ZWCAD 2024 Official

PRODUCT RELEASE NOTES

THE ZWSOFT TEAM

ZWSOFT | 2023/05/23

Welcome to ZWCAD 2024 Official!

Dear friends,

We are glad to tell you that ZWCAD 2024 Official is available now! Thanks to your valuable feedback for the previous version, ZWCAD 2024 Official now comes with significant new feature and improvements. Now, let's take a look at this version.

This Release Notes mainly introduce the new features and improvements in ZWCAD 2024 Official.

Yours sincerely,

The ZWSOFT Team

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Contents

ZWCAD 2024 Release Notes

Overview

ZWCAD 2024 has the following new features and improvements:

| New Features	Description
[FlexiBlock](#)	A special block reference object that is freely and flexibly "transformed" according to parameters and actions added by the user.
[Point Cloud](#)	Point cloud files can be attached to the drawings and these attached files can be edited.
[Hardware Acceleration](#)	Hardware acceleration is a technology that utilizes the graphics processor (GPU) in the user's computer to process graphics data to take full advantage of video memory configurations in high-performance computers.
[Area Table](#)	Quickly calculate the area of closed areas and create dimensions and table according to the calculation result.
[Quick Properties Panel](#)	A "mini" properties panel will pop up when you select an object.
[DGN Underlay](#)	Attaching DGN files and editing operations are supported.

Improvements	Description
[File Compare Optimization](#)	Add multiple file comparison options to improve the efficiency of drawing comparison.
[Xref Module Optimization](#)	New file types can be attached to the drawing and xref can be compared as well.
[3dorbit Mode Optimization](#)	Add 2 view modes and other observation modes.
[MText Module Optimization](#)	Add a variety of text editing and arrangement methods.
[Incremental Save](#)	A new save method to boost the drawing save

	efficiency.
[New View Widget](#)	A new widget is added in the model space to use view function.
[Auto Locate Function for Hatch Custom Pattern List](#)	Automatically position a custom hatch pattern list with characters.
[Multiple Printer Support Paths](#)	Add multiple printer paths directly to ensure that the print configuration is read correctly.
[Properties Panel Optimization](#)	Optimize the layout of the properties panel to present more complete information in the same place.

Efficiency

The R&D Center conducted efficiency tests on a selected set of drawings from our customers. In these tests, they evaluated common user operations such as opening, saving, moving, and copying. The efficiency comparison results between ZWCAD 2024 and competing products are illustrated in the graph below. It clearly demonstrates that ZWCAD has a significant advantage in performing common commands compared to other competing products.
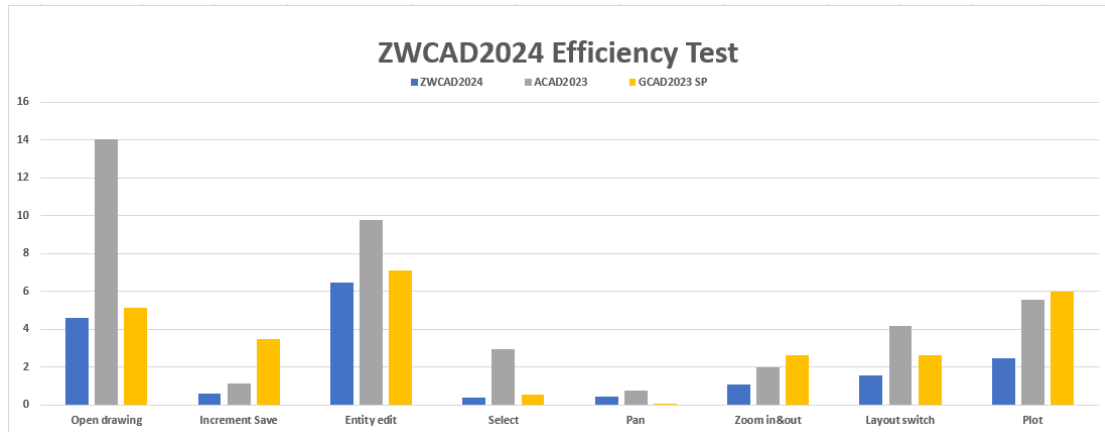

Stability

ZWCAD2024 has addressed a total of 88 stability issues (including 33 customer-reported issues) in the Jira ZWCAD project repository. The major categories of stability issues that have been fixed are as follows:

- ✧ Fixed software crashes, freezes, and unresponsiveness during the process of opening a large number of drawings.
- ✧ Fixed software crashes, freezes, and unresponsiveness during the printing process.
- ✧ Fixed software crashes caused by the 3dorbit command.
- ✧ Fixed unresponsiveness of the software when selecting objects.
- ✧ Fixed program crashes that occurred when modifying text color multiple times and then undoing the changes in the in-place editor.
- ✧ Fixed crashes that occurred in the Block Editor interface, resulting in significant loss of graphical content in the backup drawings.

New Features

Flexiblock

Flexiblock is a special block reference object. By adding specific parameters and actions to the block object, the block can be "transformed". Users can freely adjust the shape of the block according to the parameters set. Currently, Flexiblock supports actions such as "move", "stretch", "scale", and "rotate". The specific parameters and action types are shown in the following figure:
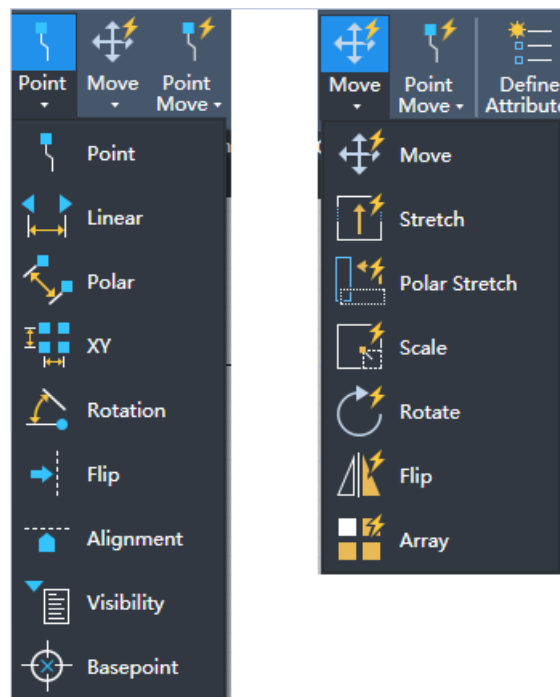
Figure 1. Parameters and actions supported in Flexiblock

As an advanced function, Flexiblock can meet more complex design needs of users. The good use of FlexiBlock can greatly save the time of drawing and improve the work efficiency. For example, users can create a flexiblock of a door, which can contain the size, style, and other parameters of the door. According to different working scenarios, users can adjust the shape of the door and apply it to different drawings, which reduces the time of creating a large number of blocks and also reduces the cost of data management.
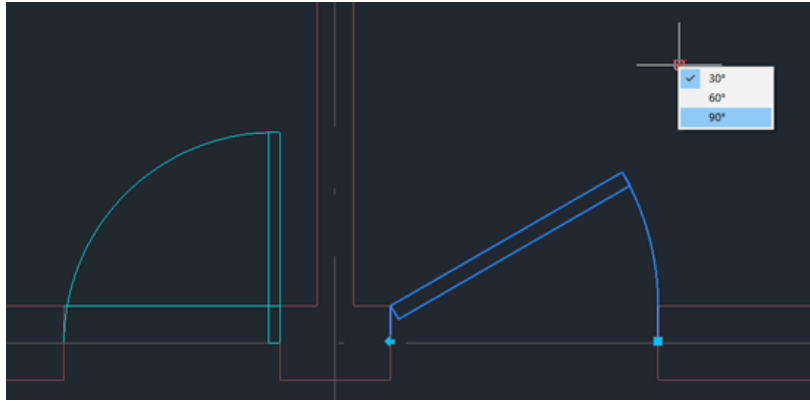
Figure 2. "Door" made by Flexiblock

Point Cloud

Point cloud data is a 3D data set consisting of a large number of points, which can be obtained from 3D laser scanning technology or other ways. The point cloud function is mainly used in surveying and mapping, building renovation, archaeological relics and other industries. The point cloud function can import the 3D shape data of the actual object to help users obtain information more quickly and accurately, reduce errors, and improve the accuracy and precision of the design.

Below are the highlights of Point Cloud：

1. Users can import point cloud files by attaching them. Currently, many file types are supported, including RCS, RCP, E57, LAS, LAZ, and PTS.
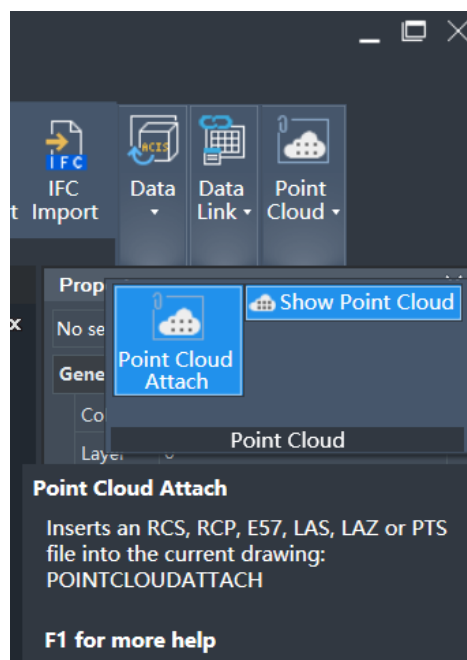

Figure 3. Point cloud file imported in the attached form

2. By setting the level of detail and point size, the visual noise can be adjusted to present different display effects.

Figure 4. Adjust the level of detail and point size to present different display effects

3. Each point can be stylized by changing the point color style. The adjustment of transparency can show different degrees of visualization. The setting of these attributes can express the characteristics of point cloud data.
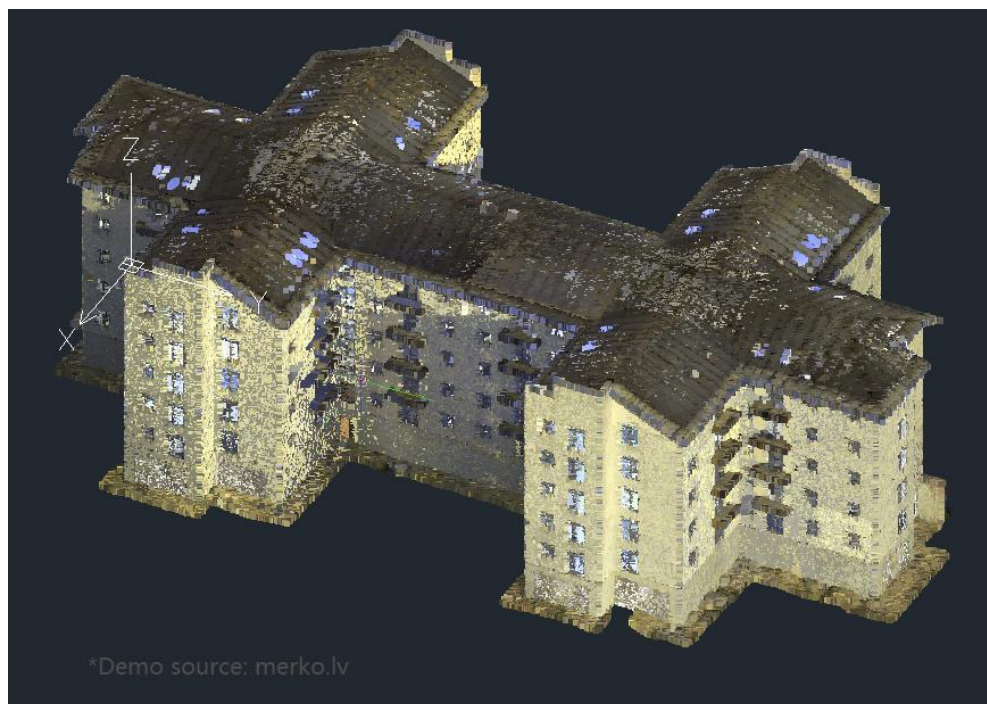
Figure 5. RGB style

Figure 6. Object Color style
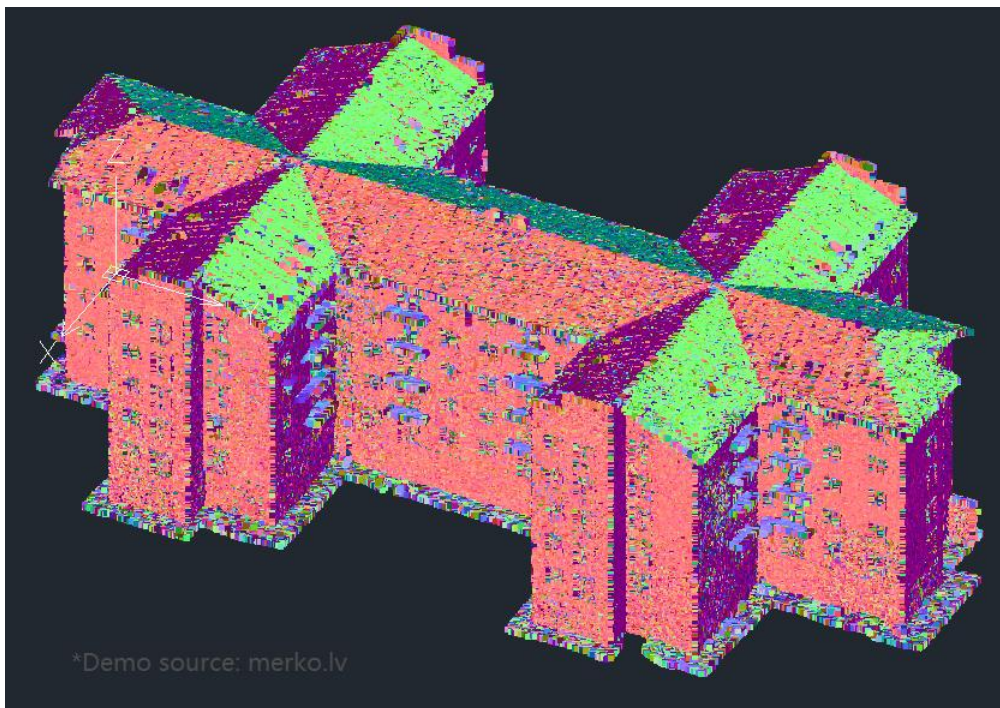
Figure 7. Normal style

