Complete Features Guide

GstarCAD 2020

GstarCAD 2020 Content

GstarCAD 2020 Completely Guide

The most desirable alternative CAD.

GstarCAD 2020 comes out with comprehensively 3D optimization, newer practical features and important enhancements, making your design smoother and efficient. With the best-ever performance, seamless compatibility and the full functionalities, GstarCAD 2020 becomes the most desirable alternative CAD.

1. Perfect Compatibility

GstarCAD improves its compatibility constantly. From the data format, interface, command structure, user operating habit to customization settings and applications/add-ons. Now, GstarCAD 2020 accomplishes the high compatibility with ACAD.

➢ Data Format

DWG file format is a native format used for storing 2D/3D design data and metadata. GstarCAD 2020 supports the native DWG/DXF file formats which are completely compatible with ACAD from version 2.5 to 2020. Any CAD drawings based on the DWG/DXF format can be easily handled by GstarCAD. Meanwhile, the drawing files created by GstarCAD also can be handled with other CAD software. GstarCAD 2020 fully realizes bidirectional compatibility with ACAD in data formats.

Furthermore, GstarCAD 2020 even supports various kinds of data file formats and secondary development interfaces. You could create or edit drawings with exactly original ways.
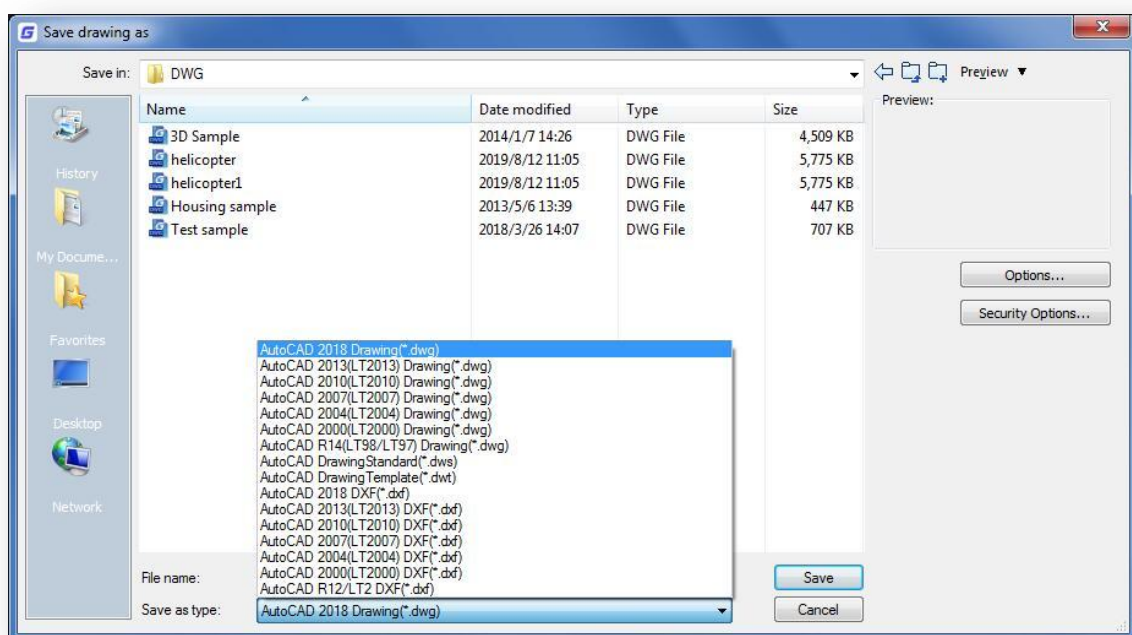
The mainly file formats and development interfaces between GstarCAD and ACAD.

Items	GstarCAD	ACAD
2.5-2018 DWG/DXF Versions	√	√
Drawing Templete File (DWT)	√	√
Drawing standard File (DWS)	√	√
Customize User interface file (CUI/CUIX)	√	√
Old Menu File (MNU)	√	√
Drawing Sheetset File (DST)	√	√
Hatch Pattern File (PAT)	√	√
Font File (SHX)	√	√
Line Type File (LIN)	√	√
Print Style File (CTB/STB)	√	√
Import and Export WMF	√	√
Import and Export SAT	√	√
Import 3DS	√	√
Import DGN	√	√
Export DWF/DWFX	√	√
Export STL	√	√
Export EMF	√	√
DWF Underlay	√	√
PDF Underlay	√	√
DGN Underlay	√	√
Script File (SCR)	√	√
LISP Development Interface	√	√
LSP File Loading	√	√
FAS File Loading	√	√
VLX File Loading	√	√
VBA Development Interface	√	√
Class ARX Development Interface	√	√
.net Development Interface	√	√

➢ Concise User Interface

GstarCAD 2020 offers you a concise and familiar interface which you can easily customize. The new attractive dark color theme and icon designs will reduce your eyes strain. It's also available for you to display and rearrange elements like the toolbars, display the command bar, switch between workspaces, change the interface themes, customize your own interface and enable the status bar. The toolbars and command bar can also be floated anywhere on the screen or docked as well.
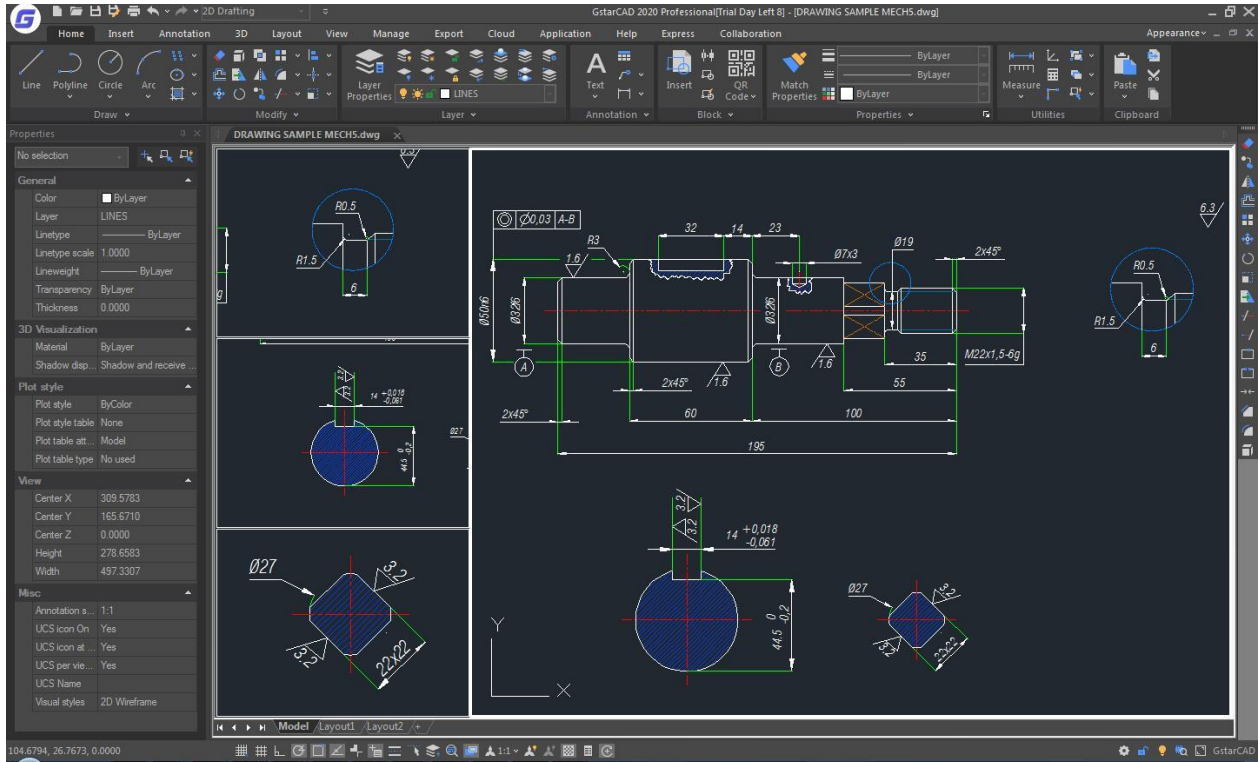
➢ Familar Command

With the familiar command structure and shortcut system that you have known, you can get start with GstarCAD immediately without any extra training. Whether you're a novice user or an experienced CAD professional, you'll soon be creating drawings using the productivity-enhancing features of GstarCAD.

