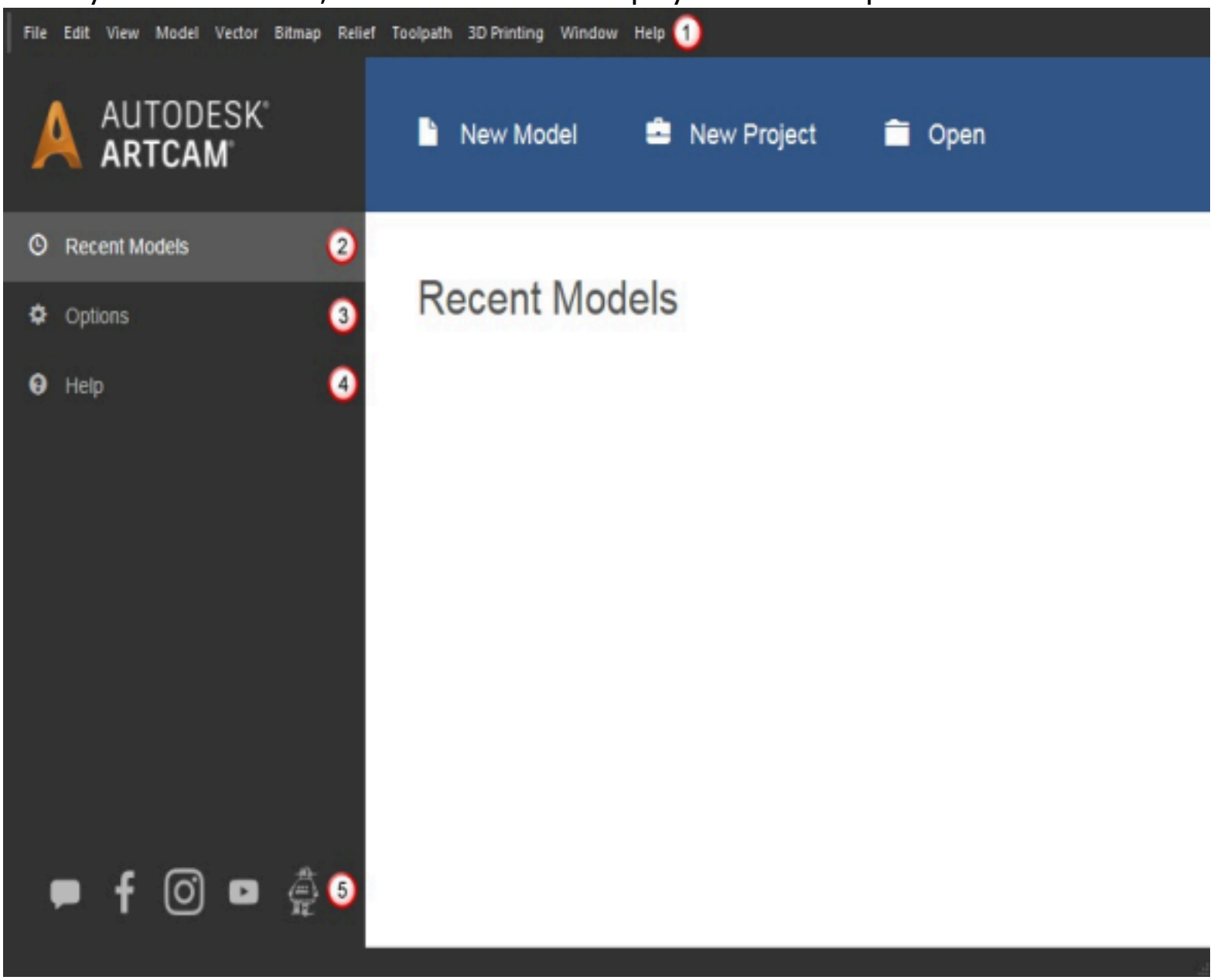
Introduction

ArtCAM is a single solution for designing and making in the woodworking industry. Its simple interface and easy-to-use tools allow hobbyists and independent designers to produce high-quality decorative woodwork.

Starting ArtCAM

When you start ArtCAM, the start screen is displayed. For example:



Area	Description
1	Use the **Menu** bar to access menu options. Most menu options are active only when you are working within a model.
2	Click **Recent Models** to create and open models and projects and to list the last four

files you have been working with. Click:

New Model to create a model. ArtCAM switches to display the model screen.

New Project to create a project. ArtCAM switches to display the project screen.

Open to open an existing model or project.

a file in the list to open it.

 The availability of projects is license dependent.

3

Click **Options** to specify the settings and defaults for ArtCAM.

4

Click **Help** to access the Reference Help, What's New, and Getting Started guide, as well as online resources, such as the Autodesk Knowledge Network and the Autodesk ArtCAM Forum.

5

Click an icon to check the Internet for more information about ArtCAM.

See also

About the Menu bar

File > New > Model

The model screen

File > New > Project

The project screen

File > Recent Files

Edit > Options

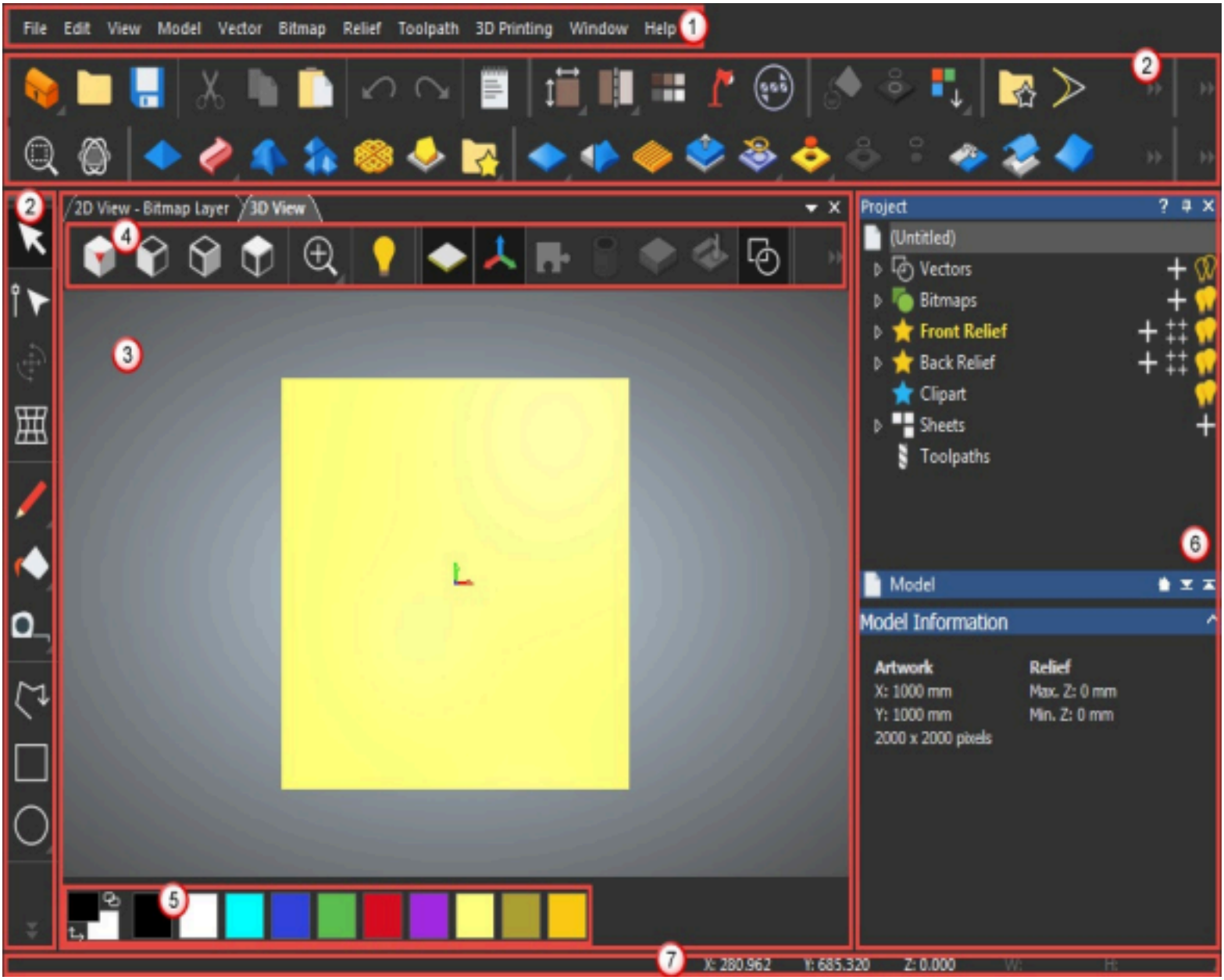
Help menu

The ArtCAM layout

This section describes the layout of the ArtCAM screen when working on a model or a project.

