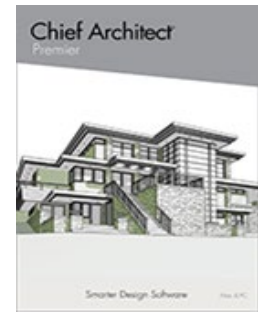


# Chief Architect

## Detailed Features List

# X15



### 3D Rendering & Visualization

#### Feature Description

Perspective and Orthographic 3D Camera tools. Create 3D presentation views and 2D technical views using camera tools for real-time representations of your designs. Use layers to turn off or on different elements, like framing. Camera views can be named, edited, saved, and copied. Use 3D Settings Controls to adjust the display options and settings.



Display Coordinate Axes. Show the XYZ axes indicator and the project origin location in 2D and 3D views. Use toolbar toggles to display the Axis style and Origin Indicator.

3D Navigation Tools & Virtual Tours. Create 3D views and navigate, spin, rotate, pan, orbit, tilt, and move forward or backward. Use the View Direction Tools to quickly set the view to top down, left side, right side or bottom angles.

Auto-Hide Exterior Walls While Navigating. Set navigation camera views to automatically hide the backs of walls that prevent seeing into a small room. Use the Hide Camera-Facing Exterior walls tools to easily navigate small rooms.

Cross Section Slider™. Show views being cut from the top, bottom, front, back, left and right side. Adjust the amount cut away from the model.

Walkthrough Tools. Create detailed walkthrough recordings along paths that you can save and share in standard video formats. Add key frames at any point on the spline to control view direction and speed; walk up or down stairs and to span walkthrough between floors. Each walkthrough contains lighting, rendering, and camera settings. Set up individual paths, each with their own look, including sunlight intensity and direction.

Walkthrough Editing. Use key frame editing controls to quickly adjust and modify individual keyframes directly from the preview dialog and the edit toolbar. Join multiple walkthrough segments as one path and retain the keyframe details from the original pieces. Use the Complete Break tool to break an existing walkthrough into individual parts or use existing, longer walkthroughs to record sub-sections as smaller animations without generating a new path.

360 Exterior Walkthrough. Create an automatic walkthrough path that orbits the exterior of your design.

Cloud Share Walkthroughs. Post recorded walkthroughs to a Chief Architect SSA cloud account and share them via e-mail, hyperlinks, or embedding them onto websites.

Export 360° Spherical Views. Ray Traced and Rendered cameras can be shared locally and to the cloud, and in apps and embedded in websites for interactive navigation. Export Render Views at a resolution of up to 8192 x 4096.

## Feature Description

- + Sky Model. Control settings for the sun, moon, horizon, and their impact on a scene's lighting from within the camera's specification dialog

Custom Backdrops. Import images from building site, or use a generic scene, to add realistic backgrounds to your renderings. Set up saved cameras to leverage different backdrops to show different scenes for different cameras in the same project.

Spherical Backdrops. Assign 360 spherical images as backdrops. Control offsets, orientation, and Eye Level for spherical backdrops.

- + Artificial Terrain. Use the Extend Terrain to Horizon feature in the Camera Specification dialog to display the ground in 3D beyond the boundaries of the plan view's terrain perimeter.

- + Procedural Grass Areas. Use Grass Region tools to create areas that simulate 3D grass; specify the length, density, color, and other parameters to achieve more natural-looking grass in your scenes.

Artistic Rendering Techniques. 3D Standard, Physically Based, Watercolor, Squiggle Line Drawing, Technical Illustration, Clay, Vector View, Glass House, and DuoTone render modes transform the look and feel of a scene in real-time.

Line Drawing Option for Rendering Techniques. Choose to Draw Lines on Top option in Standard, Duotone, Watercolor, Physically Based, and Clay styles to include the sketched line drawing technique.

Physically Based Rendering with GPU Ray Tracing. When compatible hardware is available, create PBR views that use real-time ray tracing for enhanced lighting and reflections in your scenes. Turn on Soft Shadows when ray tracing in PBR Ray Tracing to show blurrier, more diffused shadows in your scenes.

- + Denoise PBR Ray Traces. Use the Denoise feature in the Physically Based Rendering Technique settings and with the menu command to clarify Ray Traced views during the sampling process or when sampling is complete for the scene.

- + Focal Blur. Turn ON Depth of Field in perspective views; set focal points using the camera tools and set the intensity of the blur with F-Stop settings.

Photo Realistic Ray Trace Rendering. Ray Trace rendering uses multiple core processors with lighting and materials that can be set for photo realistic rendering. Preview ray trace renders as they refine and iterate image quality; export the image at any time or define the total ray trace duration. Pause and resume Ray Traces and queue multiple scenes for processing. Export common image formats for presentations and marketing use.

Camera Default Sets. Set up camera defaults to leverage Default Sets in your Template plans and for projects; for example, control the Dimensions Defaults used for Wall Elevations vs. Cross-Sections.

Isometric View Tools. View designs from any of the eight standard Isometric viewing angles.

Control Shadow Intensity. Control the darkness of shadows in Vector Views and Technical Illustration views using an intensity slider.

- + Depth Cueing. Assign a 'foggy' or shaded effect to areas that are a specified distance from the camera to differentiate the foreground from the background of a scene. Define gradient values to control the intensity range of Depth Cueing.

## Cross Sections & Elevations

### Feature Description

Cross Sections, Back-Clipped Cross Sections & Elevations. Use orthographic cameras to create elevation or cross section views. Back-Clipped Cross Section views control the cut distance generated for a cross section. Cross Sections can also be clipped at the sides to control the width of view.

Convert Wall Elevations to Section Views. Regardless of the camera tool used to create a Section View, Elevation, or Wall Elevation, it can be edited to behave as the other view types. Expand Wall Elevations to included parts of the scenes beyond a room (like vaulted ceilings or multi-room suites), or crop larger Sections to show smaller spaces.

Show Vaulted Ceilings in Wall Elevation Views. Wall Elevations for rooms with vaulted and sloped ceilings include the full wall height; the elevation can be set to crop at the top of the wall plate using the “Ignore Walls Above” setting.

Stepped Cutting Plane Cross-Section. Generate Cross Section Views along a custom plane and use breaks to create steps in the Cross-Section.

+ Hidden Lines Below Grade. Set camera defaults and specifications to display foundation and items below grade as hidden lines or other line styles.

Dimension, Annotate and Detail Cross Sections & Elevation Views. Use the text, arrow, dimension, and CAD tools to add complete details to your Cross Section and Elevation views. Select and edit, delete, resize, or move objects. Choose from over 500 CAD Details in the premium SSA catalog to overlay on your design. Use the Auto-Detail tool to add CAD details to cross-section and elevation views.

Center CAD in Elevation Views. Use the Center Objects tool in Elevation Views to control the location of CAD objects.

Copy Section and Elevation Cameras. Creating a copy of saved Section and Elevation cameras will retain the CAD, Text, Dimensions, and other additions.

Show Cameras as Callouts. Easily set up view callouts directly from the camera object. Show Elevation, Section, and Cross-Section cameras as Callouts in Plan Views. Add callout labels and descriptions; callouts remain when sent to layout.

Automatically Populate Camera Callouts with Layout Page Information. Choose to include layout page label in camera callout second line text. Callout information automatically updates if layout label is changed.

Automatic Labels in Elevations. Generate schedule callouts and labels for windows, doors, cabinets, and other items in Cross-Section and Elevation views.

Auto-generate Exterior & Interior Room Elevations.

## Plans & Layouts

Plan Templates. Start projects from pre-defined Plan Templates or create your own. Use the Save as Template feature to convert an existing project to a new template.

Space Planning Assistant. Drag-and-drop room bubbles and arrange them before converting them to walls. Provides a quick way to lay out rooms that adjoin the project to illustrate how the completed project would look.

Plan Check tool. Provides a review for basic room egress, roof, wall layout, and more.

## Feature Description

Rotate and Flip Plan tools. Use Flip Plan to create a mirrored version of your design. Use Rotate Plan to change the orientation of the floor plan on your screen.

Fill Screen to Selected Objects. Use this zoom tool to quickly set the screen view's extent to only those objects that are currently selected.

Chief Architect Viewer file compatibility. Share your Chief Architect design files with clients using the free Chief Architect Viewer software.

Design Structures with multiple Floors. Excludes attic and basement or foundation.

Insert & Exchange Floors. Use the Floor Above/Below tool to insert and exchange floors. Insert new Floors or levels between existing floors.

Advanced Layer Controls. Create new layers, change object layer assignments, customize the appearance of layers, and group layers together into task-specific Layer Sets.

Default Sets. Pre-configure sets and optimize defaults for creating kitchen plans, framing plans, electrical plans, etc.