GstarCAD Commands	ACAD Commands	GstarCAD Commands	ACAD Commands
Multiple	Multiple	Superhatch	Superhatch
Osnap	Osnap	Redraw	Redraw
qselect	qselect	Regen	Regen
Qleader	Qleader	SCALELISTEDIT	SCALELISTEDIT
Spell	Spell	bedit	bedit
Layerp	Layerp	Render	Render
Layoff	Layoff	Flatshot	Flatshot
			......

➤ Customized Settings

GstarCAD offers several ways to import your customized settings such as CUI, Lisp program, Shortcut settings, Blocks, DWT and Plotters from other CAD software. Just few minutes, you will find you are familiar with GstarCAD.

➤ API and Add-ons

GstarCAD offers friendly development interface such as GRX, .NET, VBA, Lisp etc. Nowadays, hundreds of professional applications and industrial solutions are running on GstarCAD.
For more information about applications/add-ons of GstarCAD, please refer to the link:
https://www.gstarcad.net/application/

2. Flexible Licensing

2.1. Licensing policy

GstarCAD licensing policy is flexible and simple. We provide both perpetual license and subscription. You are free to choose the license mode and you decide when to upgrade.

Perpetual License

When you choose to buy GstarCAD Perpetual License, you have the right to use it perpetually. You buy it once and it's forever yours. You are not forced to buy the subscription nor upgrades.

Perpetual License and Subscription Plans

You can buy GstarCAD Perpetual License together with Subscription Plans. Gstarsoft releases a new GstarCAD major version every year, with Subscription Plans you can upgrade to the latest version of GstarCAD.

Yearly Subscription

GstarCAD Yearly Subscription is similar as ACAD Subscription, you can just pay a smaller amount for using GstarCAD 1-year-license.

GstarCAD Upgrades

Gstarsoft releases a new GstarCAD major version every year, you can upgrade your GstarCAD Perpetual License to any newer version, still the Perpetual License!

2.2. Licensing Options

GstarCAD not only provides the flexible licensing policy, but also provides you flexible licensing Options. GstarCAD offers Stand-alone and Network licenses, both are available with Soft key (Serial number) and Dongle(USB-key).

Stand-alone license

The software is constrained to a certain host. A license is needed for each computer on which the software will be installed.

Network license

A pool of licenses is available on the server, for use in any computer on the network. You only need to have licenses for the maximum number of simultaneous users expected, not for each computer where the software will be installed.

|	Stand-alone License-key Serial number	Stand-alone USB-key Dongle	Network License-key Serial number	Network USB-key Dongle
Perpetual license	√	√	√	√
Rental license	√	×	√	×
License borrowing	×	×	√	×
Connection to license server	×	×	√	√

3. Excellent Performance

Higher performance plays an important role in GstarCAD. The performance of common-use operations like "OPEN", "QSAVE", "PLOT", "CLIP", "TRIM", "PASTE", "MOVE", "DYNAMIC SELECTION", and more commands are significantly faster than other CAD software. Big drawings could be opened more quickly and save your work in only a fraction of a second.

The chart below provides an overview of the performance of GstaCAD 2020. We build an operation speed comparison between GstarCAD and another CAD. The drawing which uses to test the operation time is around 47 MB. To make sure the data validation, same operations will be tested twice and get the average value.

Operation speed from two software's（Unite: Second）
Testing environment：WIN7 64bit; 8G storage; 64bit installation package; Drawing size: 47MB
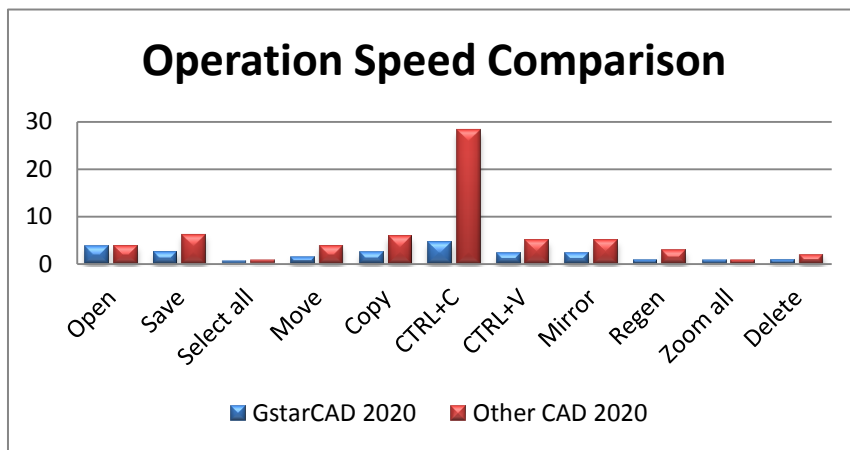
It's obviously that GstarCAD 2020 is faster than the other CAD software when executing ZOOM, MOVE, SAVE, COPY command. And extremely good when executing COPY TO CLIPBOARD command. Besides the chart, GstarCAD also works excellently in ARRAY and EXPLODE command, while another CAD even couldn't array objects in the same drawing. Additionally, execute EXPLODE by the other CAD software won't get response for a long time. Compare with other CAD software, GstarCAD is far ahead in performance especially for large drawings.

4. Innovative Features

GstarCAD offers over 100 unique and innovation tools like "Collaboration", "Area Table", "Auto Layer", "Viewport to Layout", "Autoxlstable". They are adopted to significantly speed up your drafting speed.

GstarCAD Innovative Features	Description
Autolayer	Automatically switch the current layer while drawing the graph and draws the graphic to the set layer.
Area Table	Automatically dimension and count the area of an enclosed object and export the result to a table in the current drawing area.
Break Object	Bleaks Objects by intersecting lines and allows to set the gap.
Block Break	Breaks or shelter the graphic under the block.
Graphic Compare	Compares graphic of two groups of objects or two files.
Line2pl	Converts one or multiple connected straight line(s), arc(s) to one polyline.
Sptpl	Spline created can be converted to a polyline according to the accuracy (number of segments of the arc).
GstarCAD Tools	A set of GstarCAD practical tools to enhance design efficiency, Including Drawing Scale, Rotate Cursor, Draw Axonometric Line, Extension, Normal Connect, etc.
Drawing Lock	Turns the drawing into a whole block to prevent be modified by others.
Attribute Increment	Specifies attribute of blocks with incremental value, and to modify attribute value of blocks according to the sort method.
Define Layout Viewport from ModelSpace （M2LVPORT）	Defines the range of drawing displayed in viewport from the model space, calculate the viewport size based on the set scale and position the viewport in the layout space.
Align Tool	Aligns selected objects such as: rectangle, circle, line, spline, arc, pline, block and even 3D model object along X or Y axis coordinates.
Arrange Tool	Adjusts the arrangement of multiple objects. It can align multiple objects at left, right, top, bottom and center and also can arrange vertical or laterally.
MEASUREGEOM	Supports to measure distance, radius, angle, area, volume sum area and so on.
Symmetric Draw	Generates the symmetrical object automatically when drawing an object.
Outline Objects	Extracts the outline shape of selected closed objects in a window selection method.
Invert Fillet	The FILLET command now offers a new option called Invert. You can create a reverse fillet by this option.
Magnifier	Views a specific area of your drawing as a magnifier with the capability of snap points without performing zoom in/out.
Barcode & QR Code	Creates Barcode& QR Code by entering data or picking data from drawing.
Shortcut Customization(CUSTACC)	CUSTACC command allows you to customize, delete or modify existing command shortcuts.
Table Tools	A set of practical tools to draw and edit tables and can export CAD Table to Excel file.
AutoXLSTable	Opens Excel file to edit the data and insert it to GstarCAD. It also allows to update the table data after the drawing was modified.
Pline Boolean	Supports different Boolean operation options such as union, intersection and

|	subtraction.
Batch Print	Batch print drawings with the same drawing frame attribute in a drawing.
Arrange Frame	Inserts frames of drawings, calculate according to the size of the frame and then arrange them to a big drawing.
GstarCAD Collaboration	Helps to improve project design efficiency and significantly reduce error and cost.
...	...

5. What's new in GstarCAD 2020

5.1. Quick Properties *New*

Quick Properties is a set of objects properties displayed through the Properties Palette. GstarCAD 2020 is able to customize your own Quick Properties, you can decide to show your preferred object type with selected object properties to save the limited drawing space.