The model screen

When you are working on a model, the model screen is displayed. For example:



Area

Description

1

The **Menu** bar is located at the top of the main window. Click an entry to display a list of options. Many menu options have keyboard shortcuts.

The availability of some menu options is license dependent.

2

Toolbars provide shortcuts to the most frequently used menu options. Click a button to access the function directly.

The availability of some toolbars is license dependent.

3

The workspace area contains the 2D and 3D views, which are tabbed by default. Both

views display vectors and bitmap artwork; only the 3D view displays reliefs, calculated toolpaths, and toolpath simulations.

4

The **2D View** and **3D View** toolbars enable you to manipulate the 2D and 3D views, and to control what is displayed. Which toolbar is displayed depends on which view is active.

5

The **Palette** displays the colours that make up any bitmap artwork.

The **Project** panel contains the Project Tree and the tools associated with the **Vectors**, **Bitmaps**, **Front Relief**, **Back Relief**, **Clipart**, **Sheets**, and **Toolpaths** items.

The status bar displays the cursor's coordinates; the width and height of the bounding box when vectors or previews of toolpaths are selected; a command's description when you position the cursor over a button or menu option; and a progress bar when calculating reliefs and toolpaths.

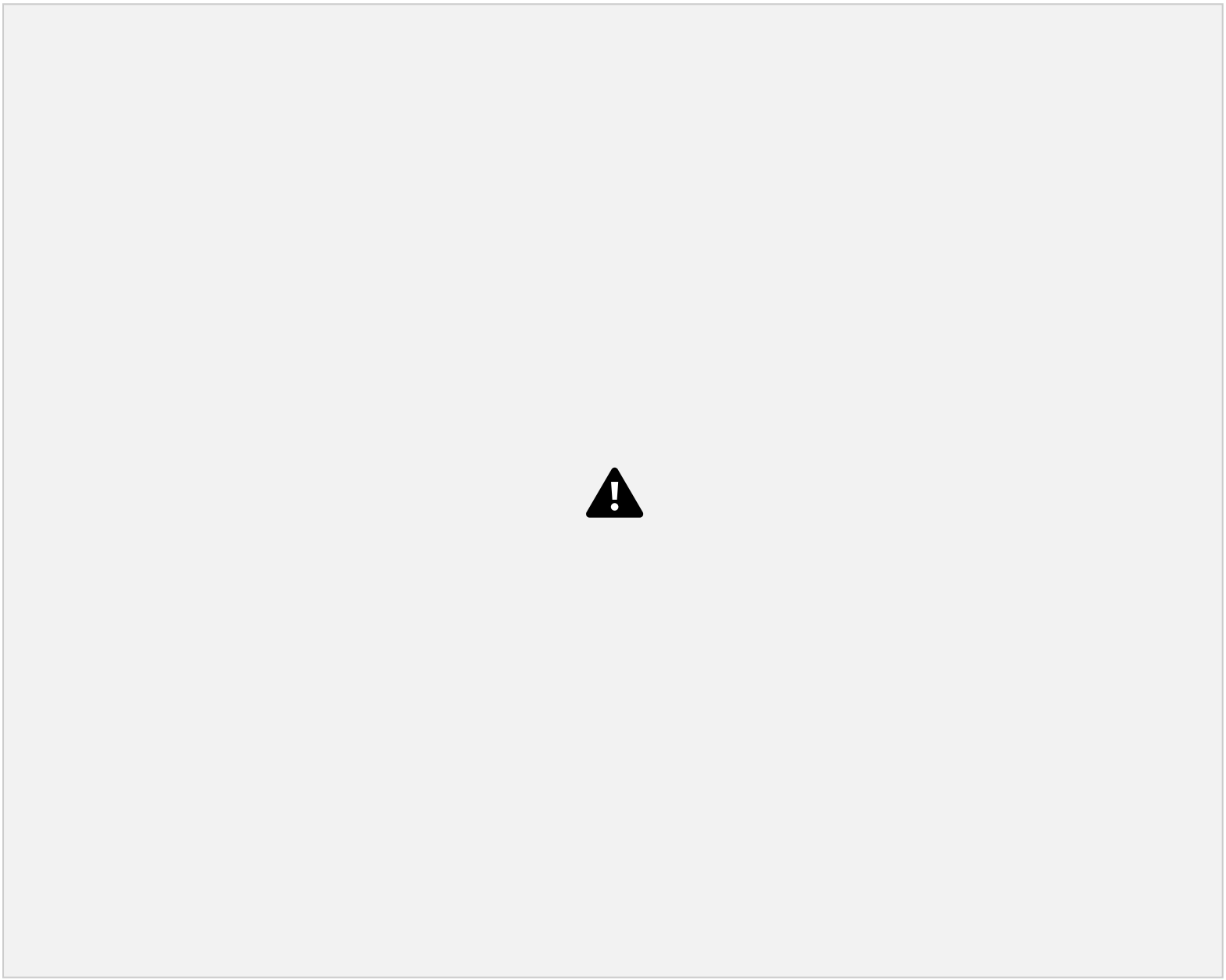
See also

Menus

The Project panel

The project screen

When you are working on a project, the project screen is displayed. For example:



Area

Description

The **Menu** bar is located at the top of the main window. Click an entry to display a list of options. Many menu options have keyboard shortcuts.

The workspace area contains the 3D view, which displays assemblies and replica meshes. When you open a model as part of a project, you can switch between displaying the project's assemblies and meshes, the model's relief layers, the calculated toolpaths, and the toolpath simulations.

The **3D View** toolbar enables you to manipulate the 3D view, and to control what is displayed.

The **Project** panel contains the Project Tree and the tools associated with the **Models**

and **Assembly** items.

The availability of projects is license dependent.

See also

Menus

The Project panel

About the workspace area

When working on a model, the workspace area contains the 2D and 3D views, which are tabbed by default. Select the:

2D View tab to display the 2D view.

3D View tab to display the 3D view.

If you want, you can display the 2D and 3D views as separate windows and reorganize the windows by overlapping them or arranging them as a series of horizontal or vertical tiles.