Saved Plan Views. Create and save multiple plan views (similar to saved cameras). Each view retains Layer Set, Default Set and Active Defaults. Open multiple Plan Views in Windows or Tabs, and manage saved views in the Project Browser. Edit the settings in your Plan Views from the Project Browser through a specification dialog; choose to save or ignore Zoom Size and Floor Level with saved plans. Import and export between plans

Project Browser. Manage and navigate Layout pages, project files, floors, elevations, cross sections, 3D views, cameras, schedules and CAD details. Rename cameras, view multiple projects at once and easily access their details. Multi Select Views to edit, activate, duplicate or delete views from the Project Browser.

Project Browser Previews. Easily navigate your saved views by displaying a preview window in the Project Browser that displays a thumbnail image of the selected view.

Time Tracker™ tool. Measure working time per project, per client, or per task. Start and stop the Time Tracker. View, edit, and export a time log, and add notes for each project. Time Tracker automatically re-starts with you as you work in a design.

Plan Database tool. Create a plan database to organize your plan portfolio.

R-Value Controls. Specify R-values for walls, floors, ceilings, and platforms.

Layout Plan Sets. Layout sheets are used to organize plans, elevations, CAD details, schedules, site plans, and other items for construction documents. The drawings can be scaled and printed at any size. All views are linked to the original model reflecting any updates you make. Reorder the Layout pages dynamically. Create templates for Layouts with borders and title blocks.

Customize Layout Views. Like other Polyline based items, add breaks and curved edges to Layout viewports to control cropping of their display on a layout page. Use panning and zooming to refocus the contents in a Layout Box. Rotate layout boxes that contain Elevation and Camera Views.

## Feature Description

Layout Box Specification. Set up default behaviors for views sent to layout to control properties like the label, scale, and border. Create multi-line formatted labels for View Boxes on Layout Pages. Relink plans, change active layer sets, and rescale views displayed in a layout box from its specification dialog. Select and edit multiple layout boxes to modify shared attributes at one time.

Open Multiple Layouts. Open multiple layout files simultaneously allowing you to edit, compare or copy elements between the files.

Advanced Layout Editing. Edit line views sent to the layout, rescale views sent to layout, re-link views on the layout to reference different files.

Set up multiple Pages per Layout File. Create multi-sheet documents within a single layout file to organize entire professional designs.

Control Layout Template Pages. Specify multiple Template pages in a Layout and assign individual pages to reference a template.

Document Revisions for Layouts. Revisions can be noted for changes to any layout page and displayed in a Revision Table with information such as; revision number, authors' info, date, description, and label. Current (or last) revision can be displayed using macros.

Layout Page Table. Create drawing schedules, like Table of Contents, for layouts by controlling each page's attributes such as Label, Title, Description, Revisions and Comments.

Layout Page Macros. Create macros for page label, automatic page numbering, title, description, and comments for individual layout pages. Macros move with pages as they are edited and re-ordered.

Delete Objects for Layouts. Use the delete objects tool to clear unnecessary elements like CAD, Images, Text, and Layout Boxes from your layout documents. These controls make it easier to transition between projects when copying layout files and in developing templates.

Home Designer® Plan Share. Share Chief Architect® plans with the consumer / DIY Home Designer® products of the same release version. Your clients can use this for floor/space planning and change colors, materials and textures. Features a Plan Lock to prevent Home Designer from editing the Plan file.

## Rooms

Room Defaults. Control initial behavior by specifying default values like ceiling height, style, moldings, wall covering, floor materials. Define room attributes by room type. Preview of room construction in the dialog.

Custom Room Definitions. Create and specify room types to customize the available rooms list to suit your most common needs and regional naming conventions.

Living Area Calculation. Specify which rooms should be included or excluded in the living area calculation.

Room Polygon tool. Create a Room automatically with pre-specified dimensions in different geometric shapes.

Room Molding Polyline & 3D Molding Polyline tool. Automatically generate a molding polyline derived from the room's perimeter. Reshape the polyline as desired and attach multiple molding profiles. Designate sizes for each profile and specify its height off the floor. 3D Molding Polyline create horizontal and vertical moldings.

## Feature Description

Room Polyline. Automatically generate a polyline derived from the room's perimeter. Use the polyline tools to generate a Materials List, view the area, or convert to a molding, slab, and other custom options.

Accurately Layered Floor & Ceiling Platforms. 3D model includes Finished Floor and Finished Ceiling layers. Use these layers to add dimension details and define floor coverings, finishes, and sub-layers.

Floor Material Region Tool. Create floor inlays and other floor finish configurations without room boundaries.

Raised Floor Platforms. Specify raised floor platforms that are automatically framed.

Define Conditioned or Unconditioned Spaces. Specify rooms as conditioned, unconditioned, or use the room type's default to generate insulation calculations on the materials list.

Multi-Select and Edit Rooms. Select multiple rooms to change their attributes simultaneously; change room type, convert from flat to a vaulted ceiling, set ceiling and floor heights, and modify the platform structure.

Room Label Dimension Format Defaults. Define the display of the dimensions supplied with a room label. Edit units, fraction or decimal display and other settings much like standard dimension formats.

## Walls

Wall Tools. Draw and edit walls in 2D and 3D. Wall Styles include interior, exterior, railing, pony, half wall, curved, angled, raked, stepped. All styles are customizable with unique layers. Wall Types include structural wood, stucco, ICF, SIPS, glass, railings, partitions.

Pony Walls. Create walls with different upper and lower types. Control wall caps, window and door display, dimensions, framing, alignment between floors. Adjust the height of individual Pony Wall pieces. Display Pony Wall Edge Line in Plan View.

Railing Tools. Specify interior and exterior railing styles with unique attributes like newels, balusters, panels, materials, handrails, and heights. Control the size and shape of panels, balusters, railings, shoe, and more

Railing Over Solid Wall. Generate Pony Walls with a railing as the upper wall type.

+ Offset Railings. Horizontal Offset controls of railing alignment. Use positive values to inset the railing from the edge and negative values to align the railing beyond the surface edge.

Create Raked & Stepped Walls. Control heights of walls, add breaks and adjust in Cross Section and Elevation views. Define stepped foundations with vertical footing control.

Custom Wall Types. Use controls in the Wall Type Definition dialog to easily edit wall assemblies, set materials, and define individual properties of each wall layer. All the Wall layers calculate into the Materials List.

Match Properties on Walls. Use the Select Same Load Same tool to quickly apply properties from one wall to another wall in your design.

Support for ICF and SIP Wall Connections. Specify multiple main layers for wall types to represent construction types such as ICF and SIP walls.

Wall Niches. Create recesses in walls like a shower niche or wall display. Define the niche depth, casing, arch, and other attributes similar to windows.

## Feature Description

Partition Walls. Use the Partition attribute to specify construction to surfaces of the surrounding walls and platforms instead of cutting through to structural layers.

Remodeling Plans. Place New, Existing, Demolition and Remodeling Walls on unique layers.

Wall Hatching. Set up attributes for the Wall Hatching tool in your template plan so that it defaults to look the way you'd like it to for every project. Copy and Paste wall hatching throughout your design to easily indicate wall areas of note. Customize labels for wall hatching segments; easily indicate which part of a wall will be demolished or reinforced shear walls.

Store Walls in Library Browser. Add custom wall definitions to the Library for reuse.

Wall Corner Boards & Quoins. Manually or Automatically place Corner Boards and Quoins at wall intersection corners. Set default size and material attributes.

Wall Material Region Tool. Design wall areas specifying different materials and assemblies.

Double Walls for Marriage Walls and Multi-Family Units. Includes window and door control.

Control Wall Connection Layer Intersections. Manually control wall intersections by dragging the intersecting wall to snap to a specific layer of another wall.

Continuous Wall Draw mode. Right click to enable continuous wall drawing mode - speeds up wall draw time.

## Cabinets

Smart Cabinet Tools. Create any style of Cabinet using the smart parametric tools including Framed, Frameless, Curved, Angled and Bow. Adjust drawers, face frames, doors, styles, shapes, shelves, moldings, backsplashes, appliances, countertops and more. Use a specification dialog to define and customize your cabinets.

Define Cabinet Defaults. Control the initial behavior by specifying default values - define, colors, sizes, doors and drawer styles, moldings, materials, countertops, hardware, and several other attributes for the cabinets as you begin a new design.

Architectural Blocks. Save any Cabinet, group of Cabinets, or an entire room of Cabinets as an Architectural Block and store in the Library for future use. Unblock the cabinet grouping and modify as needed. For example, store kitchen islands or an entire kitchen in your library for future designs.

Insert Items inside Cabinets. Attach custom shelves, storage, and hardware items into cabinet boxes and specify their behavior per face item. Attach appliances to the face of cabinets.

Cabinet Shelves. Specify the default spacing between cabinet shelves. Specify the type of shelving inside the cabinet and adjust the spacing manually per cabinet opening.

Waterfall Counters. Automatically specify the edge of a custom counter as "Waterfall" to create a solid section from the counter's top to the floor.

