

What's New in Chief Architect X10

Welcome to Chief Architect X10. This guide has been written to help our upgrading customers make a smooth transition from earlier versions of Chief Architect to Chief Architect X10.

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Getting Started Checklist

There are many new features in Chief Architect X10, and many existing features have changed. The following checklist suggests steps you should take before migrating your files to Chief Architect X10. More information about each of these steps can be found after the checklist.

- 1. Check for and Install Program Updates
- 2. Review the New Features List
- 3. Migrate Legacy Library Files
- 4. Migrate Custom Graphics Files
- 5. Review Your Preferences Settings
- 6. Create new custom Template Plan and Layout files
- 7. Set up Custom Toolbar Configurations
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1. Check for and Install Program Updates

Program updates contain improvements to the original release version and we recommend using the most current version available. By default, Chief Architect checks for program updates every day when you launch the program. Please note that program updates are available for download, which means that you need internet access to acquire them.

You can check for updates at any time:

- Select **Help> Download Program Updates** from the menu.
 - Visit the Program Updates page on the Chief Architect Web site at chiefarchitect.com.
2. Review the New Features List

There are a number of important reasons why you should familiarize yourself with the new and improved features in Chief Architect X10:

- New and improved features allow you to produce drawings more efficiently, so it is to your advantage to use them.
- Some changes to existing functionality may affect your accustomed drawing style and thus your productivity if you are not aware of them.
- New features may affect your choice of settings in your template files, as well as your preferred Preferences settings.

See “New and Improved Features” on page 8.

3. Migrate Legacy Library Files

Library content from previous program versions cannot be installed or copied into the Chief Architect X10 library. If you have Chief Architect version X5 through X9 installed on your computer, the **Migrate Settings** dialog will display after you activate the license, allowing you to migrate Preference settings, toolbars, library content, and more for use in Chief Architect X10. If multiple legacy versions are present on the system, only the data associated with the most recent will be migrated.

You can import library files from versions X1 through X5 at any time by selecting **Library> Import Library (.calib, .calibz)** from the program menu. In addition, library files from versions 10 and prior can be imported by selecting **Library> Convert Legacy (.alb) Library Files** from the program menu.

4. Migrate Custom Graphics Files

If you have custom graphics files, including textures, images or backdrops, that you were using in a previous program version, you can copy them manually using your operating system for use in Chief Architect X10.

- Copy custom texture files to the Chief Architect X10 Textures folder located in the Chief Architect X10 Data folder.
- Copy custom image files to your Chief Architect X10 Images folder located in the Chief Architect X10 Data folder.
- Copy custom backdrop files to your Chief Architect X10 Backdrops folder located in the Chief Architect X10 Data folder.

In Chief Architect X9 through X1, custom graphics were saved in the Chief Architect Data folder, as they are in version X10. In version 10, they were located in the program’s installation directory, in folders that began with “My”. Custom backdrops, for example, were saved in “My Backdrops”.

Texture and image files are not listed in the Library Browser. These files can be assigned to material and image objects, however, which are stored in the library so it is important to retain them.

5. Review Your Preferences Settings

Although you can migrate your Preferences settings from Versions X5 through X9 into Version X10, the settings that are available in Version X10 may differ from previous program versions. You should review all the settings in the **Preferences** dialog to make sure that they are set to suit your drawing needs.

6. Create new custom Template Plan and Layout files

Chief Architect X10 installs a selection of template plan and layout files that have been set up to take advantage of the program’s updated tools and features. Although you can migrate your template files for use in Version X10, for best results it is recommended that you either:

- Use the installed templates when creating new plans and layout files in Chief Architect X10
- Use the installed templates as the basis for creating new custom templates.

If you choose to continue using custom template files that you created in a previous program version, it is very important that you take the time to carefully review all the default settings in the file, making sure that they will continue to suit your needs in X10. First, make copies of your custom templates in the Chief Architect X10

Templates directory The Templates directory is located in the Chief Architect X10 Data folder. Next, open each template as you would a regular plan or layout file, by selecting **File> Open**, and then save any changes you make by selecting **File> Save**.

If you do choose to continue using a legacy template plan, it is best to also use a legacy layout template from the same program version, as well. As with a template plan, take the time to go through the layout template's defaults and make sure they are suited for use in X10 and that their line weight scales do not conflict with those in your template plans.