See also

Window > Cascade

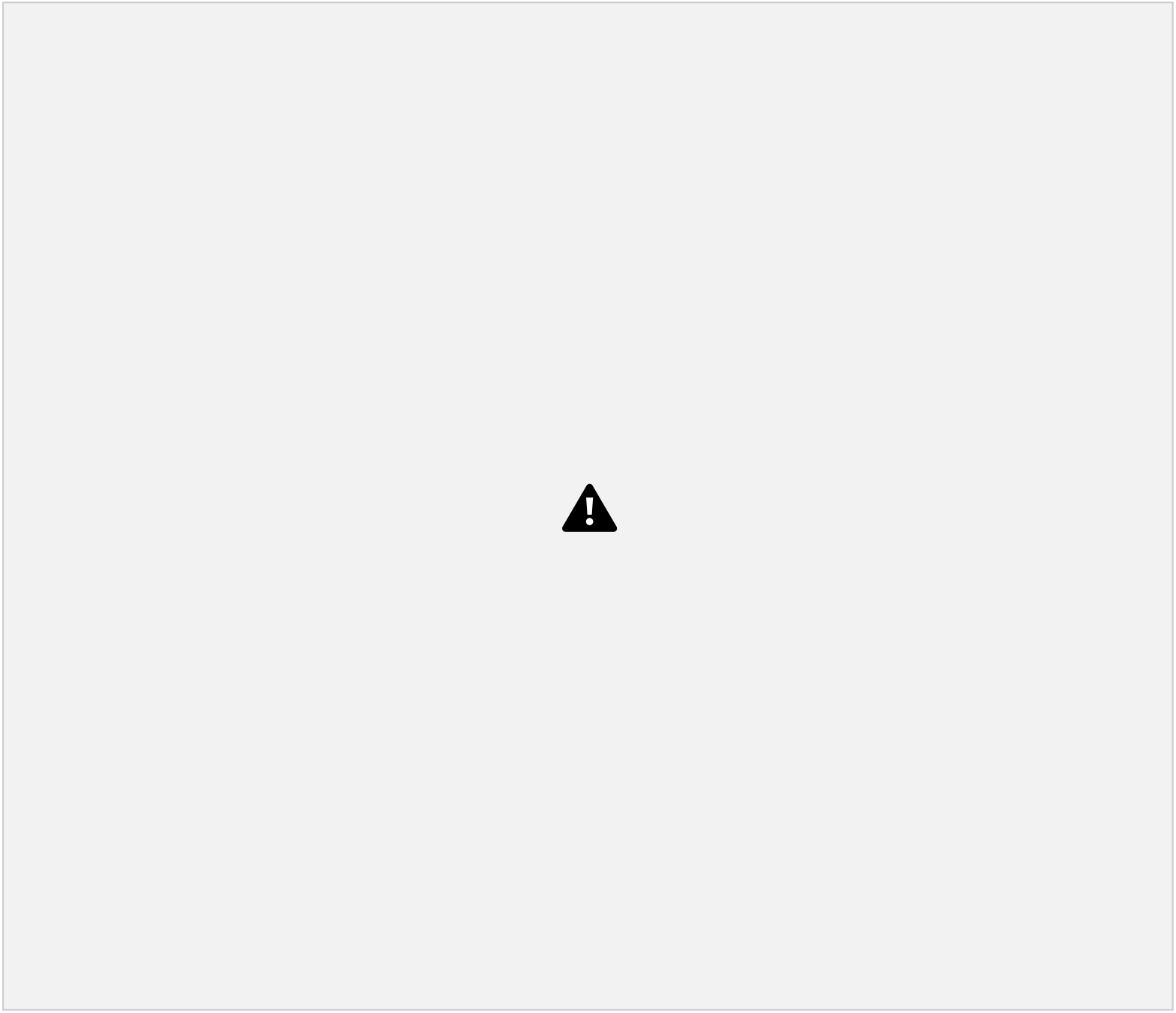
Window > Tile Vertically

Window > Tile Horizontally

Window > Tabbed Views

Using the 2D view

When you select the **2D View** tab, the 2D view is displayed. For example:



Area

Description

The **2D View** tab, which displays the name of the view and the currently active bitmap layer.

The **2D View** toolbar.

The model area.

The background.

The colour **Palette**.

When working in an open model, the 2D view displays:

- the artwork on the currently active bitmap layer.
- the artwork on all visible vector layers.
- sheets.
- a preview of all calculated 2D toolpaths.
- a preview of the currently active relief layer.
- a greyscale of the composite relief.

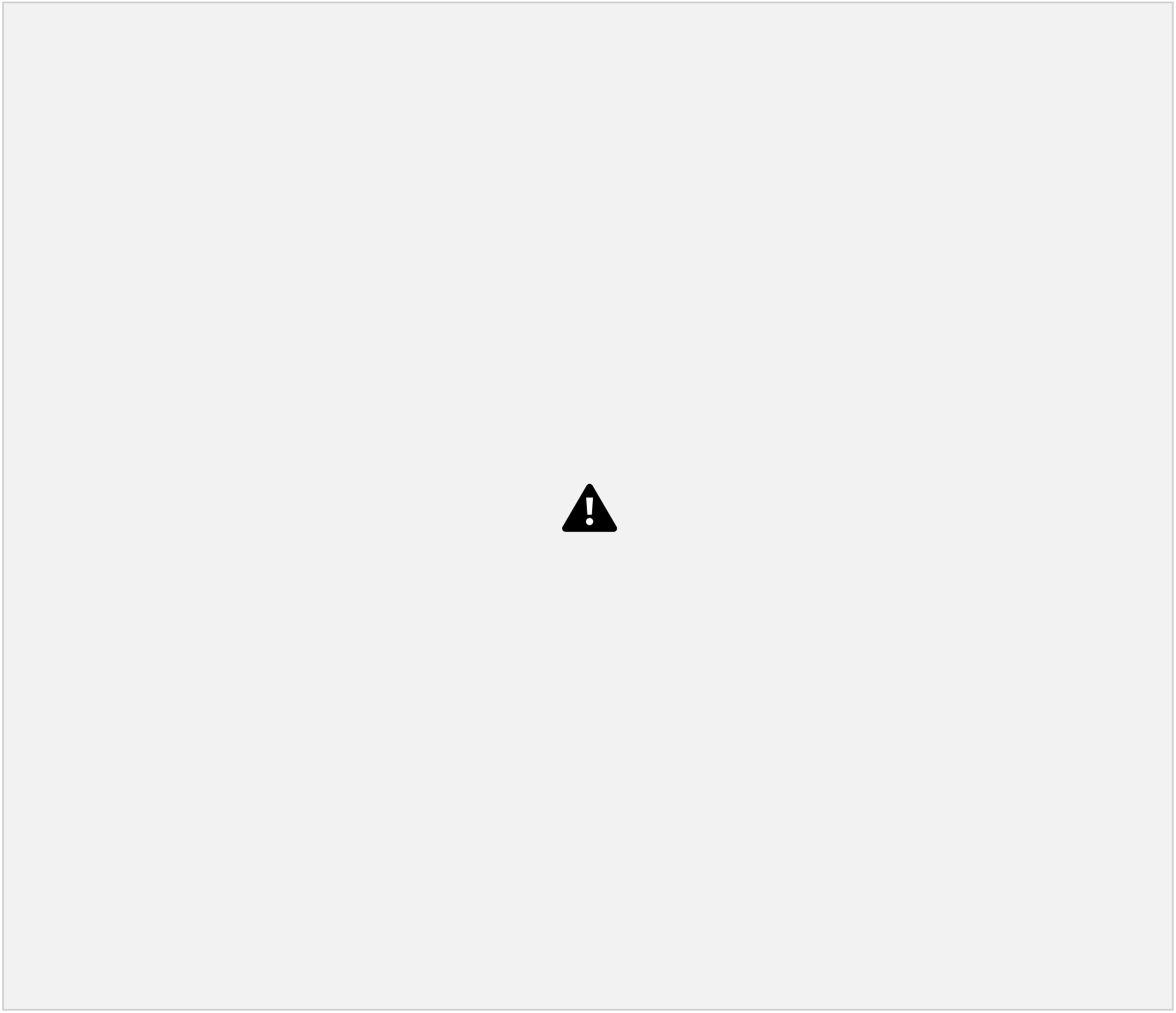
You can create multiple 2D views, and for each 2D view you create, you can change its name.

See also

- View > New 2D View
- View > Rename Current View
- View > Delete Current View

Using the 3D view

When you select the **3D View** tab, the 3D view is displayed. For example:



Area

Description

The **3D View** tab.

The **3D View** toolbar.

The composite relief.

The background.

The colour **Palette**.

When working with an independent model, the 3D view displays:

- the composite relief resulting from all visible relief layers.
- calculated toolpaths.
- the material block.
- toolpath simulations.
- the artwork on the currently active bitmap layer.
- the artwork on all visible vector layers.
- triangle meshes.

When working in a project, the 3D view can also display:

- the root **Assembly**.
- assemblies.
- replica meshes.
- gems.

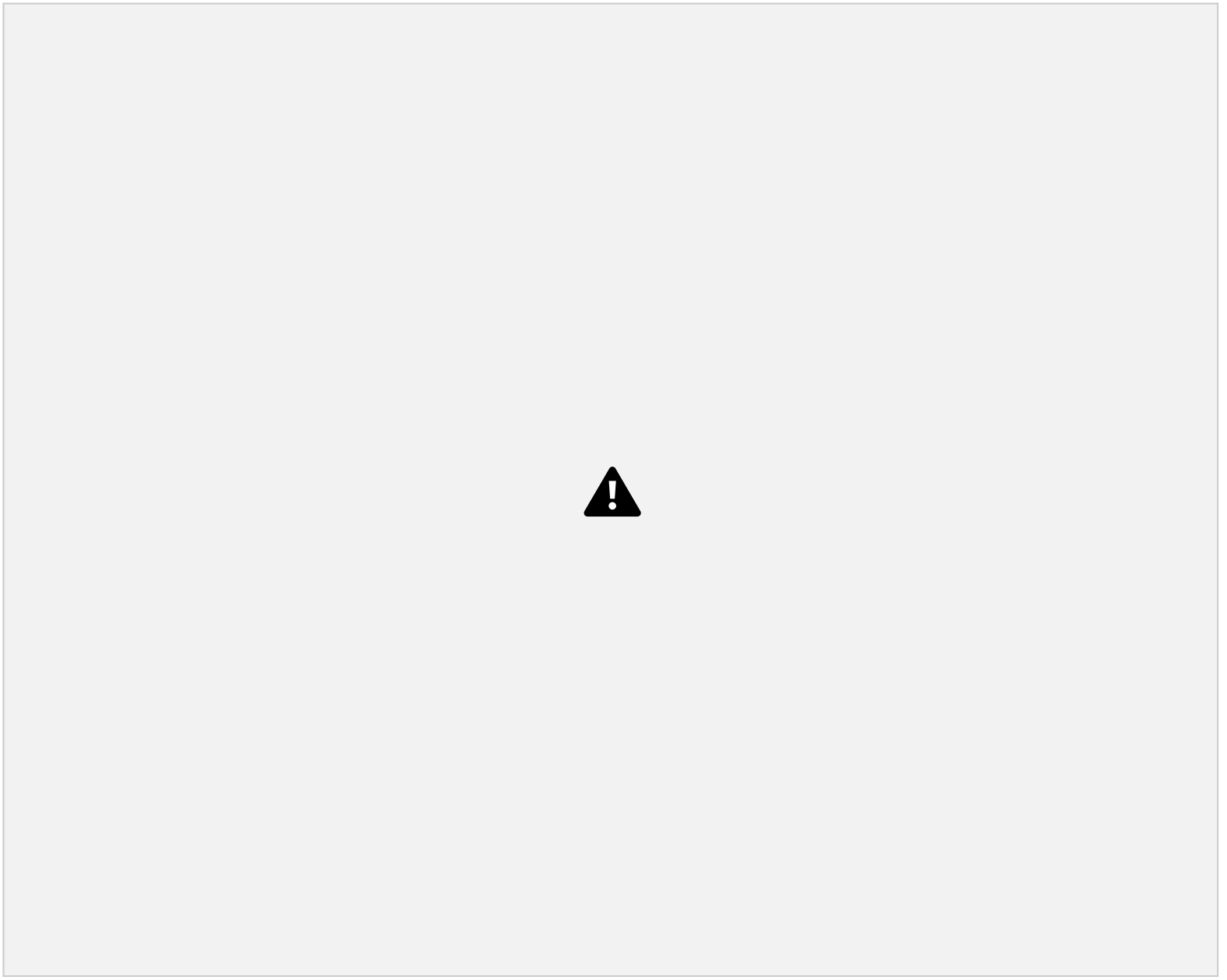
All of the visible items in the Project Tree are shown in the 3D view when a project is first opened.