4. Crop the selected point cloud through a polygonal, rectangular, or circular boundary so that unnecessary data or regions of interest can be removed or extracted for more efficient processing and analysis.
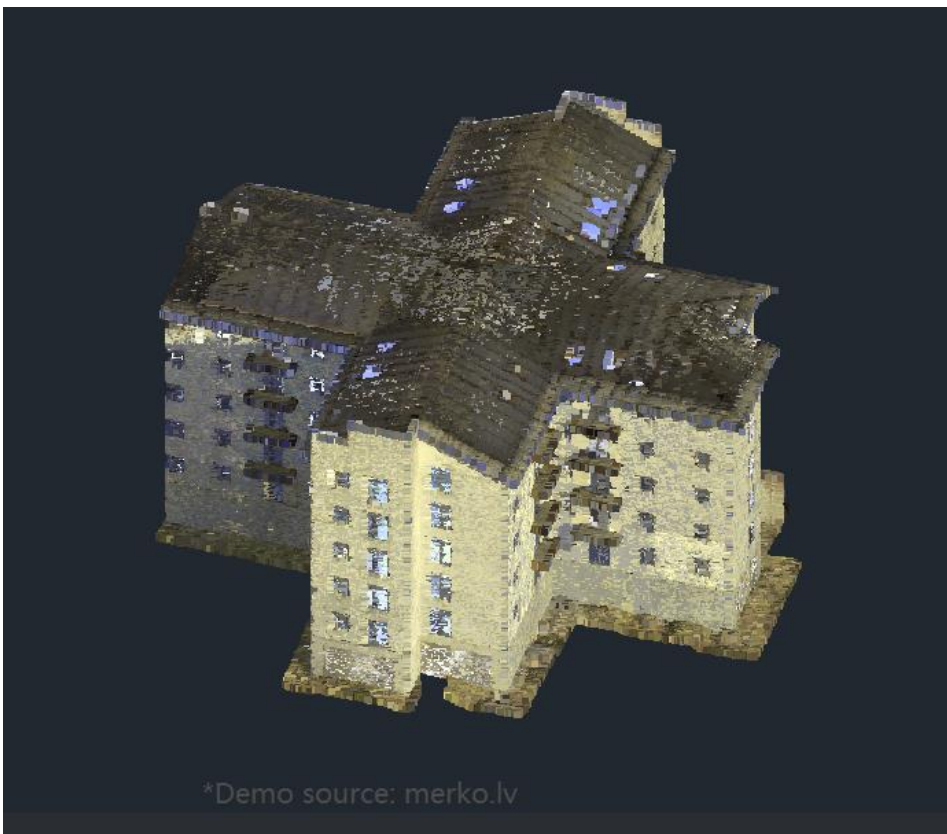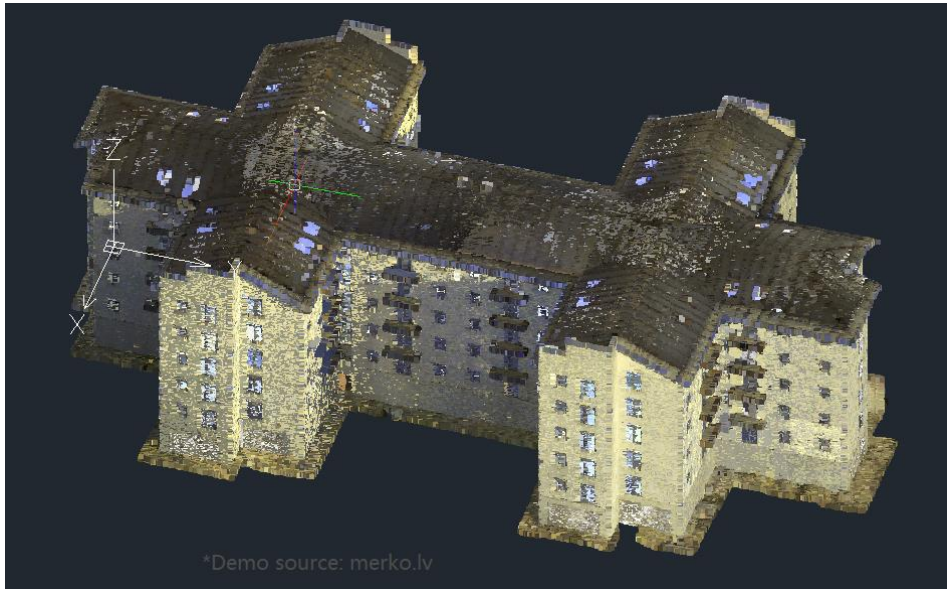
Figure 8. Point cloud cropping

5. Section plane can be applied to obtain the projection or section of the plane or curved surface. And then, one or more intersection lines can be extracted from the section plane to represent the outline or boundary of the section, which can help users analyze the internal structure or shape of 3D objects.
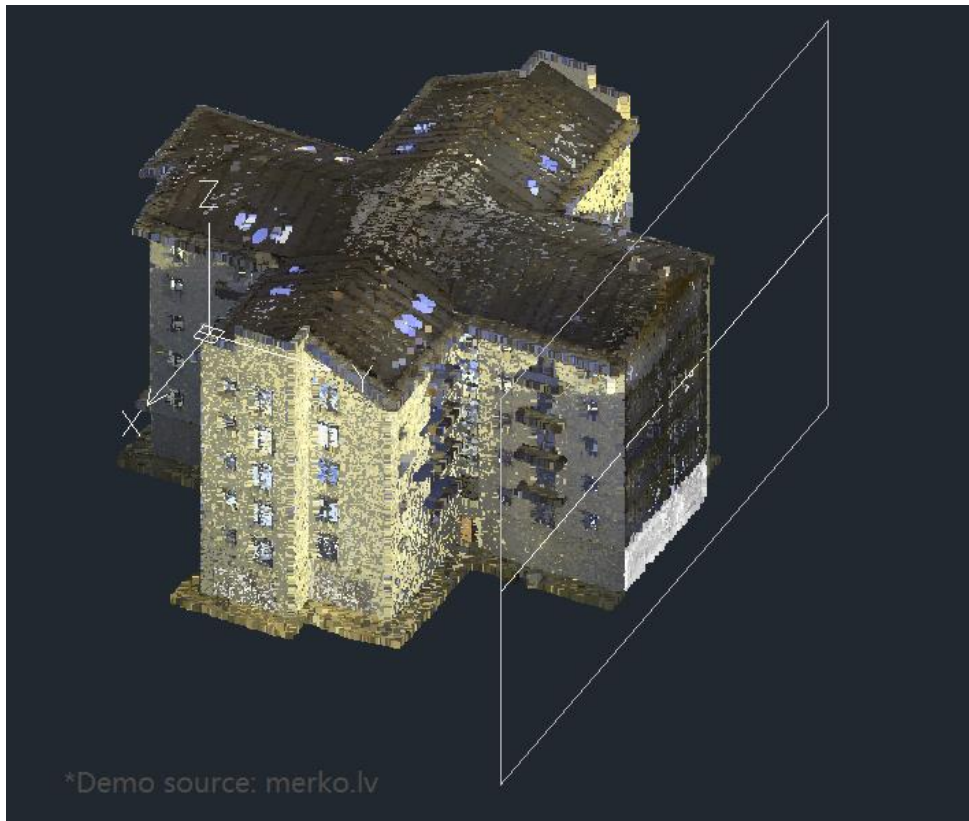
Figure 9. Point cloud section plane

6. The point cloud manager lists the point cloud items in the current drawing, and users can control the display or hiding of one or some items.
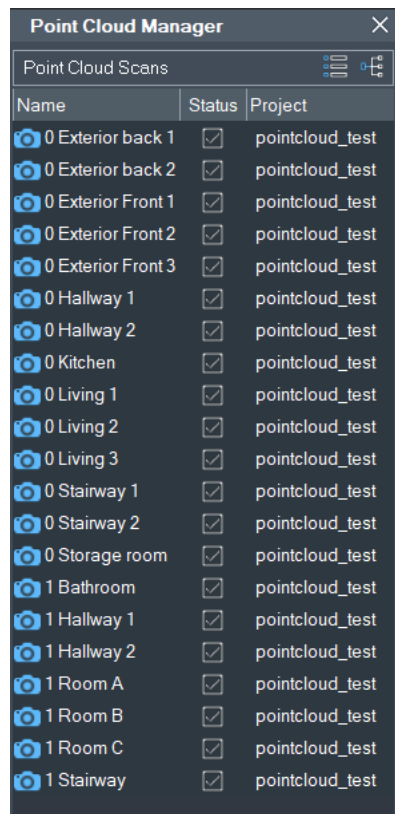
Figure 10. Point cloud manager

Hardware Acceleration

Hardware acceleration is a technology that uses the graphics processor (GPU) of user's computer to process graphics data. Effective use of high-performance computer configuration can greatly improve the performance and corresponding speed of the software, while improving the user's work efficiency and drawing accuracy. For some users with high configuration computers, hardware acceleration can be a good way to improve the user experience of ZWCAD.

Two ways are improving with hardware acceleration:

1. The user's operation efficiency is greatly improved in the 2D wireframe style, especially in the large drawings users can also smoothly use zoom, scale and other commands.

2. Improve the design accuracy: the use of hardware acceleration technology can ensure that performance will not be reduced even turning on smooth line or anti-aliasing option. Ensure the graphic display accuracy.

You can open the panel from the "Options" dialog →"Display" tab or through the shortcut button in the Model Space. The software automatically checks whether the graphics card model and OpenGL version support hardware acceleration.
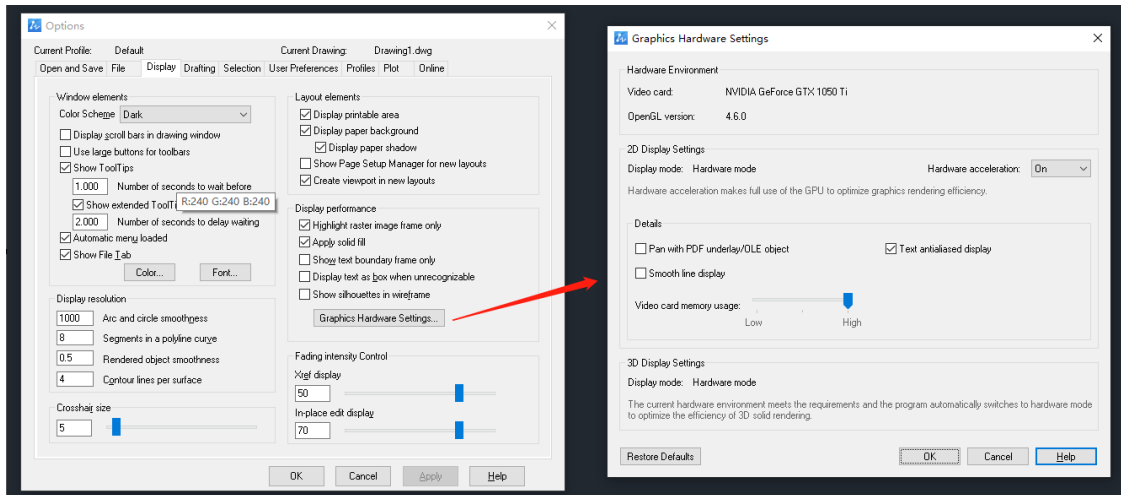
Figure 11. Open the hardware accelerate panel from the "Option" dialog
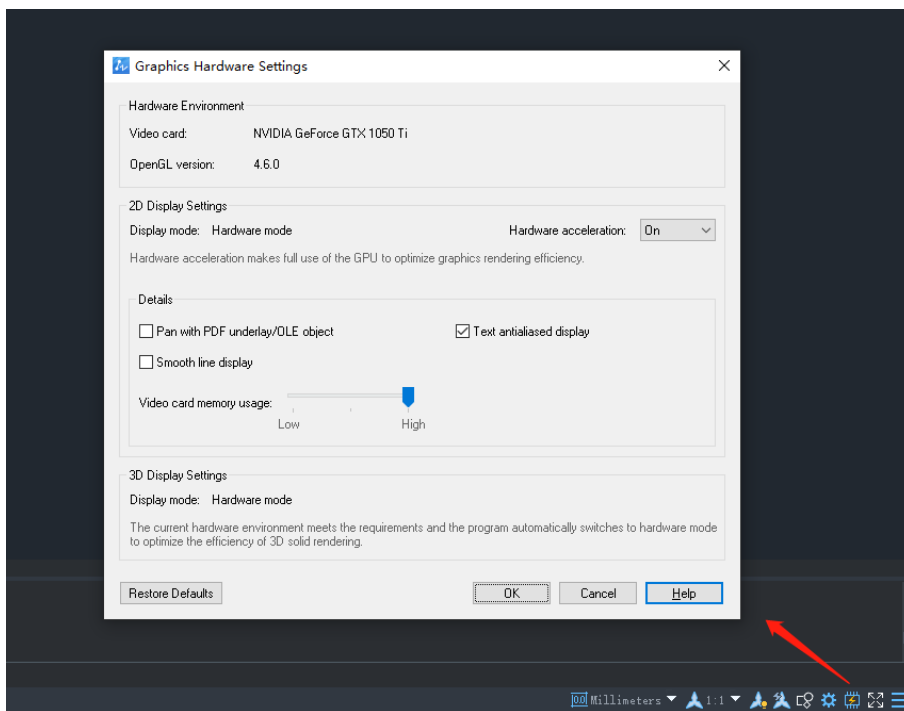
Figure 12. Open the hardware accelerate panel by the shortcut button

Area Table

The area table function can perform area calculations and dimensions on the selected object area, generate an area table, and can also export external files. This can help users organize, calculate and manage the area of graphic objects faster and more conveniently, and visually display the data to improve the accuracy and efficiency of drawing.