7. Set up Custom Toolbar Configurations

It is possible to migrate toolbar configuration files from previous versions to Chief Architect X10; however, it is possible that your migrated toolbars will be missing new tools available in Version X10.

We recommend that you set up your custom toolbars the way you would like them in Chief Architect X10. You may find it most effective to customize your toolbars as you get used to working in the new program version, rather than beforehand.

8. Backup Entire Plan

Before migrating a legacy file created in Chief Architect X9 or prior, it is a good idea to open the plan in the program version in which it was created and use the Backup Entire Plan tool (Export Entire Plan in version X3 and prior) to export the plan with all associated support files, including textures, backdrops and images.

9. Check chiefarchitect.com for more information

If you have additional questions about the changes in Chief Architect, up to date information is available in the Support section of our web site. You can also post questions on the ChiefTalk web forum at chieftalk.chiefarchitect.com.

Considerations for Legacy Files

As in all software, every new program version introduces changes to its functionality as well as to the user interface. If you choose to bring a project forward, be sure to take a few moments to look it over in the new version and confirm that the new functionality does not require you to make any modifications. Particularly if you have an approaching deadline, you may find it best to finish the current project in the version of the software in which you began it.

Chief Architect X10 can open the **.plan** and **.layout** files from prior versions. Files with the older **.pl** and **.la** file extensions are no longer supported and cannot be opened by Chief Architect X10. Before opening any files created in earlier versions of Chief Architect, it is important to be aware of changes made in the newest version and the effect they may have on your legacy plan and layout files. For details, see “Files Created in Version X7 and Prior” on page 4, “For Files Created in Version X2 and Prior” on page 6.

Please note that files saved in the latest program version cannot be read by older versions of the software. When a legacy file is saved in the version X10, an unaltered copy of the original file is created in the Chief Architect X10 Data folder, under Archives, which can still be opened in the original version.

- “Files Created in Version X9 and Prior” on page 4
- “For Files Created in Version X8 and Prior” on page 4
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Files Created in Version X9 and Prior

In addition to the above recommendations, if you wish to open files created in Chief Architect Version X9 or prior, bear in mind the following:

1. Parallel Lights

In Chief Architect X9 and prior, Parallel Light sources could be specified for electrical light fixtures and Added Lights. In Version X10, Parallel Lights are no longer supported. In legacy plans opened in Version X10, any Parallel Light sources will be converted to Spot Lights.

2. Brick Ledges

In Chief Architect X9 and prior, brick ledges were not represented in floor plan view. In Version X10, brick ledges are drawn in plan view on the “Slabs” layer in stem wall and grade beam foundations, and on the “Walls, Foundation” layer in monolithic slab foundations. When a legacy file is opened in Version X10, brick ledges, if present, will be drawn.

3. Window Types

In Chief Architect X9 and prior, the %type% text macro for windows reported some Window Types using abbreviations. In Version X10, the abbreviations were replaced with full words. When a legacy file is opened in Version X10, the width of Window Schedules may be affected, as may the width of columns in saved Materials Lists.

4. Joist Direction Lines

In Chief Architect X9 and prior, Joist Direction Lines described all platform framing as “joists” and used nominal lumber sizes in whole inches in US Unit plans. In Version X10, the platform’s framing Structure Type is reported and in US Unit plans, the size is described in fractional inches. When a legacy file is opened in Version X10, Joist Direction Lines will use the new, more accurate labeling.

5. Custom Schedule Columns

In Chief Architect X9 and prior, custom schedule columns could be created by adding a Sub Category to a type of object on the Categories panel of the Preferences dialog. In Version X10, Sub Categories can no longer be created in this manner. When a legacy file is opened in Version X10, any Sub Categories shown as custom schedule columns will be converted to Custom Fields.

For Files Created in Version X8 and Prior

In addition to the above recommendations, if you wish to open files created in Chief Architect Version X8 or prior, bear in mind the following:

1. Layer Names

In Chief Architect X8 and prior, turning off the Modify Name in all Layer Sets option made it possible to assign different names to the same layer in different layer sets. In Version X9, this option was no longer supported. When a legacy file is opened in X10, the layer names used in the currently active layer set will be retained and any other layer names in other layer sets will be discarded.