5.1.1. Specify Quick Properties window displays

Right-click the icon of the quick properties, there are three options as below:
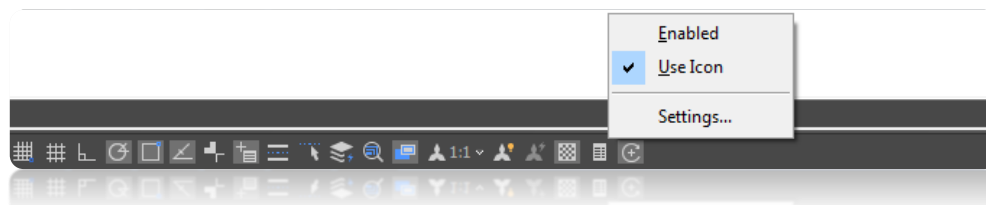
Turn on: Control Quick Properties mode turns on or turn off.

Use Icons: Control the status bar items shown with icon or text.

Settings: Settings for Quick Properties. Click Settings option, the drafting settings dialog box will pops up. You can set the relative settings of quick properties in Quick Properties Tab.
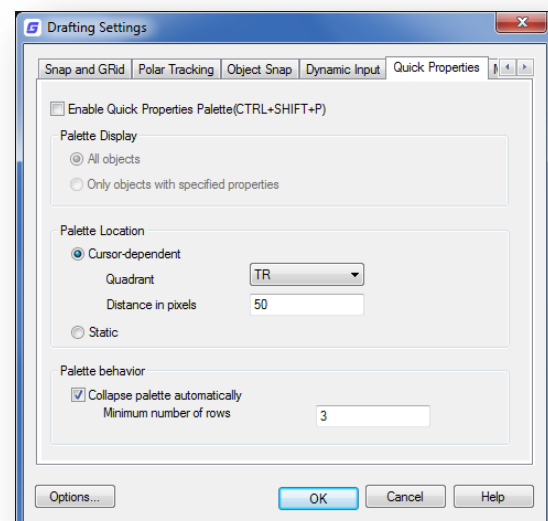
5.1.2. Options in Quick Properties Tab

Enable the Quick Properties Palette: Displays the Quick Properties palette when you select objects.

Palette Display: Sets the display settings of the Quick Properties palette.

All Objects: Sets the Quick Properties palette to display properties for all the objects when they are selected, not only the object types specified in the Customize User Interface (CUI).

Only Objects with Specified Properties: Sets the Quick Properties palette to display for the only object types with specified properties in the Customize User Interface (CUI).

Palette Location: Sets the location of Quick Properties palette.

Cursor-Dependent: Displays Quick Properties palette location relative to the cursor.

Quadrant: Specifies which of four quadrants around cursor to display the Quick Properties palette relative to the cursor location. There are four quadrant options, top-right, top-left, bottom-right, bottom-left.

Distance in Pixels: Specifies the distance in pixels from the cursor to display the Quick Properties palette. The integer values should from 0 to 400.

Static: Displays the Quick Properties palette in a fixed location. You can specify a new location as fixed location by dragging the Quick Properties palette.

Palette Behavior: Sets the behavior of the Quick Properties palette.

Collapse Palette Automatically: Displays the specified number of properties in Quick Properties palette. The palette expands when the cursor rolls over it, collapse when the cursor moves out of it.

Minimum Number of Rows: Sets the number of properties displays when the Quick Properties palette is collapsed. The integer values should from 1 to 30.

5.1.3. Set the Object Types and Properties to display on the Quick Properties Palette

In Quick Properties menu, the properties displayed in the Quick Properties palette can be customized. You are allowed to enable and disable the properties of the objects as needed, check or uncheck the category check box such as General which includes the general properties of the objects. If you check the category check box, all the properties in this category will be shown in the quick properties palette, otherwise, none of the properties will be shown in the quick properties palette.

1. Execute CUI command to open the CUI dialog box.
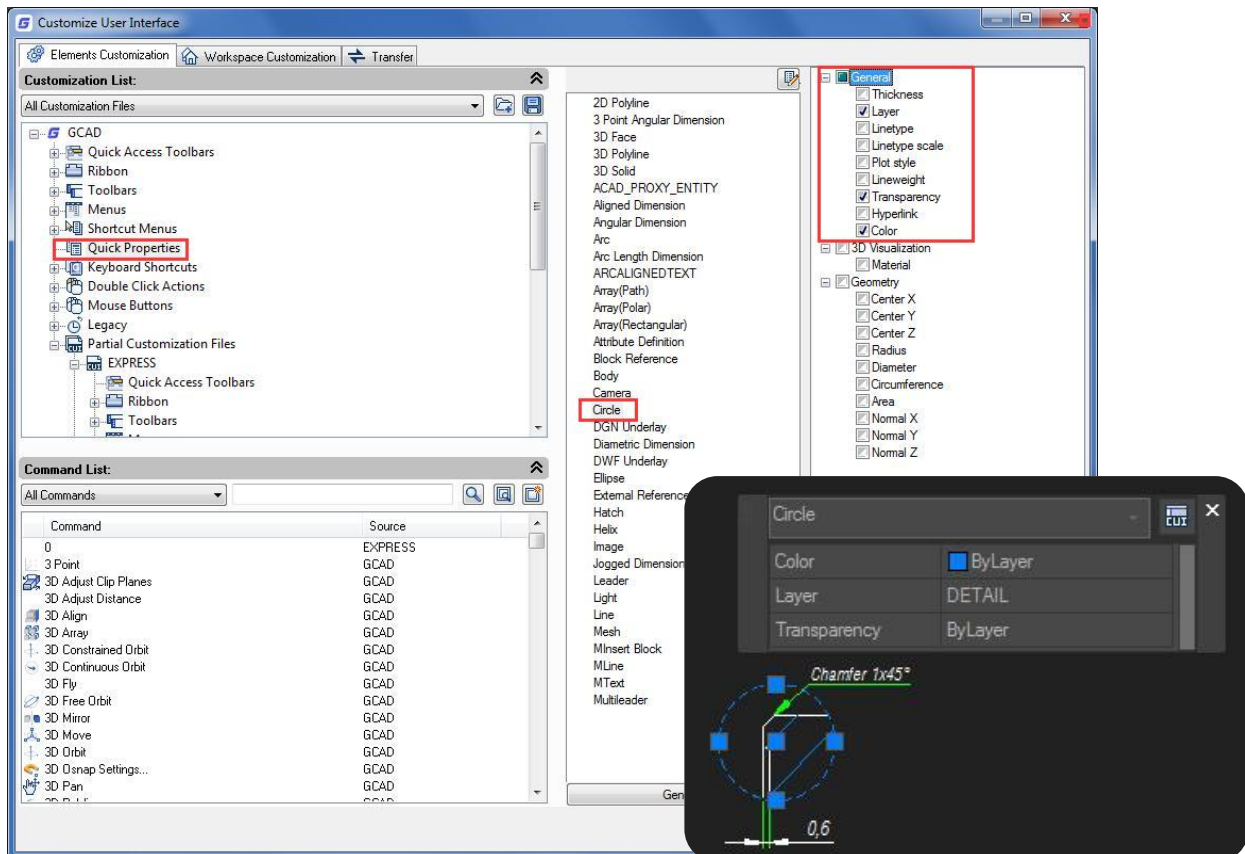
2. In the Elements customization tab, click Quick Properties

3. In the Objects pane, click Edit Object Type List to choose the objects object types you want to display properties for on the Quick Properties palette.

4. In the properties pane, you can select the properties of the object type are displayed on the Quick Properties palette.

5. Click OK and Apply.

5.1.4. Override the General Properties for all Object Types

1. In the Element Customization tab, Customizations, click Quick Properties.
2. In the Properties pane, click the check boxes next to the general properties you want the Quick Properties palette to display for all object types.
3. Click Reset Overrides.
4. Click Apply.