Custom Countertop Tool. Draw and edit countertops manually. Add countertop holes, edge profiles, adjust the thickness and height off the floor. Dialog preview allows you to visualize a custom counter as you manipulate its properties.

## Feature Description

Custom Backsplash Tool. Click to generate a Custom Backsplash that automatically fits around cabinets, openings, and appliances.

Cabinet Fillers. Create cabinet fillers automatically between cabinets, or add them manually.

Blind Corner Cabinet Controls. Turn On or Off Automatic Blind Corner Cabinet behavior.

Edit Configuration of Sides, Back, and Front of Cabinets Independently. Choose to match the sides and back of a cabinet's configuration to its front, or individually customize the layout of panels, doors, drawers and appliances for any side of a cabinet

Cabinet Door Size. Discover the overall size of cabinet doors and drawers while selected in the cabinet specification dialog.

Cabinet Box Construction. Specify whether cabinets include top, bottom, and side pieces of the box. Use these controls to design open side cabinetry and recessed bottom cabinets.

Extended Cabinet Stiles. Specify left and right extended stiles for cabinets; extended stiles automatically clip when near walls and other cabinets, and can be represented in schedules and materials lists.

Cabinet Door Overlay Each Edge. Control the side, top, and bottom overlap value for any traditional overlay cabinet door, drawer, or panel.

Frameless Cabinet Reveal Controls. Specify the reveal amount for a cabinet's front, side, and back; set reveal individually for cabinet separations.

Show Cabinet Doors Open. Use layers and controls in the cabinet dialog to draw doors and drawers open in 2D and 3D views. Set percent open for cabinet doors and drawers individually. Set door swing angle up to 180d. Use edit toggle to quickly return all cabinets to closed or open in a view.

Hide Cabinet Doors and Panels. Use the "Cabinets, Doors & Drawers" layer to show or hide their display in Elevation, Plan (when drawn open), and Perspective Views.

Separate Material for Cabinet Components. Apply a separate material to each cabinet element, including shelves, cabinet interior, toe kicks, individual doors and drawers, cabinet feet, moldings, and countertops.

Rounded Cabinet and Countertop Corners. Specify rounded or chamfered corners on a cabinet box and Automatic Countertops.

Clipped Cabinet Overhang. Automatically clip cabinet counter overhang when it butts against appliances and partitions.

Cabinet Millwork & End Panels. Pilasters, feet, legs, and moldings. All resize automatically as the cabinet changes. Define End Panels or Finishes to the sides and back of cabinets. Panels can be set to be automatically generated when an end or back is exposed, or they can be manually turned on or off.

Cabinet Hardware. Define cabinet hardware for doors and drawers, apply unique hardware to individual face items. Hardware automatically rotates to match face item orientation and can be rotated manually through the specification dialog. Use controls to locate hardware at cabinet doors' vertical and horizontal centers, and to resize hardware.

Stacked Moldings. Add multiple moldings to objects and specify vertical and horizontal offset distances with different Molding Profiles to create stacked moldings. Use the Auto-Stack feature to allow the software to group moldings together automatically.



## Feature Description

Flush Cabinet Moldings. Specify that moldings should automatically be flush with the cabinet box or the cabinet doors, drawers, and panels.

National Kitchen & Bath Association (NKBA) Standardized. Cabinet display options conform to NKBA standards including countertops, line styles, labels and more. NKBA approved software for professional certification testing.

Cabinet Brand Catalogs. Cabinet catalogs include door and drawer styles, colors, wood species, and accessories that can be attached to parametric cabinet tools.

## Doors & Windows

Custom Door & Window tools. Create any style of Door, Doorway, and Window including Arched, Shaped and Mulled. Use the Smart Parametric tools. Doors styles include interior, exterior, sliding, barn, pocket, bi-fold, atrium, fixed, double-swing, shower, and garage. Hardware Library - Hinges, Handles and Locks. Window styles include interior, exterior, pass-through, single/double hung, sliding, casement, corner, recessed, louvered, bay, and box.

Door Defaults by Door Type. Set unique door defaults for different types of doors: hinged, pocket, bifold, sliding, barn and garage.

Customize Door Glass. Independently set the top, bottom, left, and right sides for panel and glass panel doors. Create garage and entry doors with asymmetric windows. Choose to set all garage door panels to use glass.

Opening Indicators. Display opening indicators for hinged and sliding windows and doors in camera views. Set up default behaviors to configure the indicators to your drawing standards.

Multi-Panel and Accordion Doors. Specify retractable walls (also known as stackers and Nanawall) using the panel configuration options for Sliding and Pocket Doors. Create bifold doors with multiple panel sections to create accordion door types.

Bay, Box, Bow Windows. Select then edit a group of bay, box or bow windows. Copy, paste, specify width, depth, and height from floor and ceiling of Bay/Box/Bow Windows within dialog; control the structure of the units, including wall type, ceiling and floor platforms, and roofing.

Explode Bay, Box, Bow Windows. Break parametric bump-out windows into their wall and window sub-components to be edited fully.

Corner Windows. Bump windows together at wall corners and choose to include or remove the corner post at the sash joint to create a glass corner

Mulled Door and Windows. Create custom Muller door and window blocks. Move, dimension, and label them as single units and add them to the Library. Muller Units that contain Doors are automatically recognized as Door objects for Schedules and Schedule Labels.

Windows and Doors for Double Walls. Control openings for double walls in multi-family and marriage wall configurations; specify double units or single units that span both walls.

Control Plan Display of Symbol Windows. Assign custom CAD Blocks to symbol windows, like Garden Windows, to control their display in Plan View.

Custom Muntins. Design your own muntins using the CAD tools and attach them to windows.

Window Treatments. Adjust curtains by the height off floor and height above casing. Blinds fit inside casing when attached to Windows.

## Feature Description

Shutters. Specify shutters on either side of windows and doors. Use parametric shutters to control style and louver size, or attach library symbol objects. Shutters display on their own layer and can be turned ON or OFF in plan and 3D Views.

Door & Window Lintels & Sills. Specify sills, lintels, and aprons for openings and set the height, width, and overhang. Attach custom symbols to Window or Door casing and set the height and width.

Window Glazing Area and U-Factor for Doors and Windows.

## Roofs & Ceilings

Automatic Roofs. Create gable, hip, shed, Dutch gable, gambrel, mansard, and other roof styles automatically. Use the Auto-Rebuild Roofs feature to automatically update the roof as your design changes. Define roof attributes per eave wall including multiple roof pitches, overhangs, and roof returns.

Auto Dormer™ tool. Generate floating (false) and structural dormers automatically. Set the dormer size, roof pitch, and accurately place them on a roof. Dormers types – eyebrow, gable, hip, shed, gambrel, mansard, barrel, and hip curved.

Build Roof Options. Specify pitch, overhang, raise off plate for energy heels, curved roof information, framing details, fascias, gutters, exposed rafters and roof returns and many other options. Includes roof and ceiling framing and trusses. See the Framing section for details.

Roof Pivot Controls. The roof specification dialog's diagram, along with multiple controls for locking roof pivot locations, makes it easy to control roof settings based on rafter, truss, and remodel construction conditions.

Draw and Edit Roofs in 2D and 3D. Design with both the 2D and 3D views up at the same time to visualize the changes in design.

Ridge Caps. Automatically generate Ridge Caps on roofs; turn ridge caps on/off on a per roof basis; assign custom ridge cap profiles.

Control Rafter Spacing per Roof Plane. Specify rafter spacing values for individual roof planes in a design.

Skylights. Automatically cut the roof with correct structural framing. Define Square or Plumb sides and frame width and height. Set up skylight defaults to standard dimensions. Edit skylight shape using the skylight detail view tool.

Automatic Ceilings & Ceiling Tools. Automatic ceilings are created once a roof is generated. Manual Ceilings can be drawn and modified to reflect non-standard ceiling designs; create cathedral, tray, coffered, and barrel ceilings.

Automatic Tray Ceilings. Use the tray ceiling tool to automatically create tray ceilings. Define the slope, moldings, and LED rope lights for the tray ceiling. Once a tray ceiling is created, modify it with the tray ceiling polyline. Specify tray ceiling offset to be above or below the default ceiling.

Roof Assembly Controls. Create roof assemblies with multiple layers, much like floor and ceiling platforms; great for specifying SIP roofs.

Gutters & Frieze Moldings. Create custom profiles for gutters and friezes. Attach them to roofs so that they update and resize as the roof design changes. Control frieze boards per wall for granular control over their automatic generation.

Shadow Boards. Apply Shadow Boards to the fascia of roof planes automatically. Specify molding profiles and stack moldings to create the desired molding build-up.

## Feature Description

Convert Planes to Polylines. Edit Roof and Ceiling Planes using the Convert to Plain Polyline tool to easily create a CAD line that is duplicate to the plane's shape.