See also

- Working with projects

Docking areas

The ArtCAM screen includes four docking areas:



By default, the **Menu** bar and any displayed toolbars are docked in the upper- and left docking areas.

See also

- Floating a docked toolbar
- Docking a floating toolbar
- Floating a docked panel
- Docking a floating panel

About the Menu bar

The **Menu** bar is located at the top of the main window. Click an entry to display a list of options.

Some options contain sub-menus, indicated by a small arrow to the right of the text. Click the arrow to display these options. For example, clicking the **File** menu, followed by the **New** option, displays an additional set of options.

The availability of some menu options is license dependent.

You can also activate the menus by pressing the **Alt** key. You can then select options by pressing the **Up Arrow**, **Down Arrow**, **Left Arrow**, and **Right Arrow** keys, or by pressing the underlined letter for that menu. For example, pressing the **F** key displays the **File** menu.

Many menu options have keyboard shortcuts, which enable you to access the function directly. These are displayed on the right of the menu options.

The most frequently used menu options are also available from toolbars and from the ***Project*** panel. The availability of some toolbars is license dependent.

See also

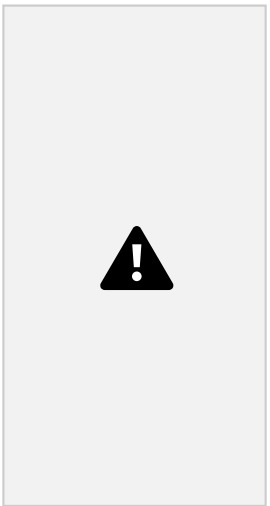
Menus

About toolbars

Toolbars provide shortcuts to the most frequently used menu options. Click a button to access the function directly.

The availability of some toolbars is license dependent

Some toolbars contain toolsets, which group together related functionality. Toolsets are identified by in a button's lower-right corner. Position the cursor over the button, and then click and hold the mouse button to display the additional buttons, for example:



If a toolbar cannot display its entire collection of buttons, click or to display the

hidden buttons, for example: 

Floating a docked toolbar

All of the toolbars displayed by default are docked, but they can be floated. When floating, a toolbar has a header displaying its name and an icon to hide it. To float a docked toolbar, use one of the following methods:

Click the toolbar's grip, or , drag it to the workspace area, then release the mouse button;
or

Double-click the toolbar's grip.

If the toolbar has not been floated before, it is displayed in the top-left corner of the interface.

If the toolbar has been floated before, it is displayed in its last floating position.

Docking a floating toolbar

You can dock toolbars in four docking areas. Depending on where a toolbar is docked, it is vertical or horizontal. When docked, the toolbar's name is hidden. All of the toolbars displayed by default are docked.

When docked, a toolbar has a grip on its left or top edge, depending on whether it is horizontal or vertical respectively.

To dock a floating toolbar, click the toolbar's header and drag, then release the mouse button when the toolbar is over the empty docking area.

To return a floating toolbar to its last docked position, double-click the toolbar's header.

See also

Docking areas

Hiding and displaying toolbars

You can control which of the toolbars are displayed or hidden. You can hide a toolbar,

whether it is currently docked or floating.

To hide a toolbar, use one of the following methods:

Right-click a docking area, then deselect the toolbar's name in the context menu;

Click on the toolbar's header.

A toolbar's header is displayed only when the toolbar is floating.

To display a hidden toolbar, right-click a docking area, then click to select the toolbar's name in the context menu.

If the toolbar has not been displayed before, it is shown in its default layout position.

If the toolbar has been displayed before, it is shown in its last position; docked or floating.

See also

Docking areas

Gem Tools toolbar

The following options are available from the **Gem Tools** toolbar:

Button	Function
	Click the **Create Gem Vector** button to create a gem vector.
	Click the **Convert Vectors to Gem Vectors** button to create a vector representing the size and shape of a custom gem.
	Click the **Gem Vector Properties** button to edit the dimensions and colour of the gem associated with a gem vector.
	Click the **Create Gems** button to create gems from gem vectors.
	Click the **Pave Wizard** button to create the vector artwork needed to add the gems and build the beads in the Pavé setting design.

The ***Gem Tools*** toolbar is hidden by default. To display the toolbar, right-click a docking area and select ***Gem Tools*** from the context menu.

The availability of this toolbar is license dependent.

Creating gem vectors

Use the **Create Gem Vector** tool to create a gem vector with or without the vector artwork already drawn as part of your model. A gem vector is needed to add gems to your project.

When creating a gem vector without using another vector, it is created in the origin of the model area according to specified gem properties.

When creating a gem vector using a vector, the gem vector adopts the size, shape and position of the vector as its properties.

To create a new gem vector:

1. On the **Gem Tools** toolbar, click the **Create Gem Vector** button. The **Create Gem Vector** panel is displayed.
2. Click the gem shape you want to associate with the gem vector. This displays the colour options for the gem associated with the gem vector.
3. Select the colour you want to apply to the gem. This displays the name and size boxes.
4. In the **Name** box, enter a name for the gem setting.
5. If you selected a **Box Radiant**, **Heart**, **Marquise**, **Oval**, **Pear**, **Princess** or **Round** gem, click the **Standard** list, followed by the standard that you want to use. If you select:

   Custom, enter the gem's dimensions in the **Length**, **Width** and **Depth** boxes. The **Size** list is unavailable.

   Carat, click the **Size** list followed by the size you want to use. The **Length**, **Width** and **Depth** boxes display the dimensions of the selected size.

   If you selected a **Brilliant**, **Emerald**, **Hexagon**, **Triangle** or **Trillion** gem, enter its dimensions in the **Length**, **Width** and **Depth** boxes.

6. Click **Accept** to close the panel and create the gem vector. The gem vector is drawn on the Gem Vectors vector layer. You are now able to create a gem from this vector.

The availability of this feature is license dependent.

Converting vectors to gem vectors

Use the **Convert Vectors to Gem Vectors** tool to convert vectors representing the size and shape of custom gems to gem vectors.

To convert a vector to a gem vector:

1. Create the vector representing the size and shape of the custom gem. The vector must be closed.
2. Select the closed vector representing the custom gem.
3. On the **Gem Tools** toolbar, click the **Convert Vectors to Gem Vectors** button. The **Vectors to Gem Vectors** panel is displayed.
4. Click the gem shape you want to associate with the gem vector. This displays the colour options for the gem associated with the gem vector.
5. Select the colour you want to apply to the gem. This displays the name and size boxes.
6. In the **Name** box, enter a name for the gem.
7. If you selected a **Box Radiant**, **Heart**, **Marquise**, **Oval**, **Pear**, **Princess** or **Round** gem, click the **Standard** list, followed by the standard you want to use to set the gem's size. If you select:

   Custom, specify the dimensions of the gem in the **Length**, **Width** and **Depth** boxes. The **Size** list is unavailable.