Files Created in Version X7 and Prior

In addition to the above recommendations, if you wish to open files created in Chief Architect Version X7 or prior, bear in mind the following:

1. Boxed Eaves

In Chief Architect X8, improvements to the generation of Boxed Eaves ensure that they extend into exterior rooms with “Use Soffit Surface for Ceiling” specified when located between the roof baseline and an interior room. In some legacy plans opened in Version X10, the **Length** value for Boxed Eaves may need to be modified in the **Roof Plane Specification** dialog.

2. Uppercase Text

The Uppercase option was added to Text Styles in Version X8, whereas in Version X7 and prior, it was an option for Room Labels and Schedules only. In legacy plans opened in Version X8, any Schedules present in the drawing will be assigned a Custom Text Style, as will their associated Schedule Defaults. If any Schedule Default is set to Use Layer for Text Style and no objects are present on that layer, a new Schedule Text Style will be created and assigned to that layer. Room Labels are treated similarly: if any are present, they and their defaults will use a Custom Text Style. If a given Room Label or Schedule has been sent to layout more than once and was set to use different Text Styles in each layout view, it is possible that its appearance may be affected in some views.

Files Created in Version X6 and Prior

In addition to the above recommendations, if you wish to open files created in Chief Architect Version X6 or prior, bear in mind the following:

1. Built-in Appliances

In Chief Architect X6 and prior, some appliance symbols designed to be inserted into base cabinets had incorrect sizing data. In legacy plans opened in Version X10, these appliances will not fit into the cabinet correctly and will need to be replaced. Built-in dishwashers are particularly affected.

2. Formatting of Bulleted and Numbered Lists

In Version X7, various improvements were made to the way lines of Rich Text are spaced. In legacy plans opened in Version X7, Rich Text objects with bulleted and numbered lists may require adjustments.

3. Chief Blueprint Font

The Chief Blueprint font was improved for Version X6, with decreased top and bottom spacing. The change in spacing may increase the overall height of text objects using this font in X6 files opened in Version X10. X5 and prior legacy files will not be affected by this change.

For Files Created in Version X5 and Prior

In addition to the above recommendations, if you wish to open files created in Chief Architect Version X5 or prior, bear in mind the following:

1. Named Values for Doors and Windows

In Version X6, the Named Values `door_style_name`, `door_type_name`, and `window_type_name` were shortened to `style_name` and `type_name`. Any object labels or text macros using these Named Values in legacy plans opened in Version X10 will need to be replaced.

For Files Created in Version X4 and Prior

In addition to the above recommendations, if you wish to open files created in Chief Architect Version X4 or prior, bear in mind the following:

1. Roof Overhangs and Framing

In Chief Architect X4 and prior, roof overhangs were measured to the outside of the subfascia, whereas in Version X5 and later, they are measured to the outside of the fascia or shadow boards, if present. In legacy plans opened in Version X10, this will not affect the appearance of roof planes in floor plan view because in X4 and prior, roof plane polylines represented the projected framing area whereas in Version X10 they represent the total projected area. But, the position of the fascia and subfascia will shift, as will the length of the rafters.

2. Door Swing Direction and Materials

In Chief Architect X4 and prior, exterior doors that swing outward display interior material on exterior side of door. This was corrected in Version X10. Doors modified to work around the old behavior could be affected in legacy plans opened in Version X5.

3. Door Swing Direction and Louvers

Improvements to door louver direction may affect louvers in all doors with the exception of bifold doors.

4. Wrapped Door/Window Lintels and Window Sills

In Chief Architect X4 and prior, wrapped lintels and sills extended out further than those that were not wrapped. In legacy plans opened in Version X10, the extents of wrapped lintels and sills will be adjusted so that they equal their **Extend** setting.

5. Cabinet Feet

The offsets for cabinet foot millwork symbols in Version X4 and prior were set per millwork symbol to insert into cabinets effectively. In Version X10, the offset is set in the **Cabinet Specification** dialogs. When legacy plans are opened in Version X5, cabinet foot offsets are set to 0 and transferred to their containing cabinet, if one exists. Any customized or independently placed cabinet feet will be affected.

