

# DesignCAD 3D Max 25.2 Release Notes

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## December 2015.

DesignCAD 3D Max 25.2 contains the following enhancements and improvements:

### Batch Convert improvement:

We added a “Remove All” button to the Batch Convert window. This makes it much easier to clear the list of files selected for conversion.

### UI Improvements:

When Windows was set to display text and other objects at 125% or 150% scaling, sometimes the entire contents of the Info Box or Render dialog box didn’t show.

Under some conditions, using the Layer Options dialog to select one more layers while the Info Box was open would cause DesignCAD to freeze. To prevent this problem, now the Info Box won’t get updated until the Layer Options dialog is closed.

### Customization fixes:

The “Change Directory” button in the Keyboard and Menu customization panels didn’t function.

### STL and OBJ Import/Export improvements:

After importing an STL or OBJ file with more than 5000 facets, the object couldn’t be moved, copied, or otherwise edited.

When exporting a very large Solid Surface object to STL format with “Orient Normals by Solid” option checked, the export could take a very long time compared to when that option was unchecked.

### Solid Surface improvements:

Drawings and symbols containing Solid Surface objects with more than 5000 facets caused unusually long load times when such drawings were opened.

Solid Surfaces wouldn’t render in all views if shaded with GDI rendering and “All views” was selected.

Solid Explode now explodes a selected Solid Surface entity into planes.

### Paperspace Improvements:

When using right-click or Ctrl-right-click to activate the context menu for a selected ViewFrame object, the Display Order menu selection was missing.

# DesignCAD 3D Max 25.1 Release Notes

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## October 2015.

DesignCAD 3D Max 25.1 contains the following enhancements and improvements:

### File Save improvements:

Historically, some users have been having problems when saving directly to a shared network location, a Dropbox share, or a similarly synchronized shared folder; in some cases, immediately after the file was saved, it would be deleted from the shared folder. We have modified the way Save operations work in order to minimize the risk of such data loss.

### Balloon command improvements:

When using the Balloon command with “Use single-line command bar” option enabled, DesignCAD would crash. This no longer happens.

In many cases, after specifying a balloon size or text size, the resulting balloon text was not sized properly (the text would sometimes be too large for the balloon or much too small). This no longer occurs.

### Point Select Mode improvements:

Previously, while Point Select Mode was active and multiple objects including text were selected, drag-selecting a region of points that included all points of one or more selected text objects would completely ignore the points of the text object(s). This made it impossible to move the text by moving the selected points. Now it is possible to select all points of an enclosed text object using a drag-selection rectangle and subsequently move the text along with other selected points. *NOTE: This only works for text that is completely enclosed by the selection rectangle; you still cannot use Point Select Mode to select only some of the points of a text entity – it’s all or nothing.*

### Symbol and Block Improvements:

When exporting DWG or DXF files containing symbols with wide lines, the line widths inside the symbols were sometimes scaled incorrectly in the resulting DWG or DXF file. This has been corrected.

After adding a symbol containing gradient hatch fills to a drawing, the gradient patterns were lost when the file was saved and re-opened. DesignCAD now stores the symbol’s gradient patterns in the host drawing.

When a block contained line style names with spaces at the end, it could not be exported to DWG or DXF format. DesignCAD now checks for this and removes the extraneous spaces.

When a symbol or block containing mirrored elliptical arcs was added to a drawing, the mirrored arcs displayed incorrectly when the drawing was saved and reloaded. The mirrored elliptical arcs now display correctly when opened in DesignCAD 25.1.

### **RedSDK Mode Fixes:**

When gravity-snapping to points in RedSDK mode, the point marker appeared to be offset from the original point by a small amount. This was a cosmetic defect only – once the object was drawn using the snapped points, they were correct. The erroneous display of the snapped point markers has been fixed.

In some cases, after changing a drawing's Background Color in RedSDK Mode, switching to Paperspace Mode would cause a crash. This has been fixed.

### **Other Fixes:**

Surface Intersect stopped working on stand-alone Grid entities. Now it does again.

Several newly-introduced problems with texture mapping have been fixed: crashes while texture-mapping, upside-down textures when shading in GDI mode, and occasional loss of the texture when switching between OpenGL and GDI shading.

Sometimes the Print command would crash when trying to produce a Hidden-line print of a 3D drawing. This has been fixed.

When shading with OpenGL, once you enabled the Fog options and shaded, the next Shade operation showed the Fog options grayed out. This has been fixed.