   Carat, click the **Size** list followed by the size option you want to use. The **Length**, **Width** and **Depth** boxes are updated with the dimensions of the size option.

   Get Gem sizes from vectors, all settings on the page are unavailable.

   If you have selected a **Brilliant**, **Emerald**, **Hexagon**, **Triangle** or **Trillion** gem, click the **Standard** list, followed by the standard you want to use to set the gem's size. If you select:

   Custom, specify the dimensions of the gem in the **Length**, **Width** and **Depth** boxes.

   Get Gem sizes from vectors, all settings on the panel are unavailable.

8. Click **Accept** to display the next page of the panel.
9. If you want to keep the original vector when the gem vector is created, deselect

Remove original vectors.

10. Click **Accept** to close the panel and convert the selected vector into a gem vector. The gem vector is shown in red when deselected.

The availability of this feature is license dependent.

Editing properties of gem vectors

Use the **Gem Vector Properties** tool to edit the dimensions and the colour of the gem associated with a gem vector.

You cannot simultaneously edit the dimensions and colour of the gem associated with a gem vector.

If you edit the properties of a gem vector when its associated gem has already been created, you must recreate the gem after you have finished editing.

To change the shape of a gem vector, edit it as you would any other vector.

To edit a gem vector's properties:

1. Select the gem vector.
2. To change the gem's dimensions:

   a. On the **Gem Tools** toolbar, click the **Gem Vector Properties** button. The **Gem Vector Properties** panel is displayed.

   b. Click the **Standard** list, followed by the option you want to use. If you select:

   Carat, click the **Size** list followed by the carat size. Its dimensions are displayed in the **Length**, **Width**, and **Depth** boxes.

   Custom, specify the gem's dimensions in the **Length**, **Width**, and **Depth** boxes.

   Get Gem sizes from vectors, the dimensions of the gem equal those of the selected gem vector. All of the settings on the panel are unavailable.

   c. Click **Accept** to close the panel and apply your changes.

3. To change the gem's colour:

   a. Click . The **Gem Vector Properties** panel is displayed.

   b. Click **Back** to display the gem colour options.

c. Select the colour you want to apply to the gem. The gem size properties are displayed.

d. Click **Accept** close the panel and apply the colour to the gem.

The availability of this feature is license dependent.

Creating gems

Use the **Create Gems** tool to create a batch of gems, provided that you have already created gem vectors for each of them. When creating gems in this way, a new assembly is also created.

To create a one or more gems using gem vectors:

1. In the **Project** panel, select the root **Assembly** or the assembly in the Project Tree with which you want to associate the new assembly and gems.
2. Select the gem vectors for which you want to c gems.
3. On the **Gem Tools** toolbar, click the **Create Gems** button. The **Create Gems** panel is displayed.
4. To create gems for each gem vector in your model, deselect **Create only selected gem vectors**.
5. In the **Gem Set Name** box, enter the name for the new assembly created along with the gems.
6. In the **Start Height** box, specify the Z height at which you want to create the gems.
7. If you do not want to wrap the gems around the composite relief, deselect **Position Around Ring**.
8. To orientate the gems in relation to the underlying composite relief, select **Lay On Composite Relief**.
9. Click to create a preview of the gems in the 3D view.
10. To edit the gems, adjust the settings on the **Create Gems** panel, and then click .
11. Click to close the panel and create a new assembly in the Project Tree along with a gem for each selected gem vector. Each gem in the Project Tree uses the name of its gem vector.

The availability of this feature is license dependent.

Creating Pavé gem settings

Use the **Pavé Wizard** to create Pavé gem settings. A Pavé gem setting is made up of beads and gems in a grid format. ArtCAM creates the vector artwork needed to add the gems and build the beads in the Pavé setting design.

You can control the layout, the number of gems and beads and their respective dimensions, and the overall area of the Pavé setting.

To create a Pavé gem setting:

1. On the **Gem Tools** toolbar, click the **Pave Wizard** button. The **Pave Wizard** panel is displayed.
2. In the **Pave Type** area, select:

   Linear to create a linear block pattern of gems.

   Honeycomb to create a honeycomb matrix pattern of gems.

3. In the **Spacing** area, set the dimensions of the gems and beads: a.

   In the **Stone Diameter** box, enter the diameter of each gem.

   b. Set the size of the beads using one of the following methods: Select **Bead Diameter**, and then enter their diameter in the adjacent box; or Select **Gap Between Stones**, and then enter the distance that you want to set between each gem in the adjacent box.

4. In the **Pave Area** area, specify the overall size of your Pavé setting.

   To create gems using a closed vector:

   a. Select the vector that you want to use.

   b. Select **Selected Vector**.

   c. Click **Create**. The vector artwork representing the Pavé setting is created on the selected vector layer.

   d. Click **Trim** to delete the vector artwork outside of the selected vector.

   To specify an exact number of gems:

   a. Select **Number of rows**.

   b. Specify the number of rows and columns of gems in the boxes.

   c. Click **Create**. The vector artwork representing the Pavé setting is created on the selected vector layer.
5. To delete the Pavé setting, click **Delete**.
6. In the **Select Vectors** area, you can control which of the vectors that make up

the Pavé setting artwork are selected. To select:

the circular vectors representing each gem, click **Stones**.

the circular vectors representing each bead, click **Beads**.

the vectors in the Pavé setting, click **All**.

At this stage, you might want to transform the shape of the vectors representing the gems to match that of a custom gem.

You might also want to apply a specific shape to the vectors representing the beads and then combine them with a specific relief layer.

7. In the **Gem Colour** area, you can control the colour of the gems in the Pavé setting. To set the colour, click the list, followed by the colour that you want to use. **Amethyst** is applied by default.

8. Click **Accept** to create the Pavé gem setting.
   The circular vectors representing each gem are red. You are now able to create gems from these vectors.

The availability of this feature is license dependent.

See also

Transforming vectors

Panels

This section describes how to manipulate the display of panels.

Floating a docked panel

You can choose whether a panel is either docked or floating.

To float a docked panel, use one of the following methods:

Click the panel's header and drag to the workspace area, then release the mouse button;

Right-click the panel's header, then select **Floating** in the context menu; or

Double-click the panel's header.

Docking a floating panel

If a panel is floating, you can:

move it to a new floating position; or

return it to a previously docked position.

To dock a floating panel:

1. Click the panel's header and drag.

   You can use the drop-targets displayed on all four sides of the interface:

   In addition, if the panel is floating over:

   the workspace area, you can use the **Docking Assistant** displayed in the centre:

   a docked pinned panel, you can use the **Docking Assistant** displayed over the panel:

2. Release the mouse button when the cursor is over the drop-target you want to use.

To return a floating panel to its last docked position, use one of the following methods:

Right-click the panel's header, then select **Docking** in the context menu; or

Double-click the panel's header.

Auto-hiding docked panels

You can control whether or not docked panels are displayed or hidden.

To collapse a docked panel, use one of the following methods:

Click on the panel's header.

Right-click the panel's header, then select **Auto Hide** in the context menu.

The panel collapses against its adjacent docking area, and a tab is displayed. To pin a sliding panel:

1. In the docking area, move the cursor over the tab displaying the name of the panel you want to pin.

The panel slides out, and is visible for as long as the cursor is over the tab or its associated panel.

If you move the cursor outside of the panel or its associated tab, the panel collapses against its adjacent docking area.

2. Use one of the following methods to pin the panel:

Click on the panel's header; or

Right-click the panel's header, then select **Auto Hide** in the context menu.

The panel is docked. If your chosen tab belongs to a group of tabs, the other tabs within the group are also pinned and displayed within the panel as separate tabs. The page associated with your chosen tab is shown in the panel, and its name is displayed on its header.

Hiding and displaying panels

You can control which of the panels are displayed or hidden. You can hide a panel, whether it is pinned or auto-hidden.

To hide a panel, use one of the following methods:

Click on the panel's header.

If the panel is auto-hidden, move the cursor over the tab displaying the panel's name.

Right-click the panel's header, then select **Hide** in the context menu. Right-click a docking area, then deselect the panel's name in the context menu.

If a panel is auto-hidden, it is not selected in the context menu. Only floating or docked panels can be hidden or displayed in this way.

Select **Window > Toolbars and Docking Windows**, then the selected panel's name in the submenu.

To display a hidden panel:

Right-click a docking area, then select the panel's name in the context menu; or

Select **Window > Toolbars and Docking Windows**, then the deselected panel's name in the submenu.

If the panel has not been displayed before, it is shown in its default layout position.

If the panel has been displayed before, it is shown in its last position; docked or floating.