6. Object Labels in Cross Section/Elevation Views

If a “Label” layer is turned on in a cross section/elevation view and objects of that type are visible in the view, then those objects’ labels will display in that view when the plan is opened in Version X10.

7. Transparent Materials

In Chief Architect X4, materials assigned to the Transparent Material Class for ray tracing were visible in rendered views even when their Index of Refraction was set to 1.0. When legacy plans are opened in Version X10, Transparent materials with an Index of Refraction of 1.0 are transferred to the General Material class and assigned a Transparency value of 100%. This will not affect these materials’ appearance in ray trace views, but will make them completely invisible in rendered views.

8. Invisible Beams

The legacy **Invisible Beam** check box was removed from the **Wall Specification** dialog. When legacy plans are opened in Version X10, any **Invisible Beam** walls will be converted to Invisible Walls.

For Files Created in Version X3 and Prior

In addition to the above recommendations, if you wish to open files created in Chief Architect Version X3 or prior, bear in mind the following:

1. Text Styles

The appearance of a number of objects that include text - including object labels, the North Pointer, Sun Angles, Joist Direction Lines, the Up/Down arrows for stairs and ramps - can now be controlled using Text Style. Their appearance may be altered somewhat in legacy plans opened in Chief Architect X10.

2. Light Sources

The illumination created by light fixtures and Added Lights was improved in Chief Architect X10. Lighting in legacy plans may appear noticeably brighter when viewed in version X10.

For Files Created in Version X2 and Prior

If you wish to open files created in Chief Architect Version X2 or prior, bear in mind the following file management changes and structural enhancements:

1. Legacy file formats

Chief Architect 9.5 and prior files were saved in .pl and .la the file formats. These file formats files are no longer supported and cannot be opened in version X10.

2. Material textures, images, and backdrops

Chief Architect X2 and prior installed with a catalog of library content, including a selection of material textures, images, and backdrops. This library catalog is no longer installed with the program because it is now available for download on-demand, so it will be possible to open a legacy plan in version X10 and encounter numerous missing file warnings. To avoid this, we recommend using the **Export Entire Plan** feature in the

original program version to create a folder that includes the plan and all associated textures, images, and backdrops before opening this file in X10. This tool is renamed Backup Entire Plan in version X10.

3. Floor and ceiling finish thicknesses

In Chief Architect X2 and prior, floor and ceiling finish layers were not modeled in 3D, and objects such as railings, stairs, landings, cabinets, fixtures, and furnishings measured their Floor to Bottom height from the subfloor. These objects now measure their Floor to Bottom height from the floor finish surface by default, so it is possible that you may notice height changes for these objects - particularly in saved, annotated cross section/ elevation views.

4. Riser heights and landing thicknesses

The default Best Fit Riser Height for stairs that do not reach the next level has been updated from 9" (225 mm) in version X2 and prior to 6 3/4" (169 mm) in Chief Architect X10.

5. Auto Adjust Height

The Follow Terrain option in some specification dialogs was replaced by the Auto Adjust Height check box. If a cabinet, fireplace, fixture, furniture, or other library symbol had Follow Terrain unchecked in version X2 or prior and was located in a room with a floor height other than the default for the current floor, then the object's Floor to Bottom Height will change to equal that room's floor height. The object's position in the model will not change, however.

6. Adjustable Thickness Walls

In Chief Architect X2 and prior, generic, single-layer wall types were available for use. When a legacy plan file is opened in version X10 and these wall types are detected, they are replaced by an updated, non-generic wall type. Framed walls and Railings will also acquire 1/2" (13 mm) thick layers of sheetrock on each side.

7. Stairwells defined by railings

Interior railings that used a generic, single-layer wall type drawn in older program versions will acquire layers of sheetrock when the plan is opened in version X10. This can affect the appearance of staircases where they join to a floor platform. To address this issue, select the railing and move it 1/2" (13 mm) away from the top edge of the staircase.

8. Deck rooms

In legacy plans opened in Chief Architect X10, Deck rooms with Advanced Deck Framing built retain the framing but have Automatic Deck Framing turned off by default. Decks with no Advanced Deck Framing built are converted to Balcony rooms.

9. Material definitions and light sources

Settings in the **Define Material** dialog that affect materials' appearance of brightness have been modified. The **Ambient** setting was removed, and the **Diffuse** setting for materials in legacy plans will be set to 100% when opened in version X10.

