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Welcome to Organic Art!

Organic Art is both a powerful framework for you to design 3D living sculptures, and an infinitely varying display of leading-edge computer graphics.   We hope you enjoy using it as much as we do.

This help file will guide you through installing Organic Art on your computer, and how to get it up and running as quickly as possible.   For those wishing to delve deeper, we show you how to personalise your Organic Art preferences, and use the Designer application to create your own scenes.

For more information, other Computer Artworks images and technology, and extra scenes for Organic Art, see our web site on "http://www.artworks.co.uk".

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System Requirements

To run Organic Art, you will need a PC running Microsoft Windows.   For best results, we recommend a Pentium with 16MB of RAM running Windows 95 or Windows NT.   The faster processor and more RAM will give smoother animation, and allow larger display sizes.   Additionally, Windows 95 or Windows NT make installation simpler, and support more colours on screen.

The minimum requirement is a 486/66 with 8MB of RAM running Windows 3.1. Organic Art has been carefully constrsucted to give good results on a minimum system; however, you may wish to use a smaller "viewport size" (see <u>Screen Saver Configuration</u>) to speed up the animation and keep memory usage down.

On Windows 3.1, only 256-colour screen modes are supported.   If you are not currently using a 256-colour mode, please see <u>How to Set a 256-colour Screen Mode on Windows 3.1</u>.

[Note: If your system is very fast, for instance a 200MHz Pentium Pro with 32MB of RAM or more, you will want to set the viewport size to "Full Screen", or Organic Art may run *too* fast (see <u>Screen Saver Configuration</u> for details).   If Organic Art still runs at manic speeds, you can slow it down using the <u>Advanced Options</u> dialog in the Designer].

Installing Over the Demo Version

If you have the Demo version of Organic Art installed, it is recommended you uninstall it before installing the full version.
If you did not uninstall the demo, see <u>Co-existence with the Demo Version</u>.

QuickStart?

If you are running a <u>recommended system</u>, simply insert the CD, wait for it to AutoPlay (or run Setup.exe yourself), and keep hitting Enter to accept the default choices - Organic Art will install itself fully automatically in a matter of minutes.

If you are running a <u>minimum system</u>, we recommend you read the <u>Installation</u> section for more details.
Should you have any problems, check the Troubleshooting sections.

Installation

Starting the Welcome Screen

Windows 95 and Windows NT 4.x
Organic Art is "AutoPlay Enabled" - this means that on inserting the CD in the drive for the first time, the Welcome Screen will run automatically after a few seconds.
The Welcome screen will not appear if you have already installed Organic Art (as you may insert the CD to play the digital audio), or if your CD-ROM drive does not support AutoPlay (e.g. a multi-CD changer).
In this case, simply open your CD-ROM drive in My Computer or Windows Explorer and run Setup.exe.

Windows 3.x and Windows NT 3.x
Run Setup.exe on your CD-ROM drive, either:
   1   Start File Manager, select your CD-ROM drive, and double-click on Setup.exe, or:

   2   From Program Manager, open the File menu and choose "Run...".   Type in "d:\setup.exe" (change "d:" to the drive letter of your CD-ROM, if required).

On Windows NT, the Welcome screen will be displayed, and you can continue to the next section.

On Windows 3.x, there may be some additional steps.   Setup may need to install Microsoft's Win32s extensions, to enable your system to run 32-bit applications (Organic Art is fully 32-bit).   Before the Win32s installation is launched, Setup may need to make some minor changes to your   system configuration in preparation, particularly ensuring "SHARE" is loaded.   Setup will ask to restart your system if changes have been made.
If you do not already have Win32s installed, or you have an older version installed, the Win32s setup program will then be launched.   Follow the instructions, and after your system has restarted, run Setup.exe again, and the Welcome screen will be displayed.

The Welcome Screen and the Installer
The Welcome screen gives a brief introduction, and presents buttons for proceeding with installation, viewing some simple help, or cancelling.

Click on "Install", or hit Enter, to launch the main installation.
You should then be able to click on the "Next" button (or hit Enter), to copy
Organic Art onto your computer.

Note: After installation is complete, Setup will ask you if you would like to make
Organic Art your default screen saver.   On Windows 3.1 and Windows 95, if you
previously had no screen saver enabled, the changes will not take effect until you
restart Windows.   Alternatively, you set the screen saver up manually by choosing
Organic Art from from Desktop Properties (Win 95) or Control Panel (Win 3.1).

Using Organic Art
Once installation is complete, the following icons will be present:
- "Test Organic Art" - this starts the screen saver immediately.
- "Configure Organic Art" - this sets your preferences for the screen saver.
- "Organic Designer" - this runs the design application, which allows you to view the preset scenes, and make your own.
- "Release Notes" - any extra or last minute information is in here.
- "Uninstaller" - this will remove Organic Art from your system.

How To Set a 256-colour Screen Mode on Windows 3.1

Organic Art requires a 256-colour screen mode to run on Windows 3.x.   This
section explains how to change this setting.   You may require your original
Windows install disks, or the driver disk that came with your video card.   If you
have any problems, see the Troubleshooting section.

- Start "Windows Setup" from the Main group in Program Manager.

- Choose "Options" then "Change System Settings".

- Make a note of the current setting for "Display" - this will show the name
  of your current video driver, the resolution and number of colours.

- Drop down the "Display" list box, and choose an adjacent setting for the
  same driver, but with 256-colours.

- The drivers and fonts will be installed - you may need your original
  Windows install disks.

- You will be asked to restart Windows for the new settings to take effect.

Co-existence with other Apps, and File Servers

Some screen savers (like the 3D OpenGL saver in Windows NT), use a lot of CPU time, and slow background tasks down, making them particularly unsuitable for file servers.   Organic Art runs at very low priority, ensuring it does not take any time away from tasks running on your computer.   Additionally, if virtual memory is low, Organic Art will close itself down automatically until more memory becomes available.

Accessing the Screen Saver Configuration

You can configure and control the screen saver in the usual way, using either the Screen Saver tab in Desktop Properties on Windows 95, or Desktop in Control Panel on Windows 3.x.

Additionally, you can use the icons installed to preview and configure Organic Art directly.

See also the next section, <u>Screen Saver Configuration Options</u>.

Screen Saver Configuration Options

Active Scenes/Inactive Scenes

The Active Scenes playlist shows the names of all the scenes in Organic Art which will be run by the screen saver.   There are well over 100 different scenes, and more can be added, each producing huge numbers of random variations.   Inactive scenes are skipped by the screen saver, but can still be viewed in the Designer. You can move scenes between the Active and Inactive lists by selecting them and hitting the "<<" and ">>" buttons.

Tip: You can select multiple scenes at one time:
by dragging with the mouse
by holding down Shift when clicking, to extend the selection
by holding down Control when clicking to add single lines to the selection
You can select the entire list quickly by clicking on the first item, then holding down shift and hitting the "End" key

Change Every

When the screen saver runs, Organic Art takes the list of active scenes, and shuffles them into a random order.   It then runs them one at a time.   The Change Every setting adjusts how long each scene runs before going on to the next.

Viewport Size

Initially, the screen saver is set to run at a size of 640x480.   If your desktop size is larger than this, Organic Art will run in a 640x480 window in the centre of the screen, with a border around it.   Using this setting ensures the animation will be smooth even on a slower machine, and keeps memory requirements low.

If you have a recommended system, you can increase this setting to get a larger display.   Organic Art is "resolution independent" - the 3D scenes will be drawn at the size of the screen, not drawn small and scaled up, so the display will always be sharp and not "pixellated".

Alternatively, if you are having problems running at 640x480, or wish to reduce the amount of memory Organic Art uses, you can reduce the Viewport to a lower setting.

The Full Screen setting will use the entire screen area, whatever the size of your desktop.

[Note that if the Viewport Size is set larger than your desktop, it will automatically be reduced to fit].

Disable Backdrops

This option switches off the backdrops in the Organic Art scenes.   Use this as another variation, or to save a little on memory usage.