The main functions of the area table are as follows:

1. Click the Area Table command in the Annotate to open the Area Table dialog box. Users can set the area name, dimension, table, boundary set, etc. to better

satisfy their requirements.
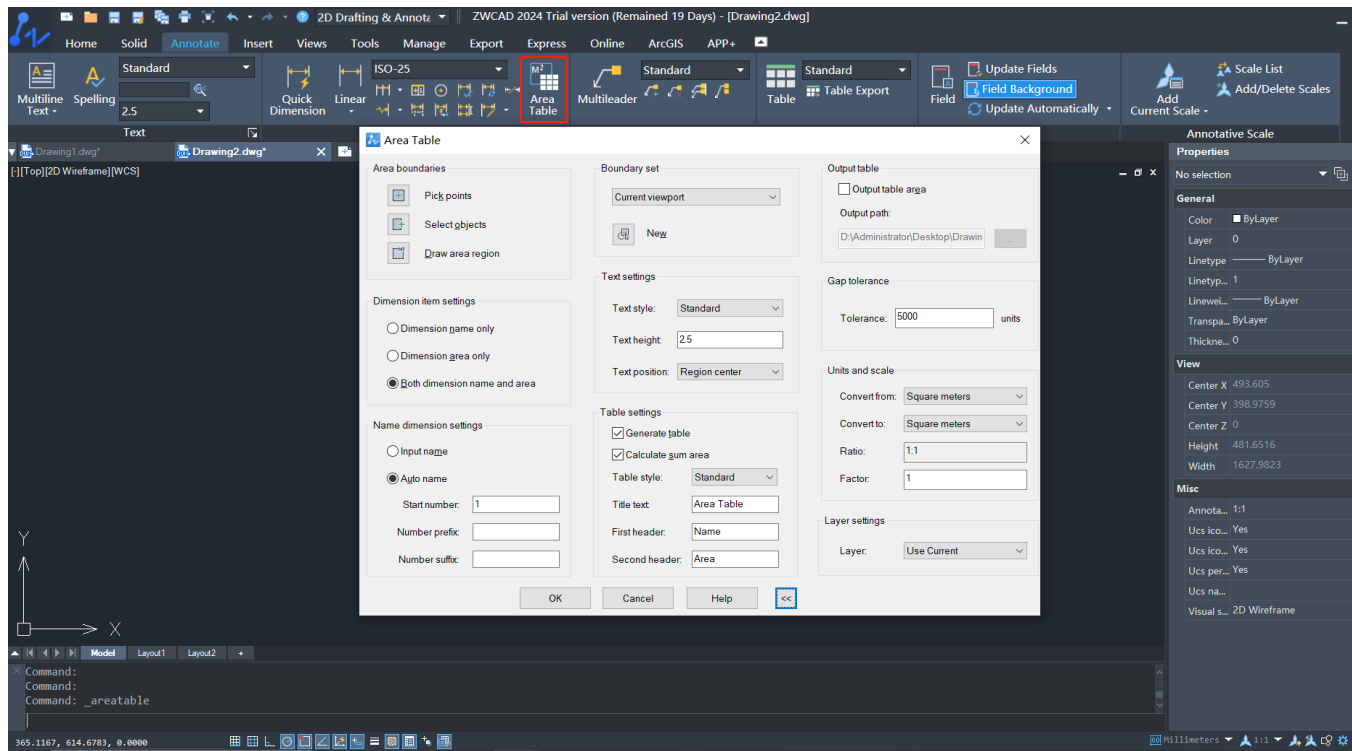
Figure 13. Area Table dialog box

2. The areas can be automatically measured and dimensioned after selecting objects so that users can avoid the tedious process of manual calculation and dimension. It can also automatically calculate the total area of the selected objects and summarize it into a table, or export an external file for easy viewing. Even, users can also further edit and analyze the table to improve work efficiency.
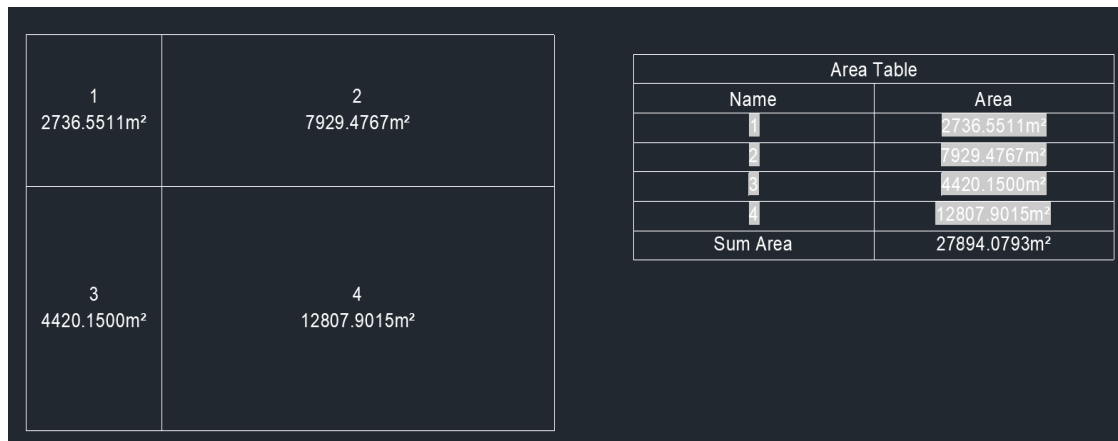
Figure 14. The area table is created automatically after selecting objects

Quick Properties Panel

When this function is enabled, the quick properties panel pops up automatically

when you click on an object. Users can customize the properties displayed on the panel. In the process of drawing design, users often need to view or modify object properties. With the quick properties panel, the efficiency of viewing objects is improved.

The main functions of the quick properties are as follows:

1. When the system variable QPMODE is set to 1 or 2, users can open the Quick Properties palette by selecting an object in the model space, where the properties of the selected object are displayed. Users can quickly view the properties of the selected object and make direct editing changes without entering the property editor.
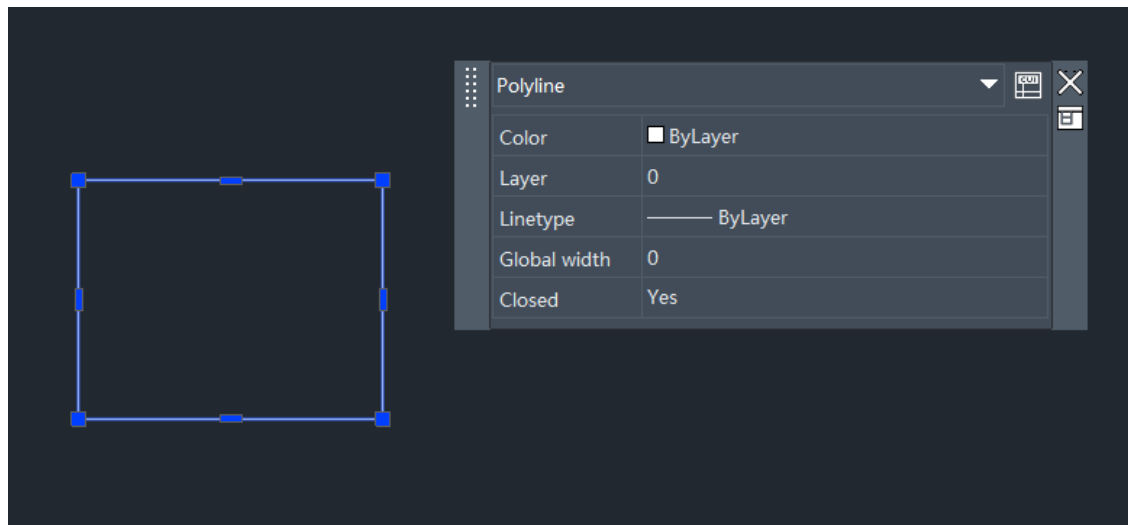
Figure 15. Select the object to display the Quick Properties palette and users can directly edit them

2. Users can customize and set general object types and properties according to their requirements in the Customize User Interface, which can help users view and edit their most commonly used properties more quickly and conveniently.
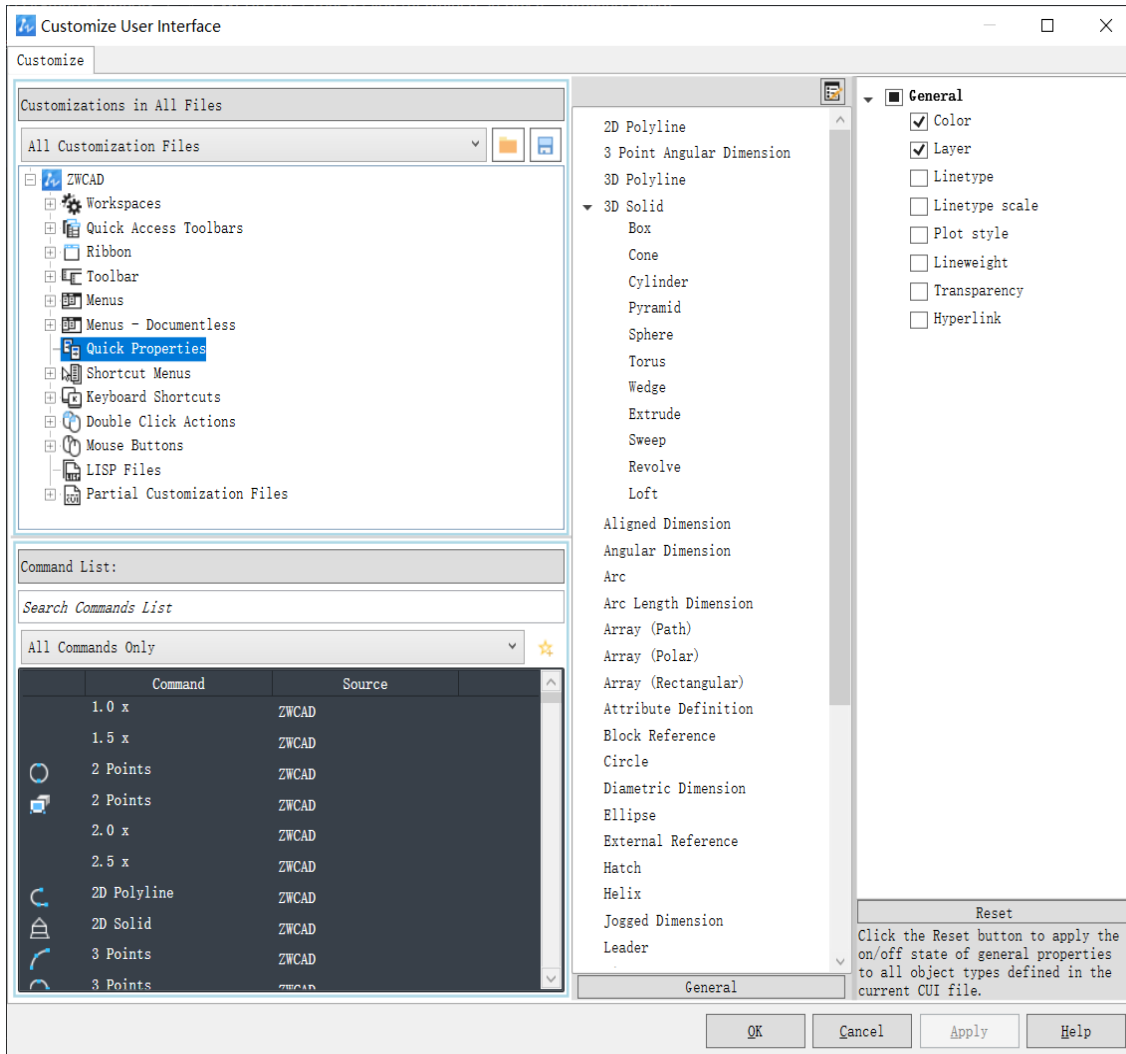
Figure 16. Set the general object types and properties in the Customize User Interface

DGN Underlay

It supports attaching DGN files to current drawings, and implements editing operations such as contrast adjustment, fade adjustment, cropping, hiding/displaying specified layer information of base drawings. This function meets the needs of users to read DGN files on CAD.
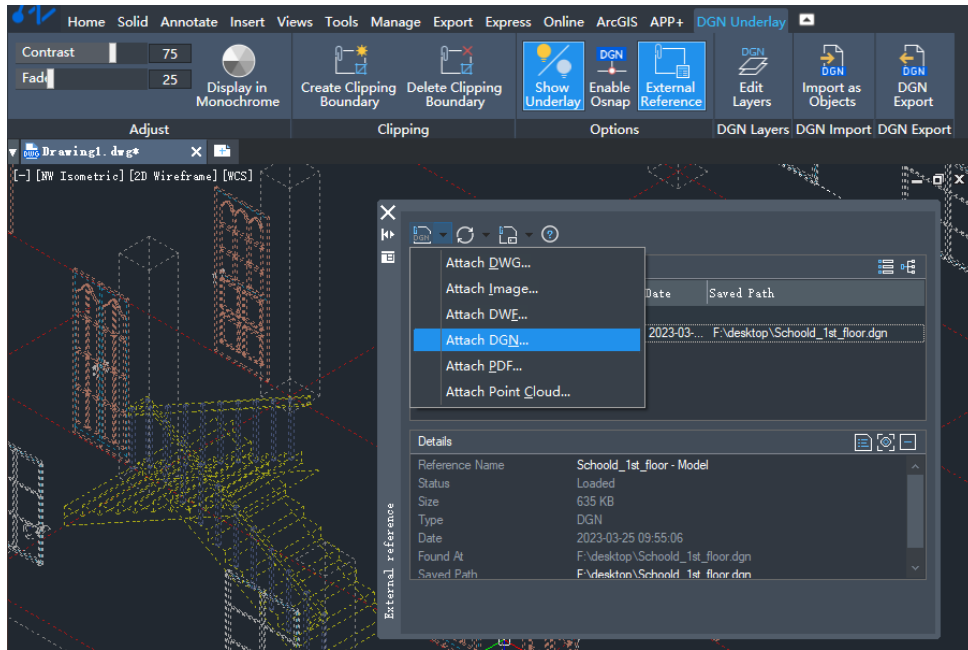
Figure 17. Support attaching DGN underlays

Improvement

File Compare Optimization

Continuous improvement of file compare function helps users improve the efficiency and accuracy of drawing comparison work. Four improvements were made in this time:

● Add "Hide Differences" function

Users can choose to hide the differences in the datum file in the comparison result and only display the differences in the reference drawing. This feature allows users to pay more attention to the details of the revised drawings and reduce the clutter of information.
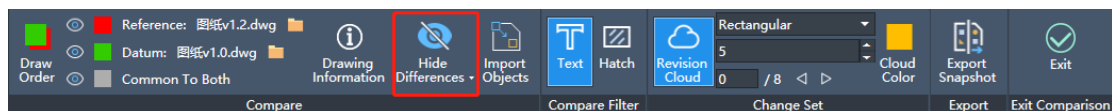
Figure 18. Hide Differences function can be used to hide the difference comparison objects in the datum drawing
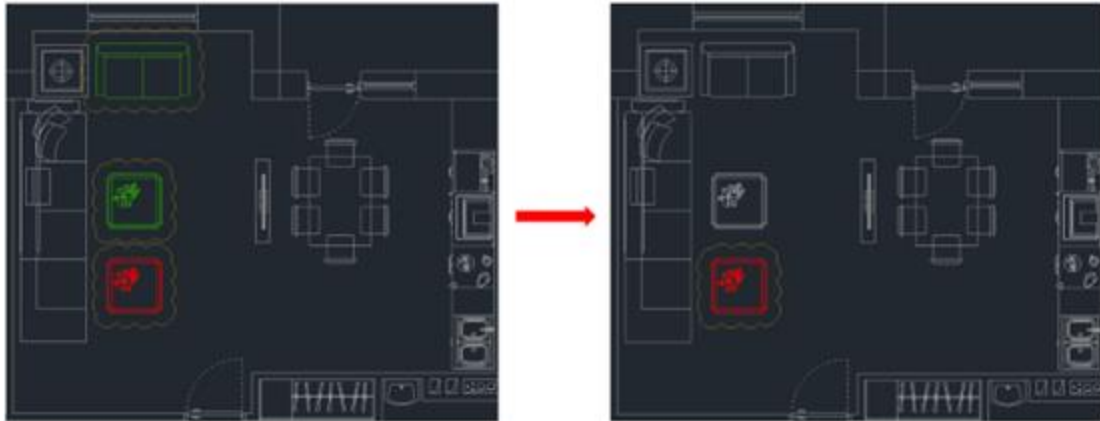
Figure 19. After the difference object is hidden, you can view the modified content of the drawing more intuitively

● Add "Import Objects" function

Users could insert different objects to current drawing, in some cases, the user may delete the original correct content by mistake when modifying the drawing. By using this function, the user can restore some incorrect parts of the drawing without redrawing or copying and pasting the mistakenly deleted data from the original drawing to the new drawing, which improves the fault tolerance rate of the drawing.
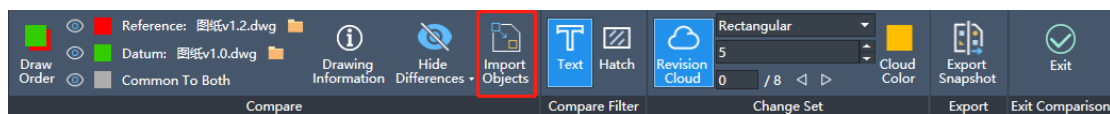
Figure 20. Different objects in drawing comparison can be inserted to datum drawing
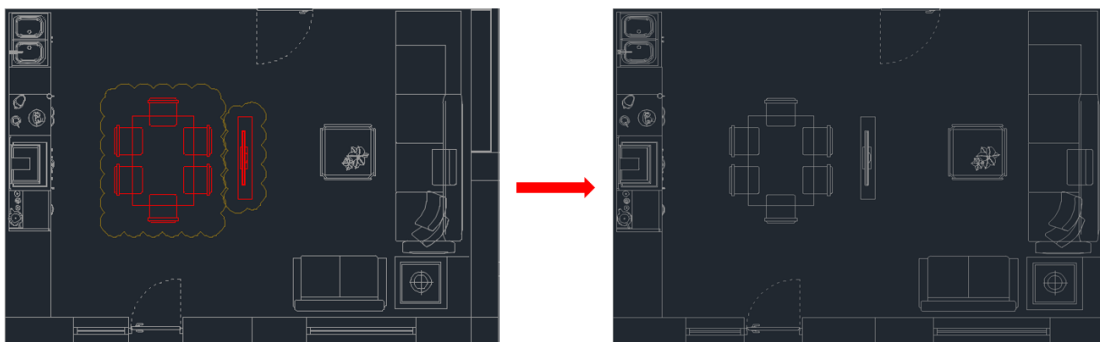
Figure 21. Through this function, you can directly restore the misoperation data on the drawing

● Add "Export Snapshot" function

Users can generate snapshot files of the comparison results of drawings, so that the comparison results can be better saved. The file compare function of an earlier version can only be performed on the current drawing, and the comparison result cannot be saved well. You can use the snapshot file to archive the comparison result so that you can quickly view the comparison content in anytime.
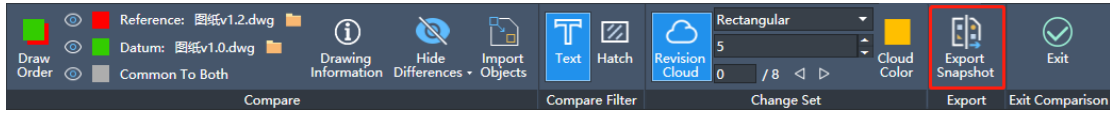
Figure 19. Comparison result can be saved as a snapshot file
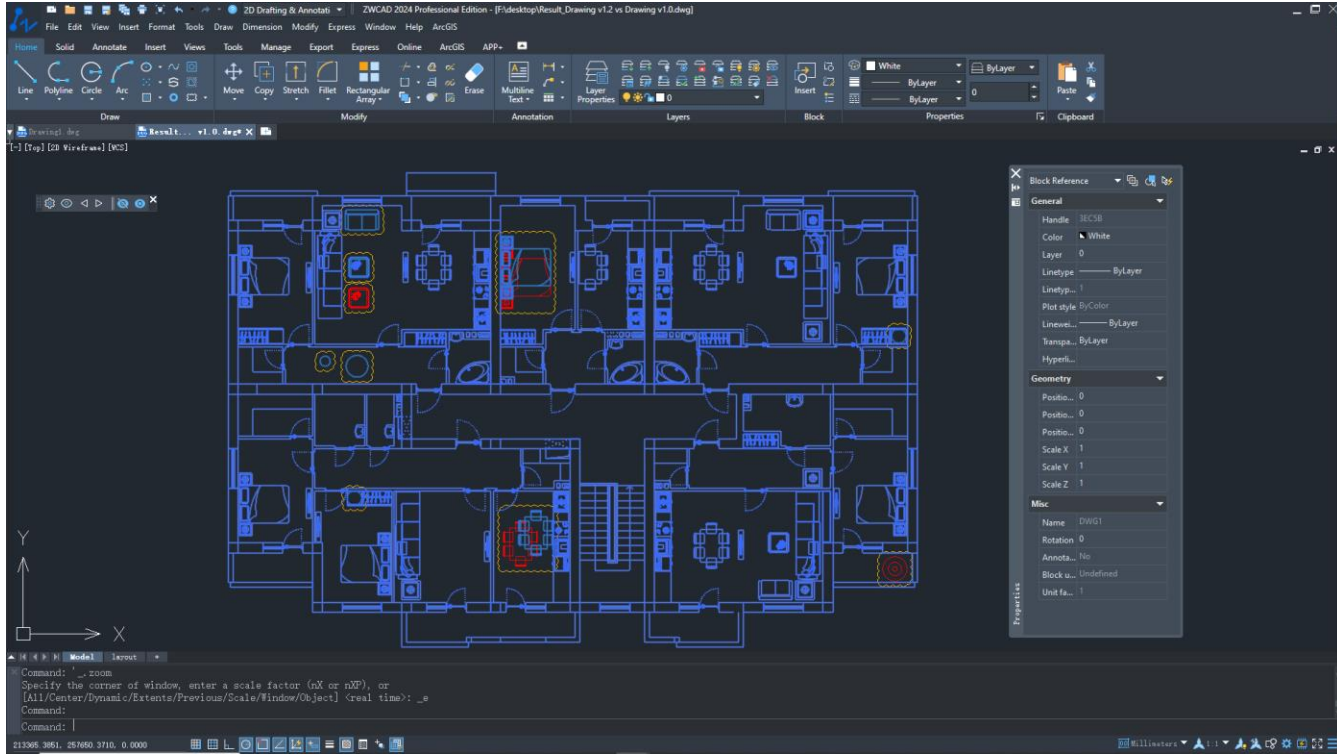
Figure 23. Comparison result saved as block reference in snapshot file

- Add "External Reference Comparison" function

  In addition to general drawings, this version also supports xref comparison. Some projects need to refer to external drawings as the basis for project design, and the contents of external drawings will also be modified according to different project stages. Therefore, the xref comparison function can be used to directly view the modification of external drawings on the original drawing. For users, there is no need to open additional drawings for comparison, which improves the user experience.
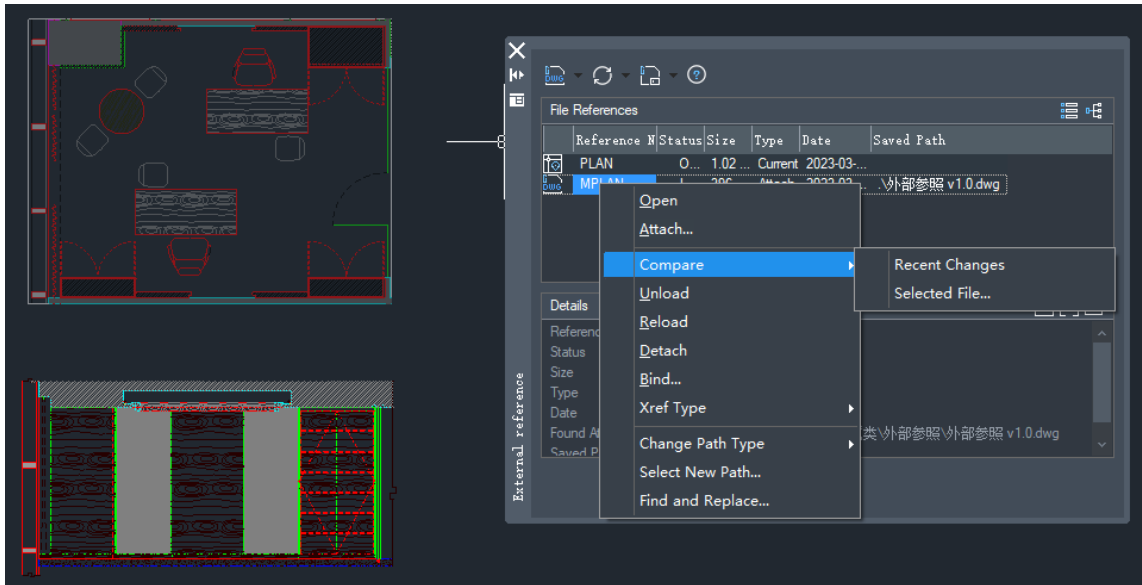
Figure 20. Xref can be compared to previous version now

Xref Module Optimization

It supports attaching points cloud and DGN files to drawings in the form of external references, and cropping reference files as well, which solves the problem that users cannot process DGN and point cloud files in ZWCAD for a long time.
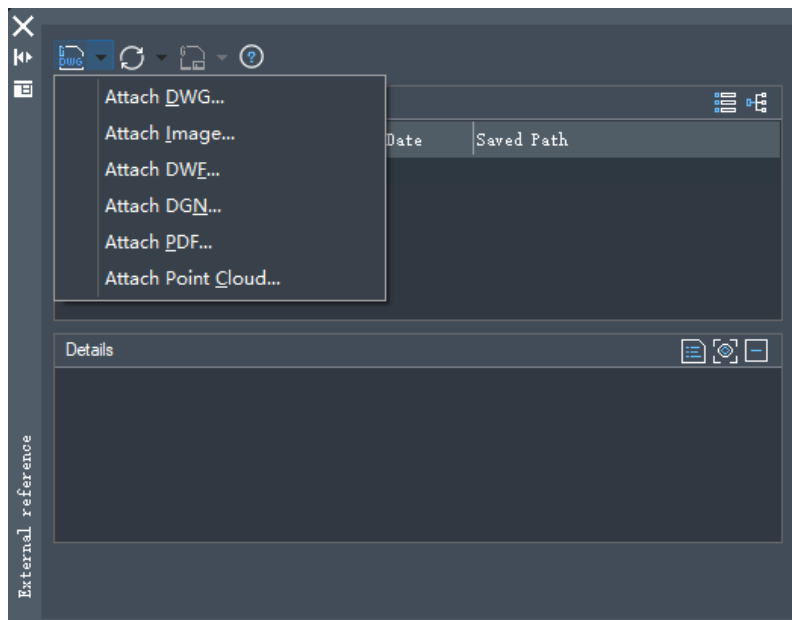
Figure 21. DGN and point cloud files can be attached to drawing

In addition to supporting new file types as the external references, xref layer properties override feature is also implemented in this version. With this function, you can adjust the properties of xref drawings in the current drawing without changing the features of the original drawing. Generally, the modified features take effect only in the current drawing.