5.1.5. Restore the Default Settings for Quick Properties

1. In the Element Customization tab, right-click Quick Properties.
2. Click Restore Default.
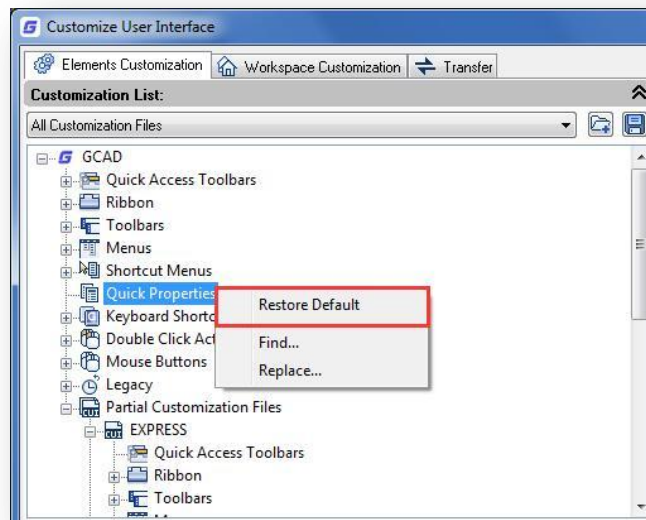
3. Click Restore the Default Quick Properties Settings.
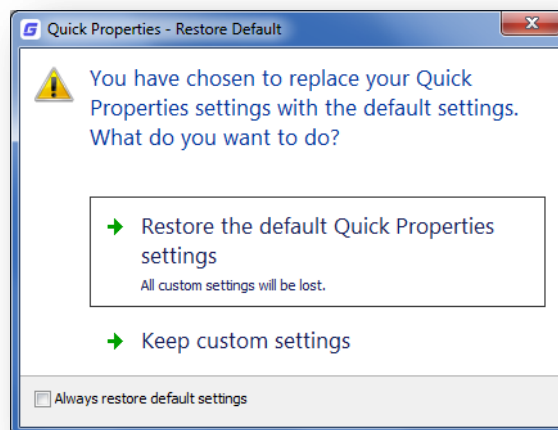
4. Click Apply.

5.2. IFC File Format Import and Export *New*

GstarCAD 2020 supports .IFC file format import and export. IFC (Industry Foundation Classes) is a standard format used in building and construction industry that provides interoperability between different software applications. Since IFC format supported in GstarCAD 2020, you can import and export standard IFC file format, as well as view 3D models by category and operate in GstarCAD conveniently.
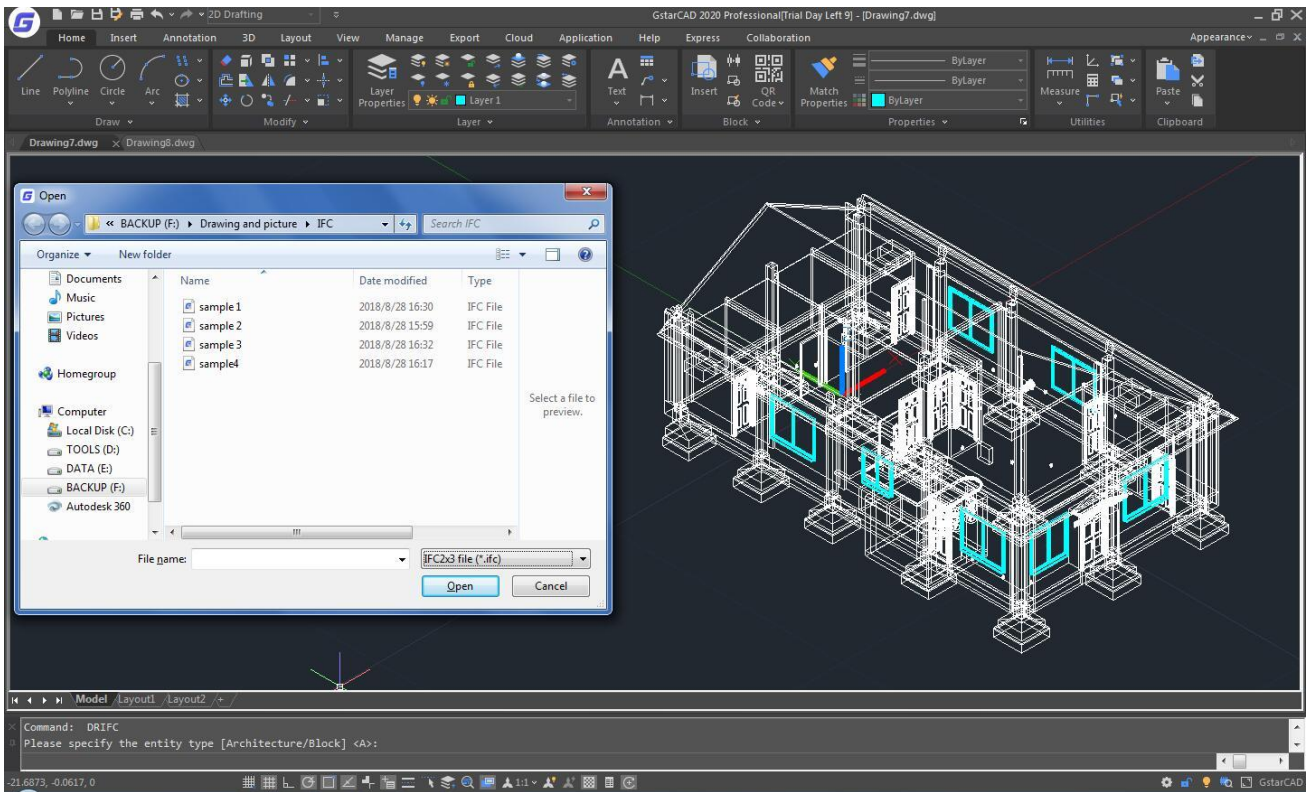
When installing GstarCAD 2020, click "Options" and check "IFC Model", then continue to install. After the installation with the IFC model component, you can import and export standard IFC files, hide and show the 3D entities with attribute by category and easily operate the entities such as move, copy, rotate, delete in GstarCAD 2020.
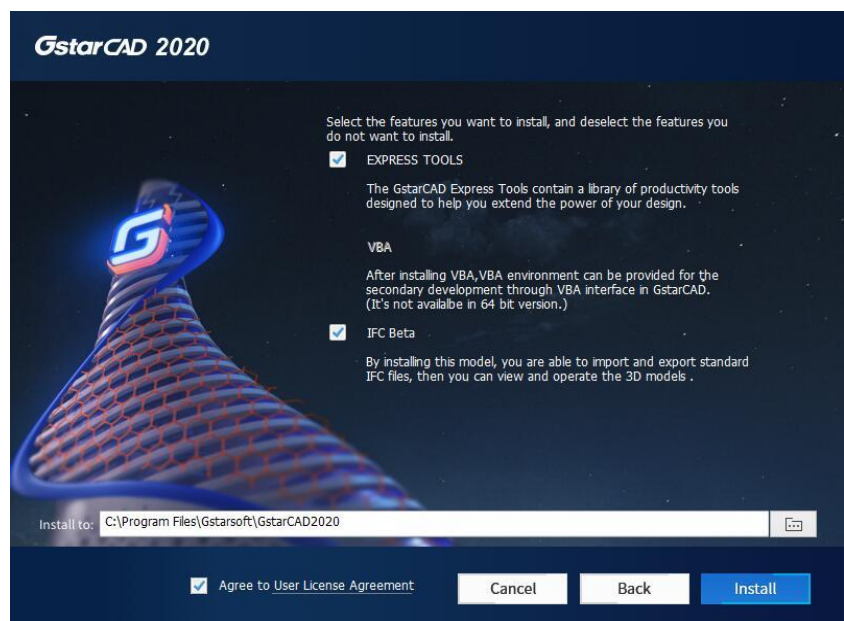
Import IFC: DRIFC command allows to import the standard IFC format to GstarCAD 2019.

After inputting DRIFC command, GstarCAD prompts "Please specify the entity type Architecture /Block".

➢ "Architecture (A)", GstarCAD will convert construction entities (such as walls, pillars & columns) to GstarCAD-defined objects and import them to GstarCAD to do further modifications more flexible.
➢ "Block (B)", GstarCAD will convert IFC data to block reference objects and import them to GstarCAD.