Disable Still Scenes

Organic Art contains very complex scenes termed <u>Stills</u>.   These produce more intricate designs than the animated scenes, and display a completely unique variation every few seconds.   You can disable these scenes as a preference, or to reduce memory usage (complex scenes require a little more RAM to draw).

Show Caption Bar

The caption bar is a line across the bottom of the screen, which shows you name of the scene, and other useful information like the current date and time.   The scene names allow you to identify scenes to view in the designer, or move in the Active/Inactive playlists, as well as showing you what their creator dubbed them.

Ignore Mouse Movements

If this option is set, the screen saver will only de-activate if a mouse button is clicked, or a keyboard key is pressed, and not when the mouse is moved

Play CD Audio

The install CD contains some audio tracks of ambient music to go along with Organic Art.   If this option is selected, the music will be played when the screen saver starts, and will stop when it exits.
Note if you have a different audio CD inserted, that will be played instead.   If there is no CD inserted, a CD-ROM is in the drive, or an audio CD is already playing, this option will be ignored.

Password Protection (Windows 3.x)

On Windows 3.x, the "About..." button is replaced by "Password...".   This allows you to password protect the screen saver, so it cannot be deactivated except by entering the current password.
On Windows 95 and Windows NT, password protection is built-in to the operating system, and is accessed from Display Properties (or Control Panel on NT 3.x).

Setting a New Password

This dialog box allows you to set a new password.   Initially, your password will be blank, and the "Old Password" field will be greyed out.   Enter a word to use as a password in the "New Password" box, and re-type it in the "Confirm New Password" box (all text typed in password fields shows up as *'s).
Once you have entered a password, you will have to re-enter it as "Old Password" to change it (so no-one else can do this).

Entering Your Password

If you have set a password, and the "Enable Password Protection" box was checked, then the next time the screen saver activates, you will have to enter your password before you will be returned to Windows.

If you want to dismiss the password box and continue running the screen saver, hit enter without entering anything.
As an added security measure, the password dialog records how many incorrect (non-blank) guesses have been made at your password each time it is activated.

Basics and Terms

The Designer application allows you to create your own scenes, which will then be added to the built-in scenes, and become part of the active playlist for the screen saver.   A scene is composed of the following elements:

A Backdrop

A background image or colour.
See the thumbnail images of the Backdrops in the <u>Graphics Help</u> file.

A Lighting Model

The type and position of the lights (e.g. overhead, uplit, coloured).
See examples of the Lighting Models in the <u>Graphics Help</u> file.

A Generator

Generates the Organic Geometry, which governs the form of your 3D creation and how it will move.   The Generator outputs a cloud of points in 3D space, and at each of these is placed an "Inform".
See the thumbnail images using each of the Generators in the <u>Graphics Help</u> file.

"Informs"

The building blocks, these are simple coloured or textured 3D shapes, a collection of which are placed by the Generator to make the form.   These are what you see in the two preview windows in the tool window on the right-hand side of the screen. They have the following attributes:
- <u>Mesh</u> (sphere, cube, ring, cone, etc.)
- <u>Colour/Texture</u>
- Draw Style - Wireframe, Flat Shaded (faceted), Gouraud Shaded (smooth).
- Scale - Their size.
- Flow - The speed the texture "flows" over the surface.

See thumbnail images of Meshes and Textures in the <u>Graphics Help</u> file.

Parameters
- Speed - the rate of the motion of the form, or "infinite" to completely change it every frame.
- Branches - Control number of <u>Branches</u>, if the Generator has branches.

- Ribs - Control number of <u>Ribs</u>, if the Generator has ribs (most do).

Effects
- Shadows - Cast shadows to enhance the 3D effect.
- Trails - Forms leave 3D trails behind them as they move.

Designer Quick Start

Viewing Preset Scenes

From the Scenes Menu, choose scene names from the pop-up sub-menus which appear.

Creating Your Own Scene - a Walk-through

- From the <u>File Menu</u>, choose "New Scene".

- Click on the <u>Mutate Button</u> to get a randomised scene.   Keep going until you get something you quite like.   Use the <u>Lighting Menu</u> and <u>Tool Window</u> controls to adjust things until you are happy.

- From the File Menu, choose "Save Scene As..." and give your scene a name.

- That's it.   You're scene will now be in the <u>Scenes Menu</u>, under "User" (on Windows 3.1), or your Windows user name (under Windows 95 and NT). It will also automatically be added to the screen saver playlist, which you can view from the "Configure Organic Art" icon.

File Menu

New Scene

This creates a new, blank scene, with a small spinning shape in the centre as a place-holder.   Work from here with the menus and tool window controls, or use the Mutate Button to randomise the scene.

Save Scene As...

When you have created a new scene, or altered an existing one, this will store the scene on your hard disk.   Either keep the same name to overwrite the previous version, or use a new name to create a separate scene.   Newly created scenes will automatically be added to the Scenes Menu, and the screen saver playlist.
Scenes are prefixed with your Windows user name (or "User" on Windows 3.1) to group them together.   [Note this means you cannot overwrite built-in scenes, but you can modify them, save them under a new name, and use the screen saver playlist if you wish to de-activate the original version].
Scene definitions use very little space on your disk - they are less than 500 bytes (or about 1/2000th of a megabyte), as they simply record the choices you have made for the various settings.

Revert To Saved

Use this if you have modified a scene, and wish to revert it to its previous settings (by reloading it from the last saved version).

Delete Current Scene

Deletes the current scene, removing it permanently.   Use the screen saver playlist if you want to de-activate a scene but not delete it completely.
[Note you can only permanently delete your own scenes].

Save Image As...

Saves the image in the window to disk as a .BMP file (the default location is the "Images" directory under where you installed Organic Art).
The image is not copied from the window, but the scene is re-rendered in memory at the size set in Saving Options, in 16-bit colour, and optional anti-aliasing, to give very high image quality.   However, this can take a lot of memory, and some time, for higher settings.
Note that images with Trails on cannot be saved in this way (due to the way parts of the graphics system work, the Trails are not stored anywhere).
Tip: You can interrupt saving by hitting the Esc key.

Tip: You can capture trails images by copying the current window contents to the clipboard by hitting Alt and "Prt Sc" on the keyboard, then pasting the clipboard image into a paint package.

Advanced Tip: You can use saved images, or other graphics, as new backdrops or textures, by converting them to .GIF format, then placing them in the Backdrop or Textures directories.   To work in 256-colour modes, backdrops should be reduced to 32 colours, and textures to 16 colours (higher colour modes have no restrictions).   The width and height of textures must be a power of 2 (..., 64, 128, 256,...).   Note we can't guarantee new graphics will work - the 3D renderer has been know to crash when using imported textures, particularly with more than 16 colours.

Save Red/Green 3D...

As above, but creates a <u>stereo image</u>, for viewing with red/green 3D glasses.
Note this uses double the the memory and takes more than twice as long to <u>render</u> as a normal image - see <u>Saving Options</u>.
Since different monitors and different 3D glasses have slightly different tints, you may have to experiment to get a good 3D effect.   While viewing the image through the glasses, close each eye in turn, and should only be able to see one image, with little or no "ghosting" of the image in the other colour.   Try different glasses or adjust your monitor brightness/contrast for best results.

Tip: Avoid using scenes with bright primary colours (red, green, blue) for stereo, as they won't be visible in one eye.   Use white or black-and-white textures instead. Try Talismans/Silver and Webs/RingWeb.   See the sample image Silv3D.bmp in Organic Art's Images directory.

Advanced Tip: If the colours don't match your 3D glasses well, you can use a paint package to adjust the RGB components in the image.

Save As Wallpaper

Saves the image into your Windows directory (as Organic.bmp) and automatically sets it to be your wallpaper.   The default is to save a small image and tile it, producing an interesting effect, while keep memory requirements down and taking just a few seconds.
[Note saving as the full size of your desktop, particularly with anti-aliasing on, uses large amounts of virtual memory - don't try this on a <u>minimum spec. system</u>].
See <u>Wallpaper Options</u> for more details.

Exit

Exits the Organic Art Designer.   If you have modified the current scene, but not saved it, it will be automatically stored and reloaded when you next start Organic

Art.   You can change this behaviour from the <u>Advanced Options</u> dialog box.