### Stairs & Ramps

Stair Tool. Specify tread width, length, tread number, overhang, and thickness. Set riser height, top and bottom height. Specify details about stringers, open underneath, runners, railing details, baluster and newel styles and shapes, brackets, handrails on walls next to stairs, around corners, and hand rail profile. Specify riser heights, tread width, start height, and bottom height.

One-Click™ Stairs & Ramps. Auto place stairs connecting platforms or terrain to platform. Create L and U-shaped stairs with a single click.

Advanced Stair tools. Customize curved sections, flared treads, starter treads, winders, definable walk line, maintainable tread width, and landings.

Wrap Around Stairs. Connect treads around corners to form stairs for decks and other specialty spaces.

Connect Stairs of Different Widths. Easily create staircases with different tread widths. Perfect for creating a stair that has exposed railing on the bottom, and is encased in walls at the top.

Refined Stair Controls. Use the Break Line edit tool and Disconnect Selected Section tool to edit and add break points to an existing stair. Use the <ALT> key to select, disconnect, edit, or move an individual stair section or landing; the default move handle allows the entire group to be moved together.

Control Landings for Automatic Stairs. Split landings into multiple segments using dialog box controls for U-shape and L-shape stairs.

Customize Stair Components. Control the number, placement, size, and materials of the stringers under a stair. Control the thickness and material of the wall trim along a stair. Specify materials for stair risers and stringers separately.

Auto Stairwell™. Creates stairwell and the platform to match the staircase.

Ramp Tool. Specify length, slope rise and run to create ADA compliant Ramps. Specify overhangs, railings, tread surface, open underneath, baluster and newel styles, shapes, and hand rail profile.

Landing Tool. Create Custom Landings to auto-connect Stair sections or Ramp sections together. Auto-connect multiple landings together to update their height values to suit the staircase. Use Landings to create custom winder stairs and starter treads. Choose auto adjust features for the height and thickness based on stair or ramp connection. Turn railings on or off per Landing edge.

Stair Railings. Railings specified for stairs can be customized with the following elements; rail style (balusters, open, middle rail, panels), multiple rails and their controls, and newel and baluster spacing and offset. Display stair railing, newels, and balusters in plan view.

Custom Newels & Balusters. Choose from newels and balusters in the Library Catalog or import your own.

Stair Defaults for Interior & Exterior Stairs. Set up defaults for stairs to create the same custom style every time.

## Feature Description

Detailed Plan Display. Display tread overhang as dashed lines on stairs in plan view, also choose to show or hide stair stringers using its layer while controlling the line style and color. Include and control the display of a cut or break line for stair display in plan view; use a drag handle to position the break line, or specify in the dialog.

Stair Handrail Returns and Extensions. Specify returns at each of a stair's handrails and specify horizontal extension lengths to meet code requirements for stair handrails.

### Foundations

Foundation Tools for Slab, Pier, Crawlspace, Full Basement, Stem Walls, Footings, Post & Beam, Grade Beam. Set up a default foundation type, controlling stem-wall height, footing size, slab or pier information. Edit the foundations settings after it has been built.

Auto Rebuild Foundations. Automatically update the foundation plan to align with the 1st floor as the design progresses.

Pier/Pad Specification. Select Round Piers or Square Pads and control their size and position in the dialog. Toggle between round and square with a single click.

Monolithic Slabs. Create monolithic slab foundations with inset ledges for masonry wall construction. Specify curbing for monolithic slab foundations and specify garage specific settings.

Foundation Footings. Generate automatic footings and supports under Bearing Walls, control footings for slabs, and define stepped footings with vertical pours. Control the pattern fill, layer, and line types for Wall Footings within the specification dialog.

### Framing

Automatic Framing. Floors, walls, ceilings, roofs, openings, headers can be framed and updated automatically as the structure evolves. Define Trimmers and Headers based on opening sizes.

Framing Reference Markers. Create framing reference markers for each level of your design to control where framing originates; choose which types of framing members reference the marker (floor, ceiling, wall). Use Stud Rollout controls to manage the framing start point for walls.

Build All Framing. Choose to "Build All Framing" in your project, generating Roof, Wall, Platform, and Deck framing in a single click.

Manual Framing Tools. Draw individual framing members or select and edit automatically generated members. Access the Object Information Panel for Framing Objects and include details to be reflected in Schedules and Materials Take-Offs.

Export EasyFrame Wall Panelization. Optimize framing designs for panelized construction and use with automated sawing machines. Export to .EZF format.

Multiple Framing Types. Choose from a wide selection of framing types when designing your structure; from lumber, to steel, to engineered materials like LVL, PSL, and VSL. Framing labels reflect the type of material specified.

Roof Framing Options. Hand Stack or Truss Frame. Define rafters, ridges, lookouts, sub-fascia, blocking, bridging. Valley fill roof trusses. Exposed Rafter Tails and custom rafter tail cuts - choose a molding profile or draw your own profile.

## Feature Description

Shoe Plates for Roof Overbuild. Specify roof overbuild conditions for a remodel or in new construction and automatically generate framing with shoe plates.

+ Auto-build Trusses. Set up your defaults and use parametric features to automatically add floor and roof trusses to your design when you build framing.

Auto-Fit Trusses. Floor, ceiling, and roof trusses. Create trusses that automatically conform and fit between platforms or overbuild using a truss base; manually edit and customize trusses. Truss options include scissor, attic, step down, girder, sub-girder, drop hip, jacks, kingpost, gable end, reduced gable, energy heel. See a preview of trusses in their specification dialog; previews update as parameters change.

Regenerate Truss Edit Tool. Quickly rebuild a truss's automatic configuration using the Truss Rebuild edit tool when it is selected.

Truss Details. Automatically generated truss details for floor, ceiling, and roof trusses. Each truss is labeled for easy identification.

Horizontal Roof Framing. Specify roof battens or purlins in the surface structure's assembly layers to automatically generate horizontal framing members on top of trusses or rafters. Define framing member sizes, material, type, spacing, and offset for top and bottom purlins.

Framing End Profiles. Apply decorative or shaped end profiles to general framing members, similar to rafter tails.

Post & Beam Framing Tools. Specify Round or Square posts. Customize the default attributes of framing posts and beams; show cross box in plan view, width and depth, materials, and other attributes.

Wall Framing Options. Define number of plates and max length, stud thickness, king studs, spacing, bridging, miter ends, framing for short walls and knee walls. Balloon Wall Framing platforms extend through walls or walls through platforms. Steel Framing for walls, headers, joists, and rafters - automatically creates C-Channel and U-Channel shaped framing members for typical steel framing. Define the number of Rim Joists generated on a per wall basis.

Balloon Framing. Set automatic framing tools to generate true balloon framing and offer flexible settings for specifying where to include or exclude this framing technique.

Header Framing Controls. Specify headers to be automatically generated at the wall top plate down with cripples to the window framing below. Set headers to be flush with the wall's interior or exterior and specify the gap between plies. Specify the distance of adjacent openings when combining your headers.

Framing per Wall Type. Create wall types with multiple framing layers and automatically generate framing for both layers; ideal for furred basement walls. Specify the number of top and bottom wall plats in the wall type.

Horizontal Wall Framing. Use the automatic framing tools along with wall definitions to create wall types suited for some Pole Buildings and Timber Framing scenarios. Set up girt spacing within the wall's properties, including distance from the ground.

## Feature Description

Wall Framing per Opening. Specify that window and door openings use custom or default settings for Headers, Trimmers, Sills, and other framing related components on the Framing tab of the specification dialog. Create Box Headers and Built-Up Headers with up to 10 members and 5 trimmers for each opening.

Wall Framing Details per Wall. For each wall, view and edit wall framing, add dimensions or callouts. Use to produce framing schedules or wall details.

Framing Labels. Label controls for posts, beams, and other framing objects. Set up custom labels and assign them to layers.

Framing Member Role. Use the Role option in the Framing Specification dialog to control how individual framing objects are represented in schedules.

Build Framing per Room. Choose to generate floor framing for a selected room or those included in a framing group; for example, create framing for an addition or remodeled space.

Wall Corner and Intersection Framing. Specify Standard, Reduced Stud (two-stud Advanced Framing Technique), or Laddered options for building wall framing at corners and intersections.

Rebuild Framing per Wall or Roof Plane. Choose to generate framing for a single object without re-creating the framing for the entire plan.

Specify Walls as 'Bearing'. Automatically control the generation of butt or lap framing over a wall with the Bearing attribute.

Floor Joists Flush with Stem Wall Top. Automatically generate floor framing platforms inside the foundation which hang from stem walls.

Automatic Platform Holes and Foundation Holes. Use polyline tools to generate holes for the floor or ceiling and automatically generate framing around them.

Tray Ceiling Framing. Build framing for tray ceilings using the Build Framing edit tool for individually selected sections and retain framing for certain trays.