After input the keyword, browsers an IFC file to open.
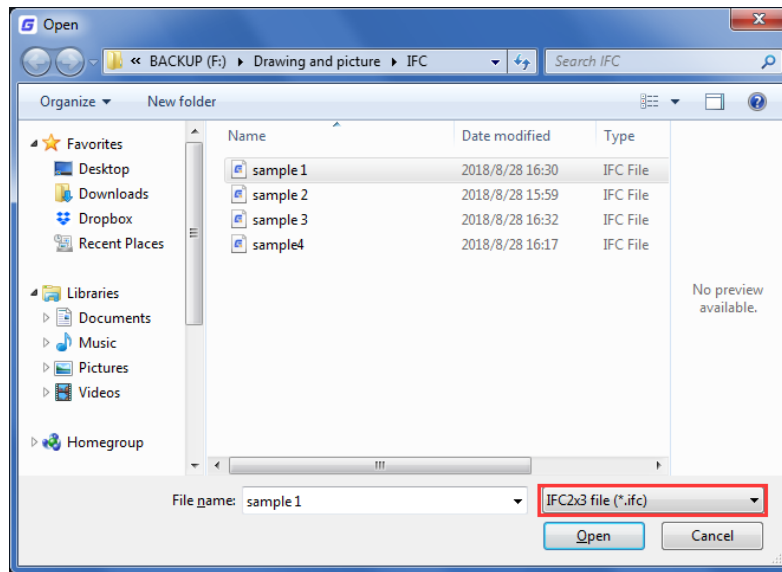
The number of imported entities of the IFC file will display in the command line, indicating the IFC file has been successful imported. All imported entities will display in southwest isometric view. You can check your 3D model in GstarCAD after importing.
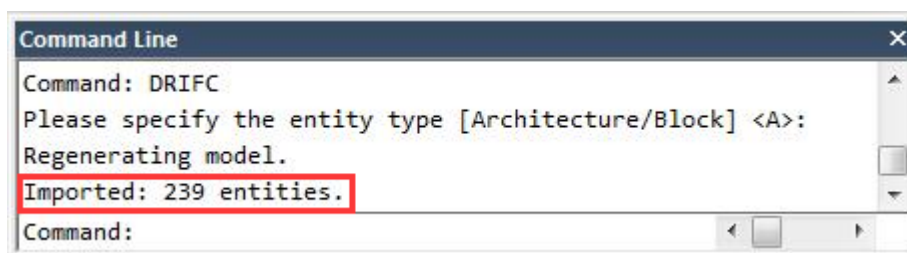
Export IFC: DCIFC command allows to export the current DWG drawing to standard IFC format IFC2x3.

After inputting DCIFC command, Save as dialog box will pop up, you can specify a path to locate the IFC file.
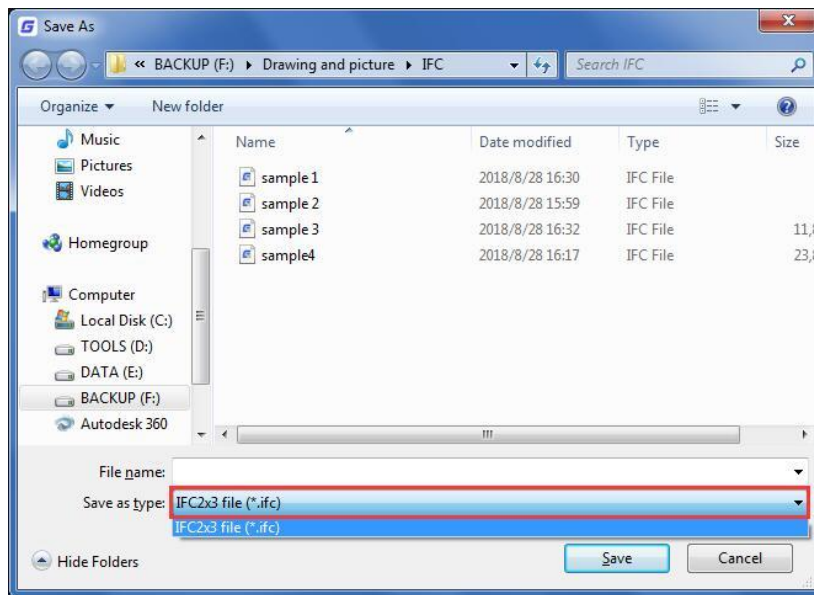
After exporting, the number of exported entities and the path of exported files will be displayed in the command line, as shown in the following picture.
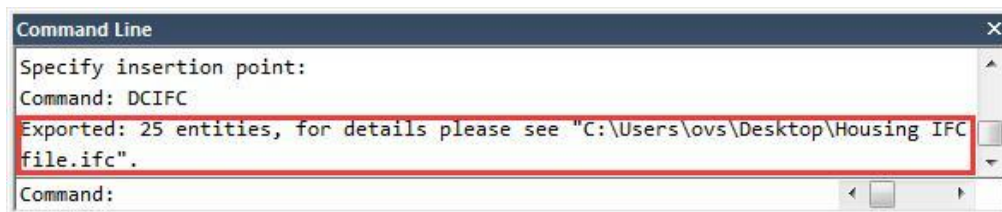
View IFC: IFCPANE command allows you to view the imported IFC file by category.

After inputting IFCPANE command, the IFC palette will show up on the right side of the workspace by default.
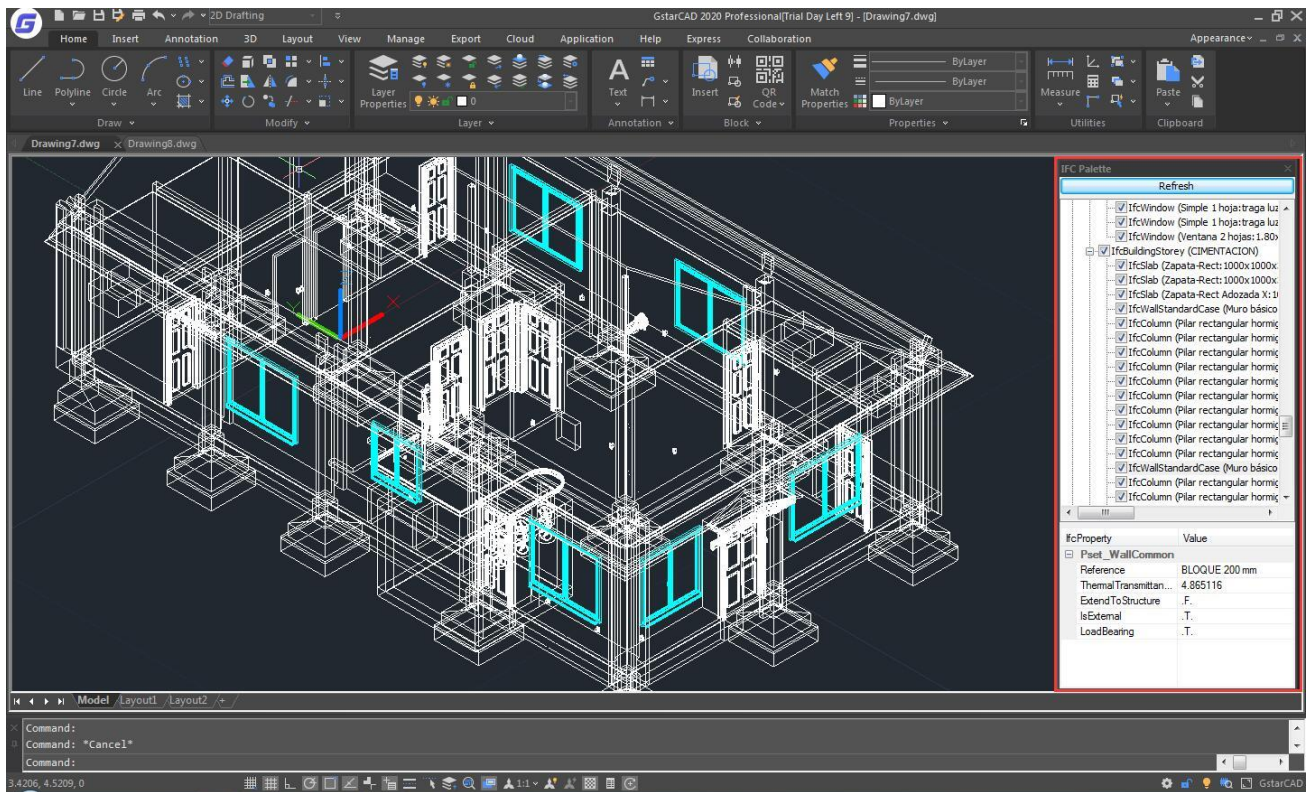
IFC palette is a dockable window that you can close it by clicking close button or to resume it by entering "IFCPANE". When opening multiple drawings with GstarCAD, click on the refresh button in the IFC panel to make sure that the IFC palette displays information of the current drawing.