Lighting Menu

This menu allows you to choose from a set of lighting models.   Using different lighting can give a variety of different looks to your scene.   Note that using the coloured lighting models requires more processing power, and will make the scene run a little less quickly.

See examples of the Lighting Models in the Graphics Help file.

The lighting models are:

"Default"
Moderate ambient lighting, with a bright white light at the top right.   A good standard model.

"BBC style"
As per Default, but with a half-brightness fill-in overhead.   Gives good depth, with objects looking solidly 3D.   See "Stills/Snakes"

"Metallic"
Low ambient, with bright lights top right and left-centre.   Customises the lighting model to make objects appear metallic (by making the shading round objects fade to black more rapidly).   Very rich look.   See "Talismans/Silver".

"Multi-coloured RGB"
Red, green and blue rotating lights, coming from all directions.   Using with fast animated scenes gives a "disco lights" effect (Geometric/Asteroid Dance).   Can be more subtle if used with dark shapes (Geometric/Geometry, Dark/Dark 'Pod).
Using with Trails is interesting, making colours change over time (Dark/Deep Sea, Dark/Sea Worm).
Coloured lights also interact with textures containing the same primary colour, giving a "glow" effect (see Single/Heart).

"Multi-coloured YCM"
Like RGB, but using Yellow, Cyan and Magenta lights.   See "Mono/Hypno".

"Purple-Green"
Another rotating coloured-light model, using two lights of (surprise) purple and green.   Gives a more subtle effect, see "Dark/Triangles" and "Faces/Black Abyss".

"Uplit"

A single up-lighter.   Gives a rather strange, surreal effect.   See "Weird/EyeBall" and "Faces/Abyss".

"Top down"

A directional light top-right, good for using with shadows.   See "Titles/Demo Titles".

"Top and left"

As top down, but with a left-centre fill in to brighten it up.   See "Titles/New Titles".

The Generator Menu

This selects the form and motion to use in the scene.   The best way to explore this setting is to select two simple shapes as informs, set <u>Ribs</u> and <u>Branches</u> quite low, and try out different Generators to see what they do.
Alternatively, you can open <u>Mutate Options</u>, and select just the Generator by itself, then use the <u>Mutate button</u> to cycle randomly through them.

See the sample scenes using each of the Generators in the <u>Graphics Help</u> file - many different variations are possible with a single Generator, but altering the number of <u>Branches</u> and <u>Ribs</u>, using the Trails effect and so on.

Scenes Menu

The Scenes Menu allows you to display each of the scenes in Organic Art.   Any scenes you create yourself will be automatically added to this menu, under your Windows username (or "User" in Windows 3.1).   Any add-on scenes you install will also be added automatically.
This menu is arranged as a cascade of sub-menus, so the large number of scenes can be grouped together (and so the menu doesn't go right off the bottom of the screen!).   A forward slash "/" in a scene name separates it into a new sub-menu. The built-in scenes only use one level deep, but you can have more, e.g. "User/My New Ones/Squirly Thing", would have two sub-menus.

Control Menu

Animate/Stop Scene

This pauses and re-starts the motion of the main scene.   This is a "full stop" - the scene is no longer updated, and no changes will take effect until you start it again. Organic Art will automatically go into Stop mode when you switch away from it, so the current foreground application will not be slowed down.
Tip: If you want to halt the motion of the scene, but keep the controls "live", set the Speed slider to zero instead.

Animate/Stop Tool Window

This pauses and re-starts the spinning motion of the Inform previews in the Tool Window.   Stopping them makes the main scene run at full speed, which is useful when adjusting the tempo of a scene with the Speed slider.

Show/Hide Tool Window

This stows away and restores the Tool Window, allowing you to run the scene using the full area of the Designer's window.

Help Menu

Contents

Opens the on-line help (or hit F1).

Generator/Mesh/Texture/Backdrop Graphics

Starts up the Graphics Help file, showing thumbnail images of the available graphical elements.

About

Brings up the about box, showing the version number of Organic Art and other system information.

Saving Options

This box contains settings for when you save an image from Organic Art, using File Save Image As, or File Save Red/Green 3D.

Window Size

Save the image at the size of the view in the window.

Specific Size

Save the image at the given size.   Maximum is 1280x1024.

Anti-aliasing

Switching this on produces a higher quality image by blending pixels together to avoid jagged edges; however it uses more memory and takes longer when saving.

Memory Required

This readout tells you how much <u>virtual memory</u> saving an image with the given settings will require.

When you save an image from Organic Art, it does not save what you see on the screen, but <u>re-renders</u> the image at the given <u>resolution</u>, at high <u>colour depth</u>, and with other image quality options turned on.

Because the image is re-rendered, extra memory is required, which can be substantial, especially if anti-aliasing is on.   Saving in Red/Green 3D stereo uses twice as much memory again.

Stick to the default settings initially, and check the memory requirements when increasing these settings.   If your computer takes many minutes to save a larger image, or reports an "out of memory" error, you will need to reduce the size settings.

Tip: you can also copy the contents of the current window to the clipboard by hitting Alt-Prc Sc, then paste the image into a paint package.

Wallpaper Options

This box contains options for File Save As Wallpaper.

Tile Wallpaper

Select this to save a small image size, and tile it across the desktop.   Fill in how many times to tile the image across and down.

Centre Wallpaper

This will make the wallpaper a single image, centred on the screen.   Either select "Desktop Size" to fill the whole screen, or enter a specific size for the image. Note "Desktop Size" can use a lot of memory to create the image - check the memory required indicator.
Tip: With the Windows 95 Plus Pack, NT 4.x (or newer versions of Windows), you have the option "Stretch   desktop wallpaper to fit the screen" in the "Plus!" tab of Display Properties, which can be used to stretch a smaller image over the whole screen.

Gamma Correction

Windows 95 and Windows NT after version 3.5 do not display a wallpaper bitmap at the correct brightness, but lighter than if displayed in, for instance, a paint package.   The gamma correction this option allows you to correct for this, by darkening the saved .BMP file before it is used as wallpaper.   Default is 0.8 on Windows 95 and Windows NT, or 1.00 on Windows 3.1 (which does not display this problem).
You can also use this option to lighten or darken the wallpaper image for effect. Try low values like 0.2 to make the image very shadowy.

Anti-aliasing and Memory Required

These are as per Saving Options.

Mutate Options

This box controls which elements of a scene are randomised by hitting the <u>Mutate button</u>.   Try ticking most of them to find an interesting starting point, then switch off mutation for each element you are happy with, re-mutating the rest.
Tip: On Windows 95 or Windows NT, these options can also be accessed by right clicking on the <u>Mutate button</u> itself.

Advanced Options

This box contains options for more advanced users.   The default buttons return each setting to its original (sensible) value.
Options changed here also affect the screen saver (if applicable).

Global Speed

This option speeds up or slows down the speed of motion of the animations in Organic Art.   For instance, increasing it to 2.0 will be double speed, decreasing it to 0.5 will be half speed.   Note this doesn't affect the frame rate, just how big a step there is in the motion between each frame.
If you have a very fast machine, you may want to reduce this figure to stop Organic Art running too fast.

Field of View

This controls the camera's zoom.   Decreasing it to say 0.2 will zoom everything up larger, increasing it to say 0.8 will make everything look further away.
Does not affect the backdrops.
Tip: To make screen saver scenes run faster, instead of decreasing the viewport size, you can set the Field of View to 0.8, so the 3D objects are smaller, but the backdrops stay full size.

Dither Coloured Lights

In 256-colour modes, scenes with coloured lights can show "banding" (see Figure). Dithering can improve the look of these scenes, but will make them run slightly slower.
Dithering isn't really necessary in higher colour modes.
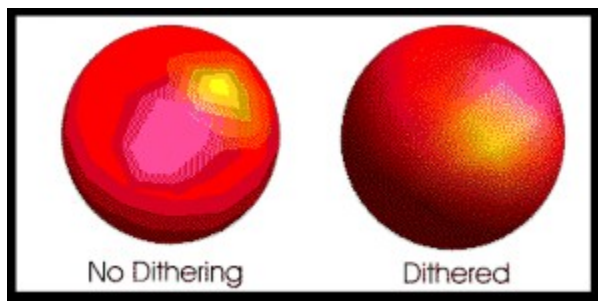
Dither White Lights

There can also be a little banding evident under white lights, but this is much less of a problem, and so is a separate option.   Remember using dithering will slow the

animation down some.