For example, when using an xref file, users only needs to know the dimension to process to the next step design and does not want to be affected by other properties (such as color, line type, line width, etc.). In this case, you can set all the objects to grey as override color so you can only focus on the dimension. After that, if you want to restore all this properties, you can use the reset button to restore the properties.
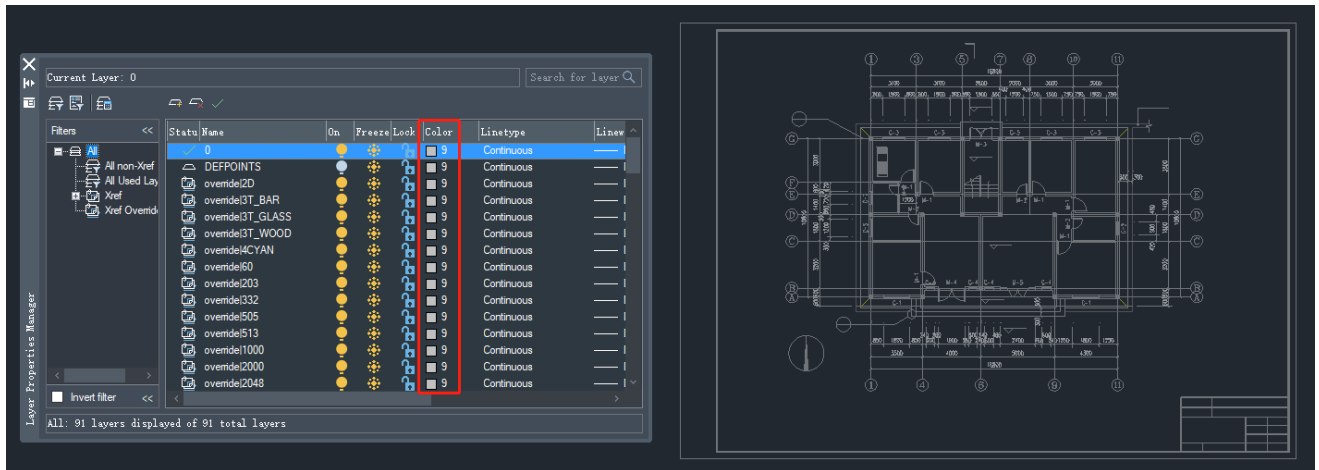
Figure 22. Set all layer to grey as override color
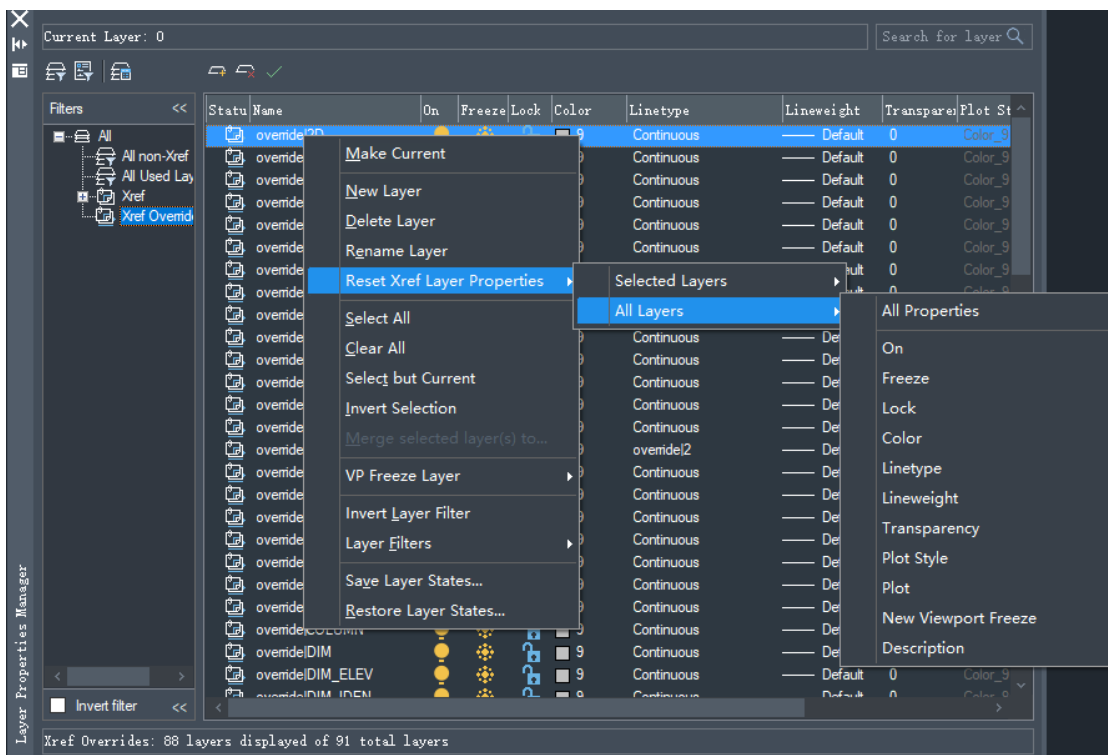
Figure 27. Use the reset button to restore selected or all override properties

3dorbit Mode Optimization

When viewing 3D entities using 3dorbit, you can set the parallel view or the

perspective view now. The parallel view or perspective view of the model can be obtained by parallel projection or perspective projection. Different view modes present different visual effects. A perspective view can produce a more realistic view. In addition, three new observation modes have been added.

2 improvements are as follows:

1. The "Parallel View" and "Perspective View" options are supported in the right-click menu of 3dorbit.

2. In addition, the functions of "Swivel", "Walk" and "Fly" have been added under the menu of "Other Mode".
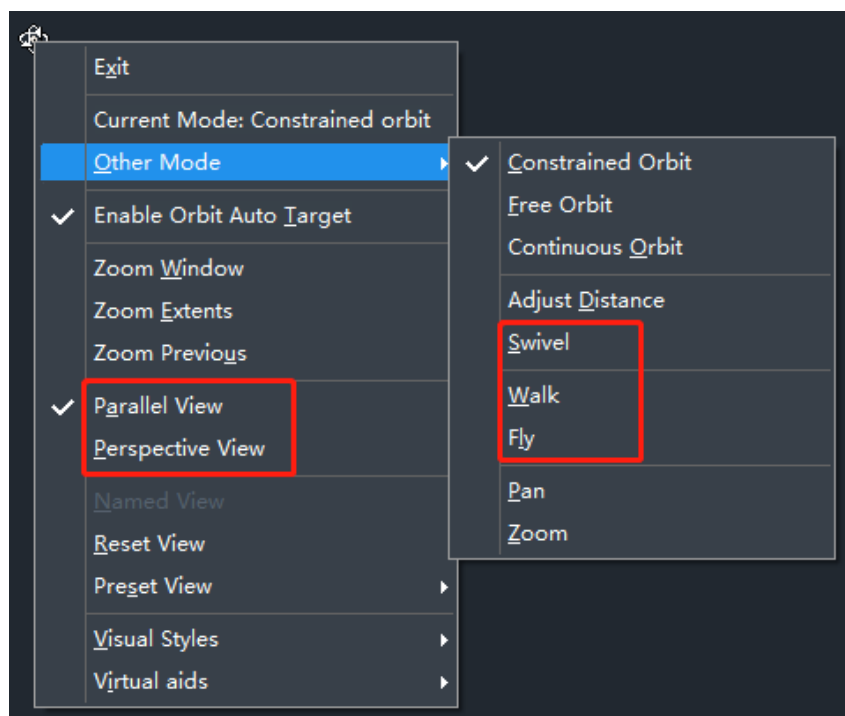
Figure 23. New options are added in the 3dordiit menu

MText Module Optimization

The multiline text function is optimized in this version, making it more practical, easy to use, enriched and complete, and thus helping users improve efficiency. The main optimized functions of multiline text are as follows:

1. Add numbering function to realize automatic text numbering in various forms, which greatly saves the time for sorting and numbering.
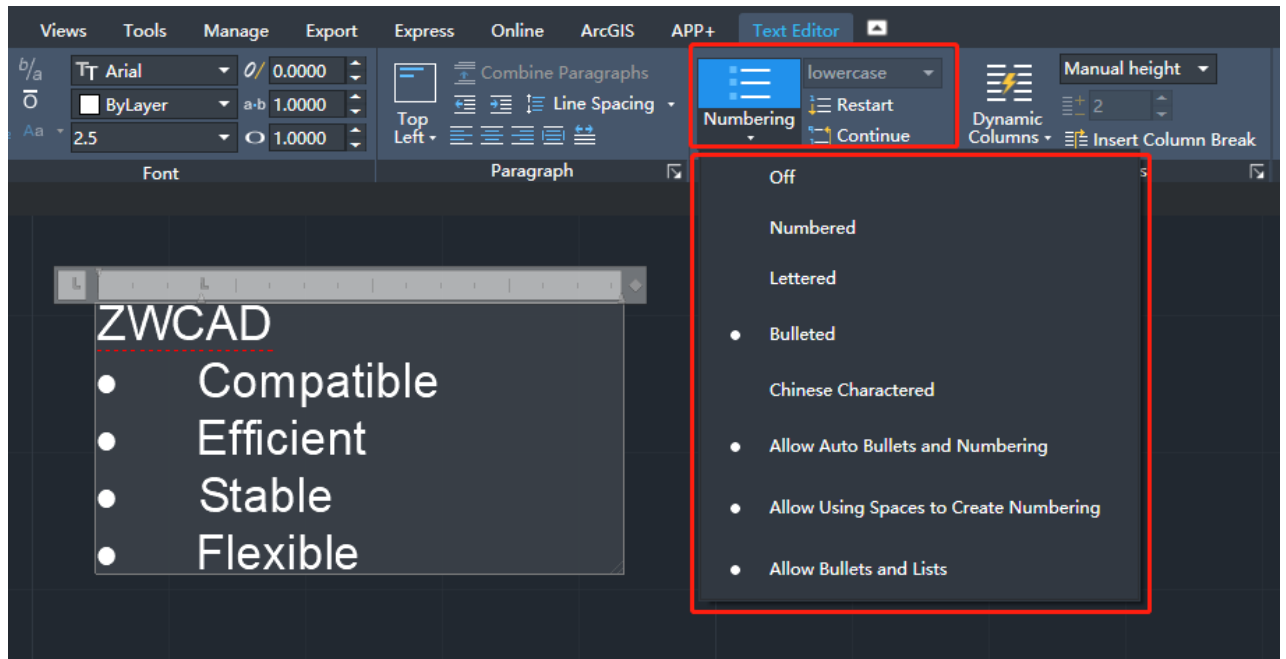
Figure 24. Numbering in multiline text

2. With the columns function, users can set the column type, column width, column height, etc. of the multiline text so that users can flexibly set multiple columns for text editing.
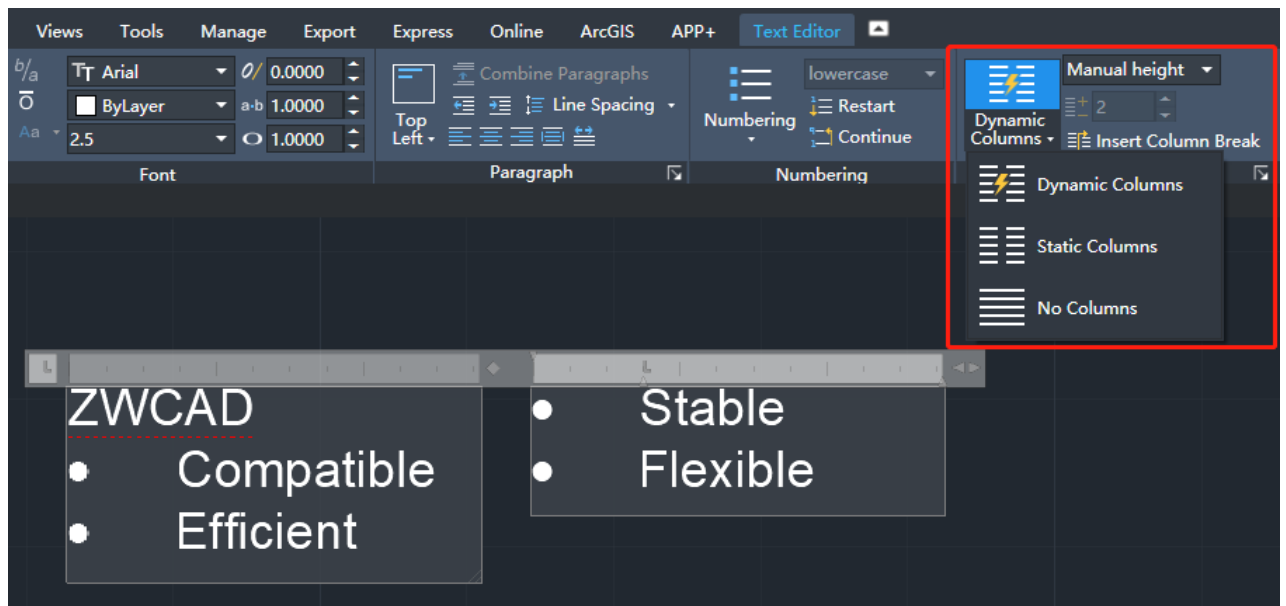
Figure 30. Columns in multiline text

3. Two alignment methods are added, containing justify and distribute. Justify means aligning paragraphs to the left and right while distribute means that distributes paragraphs and increases character spacing as needed.
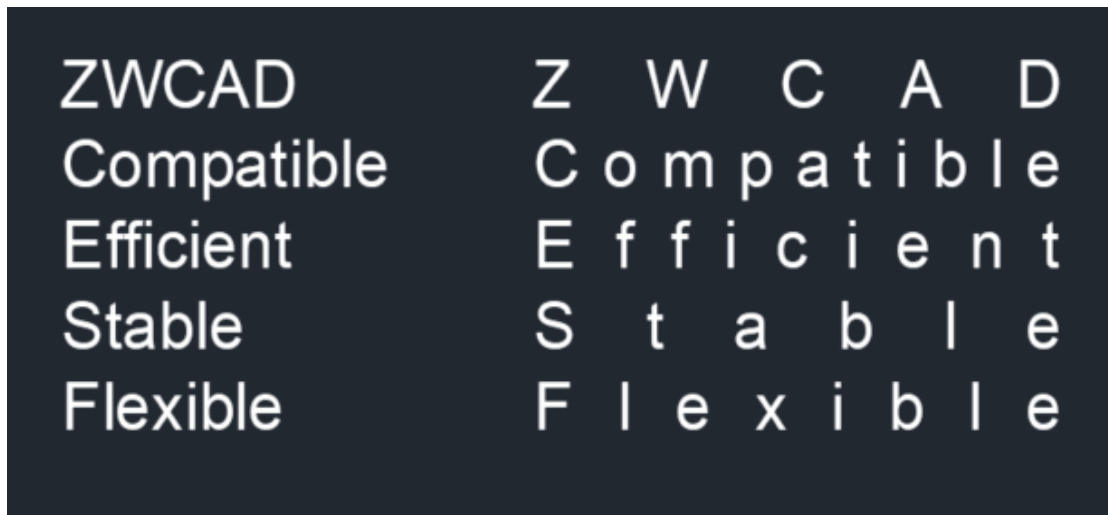
Figure 31. Justify and distribute in multiline text