See also

Auto-hiding docked panels

Window > Toolbars and Docking Windows

Embedding panels

Each panel, whether docked or floating, is a container that allows other panels to share the same space. This enables you to use the available workspace efficiently.

To embed one panel within another:

1. Click the panel's header, and drag the panel over to the destination panel. The destination panel's **Docking Assistant** is displayed: 

2. Release the mouse button when the cursor is over:

   to embed the panel above those already displayed; to embed the panel below those already displayed; to embed the panel to the left of those already displayed; to embed the panel to the right of those already displayed; to embed the panel as a tab.

   If the destination panel is already tabbed, the panel you are relocating is added as a new tab. If not, two new tabs are created. The tab associated with the relocated panel is selected.

   When the cursor is over a drop target in the **Docking Assistant**, its corresponding space is shaded blue. This provides a preview of the new layout.

Resizing panels

You can resize a floating, docked or embedded panel.

When a panel is too short and narrow to display all of its content, a scrollbar is displayed along its right and bottom edge. You can use the scrollbar to control what of the panel's content is visible.

Floating panels

To resize a floating panel, move the cursor over the edge or corner of a panel. When the cursor changes to:

- , click and drag left or right to adjust its width;
- , click and drag up or down to adjust its height;
- or , click and drag the corner inwards or outwards diagonally to adjust its height and width simultaneously.

Docked panels

To resize a docked panel, move the cursor over the edge of a panel, adjacent to the 2D or 3D view. When the cursor changes to:

- , click and drag left or right to adjust its width;
- , click and drag up or down to adjust its height.

Embedded panels

To resize an embedded panel:

1. Move the cursor over the solid splitter bar between two adjacent embedded panels.

   The splitter bar is horizontal or vertical, depending on how the panels are arranged. For example, a horizontal splitter bar looks as follows:

   The ***Project*** panel has its own splitter bar which is always displayed, separating the Project Tree from the tools associated with the currently selected item:

2. When the cursor changes to:

   - , click and drag up or down to adjust the height of the panels above and below the splitter bar;
   - , click and drag left or right to adjust the width of the panels on the left and right of the splitter bar.

   When moved, the splitter bar is no longer solid. For example, a horizontal splitter bar looks as follows:

3. Release the mouse button to set the splitter bar's position. The panels on either side of the splitter bar are resized.

The **Project** panel's splitter bar includes tools you can use to adjust its layout. Click:

- to align the splitter bar with the panel's bottom edge;
- to align the splitter bar with the panel's top edge; or
- to return the splitter bar to its previous position.

Menus

This section describes the menus and options available from the **Menu** bar.

The availability of some menu options is license dependent.

See also

About the Menu bar

File menu

Use the options on the **File** menu to open, close, save, and print models and projects.

File > New

Use the options on this submenu for creating models and projects.

File > New > Model

Use this menu option to create a model. When creating a model in ArtCAM, the model's dimensions typically represent the sheet or block of material you want to use when manufacturing your finished design.

The ***New*** ***Model*** button on the ***File*** toolbar is a shortcut for this menu option and the keyboard shortcut is ***Ctrl+N***. The availability of this button is license dependent.

To create a model:

1. Select **File > New > Model** or click to display the **Size For new Model** dialog.

   If you are creating a model as part of a project, right-click ***Models*** in the Project Tree then select ***New > Model*** from the context menu.

2. In the **Dimensions** area, specify the width and height of the model you want to create.

3. In the **Units** area, select **mm** or **inches**.
4. In the **Resolution** area, drag the slider to set the model resolution. A resolution of approximately 1500 x 1500 points is suitable for most jobs.
5. Specify the model's origin by clicking one of the numbered positions shown below:

The icon is displayed on the box diagram in your selected position.

After a model is created, you can use ***Model > Adjust Resolution*** to change the resolution.

6. Click **OK** to create the model.

   If you are creating a model that is part of a project, an open model icon is shown below the **Models** item in the Project Tree. The model is named (Untitled).

   If you are creating an independent model, the open model icon is the root of the Project Tree. The model is named (Untitled).

See also

Model > Adjust Resolution

The Project panel

The model screen

File > New > Model (Specify Pixel Size)

Use this menu option to create a model using an exact number of pixels.

To create a model:

1. Select **File > New > Model (Specify Pixel Size)**. The **Size For New Model In Pixels** dialog is displayed.

   If you are creating a model as part of a project, in the Project Tree, right click the ***Models*** folder, and then select ***New > Model (Specify***

Pixel Size) from the context menu.

If you are using the ***Size For New Model In Pixels*** dialog for the first time, the value displayed in the ***Width*** and ***Height*** boxes is 500 by default. Thereafter, ArtCAM recalls the last pixel values you have used.

2. To set the size of the model according to the exact number of pixels in the image on the Windows clipboard, select **Open Clipboard**. The number of pixels in the clipboard image is shown in the **Width** and **Height** boxes.

If the Windows clipboard does not contain a compatible image, the ***Open Clipboard*** option is unavailable. You can create a model from any *.bmp*, *.dib*, *.rle*, *.jpg*, *.jpeg*, *.jpe*, *.jfif*, *.gif*, *.emf*, *.wmf*, *.tif* *.tiff*, *.png* or *.ico* file currently on the Windows clipboard.

3. To set the size of the model without using an image from the clipboard:
   a. Ensure that **Open Clipboard** is deselected.
   b. In the **Width** box, specify the width of the model in pixels.
   c. In the **Height** box, specify the height of the model in pixels.

4. Click **OK** to create the model according to the defined number of pixels.

If you are creating a model as part of a project, an open model is shown beneath the **Models** folder in the Project Tree. Each new model is named (Untitled) by default.

If you are creating a model independently, the open model is the root of the Project Tree. The model is named (Untitled) by default.

The availability of this feature is license dependent.

File > New > Model from Image

Use this menu option to create a model in ArtCAM using .bmp, .dib, .rle, .jpg, .jpeg, .jpe, .jfif, .gif, .emf, .wmf, .tif, .tiff, .png, or .ico image files.

To create a model using an image file:

1. Select **File > New > Model from Image** to display the **Load Image** dialog.

If you are creating a model as part of a project, in the Project Tree, right click the ***Models*** folder, then select ***New > From Image File*** from the context menu.

2. Navigate to the image you want to import.
3. Select the image and click **Open**. The **Set Model Size** dialog is displayed.

   The dimensions of the image file are shown in the **Height** and **Width** boxes. The **Scanned d.p.i.** option is selected in the **Method** area.

4. If you know the resolution at which the original image was scanned, enter this in the **d.p.i.** box. If not, use the value which is currently shown.
5. Select the **Units** you are working in.
6. In the **Origin** area, specify the X and Y-axis zero origin in the model.
7. If you want to adjust the size of the image, and therefore the size of the resulting ArtCAM model:
   a. Select **Image size** in the **Method** area.
   b. Specify a new **Height** or **Width**. The aspect ratio between the height and width is maintained.
8. To set the maximum Z height of the relief layer created from the image as part of the model, enter the value in the **Height in Z** box.

   The default value shown in the ***Height In Z*** box remains 1.0 irrespective of the units in which you are working. Ensure the Z height is correct.

   If you use an image with a high Z height, the resulting relief layer in the model is likely to be poor. You should only use images with a low Z height, such as textures.

9. Click **OK** to close the dialog and create the model.

   If you are creating a model as part of a project, an open model is shown beneath the **Models** folder in the Project Tree. Each new model is named (Untitled).

   If you are creating a model independently, the open model is the root of the Project Tree. The model is named (Untitled).

   The image from which the model was created is hosted on the default bitmap layer named Bitmap Layer, and is shown in the 2D view.

   If you have used a colour image file, it is stored as a greyscale image on the default bitmap layer.

The content on the default relief layer resulting from the image is shown in the 3D view.

File > New > Rotary Model

Use this menu option to create a blank rotary model.

When you have created a rotary model, the **Front Relief** and **Back Relief** icons in the Project Tree change from to .

To create a rotary model:

1. Select **File > New > Rotary Model**. The **Size for New Rotary Model** dialog is displayed.
2. In the **Cylinder Dimensions** area:
   a. Enter the **Diameter** of the cylinder.
   b. Enter the **Length** of the cylinder.
3. Select whether you want to wrap the model around the X axis or Y axis.
4. Select the units you want to work in.
5. In the **Resolution** area, use the slider to set the resolution for the model.
6. Click **OK** to create a new rotary model.

The 3D view is empty until you create a relief.

File > New > Project

Use this menu option to create a project. Projects enable you to manage multiple models and assemblies from the Project Tree.

The ***New*** ***Project*** button on the ***File*** toolbar is a shortcut for this menu option.

ArtCAM opens with the **Project** panel docked and pinned. The **Project** panel contains the Project Tree, which consists of three default items:

The **Project** item.