Force Short Scene Filenames

Short filenames are the default in Windows 3.1.   On Windows 95 and Windows NT, the default is to use the whole scene name as the filename.
Setting this option will cause scene definition files (.scn files) to be created with DOS compatible 8.3 filenames, even on Windows 95 and NT.   Use this if you need to create scene files which will be Windows 3.1 compatible, e.g. for exchanging with other users.
To convert a long scene filename to a short one, tick this option, and re-save the scene.

Unsaved Scenes

If you make changes to a scene, a "*" is appended to its name in the title bar. These options control what happens if you try to exit without first saving the current scene:

- **Reload it next time** - the scene is automatically stored and reloaded when you next start the Designer.   To remove this "Unsaved Scene", use "Delete Current Scene" in the File menu, or use "Save Scene As" to save it properly.

- **Ask whether to save it** - You are asked whether you want to save the scene before quitting (using the normal "Save Scene As" dialog).

- **Discard any changes** - You must explicitly save any scenes you wish to keep before quitting, or the changes will be lost.

Note that only the current scene is considered - any changes made to other scenes you have switched away from are always discarded if you do not save them before quitting.

Preview Window Backdrops

By default, in 256-colour modes, the preview windows in the Tool Window have a plain grey backdrop, and in high colours modes they have the a backdrop of a dark 3D room.   These settings allow you to change these preferences.
Using a backdrop in the Preview in a 256 colour mode is not recommended, as it can cause palette flashing unless it only uses a very small number of colours (e.g. 4).
The backdrop for high colour can be anything, but it will save some memory if you use a low-res image as it will only ever be displayed small (the default image is 256x192).

Status Bar Style

Choose your preference for the Status Bar's progress meter.

Other Advanced Configuration settings can be modified by editing regstry/ini file keys.

The Tool Window

Mutate Button

This randomises each setting automatically.   You can control which settings are mutated by using the "Mutate Options" dialog box.   This is in the Options menu, or you can quickly access it by right-clicking on the button itself (Windows 95 and NT only).

Tip: Initially, mutate most of the scene settings to get something completely new, then gradually un-check settings you are happy with.   Then use the individual controls to refine each setting to be exactly as you want it.

The Mutate Button can be a source of great variation, taking you to starting points you might never have discovered otherwise.

Restart Button

This button "fast forwards" the scene, jumping to a different position (like Infinite Speed, but just once).   Use this button with animated or Trails scenes to jump around to different variations it can reach.

On Windows 95 and NT, you can right-click this button to refresh the window.

Backdrop

Pick a backdrop from this dropdown list (click on it to make the list appear).   You can use cursor keys to scroll through the list, and right-clicks to randomise the setting (see General Interface Tips).

See also the thumbnail diagrams of all the backdrops in the Graphics Help file.

Speed

Sets the rate of motion of the scene.   If   "Infinite Speed" is set, this control will be greyed out.

Tip: If you want to accurately see how fast a scene would run in the screen saver, stop the tool window previews from animating (Control menu), and resize the window to around the same size as you've set for the screen saver.

Infinite Speed

For Still scenes, use "infinite" speed to make the scene jump to a completely new variation every time it is redrawn.   Can be used also for effects with Trails (see Weird/Eggshell).

Branches

Specifies the number of Branches the current Generator will use.   Will be greyed

out if the current Generator does not have Branches.

Ribs

Specifies the number of <u>Ribs</u> the current <u>Generator</u> will use.   Will be greyed out if the current Generator does not have Ribs.

Shadows

Switches cast shadows on.   This can greatly enhance the 3D effect if used well, placing the 3D objects "in" the scene, rather than "on" it.   Try selecting "Crystals/Sky Crystals", or "Titles/Demo Titles" and switch shadows on and off. Use a simple lighting model (like "Default" or "Top Down"), or shadows end up all over the place.   Drawing shadows takes time, so they are best used with scenes with only a few objects.
[Note you may see the shadows being clipped (i.e. cut off) if they are more than about 3/4's up the screen].

Trails

When the trails effect is on, objects moving in the scene leave copies of themselves behind, building up a sculpture over time.
The Trails effect is fully 3D ("<u>Z-buffered</u>"), so trails move in front of and behind themselves correctly.
See the scenes under "Trails" in the <u>Scenes Menu</u> for examples.
[Note Trails images cannot be saved with "Save Image As..."].

Inform Previews

These two sets of controls allow you to set the Primary and Secondary <u>informs</u> which are used to build the scene.   Some <u>Generators</u> only have one Inform, so the shape in the bottom window is not always used.
See <u>General Interface Tips</u> for more hints on using these controls.

Shape

The listbox at the top right is the basic 3D <u>mesh</u> that is used for this Inform.   You can also select "<none>" to switch off one or other Inform in Generators which use both.
See the <u>Graphics Help</u> file for diagrams of available meshes.

Texture/Colour

Choose either a plain colour or a <u>texture map</u> for the object.
See in the <u>Graphics Help</u> file for thumbnails of the available textures.

Draw Style

Shapes can be drawn wire-frame, "unlit" (which turns them into a flat pattern), flat

shaded (faceted), or Gouraud shaded (smoothed).
[Note some objects are designed to stay faceted even with Gouraud shading, e.g. Dodec].

Scale

Controls the size of the objects.
Use mostly low settings for this - larger scales are used mostly for Generators like "Single".

Flow

This controls a "texture mutation" effect, which makes the texture flow across the surface of a objects, making for a nice effect, and lots of extra visual variation when a scene runs.

The Zoomed Views

The graphic is a zoomed up view of the Inform in the scene, under standard lighting.   You can start and stop the object spinning in the view from the Control menu.

The Status Bar

The Status Bar gives you information about what the Designer is currently doing.
The left-hand box shows the current activity, e.g. "Running" for when the scene is animating, or "Drawing" for when a complex scene is being rendered.
The centre area shows you the progress of lengthy activities.
The right-hand area shows either the frames-per-second speed of the animation, or for complex scenes, the number of seconds to render each frame.

General Interface Tips

- **Double Click Scene**
  This randomises the position of the scene, like the Restart button in the
  <u>Tool Window</u>.

- **Ctrl-Double Click Scene**
  This jumps to a random scene.

- **Right Click List Boxes**
  On Windows 95 and Windows NT, you can right-click on list boxes
  (backdrops, shapes, textures) to randomise their setting.

- **Cursor through List Boxes**
  On any of the list boxes (backdrops, shapes, textures),   use the up and
  down cursor keys to scroll through the contents of the list to browse
  possible choices.

- **Wait for Redraw**
  When working on a complex scene, or using the <u>Mutate Button</u>, watch the
  <u>Status Bar</u> to see how the progress of the scene being drawn.   Each time
  you click the mouse or use the keyboard, the scene needs to start redrawing
  again from the beginning, so you need to leave the controls alone while
  waiting for a complex scene to display.

- **Refreshing the Screen**
  If the display is not redrawn properly for some reason, or the colour <u>palette</u>
  has not been updated, hold down shift and click in the window - this will
  refresh the screen.   On Windows 95 and NT, you can also right-click the
  Restart Button.

- **Interrupting Saves**
  Lengthy operations, such as saving images to disk, can be interrupted by
  hitting the "Esc" key.

Uninstaller

The uninstaller will remove Organic Art from your computer.   All the files it installs will be deleted, and the icons will be removed.
Any new files whch have been created, for instance scene files or image files you have made, will *not* be deleted by the uninstall.   In this case, these files and their directories will be left intact, and the uninstaller may report "not all elements could be removed".