Deck Framing Options. Define Plank overhang, width, gap, direction, border planks, beams and joists. Define widths, spacing, direction and type of planks. Automatically rebuild framing as the design changes. Include or exclude beams, posts, and footings.

## CAD Tools

CAD Tools. Comprehensive CAD objects and editing tools: Points, Lines, Polylines, Splines, Arcs, Circles, Ovals, Boxes, Arrows, Fence, Trim Extend, Parallel, Perpendicular, Reflect, Replicate, Transform, Fillet, Chamfer, and several others.

Arc Creation Modes. Choose from a number of methods to precisely draw arcs.

Visual CAD Snaps™. Snap indicators – center, end point, tangent, and several others. Snap to objects or a grid. Snap to Reference Floor layer (a floor above or below the current floor).

Paste Hold Position tool. Copy an item between layers, plans or floors while maintaining orientation and exact position.

Point-to-Point Move tool. Accurately move or copy objects. See visual indicators of starting and ending locations while using the Point-to-Point Move and Point-to-Point Resize tools.

## Feature Description

CAD Detailing. Use cross-box, blocking box and insulation detail tools to add feature elements to cross-sections and callouts.

Convert 2D CAD to Smart Object. Quickly convert CAD to 3D Solids, Molding Polylines, Countertops, Slabs, Landings, Distributed Regions and Paths, Holes in Roofs and Platforms. Convert Arcs and Circles to Polylines. Convert polylines to Revision Clouds and Material List Areas. Convert to Elevation and Terrain data, Sprinklers, Garden Beds, Roads, Road Markings, and Sidewalks.

Multiple Copy tool. Replicate objects at pre-defined increments. Set default increments for different types of framing objects, as well as general objects.

3D Solids, Advanced Polyline, and Face Tools. Create custom solids with a variety of shapes. Edit polylines using Polyline Subtract, Polyline Union, and Polyline Intersection. Create solid faces, extrude and revolve them to create custom objects. View and rotate a 3D preview while adjusting the attributes of 3D shape objects. Edit any edge or face of a solid object in any direction. Edit solid objects in plan views and 3D Views, regardless of the view in which it was originally created.

3D Solid Tools. Create 3D shapes using the 3D Solid tool. Create custom countertop shapes, backsplashes, tub platforms, etc. Set up defaults to control initial material, layer, and other attributes.

Boolean Editing of Solids and Shapes. Perform Union, Intersection, and Subtraction editing on combinations of 3D Solids and perform these edits on objects created in different planes (plan view vs. elevation). Use the fillet and chamfer tools on any edge of a 3D Solid object.

Polygon CAD Tool. Creates regularly-shaped polylines of pre-specified dimensions. Specify the number of sides and specify the polygon size by length of sides or overall radius.

Fillet All and Chamfer All. Quickly edit polyline corners, like custom counters, with fillets or chamfers with the click of a button.

CAD-to-Walls™. Import CAD files, such as AutoCAD®, and convert CAD lines to fully configured 3D walls, windows, and doors.

Architectural CAD Details. Details for residential structural elements. Detailed assemblies for floors, roofs, decks, walls and foundations. Over 500 details are included in the premium SSA catalogs.

Align / Distribute Objects tool. Define distribution and automatic alignment of CAD objects.

Create and manage CAD Details & Blocks. Draw customized details and diagrams, print them to scale, and save for reuse in the Library. Specify insertion points to control how details are added to a design.

CAD Detail From View. Generate a CAD Detail from any view. Add or remove lines, add dimensions, fill patterns, text, and callouts. Use CAD details in your Layout and save to the Library for future use.

Manage Line Styles. Control and modify line styles used in your project; change listed order, add line styles, delete unused styles, and learn where styles are used in the plan. Design your own line styles and reuse them throughout your projects.

## Feature Description

### Layers

Layer Sets. Set up unique layer groupings for display and printing. Create separate Layer sets for Electrical Plans, Framing Views, or Space Planning. Edit, copy, and rename existing layer sets; use the Layer Set toolbar to quickly swap active Layer Sets or swap Layer Sets using Default Sets.

Layer Management. Create, edit, merge and delete layers. Adjust line weight, color, style and display. Search for layers and assign objects to layers as desired. Specify which layers report to Materials List.

Layer Eyedropper & Layer Painter tool. Select a layer assigned to an object using the Layer Eyedropper tool, then apply that layer to a different object with Layer Painter.

Layer Hider tool. Click on an object in plan view to turn off its layer display.

Object Layer Properties edit tool. Quickly and easily modify the layer properties for any object from the Edit Toolbar.

Reference Layer Sets. Choose to display more than one reference floor and/or layer set at a time, set up different configurations with Saved Plan Views, and control the draw order for Reference Displays.

Reference Display Between Plans. Use the Reference Display controls to show layer sets from other plan files. Display remodeling changes and construction options by showing layers from one design overlaid in a different file in both 2D and 3D views. Create 'ghosted' camera views that include As-Built and Addition designs together.

3D Reference Display Rendering Techniques. Display Standard, Technical Illustration, Vector, and Glass House as 3D reference overlay.

### Dimensions

Dimensioning tools. Baseline, Running, Centerline, Angular, End-to-End, Interior, Point-to-Point, and Temporary dimensions. Use One-Click Auto Dimensions™ for exteriors.

Precisely Position Objects with Dimensions. Select any object, and enter a corresponding dimension number to move the object a set distance. Use simple arithmetic formulas while editing dimensions to easily move objects in a design.

Auto Exterior Dimensions. Add dimensions to the design exterior with a single click. Define the default behavior, like included objects and distance offsets, of Automatic Exterior Dimensions. Automatically regenerate dimensions as your design changes with the Auto Refresh option.

Wall Editing with Dimensions. Adjust wall lengths by selecting dimensions or temporary dimensions that run parallel to the wall. Display Wall length as you draw; press TAB to input an exact dimension.

Dimension Snapping. Control where and to which objects dimension attach, such as on the sides, corners, or center of walls, framing, doors, cabinets, and other objects. Dimensions prioritize object snaps, making it easy to accurately control their start and end locations.

Column Bubble Grid Lines. Create a construction line grid with callouts for referencing between floor levels and across elevation views to mark key planes in your project. Dimension and snap to lines, modify callout display, and use layers to control printing.

Specify Dimension Units, Accuracy, & Display. Use Imperial and Metric systems. Control the units displayed for dimensions, number height and font, arrow size and style, accuracy in decimals or fractions to 1/128" or 0.0078125.



## Feature Description

**Dimension Dialog Preview.** Manage dimension extension settings and control multiple elements at once with table interface. See interactive previews of dimension settings.

**Dimension Centerline Markers.** When dimensions snap to the center of an object, it will automatically display the CL dimension indicator. Toggle ON or OFF the CL indicator using the Centerline edit tool, or by editing the dimension string from the specification dialog. Control the location and orientation of the marker relative to the extension line.

**Dimension Unit Display Threshold.** Set a threshold where dimensions display in inches when the value is less than the specified amount; for example, show dimension as 18" instead of 1' 6".

**Display Secondary Dimensions.** Show two formats of dimension text on the same dimension string.

**Custom Dimension Text.** Replace dimension value with text or insert additional text before or after the dimension value for any dimension string.

**Rotate Dimension Text.** Use an edit handle to rotate dimension text, or set up your defaults to use specific rotations.

**Input Accurate Dimensions using a DISTO™ or other Laser Distance Meter.** Use a Bluetooth or Wireless compatible device to automatically measure a space then input the distances directly into dimension strings.

**Automatic Elevation Dimensions.** Use the Auto Elevation Dimension tool to add dimensions to Elevation and Cross Section views.

**Multiple Dimension Defaults.** Define multiple dimension styles and attributes for your specific needs, such as defaults for floor plans, cabinet elevations and site plans. For each Default, define the attributes for number height, unit of measure, arrow, fonts and more.

**Locate Defaults per Dimension Tool.** For each dimension tool, set up location snapping; for example, set the Center Line dimension tool to pick up only walls and fixture centers for kitchen and bath dimension defaults or only pier and post centers for deck or framing defaults.

**Multiple Automatic Dimension Defaults.** Set up Automatic Exterior Dimension behaviors based on your active dimension defaults. Easily create exterior dimensions for different views, different scales, and different snap locations.

**Inner and Outer Dimension Controls.** When setting up Dimension Defaults, control the behaviors of Automatic Dimension features. Customize how each level of dimensions locate items in your projects; set up multiple defaults to create automatic dimensions for different uses (Kitchen and Bath vs. Framing, for example).

**National Kitchen & Bath Association (NKBA) Automatic Dimensions.** Automatically dimension interior rooms and elevations to the National Kitchen and Bath Association dimensioning standards using pre-defined default sets.