4. Superscript and subscript are also supported in the text format of the font. Users can just select the text and then click the corresponding font format setting.
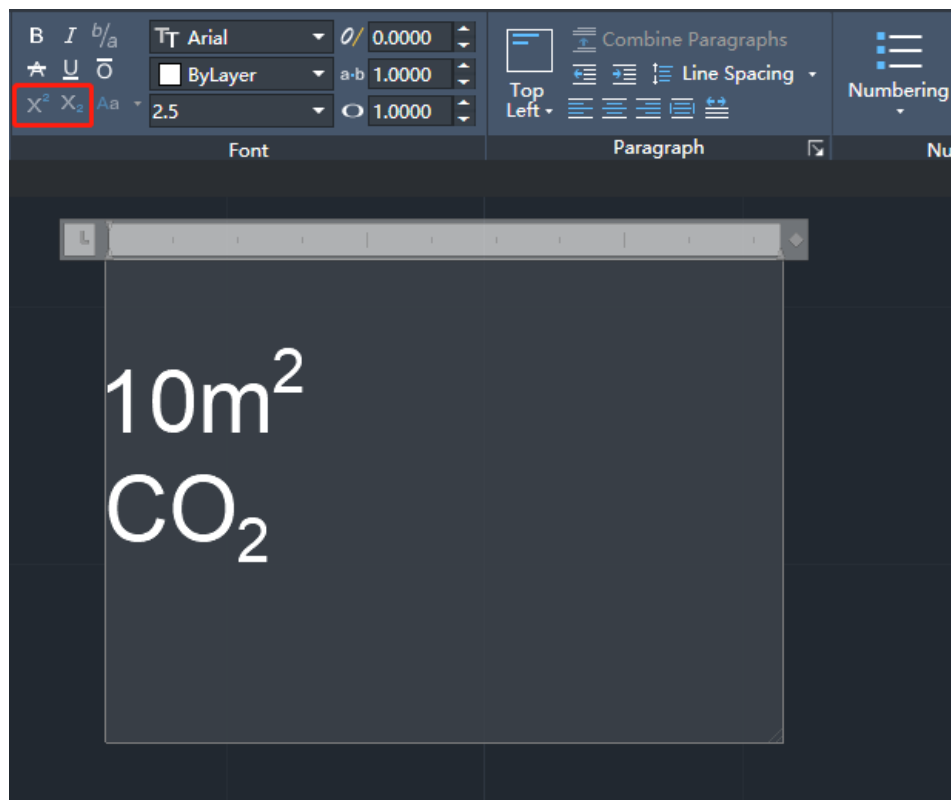
Figure 32. Superscript and subscript

5. The spelling check is optimized and an automatic spelling check function is supported, which can automatically check whether the spelling is correct in real-time. Additionally, users can customize the dictionary, which is easier, more convenient, and more accurate.
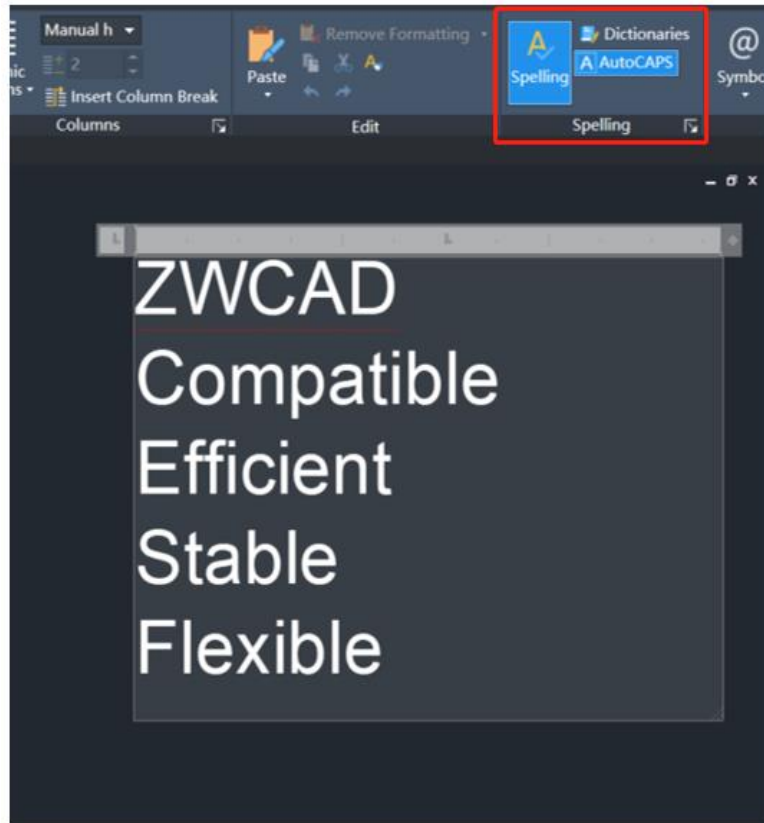
Figure 33. Spelling in multiline text
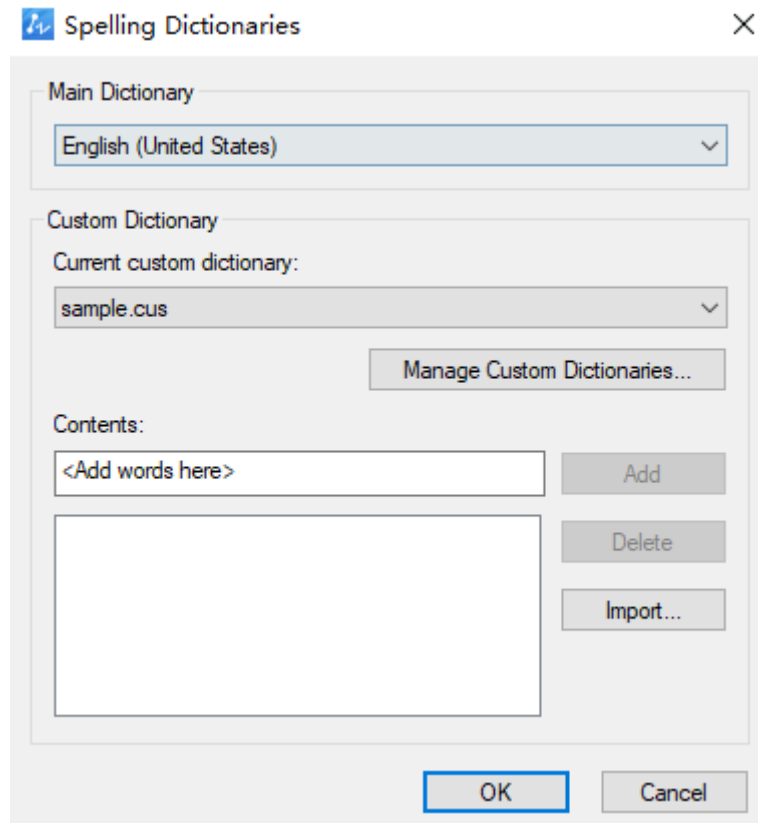
Figure 34. Spelling Dictionary

Incremental Save

Incremental save is a mechanism for saving drawings, which only saves the parts that have changed since the last save, rather than the entire CAD file. This saves time and reduces the possibility of file corruption.

New View Widget

A new widget is added in the model space, by which user can easily set views, visual styles or coordinates type in the model space.
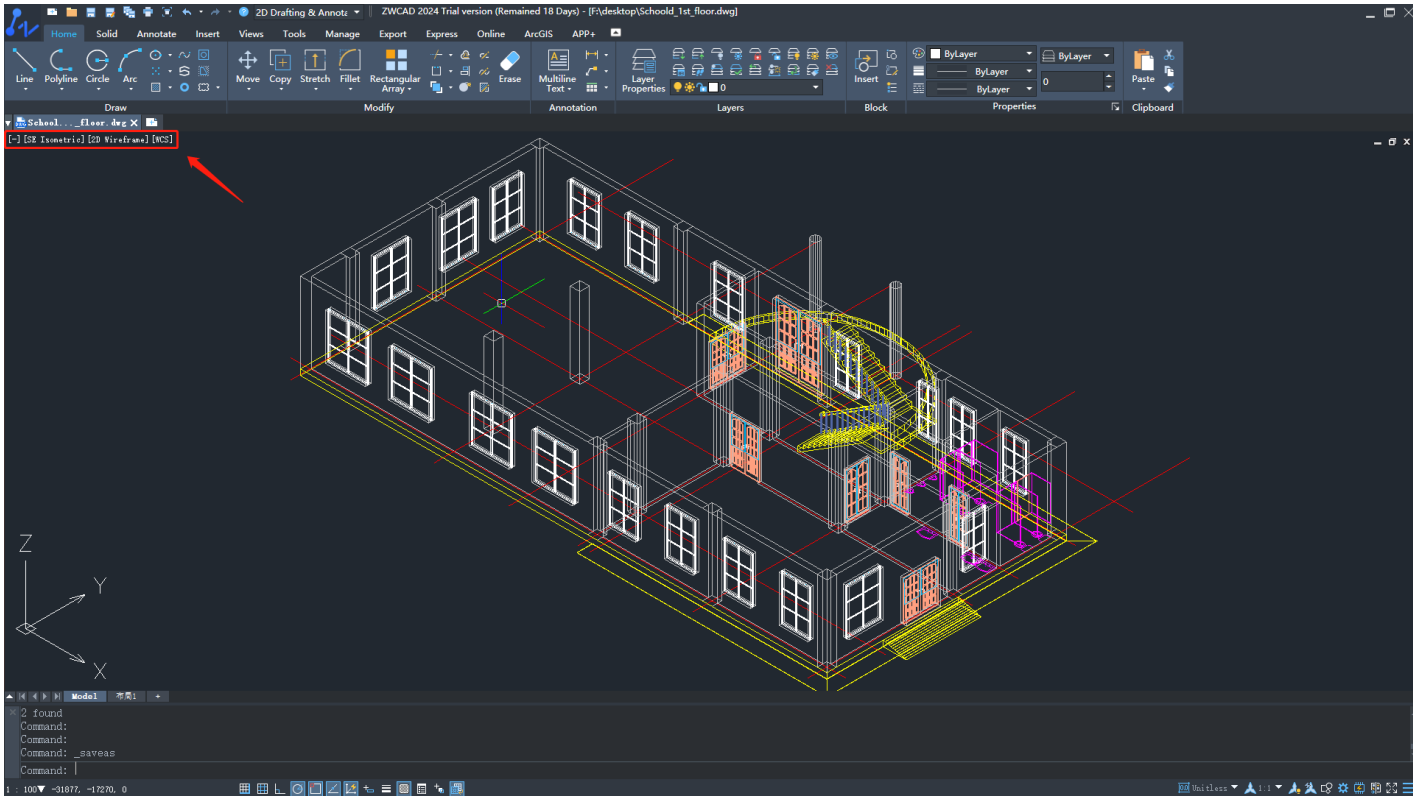
Figure 35. Views related Settings can be adjusted directly on the model space

Auto Locate Function for Hatch Custom Pattern List

The user can directly locate the specific position of the custom pattern list by entering characters. Users can select the custom pattern without opening a dialog box when using the custom hatch pattern.
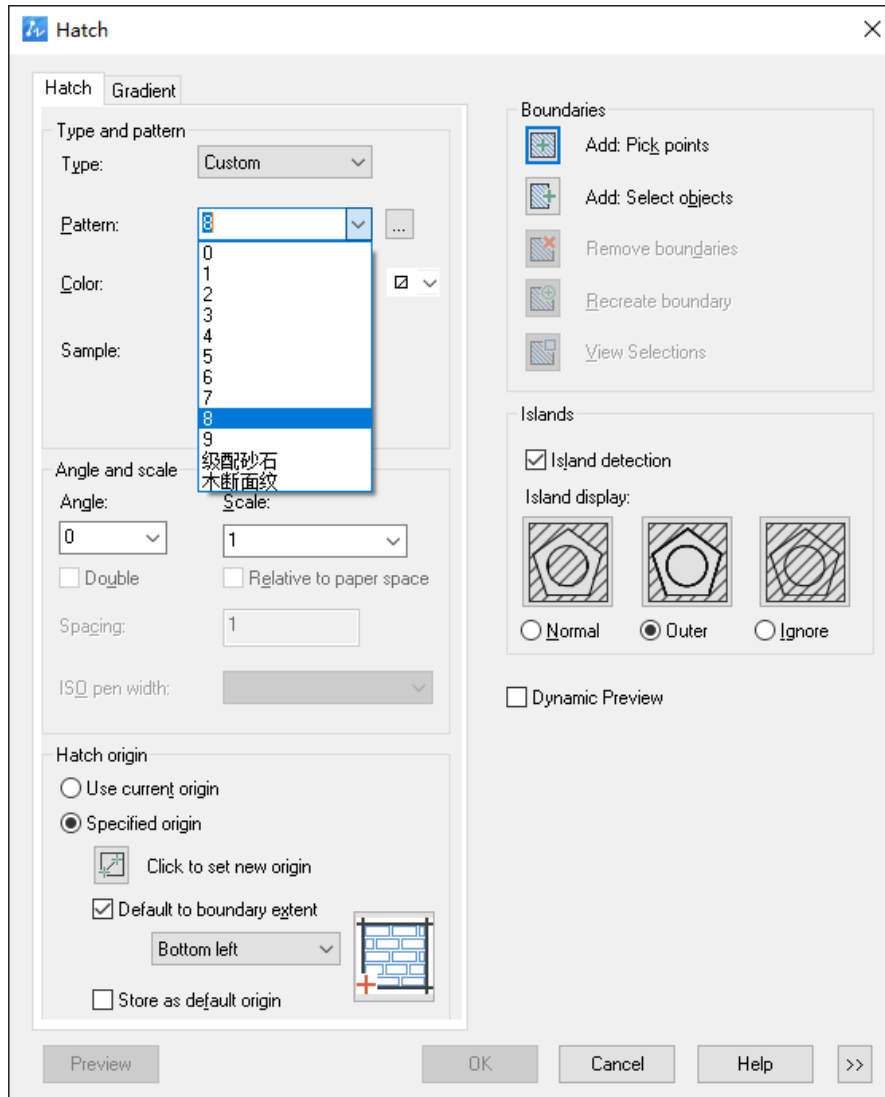
Figure 36. Auto locate to specific position