During uninstall, you will get messages about shared DLL's no longer being in use, with names of the form RLxxxx.DLL.   These files are parts of Reality Lab 2.0, the Microsoft RenderMorphics 3D <u>renderer</u> used by Organic Art.   Provided you have no other applications which use Reality Lab 2.0, these files can safely be removed.
If you remove them, and another 3D application fails to run, either re-install that application, or re-install Organic Art.   If you then uninstall Organic Art, do not choose to delete these DLL's when asked.
These files occupy approximately 4MB of disk space.

Windows 95/Windows NT
The registry key for Organic Art will be removed.
[Note: Advanced users can add registry keys to control obscure options, as documented in <u>Advanced Configuration</u>.   New keys added will not be uninstalled].

Windows 3.1

Win32s
<u>Win32s</u> will not be uninstalled.   Win32s is installed by a Microsoft setup program, (not by the Organic installer), which does not have this functionality.
Having Win32s installed does not use much disk space (less than 4MB), and it is not activated if not needed, so does not use any memory or system resources.   It will also enable your system to run some 32-bit applications, not just Organic Art.
However, you can manually <u>remove Win32s</u> of you wish.

Screen Saver list in Control Panel
After uninstalling on Windows 3.1, Organic Art will still appear in the list of screen savers in Control Panel.   This is necessary as Windows 3.1 will generate error

messages otherwise.   Once you have selected a different screen saver, you can remove Organic Art from the list by deleting the file "Org16.scr" from your system directory (note this file is very small, less than 20k).

SHARE on Windows 3.1

Symptoms:

Setup program reports SHARE is not loaded, even after you have chosen to fix it automatically, and rebooted the machine.

Setup program then locks up on percentage bar if warnings are ignored.

Explanation:

For <u>Win32s</u> to run properly (and hence Organic Art), file sharing needs to be enabled.   On Windows for Workgroups 3.11, or a networked Windows 3.1 machine, this will almost certainly be enabled already.

On a stand-alone Windows 3.1 machine, file sharing may not be enabled, and it is necessary to load an MSDOS module called "SHARE" to switch it on.   This needs to be added to your AUTOEXEC.BAT file.

Organic Art setup will detect if file sharing is not enabled, and offer to install SHARE for you automatically.   If there is still a problem, that means the automatic fix did not work for some reason.

Solution:

Firstly, you must allow setup to reboot after making the automatic fix, or the changes will not have taken effect.

If this still hasn't hasn't worked, edit the file C:\AUTOEXEC.BAT, and scroll to the end of the file.   You should see the lines:

```
rem Added by Organic Art setup
SHARE.EXE /L:500 /F:5100
```

If the SHARE.EXE line is not there, add it.   If it is there, it may be your PATH is incorrectly set - check your PATH setting (also in AUTOEXEC.BAT) includes your DOS and Windows directories.

"Only 256-colour screen modes are supported on 16-bit Windows"

Symptoms:

When starting Organic Art, you see the above error message.

Explanation:

The 3D <u>rendering</u> engine used by Organic Art only supports 256-colours modes when running on Windows 3.1.   You need to switch to a 256-colour mode.

Solution:

Please see <u>Setting a 256-colour Screen Mode on Windows 3.1</u> (alternatively, run Organic Art under Windows 95 or NT if possible, where all <u>colour depths</u> are supported.

Problems Setting 256-colour Screen Mode on Windows 3.1

Symptom:

There is no 256-colour mode listed for your current driver.

Explanation:

You may need to install a video driver specific to your card.   This will have been supplied on a floppy with your computer.

Alternatively, newer display cards may install their own control panels, which you should use in preference to Windows Setup.

Solution:

Find the Display Driver disk for your video card, and follow the instructions that came with it.

If there are no instructions available, from Windows Setup, choose Options, drop down the "Display" list box, choose the last entry "Other Display (requires disk from OEM)...", and insert the driver disk into drive A.

Problems After Setting 256-colour Mode

Symptom:

You selected a 256-colour mode, and now Windows won't start, or the display is corrupt.

Explanation:

The setting you chose was not the correct driver for the video card, or the mode is unsupported for some reason.

Solution:

From the DOS prompt, type "setup" to run the DOS mode Windows Setup, and change the video driver to something else, or back to your original setting if nothing else works.

If you do not have a 256-colour driver which works, you will have to obtain one from your vendor.   If your video card does not support 256-colour graphics, you cannot run Organic Art.

Other Win32s Problems

Symptom:

After uninstalling Organic Art, Win32s causes some problems with your system, or you see errors containing "Win32s" or "w32s.386".

Explanation

It shouldn't be necessary to remove Win32s, as it uses little disk space (less than 4MB), and virtually no memory if not active (i.e. supporting a 32-bit application). Note that if Organic Art is not the only 32-bit application on your system, you *must not* remove Win32s, or these other apps will no longer run, and require re-installing.

Solution:

The procedure to remove Win32s is as follows:
- Remove the Win32s VxD line from Windows SYSTEM.INI file in the [Enh386] section:

  ```
  device=<SYSTEM>win32s\w32s.386
  ```

- Modify the following line from the [BOOT] section in the SYSTEM.INI file:

  ```
  drivers=mmsystem.dll winmm16.dll
  ```

  to the following (remove WINMM16.DLL, leaving any other DLLs on the line):

  ```
  drivers=mmsystem.dll
  ```

- Delete the WIN32S.INI, W32SYS.DLL, WIN32S16.DLL, and WINMM16.DLL files from the <SYSTEM> directory and all files in the <SYSTEM>\WIN32S subdirectory.

- <WINDOWS> is the Windows installation directory, such as C:\ WINDOWS. <SYSTEM> is the Windows System directory, which may be on a networked drive and not a subdirectory of the <WINDOWS> directory. If you are removing only Win32s from your computer, you do not need to remove the shared files (in <SYSTEM> and <SYSTEM>\WIN32S). Before removing these files from the network share, make sure that all users of Win32s have removed the references to Win32s from the SYSTEM.INI file.

- Restart Windows.

Not Enough Free Disk Space

Symptom:

The installer reports you do not have enough free disk space, either in your Windows system directory, or on the drive you are trying to install to.

Explanation:

Organic Art requires space on the drive where your Windows system directory is, in order to install the DLL's for the Microsoft RenderMorphics 3D <u>renderer</u>, and for the screen saver executable itself.   These won't run from another location, and need about 4MB free.

The file location the install programs asks you for is for the data files (backdrops, textures, shapes), and the executables for the Designer.   These can be placed on any available drive or directory, and represent the majority of the space requirements.

Solution:

If you need more space in your Windows system directory you will need to delete some files on that drive, or move some files onto another drive.   Check your TEMP directory for old files which may have been left by crashed applications, and delete them to free space.

For the main data files, either clear space as above, or use the Browse button when the installer asks you where to install Organic Art, and put the bulk of the files on a different drive.

"Cannot find ORG16.SCR"

Symptom:

You see the above error message when the screen saver is due to start.

Explanation:

Sometimes the automatic setting of Organic Art as your default screen saver does not work correctly on Windows 3.1.

Solution:

Set Organic Art as your screen saver from Control Panel, Desktop.

Screen Saver does not Start after Timeout Period

Symptom:

Test Organic Art works, but the screen saver does not start automatically.

Explanation:

Due to bugs in Windows 3.1 and 95, there is an intermittent problem when you choose to set Organic Art as your default screen saver.

Solution:

Set Organic Art manually as your screen saver from Control Panel.

Co-existence with the Demo Version

Symptom:

You installed the demo, then the full version, then uninstalled the demo.   The full version now does not run correctly, if at all.

Explanation:

The full version and demo version of Organic Art share some files of the same name.   Uninstalling the demo deletes some files which were updated and in use by the full version.

Solution:

Uninstall the demo first, then re-install the full version.
Alternatively, you can avoid uninstalling/reinstalling, and just delete the icons associated with the demo, particularly Uninstall, as it will have been overwritten. On Windows 95 and NT, you should also delete "Organics.scr" from your Windows system directory, as on the full version it is now called "Organic Art.scr".

Low Virtual Memory Problems

Symptoms:

1 You see the "Out of memory" error, or the "Your system is running low on <u>virtual memory</u>" warning frequently.

2 Screen saver doesn't start up when you double-click the test icon, but the configuration dialog works ok.

You may only see this problem when you have one or more large applications open.