**Angled Dimensions.** Set up behaviors for Angled Dimensions within Dimension Default.

## Feature Description

**Automatic Story Pole Dimensions.** Use the Story Pole Dimension tool to automatically generate labeled markers for key locations and dimensions between them in Elevation and Cross-Section views. A new story pole label is generated for each dimension mark added. Set "Reach" values to control the distance points are located.

### Lighting / Electrical / HVAC

**Electrical & HVAC Tools.** Create Electrical, Plumbing and Heating / Ventilation plans. Electrical – place lights, switches, outlets, low voltage, and wiring. Circuit Connection tools draw the connections and circuits for your electrical layout. Connect electrical components together to create circuits. Adjust the lines and arcs of the circuit design. Connections will automatically change switches for 3-way and 4-way. Specify Electrical, Fixture, and Furniture items to attach to ceilings and roofs and auto-rotate to match the pitch of roofs or vaulted ceilings.

**Auto Place Outlets.** Place outlets at regular intervals based on room type. Use the Auto Place Outlet tool to add GFCI outlets to your kitchens and bathrooms.

**Electrical Lighting & Lighting Sources.** Use Light Sources in addition to light fixture symbols to enhance the lighting in a scene. Light Fixtures have light sources for Render and Ray Trace Views.

**Custom Lighting Controls.** Define custom lighting with shadows and intensity; turn lighting on or off per fixture to control whether a light is used for a 3D scene.

**Lighting Management.** Easily manage lights in a plan through the Adjust Lights dialog. Sort the display by column, turn lights ON or OFF, change their color, group select, open specification dialog, and more controls make it quick and easy to control your scenes' lighting.

**Lighting Sets.** Define Lighting groups to control which lights are ON at any time. Assign Lighting Sets to view defaults, individual cameras, and Ray Trace Views.

**Rope Lighting.** Create line-based paths that auto-generate rope lighting objects. Specify light size, spacing, and location for these horizontal linear lights.

### Terrain & Landscape

**North Pointer & Sun Angles for shadows.** Define a North Pointer and Sun Angle. Specify latitude, longitude, date and time; generate shadows in 2D and 3D. Sun Angles are listed by date and time stamps in dialogs for easy identification.

**Copy Sun Angles.** Create duplicate sun angles, then move and adjust the copies to represent different seasons and times for sun studies and lighting effects.

**Display Line Angle Controls.** Display angles as Azimuth Bearings, Quadrant Bearings, Degrees, Minutes, or Minutes + Seconds.

**Terrain tools.** Generate a 3D terrain model with elevation data you enter or import. Controls the terrain smoothness, triangle generation, skirt, clipping around structures, and contours.

**Create Plot Plans, Site plans, & Subdivisions.** Input accurate length, bearing and setback information.

**Import Terrain Assistant.** Import GPS data: text files, DWG/DXF. Generate Terrain information by importing GPX data from mobile devices.

## Feature Description

Terrain Elevation Splines, Polylines, Regions & Points. Input elevations data for Terrain by drawing splines, lines, and points. Attach elevation value to each object, then automatically generate the terrain contours. A Clear Terrain tool is available to remove contouring and adjust elevation data.

Terrain Elevation Labels. Automatic labels for terrain elevation lines, splines, and regions display elevation height.

Terrain Modifier tools . Hills, Valleys, Elevated Regions, Flat Regions.

Retaining Walls, Terrain Break tools. Generate retaining walls with built-in terrain breaks to automatically create steps in the terrain with the wall. Use the Terrain Break tool for steps without the wall structure.

Terrain Accessory tools. Stepping Stones, Streams, Garden Curbing, Pre-defined Garden Beds, Blocked garden beds.

Road & Sidewalk tools. Tools to create a Road, Road Median, Road Striping/Marking, Curb, Gutter, Driveway, Sidewalk and Cul-de-sac. Automatically attach a sidewalk to the road or driveway objects you are generating and specify custom curb profiles. Assign thickness values for Driveways, Sidewalks, and Roads to accurately calculate material volumes.

Calculate Materials for Roads. Include the volume of Roads, Driveways, Sidewalks, and Terrain Walls and Curbs in materials lists.

Automatic Plan Footprint tool. Use the Plan Footprint tool to automatically generate a CAD Detail for a Site Plan. Turn on only the layers you need visible for the site plan such as roof planes, overhang and exterior walls.

Deck Designer™ tool. Design Straight and Curved Decks. Define roof and ceiling attributes for a covered deck. Control the orientation and size of deck planking, gap, width, overhang, direction, border planks, beams and joists. Full Deck framing – see framing section for more details. Polygon Deck tool, specify the number of sides and the size of a deck.

Fence tool. Create picket, privacy, iron, and panel fences. Choose gate styles from the Library Catalog. Fences follow the terrain.

Sprinkler Designer™ tool. Place sprinkler heads and connect them to create irrigation runs and zones.

Landscaping Plants. Plants Images - Trees, Shrubs, and Flowers can be placed in 2D and 3D views. Over 4,000 plants are included in the premium SSA catalogs.

Create & Import Plants. Import photos of plants and add them to the Library Browser to use in your designs. Add plant growth information and adjust transparency attributes.

Plant Chooser™ with Hardiness Zone Maps. Plant Hardiness Zone maps show plant data by region. Use the Plant Chooser to filter results by attributes like common name, water and light needs, and 2D or 3D plant object.

Plant Encyclopedia™. Detailed plant information – common and scientific name, type, sub-type, characteristics, height range, zones, sun and water needs, bloom time, and leaf and flower color.

Create Landscaping Plans. Assign fill colors to plants in Plan view and display plant labels, garden beds, and contours. Place text and CAD details. Create Plant Schedules.

Grow Plants tool. Use sliding scale and grow the plants up to 20 years from the current maturity.

## Feature Description

3D Plants. Use 3D Plant Symbols for added detail. Generate realistic 3D views where plants cast shadows. Download plants from 3D Library.

3D & 2D Editing of Architectural Objects. Place and edit objects directly in 3D and 2D Plan View or Elevation View. Design simultaneously in 2D and 3D for any of the views.

Object Painter™ / Eyedropper. Use eyedropper functionality to match properties from one object and apply them to another object. Choose which attributes to be applied between objects, and use scoping to apply changes by object, by room, by floor, by selection or to entire plan.

Material Painter™ & Default Painter. Apply colors, materials and textures to objects or components of the object. Apply colors as solid or stain. Use the Default Painter tool restore items to their default material.

Material Eyedropper™ & Color Chooser™. Material Eyedropper: copy a material from one object and apply to another. Color Chooser: capture colors and materials from a photo or website, such as tile for a custom backsplash or a wood stain color for a floor. While editing and adjusting a material, create copies on-the-fly to create derivative options.

Material Properties for More Realistic Scenes. Attach Ambient Occlusion Maps, Roughness Maps and Metal Maps, along with Normal and Bump Maps, to add realism to your material properties. Control Emissive materials with more physical accuracy or set a material as Metallic with refined material property controls.

Adjust Material Scoping. When editing a material in a 3D view using the Adjust Materials tool, choose the scope of impact to adjust the material throughout your project, or create a copy on-the-fly for a subset of objects using the material. After editing a material's properties, quickly save the change with the Add to Library tool.

Fill Styles. Control the scale and rotation angle, offset, transparency, and color of Patterns and Fills. Use the Fill Style Painter to apply fills in plan view with a scoped painting tool, similar to the Object Painter.

Edit Parametric Patterns. Modify the sizing and offset for the Herringbone and Grid pattern types to accurately match your final installation pattern.

Material Class Definitions. Use class definitions to define your materials: General, Plastic, Brushed Metal, Shiny Metal, Pre-Defined Metal, Matte, Mirror, Polished, Transparent, and Translucent. Preview the Material classes for standard rendering or ray trace.

Manage Plan Materials. Manage all the materials used in the design. Replace materials used in a plan with a material from the Library Catalog. Select a group of materials to merge.

Search Plan Materials. A search bar in the Plan Materials dialog makes finding entries faster than scrolling through the list.

+ Custom Pattern Generation. Use the pattern editing view to create new hatch patterns and fill style or edit and update existing ones.

Generate Pattern from Texture. Use automatic controls and thresholds to derive vector pattern lines from custom maps, browse to files or choose a map referenced by the material. Easily create matching 2D patterns for custom tiles and other unique material surfaces.

Screen Capture Tool. Screen capture an image and apply in the design, such as a photo of tile for a custom backsplash.

## Feature Description

**Style Palette.** Curate design options like finish colors and door, window, and cabinet styles that can be stored in the Library Browser and applied to your scenes. Make as many palettes as you'd like so you can update your designs on the fly.

**Center Between Two Objects.** Using the Center Object tool, choose the Point-to-Point Center button to center an object between two other items. For example, center a cabinet between two windows.

**Match Properties / Apply Properties tool.** Match properties between items of the same type. Edit similar items, including Electrical and Images.

**Import Custom Symbols.** Import custom 3D objects from popular brand catalogs or other sharing sites and store them in the Library Browser for use in your designs.