5.3. 3D *Improvement*

GstarCAD 2020 improved 3D performance, 3D functionalities, 3D display effect and accuracy. View and edit 3D model will be more accuracy and fluency in GstarCAD 2020.

5.3.1. 3D Performance Improvement

GstarCAD 2020 made a comprehensive optimization for the performance of 3D component in GstarCAD 2020. Executes RENDER and HIDDEN command in GstarCAD 2020, the memory usage will be reduced over 30% comparing with GstarCAD previous version. The speed of ZOOM and PAN enhances more than two times, especially handling large drawings. It is quite smooth to ZOOM, PAN and constrained ORBIT under shaded and hidden states.

5.3.2. 3D Accuracy Improvement

GstarCAD 2020 optimized accuracy for 3D component. It will significantly reduce the problem like missing elements, line dislocated, incorrect color, etc. in GstarCAD 2020.
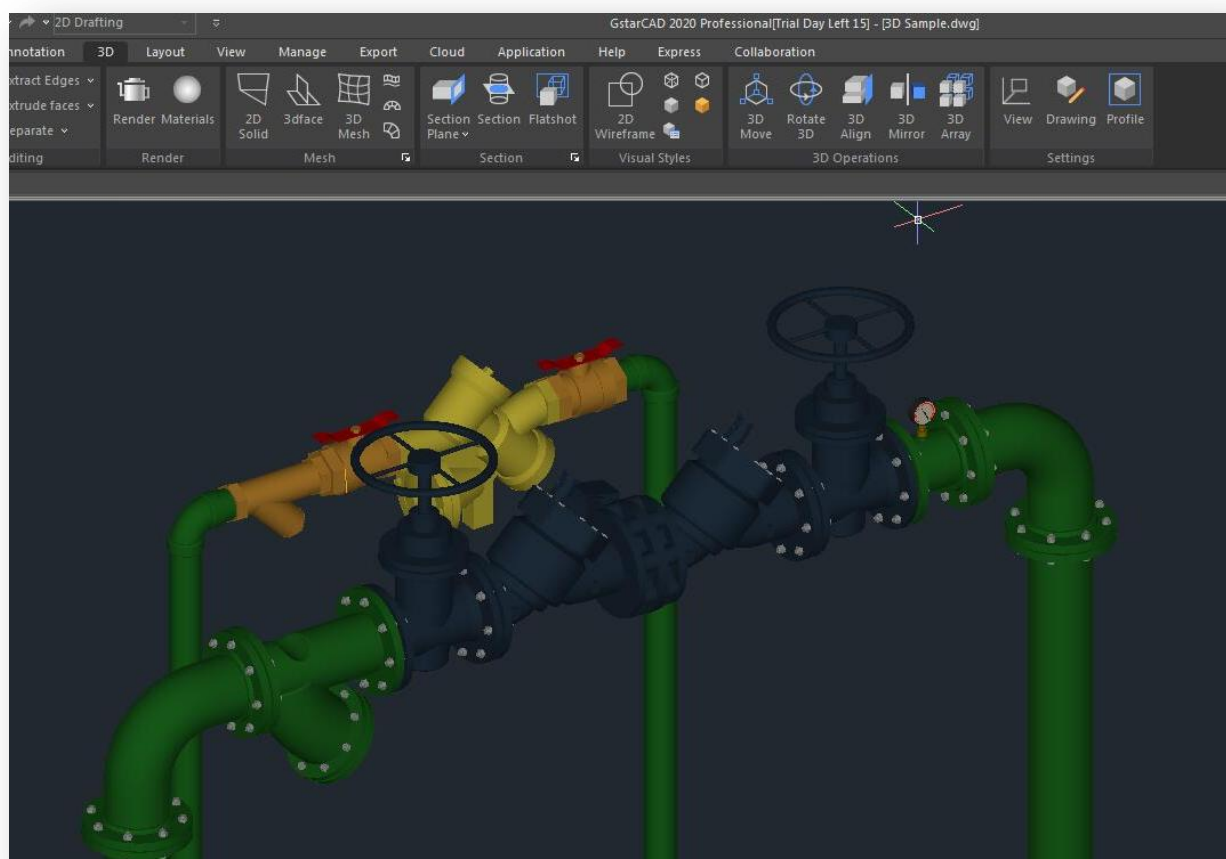
5.3.3. 3D Visual Effect Improvement

GstarCAD 2020 offers better visual effect for 3D objects than previous version.

➢ Improved the boundary display style and remove the redundant boundary.

Hidden Style
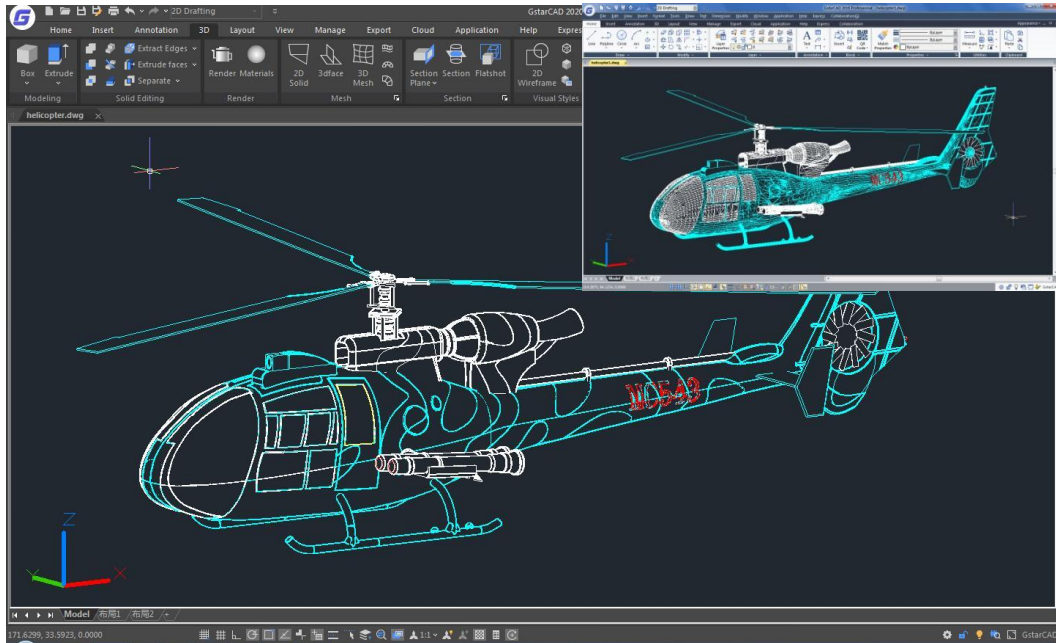
Shaded with Edges

➢ Improved 3D solid transparency and material effect.
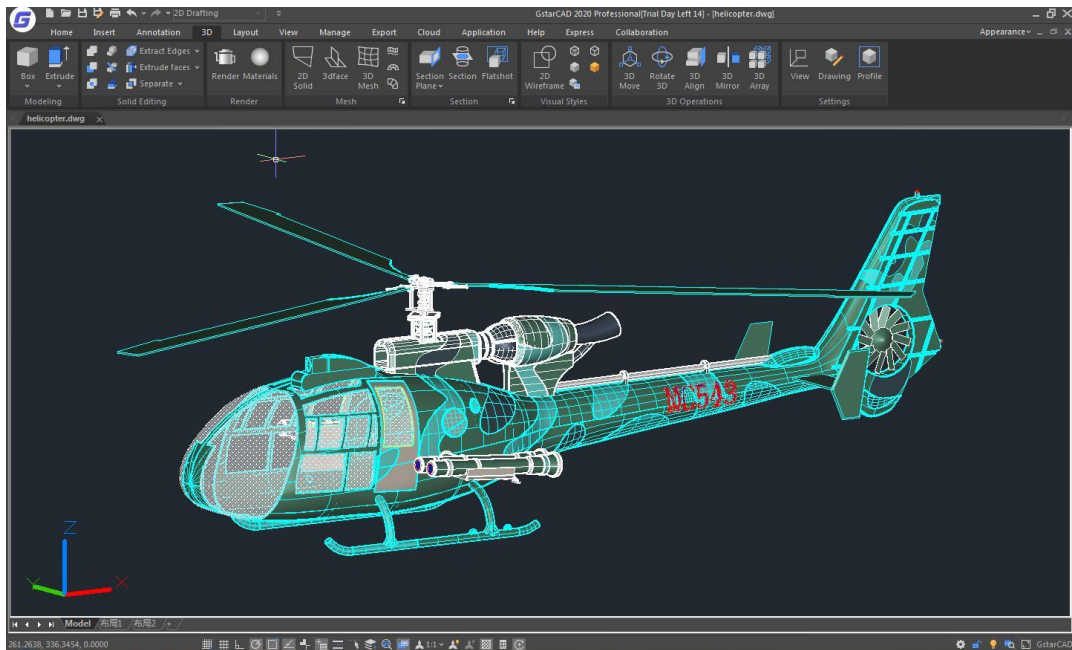
➢ Improved and added more 3D visual styles. Included 2Dwireframe, 3Dwireframe, Hidden, Realistic, Shaded, Shaded with edges, Shades of Gray and Other styles.