This is represented by the icon, and is the root of the Project Tree. It is named (Untitled) by default.

You can give the project a name when it is saved for the first time.

The **Models** folder item.

This is represented by the icon and hosts any number of models.

The root **Assembly** item.

This is represented by the icon, and hosts any number of assemblies and their associated meshes and gems.

You cannot delete any of these items from the Project Tree, or rename them.

The availability of this feature is license dependent.

See also

File > New > Model

Assembly

The project screen

File > Open

Use this menu option to open a model or project.

The ***Open File*** button on the ***File*** toolbar is a shortcut for this menu option and the keyboard shortcut is ***Ctrl+O***. The availability of this button is license dependent.

To open a model or a project:

1. Select **File > Open** or click to display the **Open** dialog.
2. Navigate to the file you want to open as a model.
3. Select the file. The **Relief Info** area of the dialog displays the file's dimensions in actual measurements and pixels. The **Model Preview** area displays a thumbnail image of the file's contents.

   If you select an .art file, the thumbnail image shown in the **Model Preview** area contains the contents of the active 2D view when the model was saved.

4. Click **Open**.

   If you select an .art or .rlf file, the **Open** dialog closes and the model is opened.

   If you select a .bmp, .gif, .jpg, .jpeg, .jpe, .jfif, .tif, or .tiff file, the **Open** dialog closes, and the **Set Model Size** dialog is displayed.

If you select a .dxf, .dwg, .pic, .dgk, or .pdf file, the **Open** dialog closes and the **Size for New Model** dialog is displayed.

If you select a .3dp or .3da file, a project is opened instead of a model.

The availability of projects is license dependent.

File > Close Model

Use this menu option to close the model on which you are working. If you have any unsaved changes, you are prompted to save them before closing. Click:

Yes to save the changes and return to the start screen. The name of the saved model is listed on the **Recent Models** page of the start screen and on the **File** menu.

No to close the model without saving the changes.

Cancel to continue working.

If you are saving the model for the first time, the **Save Model As** dialog is displayed

1. Navigate to the location in which you want to save the model. 2. Enter a **File name**.
3. Click **Save**.

If you are working with a previously saved model, any changes made are saved immediately; overwriting the previous file.

If a model has not changed since it was opened, the model closes and ArtCAM displays the start screen.

If you are working with a model as part of a project, right-click the open model icon in the Project Tree, then select **Close** from the context menu. If you have not made any changes to the model since it was opened, it closes immediately, and the model icon in the Project Tree changes to , indicating that it is now closed. If you attempt to close the model before saving any changes that you have made since it was opened, a message dialog is displayed asking if you want to update the project with your changes.

See also

Starting ArtCAM

File > Save

File > Recent Files

File > Close Project

Use this menu option to close the project on which you are working.

If you have any unsaved changes, you are prompted to save the project before closing. Click:

Yes to save the changes and return to the start screen. The name of the saved project is listed on the **Recent Models** page of the start screen and on the **File** menu.

If you close a project while a model remains open, the model is closed too.

No to close the project without saving the changes.

Cancel to continue working.

The availability of projects is license dependent.

See also

Starting ArtCAM

File > Save

File > Recent Files

File > Save

Depending on whether you are working on a model or a project, use this menu option to save the model as an ArtCAM Model (.art) file or the project as an ArtCAM Project (.3dp) file.

This option overwrites any previously saved version of the model or project. To save the model or project with a different filename or in a different folder, select **File > Save As**.

The ***Save*** button on the ***File*** toolbar is a shortcut for this menu option and the keyboard shortcut is ***Ctrl+S***.

Working on a model as part of a project

When working on a model as part of a project, you can update the project with changes you made to the model without saving the project.

To update a project with changes you made to a model:

1. In the Project Tree, right-click the Model Information item to display its context-menu.
2. Select **Update Project**.

3. If you want to save the project, select **File > Save** or click .

Using auto-recover

Auto-recover is a function that stores the current ArtCAM session periodically, helping to reduce the risk or impact of data loss in the event of a crash or freeze. Auto-recover storage can be completed at specified intervals and during periods of mouse or keyboard inactivity.

The auto-recover function stores a temporary file and does not overwrite your current ArtCAM Project (.3dp) or ArtCAM Model (.art) file. It is not an alternative to regular saving, and auto-recover files are deleted when the current ArtCAM session is closed.

You cannot work when an auto-recover is in process. The amount of time required to complete each auto-recover depends on the size of the ArtCAM project or model that is currently open.

To use the auto-recover option when you are working:

1. Select **Edit > Options** to display the **Options** panel.
2. Click the **Auto-Recover Settings** header to display its associated settings.
3. Select **Enable auto-recover**. This option is selected by default.

When using ArtCAM, you can confirm that the auto-recover function is working by clicking the ***Processes*** tab in ***Windows Task Manager***. The Image Name for the auto-recover function is ArtMonitor.exe.

4. Set the time schedule that you want to use:

   In the **minutes** box, enter the frequency with which auto-recover information is saved. The default interval is 30 minutes.

   In the **seconds** box, enter the period of mouse or keyboard inactivity before auto-recover information is stored. The default time is 30 seconds.

5. Click **Apply** to store the auto-recover settings.
6. Click **Close** to close the **Options** panel.

When the auto-recover function is enabled and there is a crash or freeze in ArtCAM, one of two error messages are displayed:

If ArtCAM cannot recover the changes you made in your most recent session, a message is displayed confirming your work has been lost. Click **OK** to close the message.

You will usually only be unable to recover your work where your most recent session has not been open long enough for an initial auto-recover to be completed.

If ArtCAM can recover the changes you made in your most recent session, an error message is displayed warning that ArtCAM must be closed, and asking if you want to recover your work:

If you want to recover the changes from your most recent session:

a. Click **Recover** to close the message and display the **Save Recovered File As** dialog.

The recovered changes are restored as either an ArtCAM Model (.art) or ArtCAM Project (.3dp); depending on what you were working on in your most recent session.

b. Navigate to the folder on your computer in which you want to save the file containing the recovered changes.

c. Enter a **File Name**.

If you were previously working on a project, the default name is Recovered Project.3dp. If you were working on a model, the default name is Recovered Model.art.

d. Click **Save** to close the dialog and save the file.

To check which of the changes in your previous session have been recovered, open the ArtCAM Project (.3dp) or ArtCAM Model (.art) file.

If you do not require the changes from your most recent session, click **Discard** to close the message.

File > Save As

Depending on whether you are working within a model or a project, use this menu option to save a previously saved model or project with a different filename or in a different folder.

To save a model or project:

1. Select **File > Save As**. If you are saving:

a model, the **Save Model As** dialog is displayed.

a project, the **Save Project As** dialog is displayed.

2. Select the folder in which you want to save the file.
3. Enter a **File name**.
4. Click **Save** to save the file and close the dialog.

Use ***File > Save*** or click the ***Save*** button on the ***File*** toolbar to save a file to its existing folder and filename.

File > Print

Use this menu option to print the model as it is shown in the active view. If you are printing the 2D view, the **Print Setup** dialog is displayed; if you are printing the 3D view, the **Print** dialog is displayed. The dialogs enable you to choose the printer and other options.

The keyboard shortcut is ***Ctrl+P***.

File > Print Preview

Use this menu option to preview the contents of the active view before printing it. Use the toolbar at the top of the window to display all the pages in the window, to zoom in and out, and to print its contents.

File > Print Setup

Use this menu option to display the **Print Setup** dialog and control the settings for the printer with which you are going to print the active view.

To adjust the printer settings:

1. Select **File > Print Setup** to display the **Print Setup** dialog.
2. Select the **Name** of the printer.
3. To change any of the default settings of the printer, such as the paper size and orientation, click **Properties**.
4. In the **Paper** area:
    a. Select the size of the paper you're printing on in the **Size** drop-down list.
    b. Select the tray or paper feed option you want to use when printing from the **Source** list.
5. Select the orientation that you want to use when printing:

    Portrait — Select this option if you want to print the model vertically. Typically, portrait orientation is used for models that are taller than they

are wide.

Landscape — Select this option if you want to print the model horizontally. Typically, landscape orientation is used for models that are wider than they are tall.

6. In the **Options** area, select the print option you want to use:

Print model to scale — Select this option if you want to print the model according to its physical dimensions.

Before printing, ensure the model can fit onto the paper to which it is currently being printed.

Stretch to fit page — Select this option if you want to print the model according to the dimensions of the paper onto which it is to be printed.

Print current screen view — Select this option if you want to print the model as it is currently shown in the 2D view.

Output model border — If selected, ArtCAM prints a border around the edge of the model sheet so you can see where the sheet is.