**Smart Symbol Creation.** Import and create smart objects with behaviors specific to the software's feature. Sinks that insert into cabinets, decorations that hang on walls, light fixtures with brightness properties.

**Convert Selected Items to Symbol Object.** Quickly convert one or more 3D elements to a Symbol Object. Assemble cabinets, 3D solids, soffits, moldings or other 3D items into a custom item, and convert only those that are actively selected to a Symbol that can be stored in the Library Browser and reused in designs.

**Create Custom Moldings.** Draw your own molding profile. The software will extrude the molding in 3D. Create stacked molding combinations, then add these compound moldings to the library for reuse. Flip moldings both vertically and rotate at any angle so they can be applied in several different scenarios.

**Distributed Region and Path.** Automatically generate groupings of an object in an area or along a path (garden beds or cable lighting, for example). Set variances like size, position and angle for a more naturalized look.

**Catalog Library Browser.** Access thousands of Objects / Items, both Manufacturer and generic. Download, import and create new objects. Search for objects in the Library or use the advanced search features to filter the results. Number of Library Items is displayed in the status bar.

**Catalog Migration.** Library Filters and Core, Bonus, Manufacturer and User Catalogs from previous installs automatically migrate and update to the latest version at install time; User Catalog automatically migrates from previous installs.

**Automatic Catalog Updates.** Check for updates for catalogs distributed by Chief Architect from the menu, or using the Update Library Catalogs tool button. Catalog Downloads automatically restart if Chief Architect is closed then re-launched. Notification dialog lists which catalogs have been updated after the updated catalog process is complete.

**Update Catalogs on Demand.** Reference a catalog's library browser icon to determine if   
+ an update is available. Use the context menu to update selected catalogs or use the Update Library Catalogs command to update all at once.

### Library / Catalog

## Feature Description

Library Search & Instant Search bar integrated into the Library. Search for Library items by keyword, object type or style. Instant Search bar is integrated into the Library, just start typing in the search bar to find objects in the Library. Customize Library Search Attributes, view or modify key words for searching on Library objects.

- + Library Browser Tagging and Filtering. Use various filter tools based on User-Defined Tags, Object Properties and Types, and Favorites to find and manage objects in the Library Browser. View and browse through filtered results; discover details about individual objects. Customize your experience with personalized Tags and Saved Filters. Use the Back button to view previous results.

Refined Search in Library Browser. Use terms “AND”, “OR”, and “NOT”, and create search groups using parentheses ‘()’ in library searches to refine results.

- + Search Online for Available Catalogs. Use the search tools inside Chief Architect’s Library Browser to discover and download content from the 3D Library.

Edit CAD Blocks. Use the Edit Block tool to temporarily open an edit view window for CAD Blocks in your designs and the Library Browser. After modifications are complete, save edits and choose to apply your changes to all the matching blocks in your work.

Store Patterns and Fill Styles in the Library. Convert and access your favorite patterns in the Library Browser, edit properties like color, scale, and orientation, and copy and rename them as necessary. Easily apply fills and patterns to objects and materials from their specification dialogs.

Add Notes to Library Browser. Save and reuse Notes, Callouts, and Markers by storing them in the Library Browser.

Store and Edit Text in Library Browser. Add individual, unblocked pieces of text to the Library Browser for easy preservation and reuse in future projects.

Library Object Shortcuts. Create shortcut items to any object in the Library Browser to customize your organization.

Replace From Library tool. Select objects in the plan and replace with an object in the Library. Replace single items or all identical items in a plan.

Library Painter. Update and replace library items by 'painting' them onto objects; see visual feedback through the cursor and when hovering over objects. Update doors, cabinet doors, and parametric items, or replace entire objects in 2D and 3D views.

Library Painter Scoping. Apply and replace library items using scoping. For example, replace cabinet hardware on a single drawer, on an entire cabinet, for all cabinets in a room, on a floor level, or in the whole plan.

Edit Parametric Items in Library Browser. Once saved into the Library, open and edit the properties of Cabinets, Windows, Doors, and other parametric items.

Edit Symbol Objects from the Library Browser. In addition to adjusting the Symbol Properties for objects, edit the specifications like Layer and Label and save with the object in the Library Browser.

## Feature Description

Find in Library. Determine whether or not a selected object exists in the library browser using an edit tool, or through the Replace from Library dialog.

Save Objects Using 'Add to Library As'. Store components attached to an object or Architectural Block (like cabinet doors, hardware, millwork, and moldings) in the Library Browser as separate and unique items using the Add to Library As Edit Tool.

### Materials List & Cost Estimating

Automatically generate Materials Lists. Automatic Materials List with columns for equipment, unit costs, percent markup, and labor costs. Change order of the columns. Generate a list for the entire plan, single room, or defined area using a polyline. Materials List updates as design changes to reflect product, quantities, prices, and general costs of the goods and services required for your project.

Master Materials List. The Master Materials List stores master data, such as price. Choose which data is stored in a Master List, and when to load saved Master List information into your project's Materials List. Save and load multiple Master Materials Lists.

Find in Plan from the Materials List. Select items from the materials list and choose to Show in Plan to identify and locate them in your design.

Comments and Notes per Object. Use the Object Information panel to easily add and manipulate Code, Comment, Description, and Manufacturer fields through items' specification dialog. Data appears in both Materials Lists and Schedules.

Object Components. Find the components panel in the specification dialog for objects that are reported to the materials list. Adjust calculation methods and other details for the object from the Components panel.

Specify Layers when calculating a Materials List. Use Layers to control what is included in the Materials List.

Ruby Macros in Materials List. Leverage Ruby Scripting to create custom formulas for calculations in the materials list. Leverage reference codes for elements in the program to write custom text macros and Ruby scripts.

Material List Layer Sets. Define layer sets to control which elements are displayed in individual Material Lists.

Schedules. Create Schedules for Doors, Windows, Cabinets and Materials, Fixtures, Appliances, Furniture, Electrical, HVAC, Notes, Plumbing, Plants, Room Finish, Walls, Molding Polylines, Roof Planes, Skylights, Millwork, Sprinklers, and Shapes. Automatically Customize the information contained in the Schedule and label controls for Schedules.

Callout Label Shapes. Designate rectangular, diamond, capsule, and other shapes for schedules' automatic callout labels. Independently control the display of object labels and their corresponding schedule callouts. Choose to display both at once, none, or just one in any given view.

Custom Schedules. Generate schedules that include multiple types of objects, and specify in which schedule grouping individual objects belong; for example, specify Glass Sliding Doors as Window Schedule objects or separate objects into "Existing" and "New" schedules.

+ Sort Schedules by Column. Change the sorting and numbering of objects in a schedule based on different columns in the table. Sort by ascending and descending values.

## Feature Description

**Polyline Objects in Schedules.** Choose to include CAD polylines and polyline based objects like backsplashes, counters, material regions, slabs, and terrain objects in schedules. Report the number of lines and perimeter.

**Find in Plan from a Schedule.** Select a row of items from your schedules and choose to Show in Plan to locate them in your design.

**Open Object Specification from Schedule.** Select a row from a schedule and choose to open the specification for the item(s) represented in the row, edit and update them in your project and your schedules.

**Schedule Thumbnails.** Display a preview thumbnail of objects as a column in schedules; change the view type to control the style of the display.

**Schedule Formatting.** Adjust the text style associated with schedule title and column headers separately from data rows. Change the orientation of schedule data by transposing the listing of the vertical column data as horizontal rows. Specify the top and bottom margin for rows in schedules.

**Custom Columns for Schedules.** Use the Object Information Panel in an item's specification dialog to assign custom fields which can be displayed in Schedules.

**Specify Schedule Starting Number.** Create a series of shorter schedules by specifying the starting number for each schedule in the sequence.

**Export Schedules.** Export schedule tables directly to .CSV, .TXT, and .XML formats to easily manipulate them in other applications.

**BuilderTREND Support.** Export Materials List with accounting codes, descriptions, quantities, and pricing. Accounting codes conform to the NAHB Standards.

**Cut & Buy Lists .** The Structural Lumber Table can be used to calculate lumber materials for a Cut List and a Buy List. This calculation is in addition to square feet and lineal feet calculations and can be especially helpful for your framing and decking board calculations.

**Pricing in Framing Buy Lists.** Include pricing data per board when you generate framing linear length and buy lists. Set up separate pricing models for each report type.

## Text / Annotation / Scripting

**Fully editable Text tools.** Control font, size, weight, color, position, justification, and more.

**Advanced Rich Text tools.** Format text with varying colors, font, and more. Convert plain text to rich text.

+ **Hyperlinks in Rich Text.** Embed hyperlinks in text objects; open the URL path using CTRL + click.

**Find and Replace Selected Text.** Use the Find and Replace tool to modify the selected text only.

+ **Replace Fonts.** Use the Replace Fonts tool to substitute font types throughout your plan.