[Note you are unlikely to see this problem on Windows 95, as it increases the <u>virtual memory</u> automatically.   Windows NT does this too, but gives a warning message].

Explanation:

Organic Art can use a lot of memory, as it runs at high <u>resolution</u>, and <u>renders</u> some very complex 3D scenes.

Two <u>screen buffers</u> are needed, one to display and one to draw into, and another as a <u>Z-buffer</u>, which records how "deep" each part of the 3D scene is.   Here is an approximate guide to how much <u>virtual memory</u> this uses:

- 400x300, 256 colours: 469k
- 640x480, 256 colours: 1.2 MB
- 800x600, 256 colours: 1.8 MB
- 800x600, 65536 colours: 2.8 MB
- 1024x768, 256 colours: 3.0 MB
- 1280x1024, 65536 colours: 7.6 MB
- 1280x1024, 24-bit colour: 10.2 MB

Additional to this is the space needed to store the data for where each shape is in the 3D scene, plus some general overhead.

Don't confuse virtual memory with physical RAM.   Virtual memory is the total amount of space available for all your running applications to use, and includes the size of your Windows swapfile on the hard disk.   Physical RAM allows more things to be in real memory, and so speeds your system up, as fewer parts of your

applications and their open files need to be swapped to and from the disk.   Having too little virtual memory will stop things from running; having too little physical RAM won't (unless critically low), it will just mean your system runs more slowly.

Solutions:

- Increase your system's virtual memory settings.   This is done from Control Panel (in Windows 3.1 it's the "386 Enhanced" icon, in Windows NT it's "System", then the "Virtual Memory" button).
  Depending on the resolution and <u>colour depth</u> of your screen, you may need to add up to around 20MB (around 20,000KB) to your current settings.   Select Help in Control Panel, and search for "virtual memory" for more information.

- Try setting a smaller viewport size in the Organic Art configuration.

- You can disable backdrops and complex <u>Still</u> scenes from the <u>screen saver configuration</u> to save a little extra memory.

Low Free Physical RAM Problems

Symptoms:
Organic Art does run, but:

1 It takes a very long time to start up or close down.

2 Some scenes, particularly the complex <u>Stills</u> scenes, take a very long time to draw.

3 Occassionally shuts down.

4 There is a lot of disk activity when Organic Art is running.

Explanation:
Organic Art, plus any other applications you have open, are using more RAM than is available.   In this case, Windows will "swap" data between RAM and the swapfile on the disk.   This is normal, but if RAM is *very* low, swapping can get excessive, and the system become very slow, with lots of disk activity in evidence (this is termed "thrashing").
Organic Art has a feature which causes it to close automatically if free memory is very low.

Solutions:
Organic Art needs a *minimum* of 8MB of RAM installed to run.   If there isn't much RAM free, Organic Art will slow down dramatically.   If you are running other applications at the same time, they may be using nearly all of your memory, leaving little free when the screen saver needs to start up.
Try one or more of the following until performance improves:

- Set the Viewport Size in the <u>screensaver configuration</u> to a smaller size.

- On Windows 95 or NT, if you are running a high colour (16-bit) or true colour (24-bit or 32-bit) screen mode, try changing to a lower number of colours.

- Switch off any desktop wallpaper or pattern and use a plain colour.

- Tick "Disable Still Scenes"   in the screen saver configuration - complex stills use more memory than other scenes.

- Tick "Disable Backdrops"   in the screen saver configuration.

- On Windows 3.x, use a permanent swapfile and 32-bit disk access if possible.   Run Control Panel, select Help and search for "virtual memory"

for more information.

- Finally, think about getting extra RAM - most Windows applications run a lot faster with 12MB or more installed.

Speed Problems

Symptom:

Organic Art runs very slowly, animations are very jerky. You have 16MB of RAM and there isn't much disk activity, so it's not a shortage or RAM.

Explanation:

A large amount of processing is required to <u>render</u> the 3D scenes. Even at 640x480, this is 4 times the work of the 320x200 mode that many DOS games use (1280x1024 is over 20 times the work), and using high-colour can double this again. Also the 3D is "real", performing calculations usually only done in pre-rendered sequences, like <u>real-time</u> lighting, coloured lights and <u>specular highlights</u>. The minimum CPU requirement is a 486/66, but a 486 can be strained to manage high resolutions and numbers of colours, or very complex scenes.

Alternatively, if you are using a Pentium, but running in a true-colour mode, Organic Art will run considerably more slowly than 256-colour or 16-bit colour modes. The 3D rendering engine in Organic Art is optimised for 8-bit (256 colour) and 16-bit (65536 colour) screen modes. Using true colour modes will give you the highest visual quality, and the smoothest shading, but will only be about half the speed.

Solutions:

- Reduce the Viewport size in the screen saver configuration to a lower setting (640x480 or 400x300).

- Switch from a true-colour mode to 256 or 65536 colours.

- Tick "Disable Still Scenes" in the <u>screen saver configuration</u> to avoid very complex scenes.

- Tick "Disable Backdrops" - scenes run a little slower if they need to redraw the backdrop.

- If you did not install Organic Art directly on your machine for some reason, you may not have the version optimised for your CPU. The install CD comes with two versions, one Pentium optimised and one 486 optimised - using the right one makes a big difference. Under normal circumstances the correct version will be installed automatically.

- Finally, think about getting a Pentium Overdrive plug-in replacement for your 486, which can double the speed of your machine.

Palette Colours in Tool Window

Symptom:

The <u>Inform</u> previews in the <u>Tool Window</u> are strange colours occassionally.

Explanation:

This should only occur when in a 256-colour screen mode, particularly when you have selected "Stop Tool Window Animating".   More likely to happen on Windows 3.1.
When the previews are not animating, they are not being updated, and so do not always get redrawn in their correct colours.   This stops them slowing down or competing with the main scene in any way.

Solution:

Shift-click in the window to refresh it.   If this doesn't work, resizing the Designer window slightly will refresh the entire contents.   Or start the previews animating again from the <u>Contol Menu</u>.

QuickRes

Symptom:

Organic Art gets confused if you have been using QuickRes under Windows 95 to change number of colours on screen.   May generate "RL Error" messages.

Explanation:

Organic Art should cope with QuickRes changing screen modes under most circumstances, but may become confused under some conditions.

Solution:

Close Organic Art, and re-start it.

"An exception has occurred writing to the display"

Symptom:

You get an error box saying, "An exception has occurred writing to the display - this may be a problem with your video driver".

Explanation:

There may be a problem with your video driver or display setup which is causing Organic Art to fail.

Solution:

Switch to a "standard" video driver, like one of the Microsoft supplied ones, and see if Organic Art works then.   Try changing your screen to a different number of colours and see if that helps.   If any of these cure the problem, it is a driver problem.

You will need to use a different number of colours, different driver, or contact your vendor for an updated driver.

"Can't display" in Preview Windows

Symptom:

Where the inform previews should be in the tool window, you get the message "Can't display".

Explanation:

A problem with the 3D renderer means the previews cannot be displayed in other than 8, 16, or 32-bit screen modes.   In modes such as 15-bit or 24-bit, these are switched off.

Solution:

Switch to a different number of colours to see the previews.   Organic Art runs very slowly in 24-bit mode in any case.
The screen saver is unaffected by this problem, and will run in any display mode.

Saver doesn't start on Win3.1 if Designer is running

Symptom:

On Windows 3.1, if you have the designer running, the Organic Art screen saver will not run.

Explanation:

On Windows 3.1, only one copy of the 3D renderer can be active at any one time.

Solution:

Quit the Designer if you want the screen saver to run.   Problem does not occur in Windows 95 or NT.

Frames/s Meter sometimes inaccurate on Windows 3.1

Symptom:

On Windows 3.1, if the a scene is running very fast, the Frames/s meter can display inaccurately high values (several hundred frames-per-second).

Explanation:

This is due to minor timing problems on Windows 3.1 and Win32s.   Mostly, the Frames/s is accurate - it only has a problem when the frame rate gets very high.