➢ Improved the visual effect of lighting and support double lights model.

➢ Improved the 3D preview visual effect (selection preview and selection view)
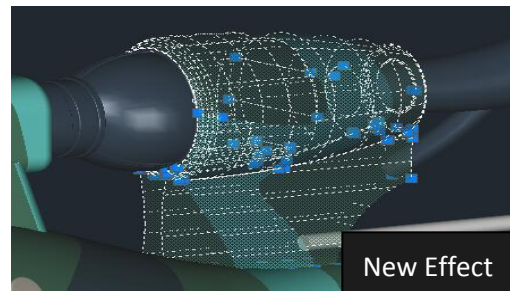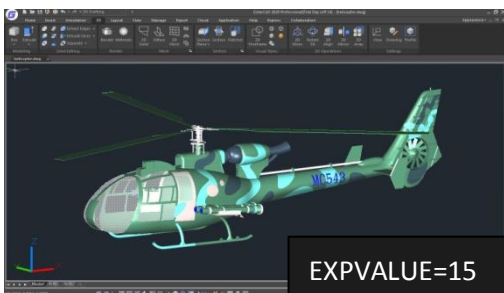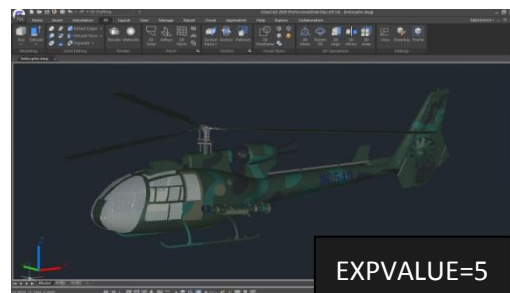
Selection Preview
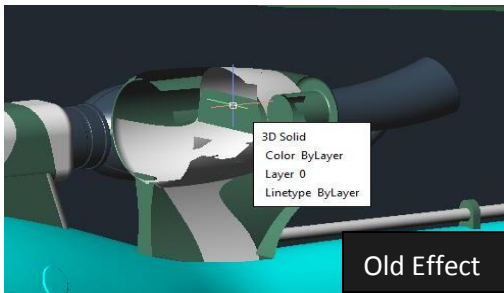
VS
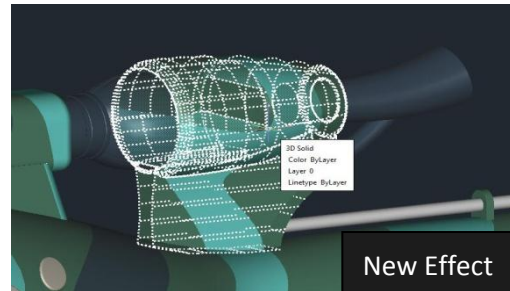
Selection View
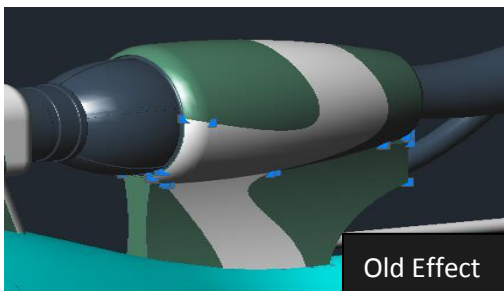
VS

➢ Support Shaded Brightness (EXPVALUE variable)

VS

5.3.4. 3D Edition Improvement

In GstarCAD 2020, with the parameterized 3D entities, you can easily edit 3D entity directly. The grips will be shown on the faces, edges, and vertices after selecting the entity. You can change the length, width and height by moving the grips or simplified other editing operations by the grips as well.
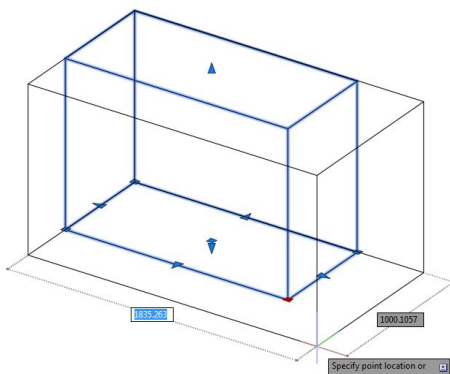
For example:
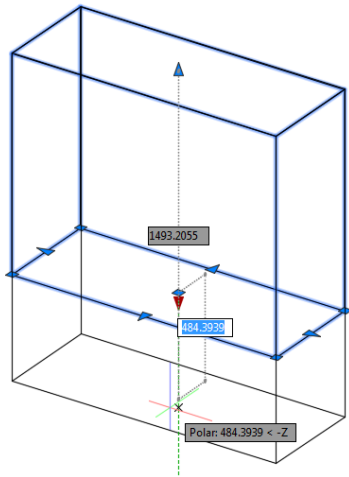
To change the height of the solid, you can move the grips by dragging the vertices grips along the extension line or set the value in command line.
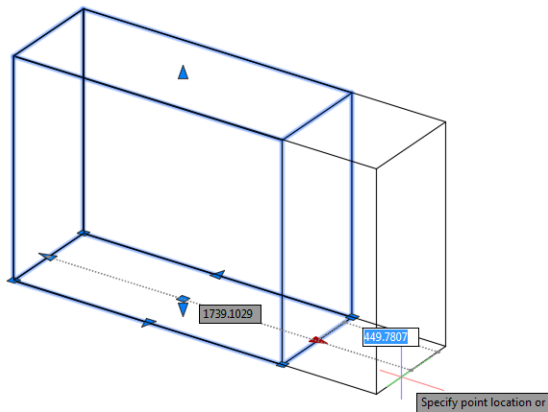
To change the length of the solid, you can move the grips by dragging the face grips along the extension line or set the value in command line.

To change the width and length of the solid simultaneously, you can move the grips by dragging the face grips along the extension line or set the value in command line.
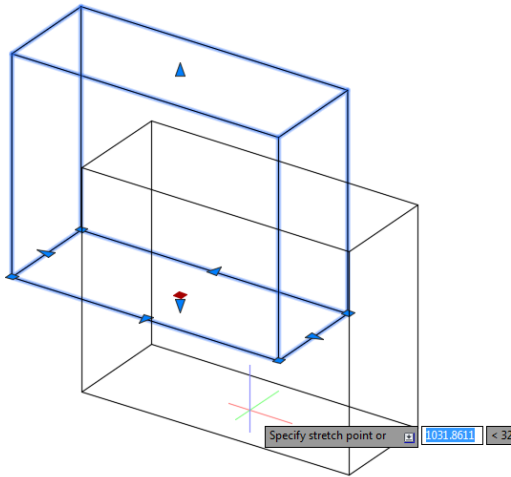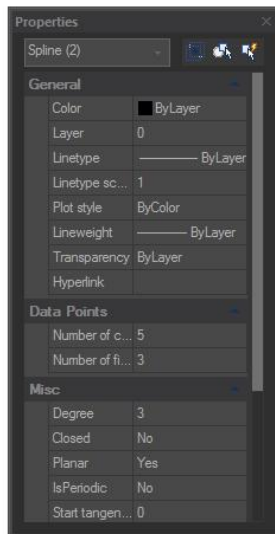
To move the 3D solid, you can move the solid by dragging the move grip to the suitable area or set the location in the command line.
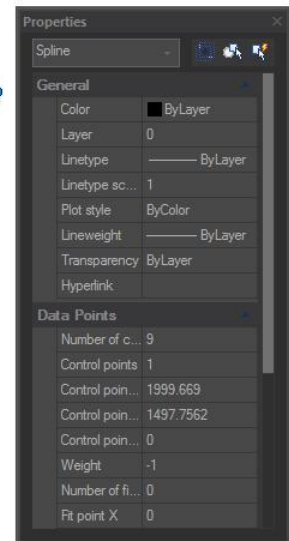
5.4. JOIN *Improvement*

More objects supported by JOIN command in GstarCAD 2020. Including line, pline, arc and spline.