The Quality setting for light sources set to use Soft Shadows in ray tracing was also modified. Lights using Soft Shadows in legacy plans will be set to use Medium quality. The Light Diameter of light sources in legacy plans is capped at 4" (100 mm).

10. Structural Member Reporting

When a plan created in Chief Architect X2 or prior is opened in Chief Architect X10, Materials Lists are set to calculate **Total Lineal Length**. For a combination of lineal length and piece count, select **Mixed Reporting** in the **Structural Member Reporting** dialog.

11. Fill New Framing Members

In Chief Architect X2 and prior, Fill New Framing Members was view-specific; in Chief Architect X10 it applies to the entire plan. As a result, it is turned off by default in legacy plans opened in version X10.

New and Improved Features

The following is a list of new and improved features in Chief Architect Version X10.

Installation

- The installed location of library content can now be specified when settings and content are migrated.
- New **New Plans/Layout** dialog allows you to quickly specify the default units of measurement and template plan on first launch.
- Library filters are now migrated along with the Core, Manufacturer, and Bonus Catalogs.

Program Overview

- A selected object's Drawing Group is now reported in the Status Bar.

File Management

- The **Backup Entire Plan**  tool is now named Backup Entire Project when used in a layout file.

Project Management

- Icons in the Project Browser now denote views and layout pages that are currently open.
- Multiple views in the same Project Browser folder can now be selected as a group and then managed using their shared contextual menu.
- Saved views, plan files, and layout files can now be closed using the contextual menu in the Project Browser.
- The maximum number of Closet room boxes that can be created by the **Space Planning Assistant**  has been increased to 5.

Preferences and Default Settings

- Camera Defaults, Door Defaults, Base, Wall, and Full Height Cabinet Defaults, Dimension Defaults, and Text, Callout, and Marker Defaults can now be edited in groups.
- New **Selected Edge Handle Fill** color setting.
- Obsolete Command Flushing setting removed from the Preferences dialog.
- Obsolete Categories panel removed from the Preferences dialog.

Toolbars and Hotkeys

- New **Saved Plan View Control** and **Active Dimension Defaults Control** drop-down in the toolbars.
- The Control drop-down lists in the toolbars now feature a tool icon for easier recognition.

View and Window Tools

- Plan views can now be saved, and multiple plan views can be open at the same time.
- Improved how the Reference and Snap Grid lines display when zoomed out.
- The title bars and tabs of Wall Detail views now state the floor that the associated wall is drawn on.
- Each view window's tab now features an icon indicating its type of view.
- The File Save and View Save message prompts now feature an icon indicating the type of file or view being closed.
- New **Close All 3D Views** command.

Creating Objects

- The obsolete Copy Region as Picture tool was removed from the software.

Displaying Objects

- Improved the initial settings used by the **Active Layer Display Options** side window.

Editing Objects

- The **Delete Objects** dialog can now be used in camera views.
- New tool.
- The **Transform/Replicate Objects** dialog now adjusts an object's height as well as its width and depth when resized.
- **Garden Beds** is now an option in the **Convert Polyline** dialog.
- New "Include in Schedule" Property in the **Match Properties** dialog.
- The **Reflect About Object** , **Center Object** , and **Make Parallel/Perpendicular**  edit

tools no longer recognize camera symbols as reflection or alignment axes.

- Objects on multiple floors can now be selected and edited as a group.

CAD Objects

- Two CAD Details, a “Details Template” and a “Schedule Detail” are included in installed Residential Template plan.

Walls, Railings, and Fencing

- A water table or cap can now be specified for pony walls.
- Pony walls can now have a Railing as the upper wall.
- The top heights of railings can now be edited in 3D views.
- New options for displaying the upper and lower pony walls in plan view.
- New **No Post** option for railing newel posts.
- New **Outline**, **Always**, and **Hide** options for displaying doors and windows in pony walls.
- New **Ignore All Off Angle Walls** option suppresses all warning symbols for off-angle walls.