Forgotten Password

If you forget your password and cannot exit the screen saver, you will have to reset your machine.   You can then erase your password by deleting the entry "Password=" in the Organics.ini (in your Windows system directory).

Technical Support

If you have any problems which cannot be solved by reading the Troubleshooting section, technical support is available from Time Warner Interactive on 0171 391 4323/4345 (International +44 171 391 4323/4345).
See also the Computer Artworks Web site on "http://www.artworks.co.uk", which has more background information, extra scenes for download, and any software updates which might be necessary.

Advanced Configuration

A number of (possibly obscure!) configuration options can be controlled by means of editing registry keys (NT and Win 95), or adding keys to the Organics.ini (Win 3.x).

Editing these settings should never be necessary, and they are provided as information for the advanced user.   Only settings which are either not accessible or not fully flexible via the user-interface are listed.

Changing these keys is <u>unsupported</u>, and undertaken at you're own risk - certain values could cause Organic Art to cease functioning correctly.   On Windows 3.1, you should make a backup copy of the Organics.ini, and revert it in case of a problem.   On Windows 95 and NT, you should delete any keys causing a problem (or even them all), so the installer defaults in HKEY_LOCAL_MACHINE, or the hard-coded defaults, will be used instead.

Key values come in four types - string, floating-point, integer, and boolean.   In the registry, all can be read from REG_SZ type values; integer and boolean values can also be REG_DWORD's.   Booleans are represented by 0 for No/Off/False, and 1 for Yes/On/True.

The documentation entries for each key are headed:
"Key Name", <Applies To>, <Type>, <Default>.
<Applies To> can be (D)esigner, (S)aver, or (B)oth.

<u>Interface and Renderer</u>

<u>General</u>

<u>Debug</u>

<u>Fixups</u>

Interface and Renderer

"AutoStop"   D   Bool   1

The AutoStop feature is where the user-interface automatically goes into an idle mode when it is not the foreground app, allowing the foreground app (including the screen saver) to run at full speed.   Equivalent to stopping the scene and tool window animation from the Control menu.
Set to 0 to disable this feature.

"ProgressBarColour"   D   Int (RGB)   0x00800060

When the status bar's progress meter is in "Plain" or "Boxed" style, this key sets its colour.   Encoded in hex as 0x00bbggrr.
Default is a purple of Red=96, Green=0, Blue=128, which is 0x00800060.

"RenderYieldEvery"   B   Int (milliseconds)   100

During rendering of complex scenes, this controls how often a callback is performed to the interface to see if an event is waiting (e.g. a menu or button click).
The default of 100 (0.1s) keeps the interface responsive, without slowing down the render too much with excessive overhead.

"ToolWindowWidth"   D   Int (pixels)   190

The width of the tool window.   The default gives enough room for the controls, and is designed to look reasonable on 800x600 through 1280x1024 resolutions. Setting this lower will truncate the controls, however setting it higher will give better aspect ratio for the preview windows at higher screen resolutions.

"UpdateFPSMeterEvery"   D   Int (milliseconds)   2000

How often the Frames/s (or Secs/Frame) meter is updated.

"UpdateInterfaceEvery"   D   Int (milliseconds)   1000

How often other miscellaneous interface updates are done.   Currently includes setting the title bar with the current scene name and modification status.

"UpdateProgressMeterEvery"   D   Int (milliseconds)   50

How frequently the status bar's progress meter is updated.   Higher values will take less CPU, but update less smoothly.

"UpdateToolWinEvery"   D   Int (milliseconds)   300

How often the tool window is updated, principally redrawing the inform previews (if animated).   Lower values will give smoother animation, but can slow down the main scene significantly.

"UserKey"   D   Str   Username or "User"

The prefix for saved scenes.   Set this to another value to create scenes under a different submenu, or to a blank string to save into any submenu, e.g. to modify in-place the built-in scenes.

General

"PerspectiveCorrect"   B   Bool   F

Setting this key to 1 enables "perspective correction" on the renderer's texture mapping.
Using perspective correct texture mapping is slightly slower than the default texturing, but gives better visual quality, reducing artefacts due the triangle-subdivision of polygonal faces.
The visual difference is only noticable on large polys, and if texture mutation ("Flow") is off.   [To see the difference, try a single large cube, flat shaded, flow of zero and GrillDub texture].
It is not recommended to use this setting on the fixed-point (486) build, as the performance hit is greater, and the visual improvement negligible.
Note this setting is not as well tested as the default, and may increase the likelyhood of seeing the "renderer exception" error box.

"GlobalTickEvery"   S   Int (milliseconds)   1000
"LowPageFileAbortMB" S   Int (megabytes)   1

The screen saver performs certain periodic checks for low resources, and will quit automatically if minimum thresholds are reached - this key controls how often those checks are made (as they may take significant time).
Currently checks for running out of pagefile space - if there is less than "LowPageFileAbortMB" megabytes free in your pagefile/swapfile, the screen saver will shut down automatically.   Setting this to 0 will (implicitly) disable this feature.
The default is low to cope with 8MB systems - on larger systems you may consider higher values to still indicate a very low memory condition.

MultipleInstances   D   Bool   0

By default, if the Designer is already running, and you try to run another instance, the running instance will be foregrounded instead.   Set this key to 1 to run multiple copies instead.
Note: don't change this key on Windows 3.1 - multiple instances of the renderer crash on exit.

ProcessPriority   S   Int   [IDLE_PRIORITY_CLASS]

ThreadPriority   S   Int [THREAD_PRIORITY_NORMAL]

These control the scheduling priority of the screen saver.   By default, it is set low so the saver will not take CPU time from background tasks.
The actual hex values for these keys are defined in <winbase.h>.

Possible values for ProcessPriority are:

IDLE_PRIORITY_CLASS	0x00000040
NORMAL_PRIORITY_CLASS	0x00000020
HIGH_PRIORITY_CLASS	0x00000080
REALTIME_PRIORITY_CLASS	0x00000100

StereoDisparity   D   Float   0.02

This is the camera separation when rendering red/green 3D stereo images.   Lower values will be easier to see, but give less illusion of depth, and vice versa.
Set this value negative to reverse the red and green images, which will give an inverted depth image (out of the screen instead of into it).

StillSpeed   S   Int   20

This is the threshold for whether scenes are considered stills for "Disable Still Scenes" in the saver config.   A scene speed   of more than StillSpeed is a still, less (or if trails are on) is not.

ViewportWidth   S   Int   640
ViewportHeight   S   Int   480

The size of the viewport, as per the saver configuration.   You can set these manually to get sizes other than the presets offered.
A value of zero is taken as "full size".   Try your full width and 0.75 height to get cinema aspect ratio.

Debug

Debug,	B	Bool	0
TraceLevel	B	Int	3
MaxLogFileSize,	B	Int	5124288 (512k)

Setting Debug to 1 enables Debug mode, which will output trace information to a log file (and the system debugger).

The log file is placed in the same directory as the executable, and is called <your username>.log, or "artworks.log" on Windows 3.1.   This will be in Organic Art's "Programs" directory for the Designer, and your Windows System directory for the screen saver.

If the current exe's directory is not writeable, the system's TEMP directory is used instead.

The value of TraceLevel determines the detail level output -
     Level 3 gives general log information of the run.
     Level 2 gives details of each main function performed.
     Level 1 traces every low-level operation.
Be careful with Level 1, as it can quickly produce a multi-megabyte log file.

Switching Debug mode on, and examining the log file can often give useful information in the event of a problem, as details of any warnings or errors are reported.

ShowMemStats	S	Bool	0

Setting this to 1 causes the screen saver to display the amount of virtual memory used/free for Organic Art, plus the used/free pagefile space for the system as a whole.   ShowMemStats is automatically enabled when Debug is on.

Fixups

DisablePreviews   D   Int   \<unset\>

The inform previews in the tool window can cause problems in some unusual graphics modes, and are disabled automatically in these cases.   This key can override the automatic setting as follows:
     Unset (or -1) means disable only in modes other than 8, 16, or 32-bit.
     0 means never disable.
     1 means always disable.