Help problem: Under 64-bit Windows 8.1 or Windows 10, using the Index tab in the Help for the 32-bit version of DesignCAD would cause the program to freeze. The freeze has been fixed; however, context-sensitive help no longer works correctly in the 32-bit version. We are continuing to investigate this behavior.

Copy/Paste problem: When objects were copied from DesignCAD to the clipboard and pasted into Word, the resulting image was skewed in Word. Also if the pasted objects contained bitmap images, the bitmaps could not be displayed in Word. Both problems have been fixed.

Under Windows 10, if Windows was set to use text scaling of 125% or more, the Info Box for dimensions was not showing all the fields completely. This has been fixed.

Using the Find/Replace Text command caused DesignCAD to crash. Now it works as expected.

When a drawing was exported to PDF format using File/Export, if a non-default working plane was active, the resulting PDF file was created using the default working plane. Now it is created using whatever working plane is currently active.

The Auto Trace Bitmap command was causing DesignCAD to crash. This has been fixed.

Some BasicCAD programs were causing the 64-bit version to crash. The causes for those crashes have been fixed.

When some tools (Trim Multiple Lines was the most frequent culprit) were added to a custom toolbox, the resulting button simply didn't work. This has been fixed.

Toggling the Line Style by Layer button in the Line Style toolbar caused the cursor to temporarily change from the selection cursor to the set points cursor. This no longer occurs.

# DesignCAD 3D Max 25.0 Release Notes

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July 2015. Thanks for purchasing or upgrading to DesignCAD 3D Max 25. We hope that DesignCAD will prove to be a useful addition to your arsenal of CAD tools.

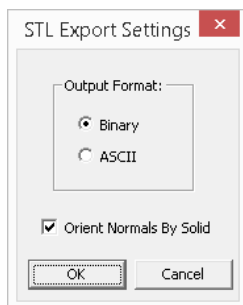
## What's New in DesignCAD 3D Max 25?

### DesignCAD is now available as a 64-bit program

For the last eighteen years, DesignCAD has only available as a 32-bit program. Now with DesignCAD 3D Max 25, that has changed. At long last, we can now offer DesignCAD in both a 32-bit and 64-bit format. While the 32-bit version is still limited to accessing only the first 2GB of the system's RAM, the 64-bit version of DesignCAD 3D Max 25 can access all of the 4GB and more that is typically present on modern systems. That means you can create and edit larger drawings than ever before.

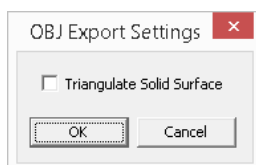
### DesignCAD can now import and export STL files

DesignCAD 3D Max 25 now supports the import and export of STL files, the most-used file format for 3D printing. You have the option of exporting either Binary- or ASCII-formatted STL files, and the option to have DesignCAD try and optimize the normals of the exported facets.



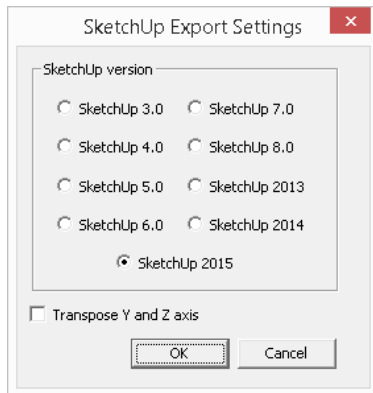
### DesignCAD can now import and export Wavefront OBJ files

The OBJ file format one of the most-commonly used formats for transferring 3D objects between different 3D programs. DesignCAD 3D Max 25 now offers OBJ as both an import and export format. *Note that DesignCAD only supports vertices and facets -- the basic geometry features of the OBJ format. Materials and UV mapping are not supported. In addition, no effort is made to align the surface normals of exported objects, so your OBJ output from DesignCAD may require some face-flipping when read into another program.* When exporting to OBJ format, you have the option to have DesignCAD reduce all Solid Surface faces to triangles, or leave them as n-gons.



## DesignCAD can now export SketchUp files

SketchUp is a very popular 3D drawing program. DesignCAD 3D Max 25 can now export both 2D and 3D drawings to SketchUp files. When exporting to SketchUp format, you can choose the target SketchUp version, and optionally transpose the Y and Z axes. Transposing the axes helps DesignCAD objects properly face "up" in SketchUp, since DesignCAD uses Y as the vertical axis, where SketchUp uses Z.