If you are printing the 3D view, the print options are unavailable. In this instance, ArtCAM prints to fit the 3D view in its current orientation.

7. Click **OK** to print the active view and close the **Print Setup** dialog.

File > Recent Files

The recent file list at the bottom of the **File** menu lists the last four files opened in ArtCAM. Select an option to re-open the file.

File > Exit

Use this menu option to exit ArtCAM.

If you have any unsaved changes, you are prompted to save them before closing. Click:

Yes to save the changes and then exit.

No to exit without saving the changes.

Cancel to continue working.

Edit menu

Use the options on the **Edit** menu to edit the model, select vectors, and manage your display preferences.

Edit > Undo

Use this menu option to undo your previous actions, starting with the most recent.

The ***Undo*** button on the ***File*** is a shortcut for this menu option and the keyboard shortcut is ***Ctrl+Z***.

To reinstate a previous action you have undone, select **Edit > Redo**.

The number of times you can undo or redo an actions depends on the size of the scratch file associated with ArtCAM, as well as the magnitude of your editing. For example, a sequence of small changes to a selected relief layer or bitmap layer will store more undo actions than larger modifications.

You can set the size of the scratch file in the **Options** panel.

See also

Edit > Redo

Edit > Options

Edit > Redo

Use this menu option to reinstate actions you have undone using **Edit > Undo**.

The ***Redo*** button on the ***File*** is a shortcut for this menu option and the keyboard shortcut is ***Ctrl+Y***. The availability of this button is license dependent.

The number of times you can undo or redo an action depends on the size of the scratch file associated with ArtCAM, as well as the magnitude of your editing. For example, a sequence of small changes to a selected relief layer or bitmap layer will store more undo actions than larger modifications.

You can set the size of the scratch file in the **Options** panel.

See also

Edit > Undo

Edit > Options

Edit > Cut

Use the options on this submenu to remove selected objects or reliefs and copy them to the clipboard.

Edit > Cut > Cut

Use this menu option to remove selected objects from the model area and copy them to the clipboard. This option is available only if you have one or more objects selected.

The ***Cut*** button on the ***File*** toolbar is a shortcut for this menu option and the keyboard shortcut is ***Ctrl+X***.

Edit > Cut > Cut Relief

Use this menu option to remove any relief on the active layer that is within the selected vector and place it on the clipboard. If you paste the cut relief back into the model, it is pasted as relief clipart.

The keyboard shortcut is ***Ctrl+Shift+X***.

Edit > Copy

Use the options on this submenu to copy selected objects, reliefs, or regions of vectors to the clipboard.

Edit > Copy > Copy

Use this menu option to copy selected objects to the clipboard. This option is available only if you have one or more selected objects in the 2D or 3D views.

The ***Copy*** button on the ***File*** toolbar is a shortcut for this menu option and the keyboard shortcut is ***Ctrl+C***.

Edit > Copy > Copy Relief

Use this menu option to copy any relief on the active layer that is within the selected vector and place it on the clipboard. If you paste the copied relief back into the model, it is pasted as relief clipart.

The keyboard shortcut is ***Ctrl+Shift+C***.

Edit > Copy > Copy Bitmap

Use this menu option to copy bitmap artwork within a specified region defined by vectors.

To copy and paste areas of bitmap artwork:

1. Select the bitmap layer containing the artwork that you want to copy.
2. Select the vectors that define the area of bitmap artwork you want to copy. The bounding box that surrounds the selected vectors represents the area of the bitmap artwork that you want to copy.

Ensure the vector layer containing the vector artwork that you want to use is visible.

3. Select **Edit > Copy > Copy Bitmap** to copy the bitmap artwork within the bounding box that surrounds the selected vectors to the ArtCAM clipboard.
4. Select the bitmap layer onto which you want to paste the copied bitmap artwork.
5. Select **Edit > Paste > Paste** to attach the copied the bitmap artwork to a selection rectangle in the top left corner of the model area in the 2D view.

   The selection rectangle is the same size as the bounding box that surrounds the selected vectors.

6. Use the mouse to position the selection rectangle in the bitmap layer on which you want to paste the copied bitmap artwork.

   You cannot see the bitmap artwork attached to the selection rectangle.

7. When the selection rectangle is in the correct position, click to paste the copied bitmap artwork onto the selected bitmap layer.

Edit > Paste

Use the options on this submenu to paste the contents of the clipboard into the model area or onto separate layers.

Edit > Paste > Paste

Use this menu option to paste the contents of the clipboard into the model area.

The ***Paste*** button on the ***File*** toolbar is a shortcut for this menu option and the keyboard shortcut is ***Ctrl+V***.

Edit > Paste > Paste Preserving Layers

Use this menu option to paste copied vectors onto separate layers, preserving any colour attributes assigned to them.

Edit > Delete

Use this menu option to delete any objects selected in the 2D or 3D views from a model or project.

Edit > Select

Select this menu option to enable selection mode.

The ***Select*** button on the ***Design*** and ***Design Tools*** toolbars is a shortcut for this menu option.

Edit > Transform

Use this menu option to edit the size, shape, and position of selected vectors and relief clipart.

The ***Transform*** button on the ***Design*** and ***Design Tools*** toolbars is a shortcut for this menu option.

Transforming vectors

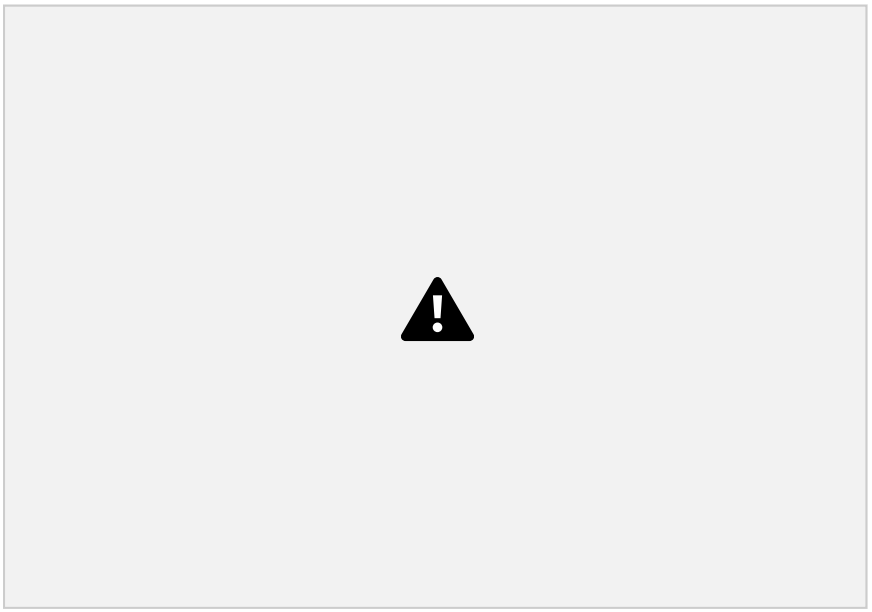
You can transform a vector directly in the 2D or 3D views using the cursor or using the **Tool Settings: Transform** panel.

To transform vectors using the cursor

When you enable transform mode, you can transforms vector directly in the 2D or 3D views using the cursor.

To transform a vector using the cursor:

1. Select the vector.
2. Select **Edit > Transform** or click the **Transform** button. The selected vector is surrounded by a transform box, which includes resizing handles, a transform origin, a rotation handle, and shearing control-points, for example:



Resizing handles Transform origin Rotation handle Shearing control points

3. To move the vector, position the cursor over one of the spans or within the transform box. When the cursor changes to , click and drag the vector into position.

Hold down ***Ctrl*** when you move the vector to keep a copy of it in its original position.

4. To adjust the size and shape of the vector, position the cursor over any of the resizing handles. When the cursor changes to , click and drag the resizing handle.

   Hold down ***Shift*** when you scale to preserve the ratio between the vector's width and height.

   Hold down ***Alt*** when you scale to scale the selected vector relative to the transform origin.

5. To change the position of the transform origin, click in the **Origin position** area to unlock the transform origin, then position the cursor over the transform origin handle. When the cursor changes to , click and drag it to a new position.
6. To adjust the angle of the vector, position the cursor over the rotation handle or outside of the transform box. When the cursor changes to , click and drag to rotate the vector around the transform origin.
7. To shear the vector vertically, move the cursor over the control point outside of the left edge of the transform box. When the cursor changes to , click and drag the control point.
8. To shear the vector horizontally, move the cursor over the control point outside of the bottom edge of the transform box. When the cursor changes to , click and drag the control point.

If you want to transform the selected vector using specific values, use the **Tool Settings: Transform** panel.