Two spline objects

One spline after Join

5.5. Display *Improvement* for 4K Monitor

Support for high resolution monitors continues to be improved in GstarCAD 2020 to ensure the best possible viewing experience even on 4K displays and higher. Commonly used user interface elements, such as the Start tab, Command line, palettes, dialog boxes, toolbars and grips are appropriately scaled and displayed as per the Windows setting.

5.6. PDF Import and Export

Coming soon...

6.Collaboration Features

GstarCAD Collaboration enables cross-department and cross-team design collaboration based on DWG drawings, allowing designers/draftsmen easily to trace and return back to any previous version and locate design changes by one click, ensuring design quality and overall accuracy. To further improve team efficiency, GstarCAD 2020 adds more new features in Coloration such as Milestone, Project Branches, Export Logs, View Drawing Changes, and Reference File Relocation.
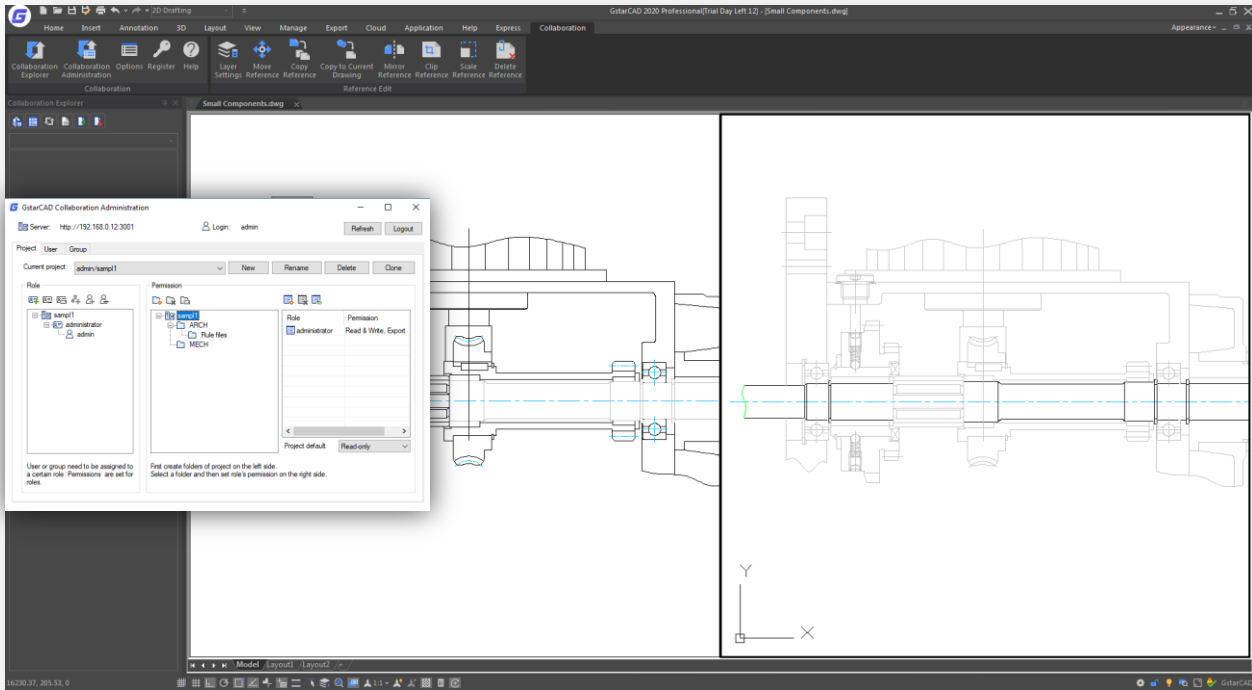
➢ Milestone and Project Branches (Tag and Branches)
You can set a specific time point as a milestone version for the project (such as expansion design, sketch design, construction drawing, etc.), and you can extract the whole specified files from the project by time based on the milestone. Project Branches can be established, and multiple projects can be designed for one project.

➢ Export Logs:
Export the log submitted during the design to EXCEL files to understand the condition of project progress and modifications made for the design.

➢ Check Drawing Changes:
There are three more ways to check the changes between two specific drawings. Check drawing changes from local and server, check drawing changes between selected and latest version, check drawing changes between two specific versions. You can chose to check the changes in the reference file or in the original drawing.

➢ Reference File Relocation:
After the reference drawing is moved or modified, the position of the reference drawing can be repositioned.
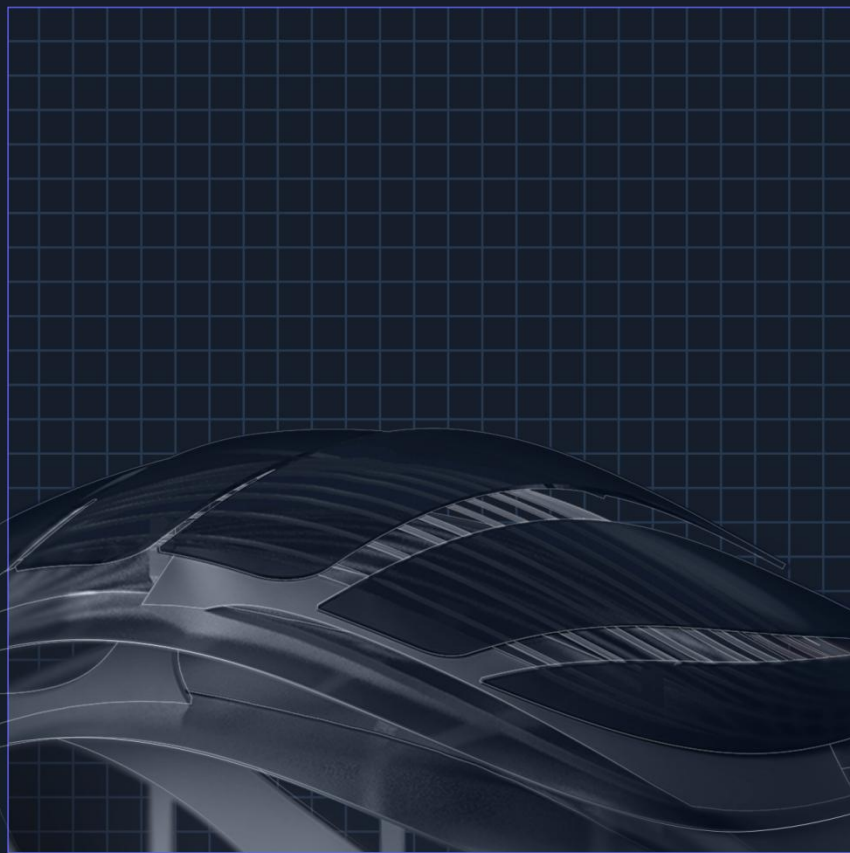
➢ Reference Drawing Layer Settings:
You can set the layer toggle, color, line width, line type, and whether to print for reference drawing layer separately.

➢ Reference Drawing Editing Mode adjustment:
Now you can not only edit the reference drawing in the project manager, but also edit the reference drawing through commands, command panel and right-click menu.

➢ Clip Reference Drawing:
You can directly select the reference drawing to clip.

➢ Copy Parts of Reference to Current Drawing:
You can copy some of the objects from the reference and paste to the current drawing.

➢ Export File improvements:
When you export a file and a folder, you can set merge method of the referenced layer and related data.

➢ Users and Department Data Input and Output:
You can import users and department data from EXCEL. You can export the set users and department data to EXCEL, which simplifies the setup and editing in project.

➢ Backup and Recovery of Server Data:
You can set the period and time to back up the server data. If the server is abnormal or the collaborative drawing data is accidentally deleted, the related data can be restored to minimize the losses.

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