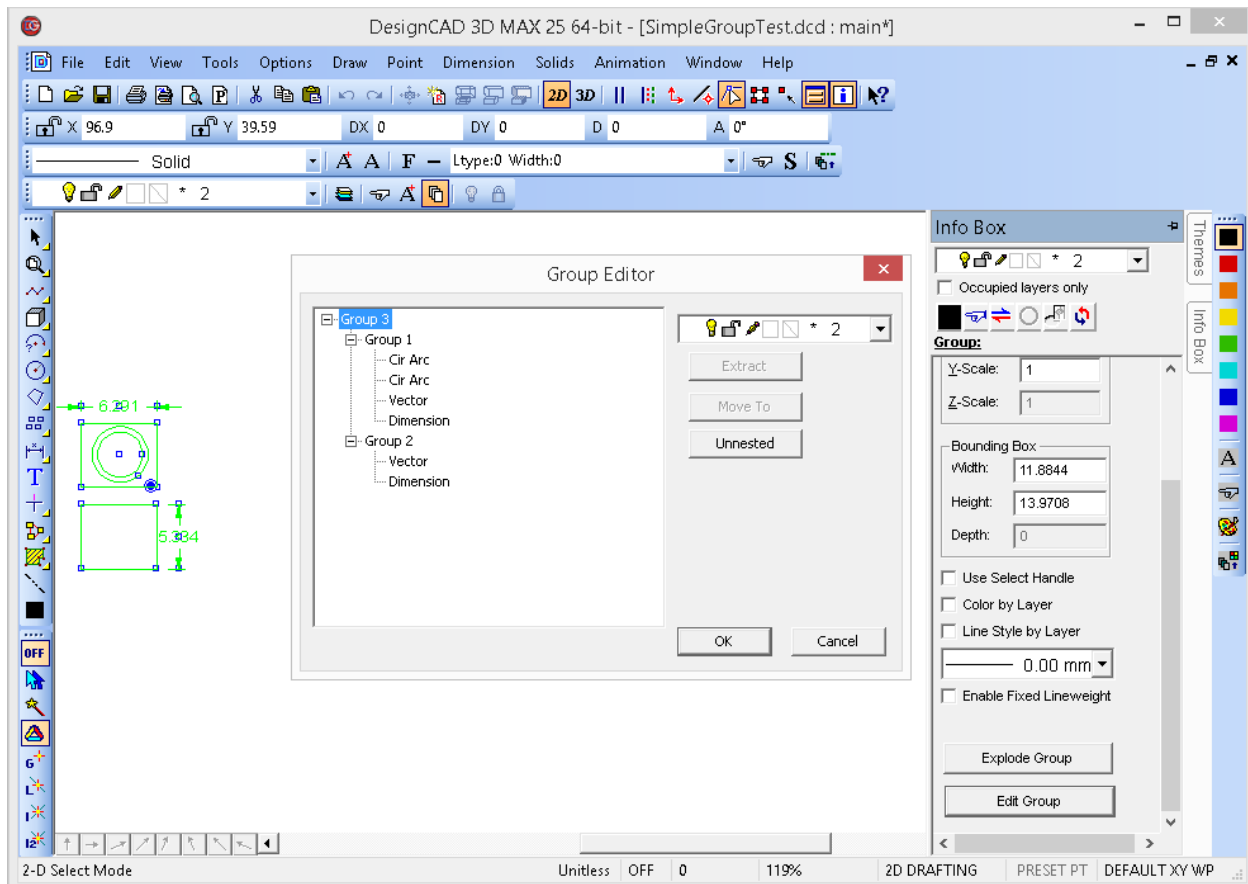
## There have been changes to the list of image formats supported

DesignCAD can now load the following image file formats: JPG, BMP, DIB, PNG, PSD, TGA, TIF, PCX, WMF, EMF, and GIF. *These raster file formats can no longer be loaded: PCT, PCD, WPG, EPS, and AWD. Also, Load Image File supports only raster-based WMF files; vector-based ones such as those exported from DesignCAD must be imported using File/Import. If one method fails to load a WMF file correctly, try the other.*

DesignCAD can now save the following image file formats: JPG, BMP, TGA, TIF, PCX, PNG, and GIF. *These raster file formats can no longer be saved: PCT, PSD, WMF, WPG, EPS, and AWD. Note that DesignCAD drawings can still be exported to WMF format as a vector graphic, but not saved as a raster image.*