**Text Arrows.** Arrows recognize text justification (left, right, center) and automatically orient appropriately. Add tails using flag parametric objects. Use edit handles to automatically generate new leader lines on text objects.

+ **Custom Arrowheads.** Create and save custom CAD Blocks and use them as arrowheads for Text Arrows, Leader Lines, and Dimensions.



## Feature Description

**Callouts & Markers.** Place Callouts and Markers in Plan, Elevation, Layout, and Detail views. Adjust fill color, line style, line weight, and double-headed Callouts. Callouts and Markers have unique layers. Use multiple default styles for Arrows, Markers, and Callouts.

**Linked Callouts.** Use callouts as hyperlinks between views. Quickly access and open views to traverse between CAD Details, Saved Plan Views, Camera Views, and Layouts. Display a view's callout as part of the label when sent to layout.

**Object Labels.** Type your own customized labels objects; include macros to make them dynamically update with the item. Control label size, orientation, and on which layer it displays.

**Formatting for Labels.** Choose to set your object labels as Left, Right, or Center justified, and turn on or off a border around the text box.

**Labels for Layout Boxes.** Automatic labels for layout views will display the camera name for elevation and section views or the floor plan name for plan views. Create custom labels that will move with the views as you set up your layout .

**Text Styles.** Create Text Styles and assign them per layer, per default, or per object to control the appearance of labels, dimensions and other text in your design.

**Default Sets.** Default Sets control a subset of defaults including Dimensions, Text, Arrows, Markers, Callouts, and Layers. Default Sets can be used to quickly change your defaults and streamline the annotation process.

**Notes.** Generate numbered note markers with associated descriptions can be displayed in a schedule table. Include interactive note markers in camera views that can be selected and edited, and exported to 3D Viewer mobile app for client review.

**Spell Checker Highlight.** See onscreen the highlighted word in its context while using Spell Check

**Embed Hyperlinks in Text.** Add links to website or other files using the text tools.

**Text Macros & User Defined Text Macros.** Insert macros into text objects. Add Contact Info, File Info, Plan Info, Special Characters, and Time and Date macros. Create custom Macros, such as macros for Contractor, Supplier, or Revision Number. Use Text Macros in combination with the Ruby Scripting tools to dynamically update object labels or other annotation in your design.

**Text Macro Management dialog.** Create New, Edit, Copy, Delete, and Test custom macros from within the Text Macro Management dialog.

**Ruby Scripting.** Use the Ruby Scripting Console for writing program scripts - such as determining room volume, custom cabinet labels and several others. Includes an Interactive tutorial on how to create user-defined macros.

**Revision Clouds.** Encircle objects with revision clouds, or draw your own. See a preview of the Revision Cloud you are creating or editing from within its specification dialog. Define Revision Cloud defaults to easily manage clouds with your Saved Views.

## Printing

**Save Prints in PDF Format.** Save to a PDF file for outsourcing print jobs.

## Feature Description

Custom Watermarks. Create watermarks and display them on your work. Control location, size, angle, transparency, and include images in your watermark design. Include watermarks on walkthroughs and control whether a watermark is displayed from within Camera Defaults and for individual cameras.

Print Preview. Displays printable area, paper edges, and line weights.

Drawing Sheet Setup. Determine plan sheet size and specify how it prints to different paper size.

### Import / Export

Export Materials List to Microsoft Excel, CSV, TXT, or HTML.

Import PDF files. Import Adobe® PDF file formats into plans, layouts, and CAD Details; retain print resolution and quality when printing final documents with embedded PDF files.

AutoCAD® Compatibility. Import or Export DXF and DWG files.

Import & Export 3D files. Import 3D DXF, DWG, OBJ, 3DS, SKP, STL, Collada (DAE). Export 3D DXF, DWG, 3DS, STL, DAE.

Import image files: BMP, JPG, GIF, TIFF, PNG, Metafiles. Image import - specify transparency color and add plant data or image information for materials and backdrops. Display Metafile on plan, elevation, and layout views. Specify fill style to show through and transparency on the image.

HD Picture Export. Create and export high-quality, larger than screen resolution renders (watercolor, technical illustration, and final view with shadows). Choose to export images with transparent backgrounds.

Import and Export Chief Objects. Import/Export Saved Plan Views, Default Sets, Layer Sets, Hot Keys, Wall Types, Line Styles, Defaults, Macros, and Ruby Scripts. Share with other users or transfer them from plan to plan.

3D Mass Import. Group import 3D DWG, DXF, 3DS, OBJ, SKP files and convert them to Library Objects.

Create Materials from Textures. Group import texture image files and convert them to materials automatically.

Import Terrain Elevation data. Import survey data from AutoCAD or other sources.

Migrate Settings. Choose to migrate your settings after the initial installation of X13. If you forgot to migrate a file, or want to review the X13 Out-of-Box settings, you can do so and then migrate your custom settings like toolbars and hotkeys later.

### User Resources

Mac & PC compatible. Chief Architect can be installed and run natively either on Mac or Windows operating systems with a single license. Includes native ARM support for Mac M1 processors.

Chief Architect 3D Viewer. Save 3D designs to the Chief Cloud for sharing and viewing in Chief Architect's 3D Viewer application. Multiple cameras can be included and viewed from a single 3D Viewer project, allowing real-time navigation of your designs on the web or mobile devices.

Chief Viewer™ . Free download version of the Client Viewer and your projects with peers, sub-contractors, and customers, allowing them full access to view (but not modify) your work. Include relevant Saved Plan Views to make communicating and sharing ideas easier.

## Feature Description

Home Designer® Compatibility. Open and edit plans created using Chief Architect's Home Designer software products. Full editing allows you to take a DIY design to the professional level.

Support for Multiple Monitors. Tabbed view windows can be torn or undocked from the main user interface and moved between monitors independently.

Touch Screen Optimization. Smooth and accurate touch controls for pinch zoom, pan, rotate and other controls for Windows computers (not supported by Mac OS).

HD Interface Graphics and Icons. Toolbar buttons and high definition icons scale to fit screen resolutions and increased DPI (128px vs 20px)

Specify Preferences & Defaults. Set up Preferences for display and editing tools to customize the interface to your needs. Specify defaults for most architectural elements so that their initial placement suits your project's design and style.

3D Mouse Support. Use a 3Dconnexion Mouse as your input device to efficiently navigate camera views. \*Not compatible with Mac OS.

Virtual Graph Paper™ display. Adjust grid to display a reference in any increment, great for modular design, space planning, and as an indication of scale.

Auto-Save Untitled Projects. Projects that have not been named or manually saved for the first time are archived through the Auto-Save rules set up in user Preferences.

Auto-Archive. Set Auto-Archive Preference to schedule how frequently projects are backed up to an archive file.

Create Archival .ZIP Files. Export an archive of a project that combines all files into a single .ZIP for easy storage. Use the Backup Plan feature to overwrite files into an existing folder instead of requiring an empty directory.

Crosshair Display Thickness. Make the crosshair more prominent on-screen by increasing its display size in Preferences.

Custom Stylized Themes. Set up Chief's User Interface with color and style themes of your choosing. Set preferences for the look of dialogs, menus, buttons and other interface elements; import, export, and share saved themes.

Customizable Toolbars. Modify the toolbar to match your work style. Add and remove buttons, create toolbar groupings, dock and undock toolbars. Create Toolbar Sets. Use the search bar to quickly locate buttons.

Toolbar Sets. A collection of tools on a toolbar set organized by discipline: Default, Terrain, Kitchen & Bath, Space Planning, and Mechanical Electrical Plumbing.

Customizable Hotkeys. Assign and change shortcut key mapping. Set up Sequential Hotkeys. Assign combinations of keystrokes, up to 4, to be used sequentially as shortcuts to tools.

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## Feature Description

**Virtual Reality.** Leverage HTC VIVE™ and Oculus Rift Virtual Reality Headsets to view your Chief Architect Designs. In addition to experiencing the 360d area of a scene, teleport from point to point in a model to experience multiple virtual spaces. Choose to view your models in VR from a First-Person orientation or from an Overhead view; interact with each view type to experience the details of your design.

**Dockable Layer Display Options.** Configure Active Layer Display Options Dialog (ALDO) to be docked and accessible while designing to quickly and easily control your layers.

**REScheck™ Support.** Export energy calculations to U.S. Department of Energy's REScheck™ software.

**Dynamically-Updating Help.** The Help viewer automatically updates to show the Help topic for the highlighted object, tool, or dialog. Dynamic help updates can be toggled on or off.

**Support & Software Assurance.** Updates, Major Releases and New Versions, Priority Technical Support, Online Training Video access, Download Library Catalogs access, Discounted Training Seminars, Discounts on Secondary Licenses.

**Activate/Deactivate Options.** Deactivate a license remotely from your Chief Architect online account in order to access the program from another computer.