seen within this *3D View* Section. It is recommended to view the brief video below for a more in-depth, visual explanation of this section.



[3D BIM MODEL VIEWER \(1 MINUTE AND 16 SECONDS\)](#)

## 8 Results – Reports and Drawings

After completing the desired water system installation and design, detailed report results and drawing are able to be automatically obtained. Detailed report results are able to be obtained in design criteria, results, checks, materials, and quantities which can be exported and printed as needed. Automatically generated drawings are also able to be obtained. These 2D drawing files are based off of the input parameters and can be exported or printed as well.

The results such as reports and drawings can be accessed in the top left corner of the interface (outlined in red above). It is recommended to view the tutorial video below explaining the *Results – Reports and Drawings* in more detail.

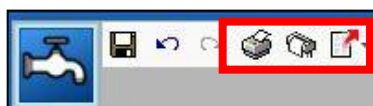


Figure 74 – Results – Reports and Drawings



[RESULTS – REPORTS AND DRAWINGS \(1 MINUTE AND 24 SECONDS\)](#)

### 8.1 Reports

After selecting the **Reports** icon, the available reports can be accessed in the top left of the popup window and the document settings can be accessed in the top right of the window. Once the desired report is selected, it can be exported, printed, or shared.



Figure 75 – Reports Icon

### 8.2 Drawings

After selecting the **Drawings** icon, another popup window appears. To add a drawing, the small, top left icon in the popup window is selected. The configurations are then able to be selected and a drawing is then generated which can be printed.



Figure 76 – Drawings Icon

## 8.3 Export

The export icon is selected when the design is to be exported in a BC3 format. To export in a BC3 format, select on the icon and a popup appears to choose the path to save the final. After confirming the path, the file will be saved in that location and can be accessed from there.



Figure 77 – Export Icon

# 9 Conclusion and Contact

How to setup a project, navigate through the user interface, design within the software, and obtain results based off the design should be known after the completion of this manual for CYPEPLUMBING Water Systems. It is encouraged to review this manual and its video tutorials if there are any questions. If there are still questions, issues, or further information is needed, please visit our website or contact CYPE. The contact information is below.

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Thank you for choosing CYPE and CYPEPLUMBING Water Systems.