## A Group Editor tool has been added

Once created, it's always been a matter of guesswork to determine the structure of a nested group in DesignCAD. The Details button in the Info Box doesn't list any sub-groups contained in the selected group entity; it only lists drawing objects. To resolve this problem, Version 25 now offers the **Edit Group** button in the Info Box. With a single Group entity selected, by clicking on the **Edit Group** button you can use the Group Editor to explore the contents of the Group and any sub-groups it contains. Operations include extracting objects completely from the Group, moving objects from one sub-group to another, moving highlighted objects or groups to a different layer, or reducing all subgroups and contents to a single-level group.



In the image above a group has been selected, the Info Box opened, and the **Edit Group** button pushed. The Group Editor dialog box then appeared. We can see from the list that the outer container is Group 3. Groups 1 and 2 are additional groups nested inside of Group 1, each containing several individual entities. When Group 3 was selected in the list, the **Layer** drop-list became enabled; now it would be possible to assign Group 3 (and all its contents) to a different layer. This is different than using the Info Box to reassign the layer – if done in the Info Box's Layer drop-list, only the Group 3 container would be moved to a different layer; the contents of the group would still be on their original layers. In the Group Editor, if you assign a layer using the Layer drop-list, it applies to the selected node and everything contained within that node (i.e. everything that is highlighted green in the display). While Group 3 is selected, we also have the option to click the **Unnested** button – this will move all entities within Group 1 and Group 2 to Group 3, and remove the now-empty groups 1 and 2.

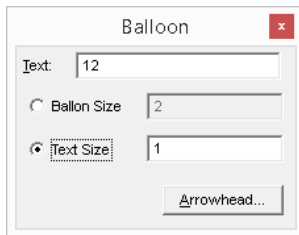
If we click on the Group 1 node, the **Unnested** button becomes grayed out, because Group 1 doesn't contain any groups in its list. However, the **Extract** and **Move To** buttons now become highlighted, and the **Layer** drop-list remains active. Picking a different layer would move Group 1 and all its contents to the new layer. Clicking **Extract** would remove Group 1 from the Group 3 collection – it would then become a standalone group in the drawing. Clicking **Move To** would let us click on any other group in the collection, forcing Group 1 to now be contained within the selected group. So if we click **Move To**, then select the Group 2 node, Group 1 and all its contents would now be nested inside of Group 2. If we then select the Group 2 node, the **Unnested** button activates, since Group 2 now contains Group 1

within it. Clicking the **Unnested** button with Group 2 selected would move all entities in Group 1 to Group 2, and delete Group 1.

Finally, there are the **OK** and **Cancel** buttons. If you click **Cancel**, all changes you have made to the Group structure are forgotten, and it reverts to its original structure. If you click **OK**, all changes are applied permanently to the selected Group.

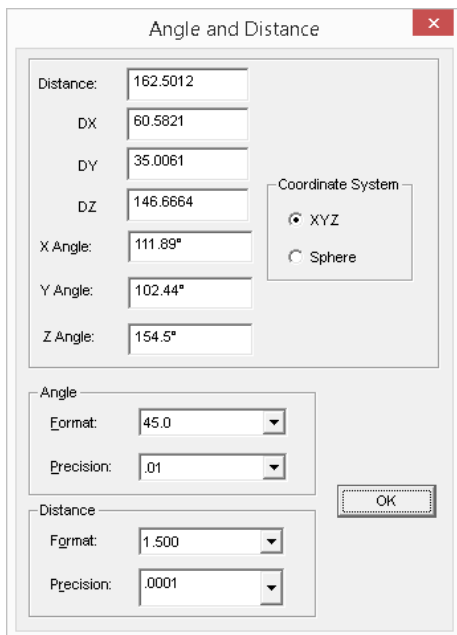
### The Balloon Command has been enhanced

DesignCAD 25 offers a new option to the Balloon command. You can still specify the balloon size as always (which causes the text height to be adjusted so the text will all fit within the balloon), but now you have the alternate option of specifying the text height – in this case the balloon will resize to fit around the text. Note that selecting either option disables the other input field – you cannot specify both settings.



### The Angle and Distance Between Points command has been enhanced

In previous versions of DesignCAD, the Angle and Distance Between Points command only displayed the overall distance and the angle between the two points. Version 25 adds three new distance fields to the results: DX, DY, and (in 3D Mode) DZ now show the overall distance broken down into its X, Y and Z components.