Multiple Printer Support Paths

Users can set multiple printer support file paths in the Options dialog box, ensuring that print style, configuration, and description files can still be applied even if one printer file is invalid.
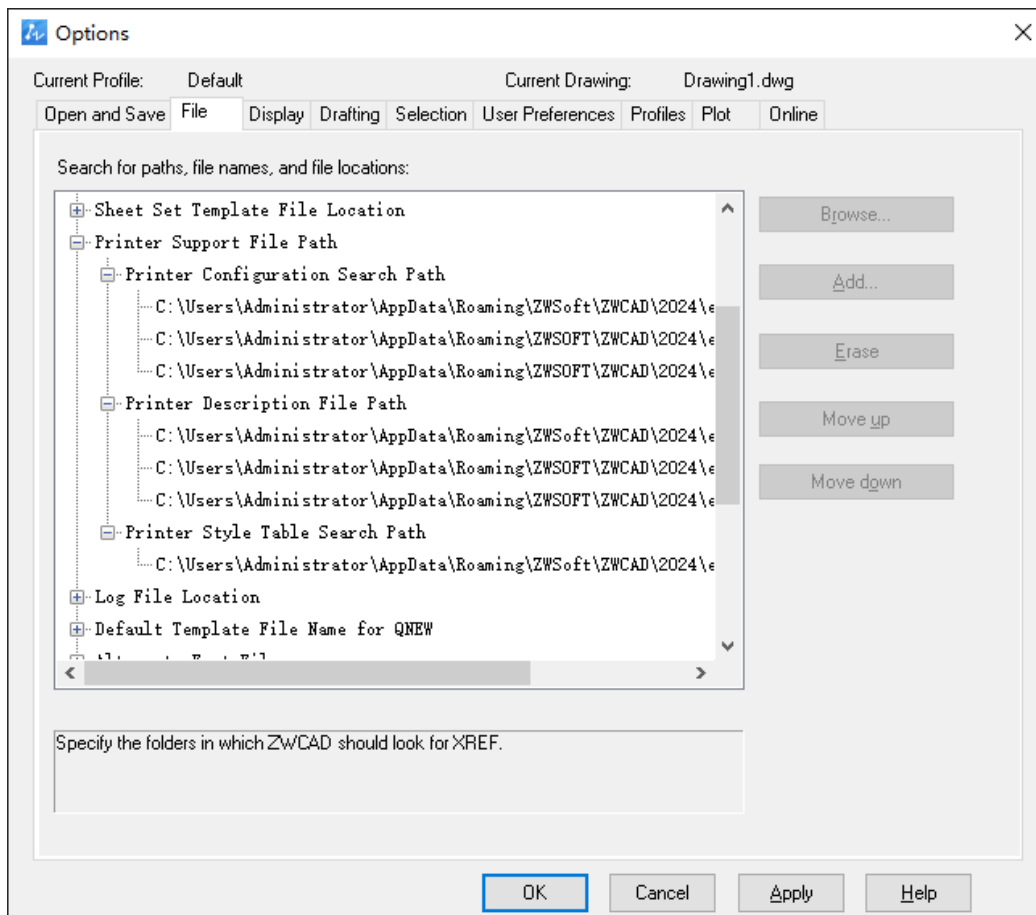
Figure 37. Support adding multiple support paths

Properties Panel Optimization

The spacing of the properties panel has been adjusted to make the panel more comfortable and allow more information to be displayed.
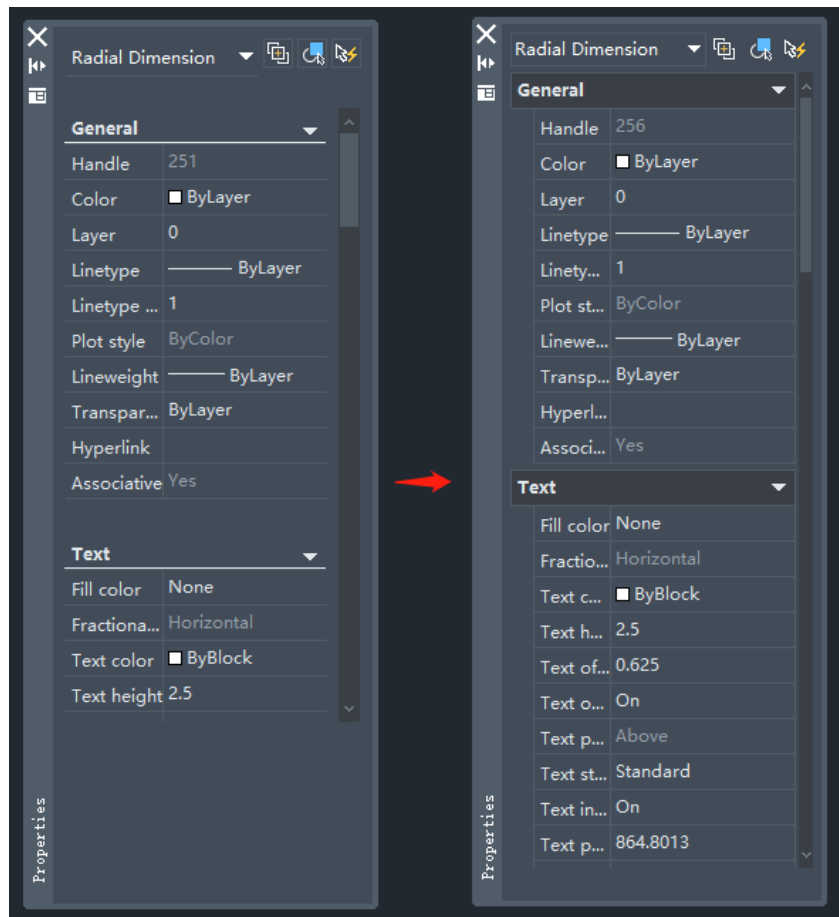
Figure 38. More information can be displayed in new properties panel

New Command & System Variables

New Command	Description
3DFLY	Observe objects in 3D fly mode.
3DFORBIT	Observe objects dynamically in 3D space.
3DSWIVEL	Observe objects in 3D swivel mode.
3DWALK	Observe objects in 3D walk mode.
-BCONVERT	Convert the dynamic block specified in current drawing to a flexi block.
-DGNADJUST	Adjust the fade and contrast of DGN underlays, and whether to use monochrome display.

New Command	Description
-DGNATTACH	Insert a DGN file into current drawing as an underlay.
-DGNBIND	Bind the DGN udnerlay as a block reference in the drawing.
-PCEXTRACTSECTION	Extract section lines.
-POINTCLOUDATTACH	Attach point cloud.
-POINTCLOUDCROPSTATE	Save/manage clipping states.
AREATABLE	Display the "Area Table" dialog to add area annotations or create an area table for closed regions.
BCONVERT	Convert specified dynamic blocks in the current drawing to dynamic blocks.
BPARAMSETFLIPSET	Parameter Set: Flip Set.
BPARAMSETLINEARARRAY	Parameter Set: Linear Array.
BPARAMSETLINEARMOVE	Parameter Set: Linear Move.
BPARAMSETLINEARMOVEPAIR	Parameter Set: Linear Move with Pairing.
BPARAMSETLINEARSTRETCH	Parameter Set: Linear Stretch.
BPARAMSETLINEARSTRETCHPAIR	Parameter Set: Linear Stretch with Pairing.
BPARAMSETPOINTMOVE	Parameter Set: Move Points.
BPARAMSETPOLARARRAY	Parameter Set: Polar Array.
BPARAMSETPOLARMOVE	Parameter Set: Polar Move.
BPARAMSETPOLARMOVEPAIR	Parameter Set: Polar Move with Pairing.

New Command	Description
BPARAMSETPOLARSTRETCH	Parameter Set: Polar Stretch.
BPARAMSETPOLARSTRETCHPAIR	Parameter Set: Polar Stretch with Pairing.
BPARAMSETROTATESET	Parameter Set: Rotate Set.
BPARAMSETVISIBILITYSET	Parameter Set: Visibility Set.
BPARAMSETXYARRAY	Parameter Set: XY Array.
BPARAMSETXYMOVE	Parameter Set: XY Move.
BPARAMSETXYMOVECORNER	Parameter Set: XY Move with Grid.
BPARAMSETXYMOVEPAIR	Parameter Set: XY Move with Pairing.
BPARAMSETXYSTRETCHCORNER	Parameter Set: XY Stretch with Grid.
DGNADJUST	Adjust the appearance of the DGN reference base map.
DGNATTACH	Attach the DGN reference base map.
DGNBIND	Bind the DGN base map as a block reference in the drawing.
DGNCLIP	Crop the DGN reference base map.
DGNLAYERS	Open the layer dialog for the DGN reference base map.
FCMPEXPORT	In file comparison mode, output the current file comparison results as a snapshot file.
FCMPHIDE	In file comparison mode, hide specified differential objects.
FCMPIMPORT	In file comparison mode, input specified differential objects from the compared drawing into the current drawing file.

New Command	Description
FCMPSHOW	In file comparison mode, restore all hidden differential objects to their initial display state.
GRAPHICSCONFIG	Open the graphics hardware settings dialog.
LIVESECTION	Activate sections.
PCEXTRACTSECTION	Extract section lines.
POINTCLOUDATTACH（PCATTACH）	Attach point cloud.
POINTCLOUDCROP	Clip point cloud.
POINTCLOUDCROPSTATE	Save/manage clipping states.
POINTCLOUDMANAGER	Open point cloud manager.
POINTCLOUDMANAGER CLOSE	Close point cloud manager.
POINTCLOUDSTYLIZE	Adjust point cloud stylization.
POINTCLOUDUNCROP	Cancel point cloud clipping.
QUICKPROPERTIES	Execute a command and display the quick properties panel for the selected objects.
RESETBLCOK	Restore one or more dynamic blocks to their default state.
SECTIONPLANE	Create a section.
VPCONTROL	Control whether the viewport control toolbar is enabled.
XFCMP	Compare the attached external reference with a specified drawing file or the most recent modifications to an external reference.
XFCMPCLOSE	Exit external reference comparison mode.

New System Variables	Description
HARDWAREACCELERATION	Control the enabling of hardware acceleration.
DGNFRAME	Control the display and printing of the DGN reference base map border.
DGNOSNAP	Control the enabling of object snapping for subobjects of the DGN reference base map.
XFCMPBAKSIZE	Set the folder size for storing backup external reference files.
XFCMPBAKPATH	Specify the path for storing backup external reference files.
XFCMPENABLE	Control the enabling of external reference comparison functionality.
XFCMPCOLORMODE	Control the dimming of objects in the current drawing during external reference comparison.
FCMPSHOWCONTEXT	Control the display of objects in the external reference comparison result in the current drawing.
QPMODE	Control the opening of the "Quick Properties" palette when selecting objects.
QPLOCATION	Set the position of the "Quick Properties" palette.
XREFOVERRIDE	Control the application of external reference layer properties overrides in the current drawing.
VISRETAINMODE	Set the layer property types to be saved to the current drawing when layer properties change in the external reference source drawing.
ATEXMODE	Control the opening of the area table output after saving.
STEPSIZE	Set the distance for each step of movement in 3D pan or fly mode.

New System Variables	Description
STEPSPERSEC	Set the number of steps per second for movement in 3D pan or fly mode.
DRAWINGAREABUTTON	Control the display and hiding of the three buttons in the upper-right corner of the drawing area.
POINTCLOUDPOINTSIZE	Set the point size of the point cloud.
POINTCLOUDLOD	Set the level of detail for the point cloud.
POINTCLOUDBOUNDARY	Control the display of the point cloud border.
POINTCLOUDDISPLAY	Control the display of the point cloud.
POINTCLOUD2DVSDISPLAY	Control the display of the point cloud in 2D wireframe mode.
POINTCLOUDLOCK	Lock the point cloud.
LINEEXTRACTCOLOR	Set the color of section lines.
LINEEXTRACTCONNECTSEGM	Control the line-to-line tolerance for extracting section lines from the point cloud.
LINEEXTRACTMINSEGMENTLENM	Control the minimum length of straight lines when extracting section lines from the point cloud.
LINEEXTRACTOUTPUTLAYER	Set the output layer for the extracted point cloud section lines.
LINEEXTRACTOUTPUTTYPE	Control the output type for the extracted point cloud section lines.
LINEEXTRACTPOLYLINEWIDTH	Control the line width of the 2D polylines when extracting point cloud section lines.
LINEEXTRACTPREVIEW	Control the preview of results when extracting point cloud section lines.
LINEEXTRACTEDUCECOLVERT	Control the angular tolerance for extracting point cloud section lines.

PCMSTATE	Display the current status of the point cloud manager.
New System Variables	**Description**
POINTCLOUDPOINTMAX	Set the maximum number of points to display in the point cloud.
LINEEXTRACTTYPE	Control whether to extract the entire cross-section or only the perimeter when extracting point cloud section lines.
3DOSMODE	Set the snapping mode for 3D objects, currently only controlling the snapping to point cloud nodes.
POINTCLOUDPLOT	Control the display of relevant prompts when printing point clouds is not supported in the current mode.
MTEXTCOLUMN	Control the default layout mode.
MTEXTTOOLBAR	Control the display of the text editing toolbar.
MTEXTDETECTSPACE	Control the application of spacing settings for numbering.
CLICKAPPBTN	Control the single-click or double-click behavior of the application icon.

APIs

The following section describes the condition of APIs in this release.