Rooms

- New **Lock Floor Top** and **Lock Floor Bottom** radio buttons in the **Room Specification** dialog.
- The version X10 template plans have a variety of new Room Types.
- The **Include in Schedule** check box is now in the **Room Type Defaults** dialogs.
- New **Select and Clear Transferrable** buttons in the **Match Properties** dialog.
- New properties for electrical objects were added to the Match Properties dialog.
- When **Select Room Before Wall in 3D** is unchecked in the **Preferences** dialog, rooms can now be selected in 3D views using the **Select Next Object**  edit tool.

Dimensions

- New **Reach** settings in the **Auto Story Pole Dimension Defaults** dialog.
- **Auto Story Pole** dimensions now locate the tops of shed roofs.

- Improved the feedback of snap indicators while drawing dimension lines.
- The bottom strings of **Auto NKBA Elevation Dimensions** no longer locate doors.
- Improved how **Angular Dimensions** are linked to a Saved Dimension Default, which you can now specify.

Text, Callouts, and Markers

- Text can now be pasted directly into cross section/elevation views.

Doors and Windows

- Wall surface lines now display for Doorways and can be displayed or suppressed for all types of doors.
- Windows can now display Header Lines and the “Doors, Headers” layer was renamed “Opening Header Lines”.
- New “Glass Slab” Door Style. The “Glass” Style was renamed “Glass Panel”.
- New settings to control the display of doors and windows in pony walls.
- Doors placed in Solid Railings now have a **FRAMING** panel in their specification dialog.
- Removed abbreviations from Window Types reported by the %type% macro.

Cabinets

- Cabinet front items can now be selected by right-clicking in the **Cabinet Specification** dialog preview.
- New **Move Left** and **Move Right** buttons for cabinet face items.
- Option to show cabinet face items as open was moved to the **FRONT/SIDES/BACK** panel of the **Cabinet Specification** dialog.
- New **Percent Open** setting for cabinet doors and drawers.
- Special cabinet shelf and rollout storage and organization objects can now be inserted into cabinets.
- Shelves and Partitions can now be included in schedules.
- Improved how cabinet fillers are named in cabinet schedules.

Electrical

- Wall mounted electrical objects placed from the Library now use the Height value saved in their specification dialog instead of in the Electrical Defaults dialog.
- Retired the deprecated Custom Light Intensity dialog.

Schedules and Object Labels

- New Custom Fields allow you to easily create custom Schedule columns.
- New **Find Object in Plan**  edit tool for line items in schedules and the Materials List.
- New **Open Row Object(s)**  edit tool for line items in schedules and the Materials List.
- New **Use Default Formatting** option for custom object labels with macros.
- The Supplier for most objects can now be set in their specification dialog rather than in the Components dialog.
- New **Column to Include** for Supplier in all schedules except Framing and Room Finish.
- New **Columns to Include** for energy value information in Door and Window Schedules.

Foundations

- Brick ledge lines are now drawn in floor plan view.

Stairs, Ramps, and Landings

- Stair Railings and Railings at Walls can now be specified independent of one another.

Roofs

- New **Dutch Gable Roof** option for automatic roofs.

Framing

- Wall headers can now display in floor plan view and have improved label functionality.
- Improved how Nominal size is reported for framing specified as Lumber in schedules.
- Improved labels for **Joist Direction Lines**  now report the framing Structure Type, and in plans using US Units, fractional inches are used

instead of whole inches unless the Structure Type is “Lumber”.

- General Framing objects are now drawn on the new “Framing, General” layer.
- The default fill style for joists, rafters, General Framing, and headers in floor plan view can now be specified.
- The default fill style for wall framing in Wall Detail views can now be specified.
- **Automatic Height** is now unchecked automatically if the selected roof framing member’s height is edited outside of its specification dialog.
- New PSL and VSL structural member Types for framing.

Trusses

- The **No Special Snapping** setting now disables additional truss snapping behaviors and becomes checked automatically if you place a truss end at a non-default location.
- The Maximum Height setting was removed from the **Roof Truss Specification** dialog.
- Obsolete Ceiling Step setting was removed from the **Roof Truss Specification** and **Framing Defaults** dialogs.

The Library

- The location of library content on the system can now be specified.
- Individual Library Browser catalogs and folders can now be searched.
- The preview for a selected material in the library is now displayed on a sample Sphere, Cube, Teapot or 2D Plane object.
- Multiple materials in the User Catalog can now be edited as a group.
- The Replace from Library function can now be overridden by holding down the Alt key.