## **Additional support for Solid Surface entities has been added**

DesignCAD 3D Max 24 first introduced the Solid Surface entity, a new way of representing solid objects that is more flexible than the previous limitations of Planes and Grids. Solid Surface entities consist of a list of points, and a list of facets that are formed by connecting ordered sets of those points. Version 24 didn't offer a lot of support for the new entity type. DesignCAD 3D Max 25 offers expanded support for it.

### **Hidden Edge**

The Hidden Edge command now works on Solid Surface entities.

### **Hidden Edge by Section**

The Hidden Edge by Section command now works on Solid Surface entities.

### **Show All Edges**

The Show All Edges command now works on Solid Surface entities, and optionally can be set to apply only to selected objects. Previously it worked on all objects in the drawing (except Solid Surfaces).

### **Slice**

The Slice command now works on Solid Surface entities.

### **Cross Section**

The Cross Section command now works on Solid Surface entities.

### **Contour Line**

The Contour Line command now works on Solid Surface entities.

### **Surface Intersection**

The Surface Intersection command now works on Solid Surface Entities.

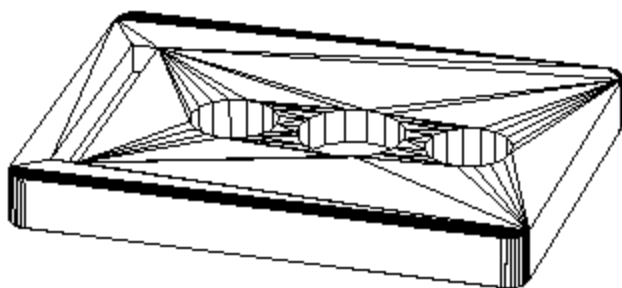
### **Triangulate Surface**

The new Triangulate Surface command now allows you to reduce any selected Solid Surface entities to all-triangular facets.

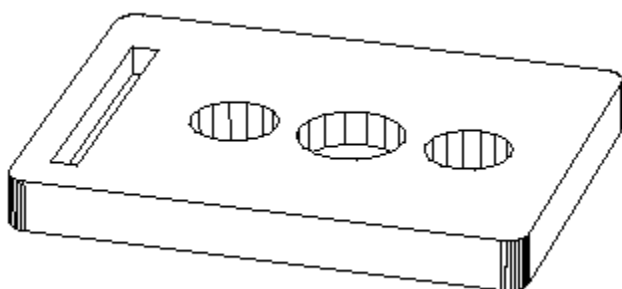
### **Hide Coplanar Facets Edges**

The new Hide Coplanar Facets Edges command automatically hides all non-boundary edges of coplanar facets in a planar surface. What does that mean, exactly?

The first image below is the result of running Show All Edges after numerous edits on a Solid Surface entity. Many, though not all, of the surfaces have been reduced to triangles. Even in Hidden Line mode, it's hard to tell what the actual shape of the object is.



Now look at the result after selecting the entity and running Hide Coplanar Facets Edges:



### **OLE Automation Support for Solid Surfaces**

New features have been added to OLE Automation to allow the examination of the point and facet data for Solid Surfaces.

#### ***DcEntityType***

The DcEntityType collection has a new member:

DcEntSolidSurface = 85

#### ***Selection***

The Selection class has these new methods:

SurfacesTriangulate as Boolean – reduces all facets in selected Solid Surface entities to triangles.

SurfacesHideCoplanarFacetEdges as Boolean – hides all internal edges of coplanar facets in Solid Surfaces.

ConvertSolidToSurface as Boolean – converts all selected "classic" solids to Solid Surfaces

ConvertSurfaceToSolid as Boolean – converts all selected Solid Surface entities to "classic" solids, where each facet in the Solid Surface is directly converted to a Plane in the resulting solid.

## ***EntSolidSurface***

The new EntSolidSurface class offers these methods and properties for manipulating points and facets in solid surface entities:

Property FacetCounts as Integer – returns the number of facets in the Solid Surface

Property Smooth as Boolean – returns whether or not the Smooth flag is set for the Solid Surface

Method GetFacetPointCount(facetIndex as Integer) as Integer – returns the number of points for the indexed facet. Facet indices begin at 1.

Method GetFacetPoint(facetIndex as Integer, Pointindex as Integer, X as Double, Y as Double, Z as Double) as Boolean – stores the coordinate of the indexed point of the indexed facet in X, Y, and Z. Returns False if unsuccessful.