ZRX

14 were added and 76 were Fixed:

State	Interface
Added	AcDbUnderlayHost* acdbGetCurrentPdfHost();
Added	AcDbUnderlayHost* acdbGetCurrentDgnHost();
Added	Acad::ErrorStatus AcDbUnderlayReference::setHeight(double width);

State	Interface
Added	Acad::ErrorStatus AcDbUnderlayReference::setWidth(double width);
State	Interface
Added	Acad::ErrorStatus AcDbUnderlayReference::height(double& width) const;
Added	Acad::ErrorStatus AcDbUnderlayReference::width(double& width) const;
Added	AcBr::ErrorStatus AcBrEntity::getPerimeterLength(double& length, const double& tolRequired = *(double*)NULL, double& tolAchieved = *(double*)NULL) const;
Added	AcBr::ErrorStatus AcBrEntity::getMassProps(AcBrMassProps& massProps, const double& density = *(double*)NULL, const double& tolRequired = *(double*)NULL, double& tolAchieved = *(double*)NULL) const;
Added	virtual bool AcDbMultiModesGripPE::getGripModes(AcDbEntity* pThis, AcDbGripData* pGripData, AcArray<GripMode>& modes, unsigned int& curMode) const = 0;
Added	virtual GripType AcDbMultiModesGripPE::gripType(AcDbEntity* pThis, AcDbGripData* pGripData) const = 0;
Added	virtual unsigned int AcDbMultiModesGripPE::mode(AcDbEntity* pThis, AcDbGripData* pGripData) const = 0;
Added	virtual GripMode AcDbMultiModesGripPE::modeEx(AcDbEntity* pThis, AcDbGripData* pGripData) const = 0;
Added	virtual void AcDbMultiModesGripPE::reset(AcDbEntity* pThis) = 0;
Added	virtual bool AcDbMultiModesGripPE::setMode(AcDbEntity* pThis, AcDbGripData* pGripData, unsigned int newMode) = 0;
Fixed	Adesk::Boolean AcGeLinearEnt3d::intersectWith(const AcGeLinearEnt3d& line,AcGePoint3d& intPt, const AcGeTol& tol = AcGeContext::gTol) const;
Fixed	Acad::ErrorStatus AcDbHostApplicationServices::findFile(AcString& fileOut, const ACHAR * pcFilename, AcDbDatabase * pDb = nullptr, AcDbHostApplicationServices::FindFileHint hint = AcDbHostApplicationServices::kDefault);
Fixed	AcDbMText * AcDbAttributeDefinition::getMTextAttributeDefinition() const;
Fixed	int acedGetVar(const ACHAR * sym, struct resbuf * result);
Fixed	Acad::ErrorStatus AcApDocument::downgradeDocOpen(bool bPromptForSave);
Fixed	Acad::ErrorStatus AcDbEllipse::getParamAtDist(double dist, double& param) const;

Fixed	Acad::ErrorStatus acdbBindXrefs(AcDbDatabase* pHostDb, const AcDbObjectIdArray& xrefBlkIds, const bool bInsertBind, const bool bAllowUnresolved = false, const bool bQuiet = true);
Fixed	**Interface**
Fixed	Acad::ErrorStatus AcDbLayerStateManager::importLayerState(const ACHAR * sFilename);
Fixed	Acad::ErrorStatus AcDbLayerStateManager::exportLayerState(const ACHAR * sNameToExport, const ACHAR * sFilename);
Fixed	bool AcDbDgnReference::isContentSnappable() const;
Fixed	const AcDbMText * AcDbAttribute::getMTextAttributeConst() const;
Fixed	Acad::ErrorStatus AcDbDatabase::wblockCloneObjects(const AcDbObjectIdArray& objectIds, const AcDbObjectId& owner, AcDbIdMapping& idMap, AcDb::DuplicateRecordCloning drc, bool deferXlation = false);
Fixed	virtual Acad::ErrorStatus AcDbLayoutManager::setCurrentLayout(const ACHAR * newname, AcDbDatabase* pDb = NULL) = 0;
Fixed	ADESK_SEALED_VIRTUAL Acad::ErrorStatus explode(AcDbVoidPtrArray& entitySet) const;
Fixed	AcGeEntity3d& AcGeEntity3d::transformBy(const AcGeMatrix3d& xfm);
Fixed	virtual void AcPlPlotReactor::beginPlot(AcPlPlotProgress* pPlotProgress, PlotType type);
Fixed	virtual void AcPlPlotReactor::endPlot(AcPlPlotProgress::PlotCancelStatus status);
Fixed	virtual void AcPlPlotReactor::beginDocument(AcPlPlotInfo& plotInfo, const ACHAR * pDocname, Adesk::Int32 nCopies = 1, bool bPlotToFile = false, const ACHAR * pFilename = NULL);
Fixed	virtual void AcPlPlotReactor::endDocument(AcPlPlotProgress::PlotCancelStatus status);
Fixed	virtual void AcPlPlotReactor::beginPage(AcPlPlotPageInfo& pageInfo, AcPlPlotInfo& plotInfo, bool bLastPage);
Fixed	virtual void AcPlPlotReactor::endPage(AcPlPlotProgress::SheetCancelStatus status);
Fixed	virtual resbuf* AcDbObject::xData(const ACHAR* regappName = nullptr) const;
Fixed	Acad::ErrorStatus AcDbObject::dwgOutFields(AcDbDwgFiler* pFiler) const;

Fixed	double AcGeCurve2d::paramOf(const AcGePoint2d& pnt, const AcGeTol& tol = AcGeContext::gTol) const;
Fixed	**Interface**
Fixed	Acad::ErrorStatus AcDbPdfDefinition::setSourceFileName(const ACHAR* file);
Fixed	Body Body::extrusion (const Point3d plg[], PolygonVertexData* vertexData[],int numVertices,const Vector3d&plgNormal,const Vector3d&extrusionVector);
Fixed	void AcEdJig::setDispPrompt(const ACHAR*, ...);
Fixed	void Atil::ImageContext::flush();
Fixed	AcGePoint3d AcDbRasterImage::position() const;
Fixed	virtual AcDbObjectId AcDbLayoutManager::findLayoutNamed(const ACHAR* name, const AcDbDatabase* pDb = NULL) = 0;
Fixed	void AcGeEllipArc2d::getSamplePoints(double fromParam, double toParam, double approxEps, AcGePoint2dArray& pointArray, AcGeDoubleArray& paramArray) const;
Fixed	Adesk::Boolean AcGeCircArc2d::intersectWith(const AcGeCircArc2d& arc, int& intn, AcGePoint2d& p1, AcGePoint2d& p2, const AcGeTol& tol = AcGeContext::gTol) const;
Fixed	Acad::ErrorStatus AcDbSpline::getDistAtParam(double param, double& dist) const;
Fixed	virtual double AcDbLeader::dimscale() const;
Fixed	virtual Adesk::Boolean AcDbPolyline::onSegAt(unsigned int index, const AcGePoint2d& pt2d, double& param) const;
Fixed	double AcGeEllipArc3d::paramAtLength(double datumParam, double length, Adesk::Boolean posParamDir = Adesk::kTrue, double tol = AcGeContext::gTol.equalPoint()) const;
Fixed	AcGeEntity3d& AcGeEllipArc3d::transformBy(const AcGeMatrix3d& xfm);
Fixed	Acad::ErrorStatus AcApDocument::upgradeDocOpen();
Fixed	Acad::ErrorStatus AcApDocument::downgradeDocOpen(bool bPromptForSave);
Fixed	virtual Acad::ErrorStatus AcEdInputPointMonitor::monitorInputPoint(const AcEdInputPoint& input, AcEdInputPointMonitorResult& output);
Fixed	void AcEdCommandReactor::commandWillStart(AcEdCommand* pCmd, AcEdCommandEventArgs* data)

Fixed	void AcEdCommandReactor::goodbye(AcEdCommand* pCmd, AcEdCommandEventArgs* data)
Fixed	**Interface**
Fixed	Body& Body::operator -=(const Body&);
Fixed	Body& Body::operator +=(const Body&);
Fixed	virtual Adesk::Boolean AcGiGeometry::image(const AcGiImageBGRA32& imageSource, const AcGePoint3d& position, const AcGeVector3d& u, const AcGeVector3d& v, TransparencyMode transparencyMode = kTransparency8Bit) const = 0;
Fixed	Acad::ErrorStatus AcDbDimension::recomputeDimBlock(bool forceUpdate = true);
Fixed	Acad::ErrorStatus AcDbLayerStateManager::restoreLayerState(const ACHAR * sName, const AcDbObjectId& idVp, int nRestoreFlags = 0, const LayerStateMask* pClientMask = NULL);
Fixed	virtual AcGiImageOrg AcDbRasterImageDef::organization() const;
Fixed	virtual int AcDbRasterImageDef::colorDepth() const;
Fixed	void Atil::Image::clear();
Fixed	virtual AcGeVector2d AcDbRasterImageDef::resolutionMMPerPixel() const;
Fixed	virtual Units AcDbRasterImageDef::resolutionUnits() const;
Fixed	virtual Adesk::Boolean AcDbRasterImageDef::isEmbedded() const;
Fixed	ACPL_PORT const AcDbPlotSettings* AcPlPlotInfo::overrideSettings() const;
Fixed	Acad::ErrorStatus AcDbBlockTableRecord::appendAcDbEntity(AcDbObjectId& pOutputId, AcDbEntity* pEntity);
Fixed	virtual Adesk::Boolean AcGiGeometry::text(const AcGePoint3d& position, const AcGeVector3d& normal, const AcGeVector3d& direction, const double height, const double width, const double oblique, const ACHAR* pMsg) const = 0;
Fixed	int acedOsnap(const ads_point pt, const ACHAR * mode, ads_point result);
Fixed	Acad::ErrorStatus AcDbHatch::appendLoop(Adesk::Int32 loopType, const AcDbObjectIdArray& dbObjIds);

State	Interface
Fixed	AcBr::ErrorStatus AcBrEntity::getLineContainment(const AcGeLinearEnt3d& line, const Adesk::UInt32& numHitsWanted, Adesk::UInt32& numHitsFound, AcBrHit*& hits) const;
State	Interface
Fixed	Acad::ErrorStatus AcDbPolyline::getClosestPointTo(const AcGePoint3d& givenPnt, AcGePoint3d& pointOnCurve, Adesk::Boolean extend = Adesk::kFalse) const;
Fixed	DragStatus AcEdJig::acquirePoint(AcGePoint3d&);
Fixed	Acad::ErrorStatus AcDbHatch::getArea(double& a) const;
Fixed	virtual BOOL AcApStatusBar::Remove(AcTrayItem* pTrayItem, BOOL bUpdate = TRUE) = 0;
Fixed	BOOL AcPane::SetIcon(HICON hIcon) override;
Fixed	virtual AcApDocument::CDocument* cDoc() const = 0;
Fixed	virtual HRESULT STDMETHODCALLTYPE IAcadPopupMenu::AddMenuItem(VARIANT index, BSTR Label, BSTR Macro, IAcadPopupMenuItem **pItem) = 0;
Fixed	virtual Acad::ErrorStatus AcEdInputPointManager::disableSystemCursorGraphics() = 0;
Fixed	Acad::ErrorStatus AsdkHlrEngine::run(AsdkHlrCollector &collector);
Fixed	DragStatus AcEdJig::acquireAngle(double & ang);
Fixed	virtual void AcDbEntity::subList() const;
Fixed	int acedGrDraw(const ads_point from, const ads_point to, int color, int hl);
Fixed	Acad::ErrorStatus AcDbViewport::thawLayersInViewport(const AcDbObjectIdArray&);
Fixed	Acad::ErrorStatus AcDbViewport::freezeLayersInViewport(const AcDbObjectIdArray&);
Fixed	virtual void AcEdSSGetFilter::ssgetRemoveFilter(int ssgetFlags, AcEdSelectionSetService & service, const AcDbObjectIdArray& selectionSet, const AcDbObjectIdArray& subSelectionSet, AcDbIntArray& removeIndexes, AcDbArrayIntArray& removeSubentIndexes);
Fixed	virtual void AcEdSSGetFilter::endSSGet(Acad::PromptStatus returnStatus, int ssgetFlags, AcEdSelectionSetService & service, const AcDbObjectIdArray& selectionSet);

Fixed	virtual HRESULT STDMETHODCALLTYPE IAcadToolbarItem::SetBitmaps(BSTR SmallIconName, BSTR LargeIconName) = 0;

.NET

15 were added and 21 were fixed:

State	Interface
Added	Complex.Shells Property
Added	BrepEntity.GetPerimeterLength() Method
Added	BrepEntity.GetSurfaceArea() Method
Added	Edge.IsOrientToCurve Property
Added	BrepEntity.GetMassProperties() Method
Added	Hit.Point Property
Added	Face.GetArea() Method
Added	DxfCode Enumeration
Added	Device.DeviceRenderType Property
Added	MLeaderStyle.Name Property
Added	MLeader.Scale Property
Added	Utils.WcMatchEx(string str, string pattern, bool ignoreCase) Method
Added	MPolygon.IsPointInsideMPolygon(Point3d worldPoint, double tolerance) Method
Added	Application.LoadPartialMenu Method
Added	Application.UnloadPartialMenu Method

State	Interface
Fixed	BlockTableRecord.IsAnonymous Property
Fixed	BlockTableRecord.IsDynamicBlock Property
Fixed	BlockTableRecord.GetAnonymousBlockIds Method
Fixed	DBObject.Copied Event
Fixed	Surface.CreateSweptSurface(Profile3d, Profile3d, SweepOptions) Method
Fixed	Editor.GetNestedEntity(PromptNestedEntityOptions) Method
Fixed	Application.IsQuiescent Property
Fixed	AttributeCollection.AppendAttribute Method
Fixed	Polyline.OnSegmentAt Method
Fixed	Point2d.IsEqualTo(Point2d, Tolerance) Method
Fixed	DynamicDimensionDataCollection.Add Method
Fixed	Document.BeginDocumentClose Event
Fixed	GripOverrule.MoveGripPointsAt(Entity, GripDataCollection, Vector3d, MoveGripPointsFlags) Method
Fixed	Database.WblockCloneObjects Method
Fixed	Dimension.TextStyleId Property
Fixed	GripOverrule.GetGripPoints(Entity, GripDataCollection, double, int, Vector3d, GetGripPointsFlags) Method
Fixed	GripOverrule.OnGripStatusChanged Method
Fixed	GraphicsKernel.GraphicsKernel() Constructor

State	Interface
Fixed	Document.DowngradeDocOpen Method
Fixed	Document.UpgradeDocOpen Method
Fixed	Curve.GetClosestPointTo(Point3d, [MarshalAs(UnmanagedType.U1)] bool) Method

VBA

8 were fixed:

State	Interface
Fixed	AcadDocument.WBlock Method
Fixed	AcadModelSpace.AddExtrudedSolidAlongPath Method
Fixed	AcadModelSpace.InsertBlock Method
Fixed	AcadToolbar.AddSeparator Method
Fixed	AcadUtility.GetPoint Method
Fixed	Acad3DSolid.TrueColor Property
Fixed	AcadPopupMenuItem.Enable Property
Fixed	AcadPopupMenu.NameNoMnemonic Property

LISP

1 were added, 18 were fixed:

State	Interface
Added	layerstate-getnames

Fixed	layerstate-export
Fixed	vl-catch-all-apply
Fixed	layerstate-import
Fixed	getenv
Fixed	vla-selectOnScreen
Fixed	vla-select
Fixed	vla-GetXRecordData
Fixed	vector_image
Fixed	image_button
Fixed	list_box
Fixed	vlax-import-type-library
Fixed	vla-AppendOuterLoop
Fixed	vlax-put-property
Fixed	get_tile
Fixed	defun
Fixed	eval
Fixed	set_tile
Fixed	cal

Bug Fixes

For the complete list, please refer to:

https://www.dropbox.com/s/lgael2jai8bwzgx/Bug%20Fixlist_ZWCAD%202024_Official.xlsx?dl=1