Custom Symbols

- Free standing symbol objects can now be rotated in all directions in 3D views using the edit handles.
- New **Inserts into Wall** attribute for custom symbols.

Other Objects

- Distribution Regions and Paths have new spacing and scaling options.
- The **Distribution Path Specification** dialog now has an ARROW panel.
- The objects assigned to Distribution Regions and Paths can now be replaced directly from the library.

Materials

- New **Plane**  shape option for the material preview pane in the **Define Material** dialog.
- New **Ambient Occlusion Map** option for materials.
- New **Metallic** option for General Materials.
- New **Roughness Map** and **Metal Map** options for some Material Classes.

3D Views

- New **Virtual Reality**  option in Perspective cameras and overviews lets you view the model using a VR headset.
- The **Camera Defaults** dialog was replaced by multiple defaults dialog for the different 3D View tools.
- The obsolete Display Callouts for Sections/Elevations check box was removed from the **Camera Defaults** dialogs.
- The **Always Display Active Cameras** check box was moved from the Camera Defaults dialog to the **3D View Defaults** dialog.
- New **Ray Casted Sun Shadows** option for cameras improves quality of shadows created by sun light.
- The **Open Object**  edit button is now available when multiple cameras are selected.
- Cameras now follow their floor when floor levels are added or exchanged.
- The obsolete Remove 3D tool was removed from the program.
- The obsolete Restrict Floor Camera to Room check box, View Panel Factor settings, and Backdrop panel were removed from the **3D View Defaults** dialog.
- The obsolete Advanced Camera Options dialog was removed from the program.

- The obsolete Remove Wall Within and Unless Opening scene clipping options were removed from the Camera Specification and Defaults dialogs.

Rendering and Ray Tracing

- The **Open Object**  edit button is now available for multiple selected cameras.
- The number of lights that can be on in a camera view can now be specified.
- Enhanced **Adjust Lights** dialog.
- Lighting in 3D views is no longer confined to the same room that the camera is located in.
- Parallel Light sources are no longer supported.
- New Light Sets allow you to control which lights are used in each camera view, regardless of their distance from the camera.
- The **Ambient Light** settings were moved from the 3D View Defaults dialog to the **Rendering Technique Options** dialog.
- New **Physically Based**  Rendering Technique models reflections on non-mirror surfaces like counters and appliances.
- Shading Contrast can now be turned off or on in Vector Views.
- When a light or light source is placed or copied and pasted, it will always be on initially.
- A light source's Position Indicator now displays in all Rendering Techniques aside from Line Drawing.

Pictures, Images, and Walk-throughs

- Backdrops can now be specified on a per-camera basis as well as for each Rendering Technique.
- Improved the transitions between different speeds in walkthroughs.
- The obsolete .tga image file format is no longer supported.
- Obsolete Line Weight Scale setting removed from the **Export Picture** dialog.

Importing and Exporting

- Added support for AutoCAD® 2018 file import.
- Saved cameras and multiple floors can now be exported to the 3D Viewer app.

- 360 Panorama images previously saved to disk can now be uploaded to your online account.

Terrain

- New **Make Terrain Hole(s) Around Building(s)**  edit tool provides manual control over the terrain holes that are automatically generated around buildings.

Materials List

- Line items representing multiple objects can now be expanded to display each object in its own line.
- Mouse over any cell with a formula or count to see a Tool Tip with information about its contents.
- Custom formulas can now be applied in the Materials List.
- New **Update to Master**  and **Update from Master**  toolbar buttons.
- New **Save Active Materials List**  toolbar button.
- New **Assemble Wall Plates, Deck Planking,** and **Rim Joist** options for Materials List Buy Lists.

Layout

- Layout view boxes are no longer restricted to a rectangular shape and can be edited like a closed polyline.
- New PLAN VIEW and CAMERA VIEW panels in the **Layout Box Specification** dialog.
- **Color**  can be toggled on or off in individual views sent to layout.
- The position of a layout box can no longer be set in its specification dialog.

Printing and Plotting

- New **Watermark**  option for plan and layout files.

Ruby Console

- New “program_version” Ruby command.
- New Named Value pairs for doors and windows.
- New “include_in_schedule” Named Value pair for a variety of objects.