Method GetFacetPoints(facetIndex, PXYZArray as Array of Double) as Integer – return value is the number of points returned. PXYZArray is an array of 3\*nfacetpoints of doubles. Points are stored consecutively as X,Y, Z, X,Y, Z.... values.

Method SetFacetPoint(facetIndex as Integer, PointIndex as Integer, X, Y, Z) as Boolean. Sets the X, Y, Z coordinate of the indexed point of the indexed facet. Return value is False if unable to set the point.

Method SetFacetPoints(FacetIndex as Integer, PXYZArray as Array of Double) as Boolean. Updates the facet points with the values in the PXYZArray.

Method GetFacetPointIDs(FacetIndex as Integer, PintArray as Array of Integer) as Integer. Stores all the IDs of the indexed facet's points in the array. Returns the number of indices obtained.

Method GetPointByID(pointID as Integer, X as Double, Y as Double, Z as Double) as Boolean. Gets the location of the point with the given ID. Point IDs are not the same as their indices, and the IDs start at zero, not one. Returns False if the point cannot be obtained (possibly due to wrong ID value).

Method SetPointByID(pointID as Integer, X as Double, Y as Double, Z ad Double) as Boolean. Sets the new location of the point with the given ID to the specified X, Y and Z values. Returns False if the point cannot be set (possibly due to wrong id).

Method Triangulate as Boolean. Reduces all facets in the Solid Surface to triangles. Returns False if unable to do so.

Method HideCoplanarFacetEdges as Boolean. Hides all internal edges of connected coplanar facets. Returns False if unable to do so.

## **BasicCAD Support for Solid Surfaces**

### ***New Entity Type value 122 for Solid Surfaces***

Sys(99), GetAttr, and Query Parameter ENT\_TYPE now show 122 for Solid Surface entities.

### *New Query and Change Parameters for Solid Surface entities.*

Alias SS\_NFACETS &H0F01 'R - i – read-only value indicating how many facets are in the Solid Surface entity. Query only.

Alias SS\_NFACETPOINTS &H0F02 'R - i, i – the first parameter is the facet index, the second is a variable to receive the number of points in that facet. Query only.

Alias SS\_FACETPOINT &H0F03 'R/W - i,i,f,f,f – the first parameter is the facet index, the second is the point index in that facet. The last three values are for the X, Y, and Z location of the point. Useable by both Query and Change.

### *New BasicCAD Commands:*

**Triangulate** – used to reduce all selected Solid Surface entities' facets to triangles. Has no effect on grids, planes, or classic solids.

```
>Triangulate
```

```
{  
  
}
```

**HideCoplanarEdges** – used to hide all non-boundary edges of coplanar facets in selected Solid Surface entities. Has no effect on Grids or classic solids.

```
>HideCoplanarEdges
```

```
{  
  
}
```

## **General Fixes and Improvements**

**Line Style Toolbox** – When changing a line style using the drop-list in the Line Style toolbox, the new line style had to be selected twice before the current line style would update. This has been fixed.

**Rotate** – The Rotate command, in Drag mode, wasn't respecting the specified rotation increments in the final result. The preview looked fine, but when the last point was set, the rotation was determined exactly at that point rather than the nearest specified increment. This has been fixed.

**Dimensions** – For all Dimension commands, the text size shown in the Text Options dialog box was the text size for the Dimension command, rather than the specific dimension type being used. This has been fixed.

**Open** – In the Open command, when the file filter was set to "All files", after closing and re-running the Open command the file list did not show any file names, only directories. This has been fixed.

**Print** – In the Print command, if you selected a pre-defined scale setting, sometimes you had to select it twice in order for the new scale to "stick". This has been fixed.

**Set View** – the names of custom cameras saved from a previous version might not be visible when the drawing was opened in a later version.

**Save Image File** – when saving OpenGL-shaded images at a higher resolution than the actual view, the image was sometimes partially empty.

### **RedSDK Mode Improvements**

- Sometimes after editing a selected entity, it would become "stuck" in the selection highlight color.
- In Paperspace Mode, editing the points of a viewframe then undoing that edit would result in display anomalies.
- Turning off one or more layers in a Paperspace viewframe had no visible effect.
- When a layer was turned off in Modelspace, switching to Paperspace and back would make the layer visible until the drawing was regenerated.