DisableToolWindow   D   Bool   0

Set DisableToolWindow to 1 to disable the entire tool window.

ForceBackdropRefresh   D   Int   \<unset\>

Some problem with the renderer means when you change backdrops when using coloured lights (RGB mode), it does not get redrawn properly, except on Windows NT.
By default, in these circumstances, the entire window is refreshed, which works, but is cumbersome.
This key controls this fix -
     Unset (or -1) means do it only on Win95 and Win3.1 in RGB mode.
     0 means never do it (e.g. if it's a Windows bug which gets fixed).
     1 means always do it when in RGB mode (if bug appears on NT).

ForceSysKeyFix   S   Int   \<unset\>

Due to oddities in Win95's password handling, there was a problem which caused the Windows system keys (ctrl-esc, alt-tab, etc.) to be disabled when the saver exited when a saver password was set.   A fix was found by forcing the system to realise the saver had stopped, via the SPI_SCREENSAVERRUNNING setting.
This key controls this fix -
     Unset (or -1) means use the fix on Win95 only.
     0 means never do this (Win95 is corrected, or fix causes problems).
     1 means always do it (problem starts occurring on NT).

SaverConfigTimerDelay   S   Int (milliseconds)   4000

If the "Configure Organic Art" icon is launched from the Program Manager on Windows 3.1 when "Minimise on Use" is set, the dialog box is hidden in the minimised ProgMan icon, and the system appears to have locked.
The only way round this is for the saver's configure routine to wait a few seconds and see if its parent window has become iconised, and exit (restoring it doesn't work).   This at least unlocks the system.
The default of 4 seconds should be long enough for even a slow machine to have minimised ProgMan and initialised the config box, but not long enough for the user to think the system has hung.

SuppressCPUSpeedCheck   B   Bool   0

The About box (and log file) report the CPU speed of the host machine in MHz. This involves some high-speed timers and assembly language.   If any problem was to occur with these routines, this key can be set to 1 to disable them.

SuppressSaver   S   Bool   0

Setting this key to 1 causes the saver not to start if the Designer is running.   This is the default on Windows 3.1, due to the problem with multiple instances of the renderer.

Credits

Produced on location at Computer Artworks Ltd., London, UK.

Computer Artworks

Art
 - William Latham.

Software Design & Programming, 3D Form Design & Programming (Generators), Graphic Design, Scene Composition, 2D Backdrops, Manual & Help Authoring
 - Mark Atkinson.

Backdrop 3D Graphics, 3D Modelling, Additional Programming
 - Chris Jones

Time Warner Interactive

Producer
 - Steve Sargent
Marketing
 - Liz Morris
Specialist Press PR
 - Deirdre Murphy

Talkloud PR

Events, Consumer Press PR
 - Jasmine Joseph, Sheryl Seitz, Addie Churchill

Music

Original Music Composed by
 - Mark Ayres

StyloRouge

Packaging Design, Logo Design and Typography

The History of "Organic Art"

Computer Artworks Ltd grew out of the development of Latham's Organic Art style, and became a fusion of computer art and science, creating innovative technology and unique imagery in a wide range of media. Computer Artworks is an independent company founded by William Latham and is now owned by directors William Latham and Mark Atkinson.

Recent work includes producing animations for the Sony Playstation, cover artwork for the Shamen album "Axis Mutatis" and singles "Destination Eschaton", "Transamazonia" and "Heal the Separation".   Computer Artworks also co-directed the videos for these singles,   producing all of the 3D computer   animation.   Early in 1996 produced cover artwork for Robert Miles' single "Children" on Deconstruction.

William Latham was born in 1961 and was a student at Oxford University and at the Royal College of Art, before becoming a research fellow at the IBM UK Scientific Centre.   Between 1987-1994 at IBM, Latham established his characteristic artistic style, and began working with IBM mathematician Stephen Todd.   IBM's sponsorship of this ground-breaking work lead to Todd developing the "FormGrow" geometry system, which was designed to create the weird organic forms the artist envisaged.   The fruits of this graphic and animation work is known throughout the world, and has been featured in numerous newspapers and magazines (including Wired, Mondo 2000, New Scientist, Scientific American, The Independent, Ashahi Shimbum, Financial Times), and TV programs (Beyond 2000, Tomorrow's World, Horizon), in addition to citations in many computer graphics textbooks. Latham's organic imagery has been exhibited in the UK, Japan, Germany, Australia, Spain, France and Hong Kong to much critical acclaim.

Mark Atkinson has been designing and writing software for 17 years, starting out in 6502 machine code at the age of 11. He co-wrote a number of home computer games during the early 80's, going on to study Computer Science at   Glasgow University at 16.   After graduating with honours, he took his interest in the specialist fields of artificial intelligence and genetic algorithms into industry, creating leading-edge software systems for a number of large international companies.   His continuing research in these areas, plus 3D graphics, fuzzy logic, neural networks and Artificial Life, is now with the aim of producing the ultimate in games AI, within sophisticated ALife virtual environments.

Chris Jones studied Civil Engineering at Dundee University where he was introduced to the use of computer graphics in scientific applications. Pursuing this interest, he went on to gain an MSc with distinction in 3D Computer Aided Graphical Technology Applications at Teesside University.
In 1994, he worked in collaboration with Stephen Todd at the IBM UK Laboratories. He undertook the first rewrite of   "FormGrow" in C++ and OpenGL. Chris is also an accomplished 3D designer and animator in Alias, SoftImage, Prisms and 3D Studio.   He was responsible for many of the outstanding rendered images in Organic Art.

More information on the history and techniques behind this work can be found in the book "Evolutionary Art and Computers", by Stephen Todd and William Latham, Academic Press 1992, ISBN 0-12-437185-X.

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- William's special thanks to Belinda, Daisy, Emmanuel and Dilys.

See also <u>Additional Mentions</u>.

Additional Mentions

Harley Davis (davis@ilog.fr) for Imogenes; David Marlowe for GB3.gif; Serge Moes (serge@cix.compulink.co.uk) for fractals iceblue.gif and tangles.gif; Justin Fischer (misc335@cantva.canterbury.ac.nz) for jf-13.gif, and Alienbg.gif (grabbed from the Alien-TC .wad); Kevin Burfitt (zaph@torps.apana.org.au) for Cthugha;   Dave Collier for gamobj5.xof;   Hari Kunzru (hari@wired.co.uk) for "Cosmic Ringos"; Ben Wharton for "Blue Connected Triangles".

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Unsupported

Some extra facilities, content or options for the advanced user are not guaranteed in any way, and are not covered by technical support.

Generators

The modules in Organic Art which produce the characteristic forms and motion of the scenes. See also the thumbnails of example scenes using each of the Generators in the Graphics Help file.

Informs

The shapes that are used to build the scene.

Rendering

Essentially, "drawing" - the process of taking a the geometry of a 3D scene and drawing the 2D screen image it describes.

Resolution

The resolution of an image is the number of dots or "pixels" it contains.   A high resolution image looks very sharp, a low resolution image looks "blocky", as you can see the individual square pixels.

Colour Depth

The maximum number of colours in an image, or which your screen can display at once at its current settings.   An 8-bit (256-colour) mode will give good animation speed, but occassional shortcomings in image quality.   256-colour screen modes switch between different sets of colours (the "palette") as the image to be displayed changes.   This can be seen as colours flashing, and things being displayed in "false colour" sometimes.

A 16-bit or "high-colour" mode has up to 65536 colours, and is the recommended setting for Organic Art.   Image quality is high, and speed is nearly as fast as 8-bit.

A 24-bit or 32-bit mode ("true colour") can display over 1.6 million colours, and gives the best image quality.   However, it is considerably slower to animate than 8-bit or 16-bit modes.

[In Windows 95, you can change the colour depth from Settings tab of Display Properties in Control Panel].

Anti-aliasing

When rendering an image, blending colours together and smoothing out jagged edges to give better quality.   Can make lower resolution images look much better.
Achieved by calculating the image at a higher resolution than necessary, then blending together groups of pixels in the high-res image to make averaged pixel colours in the lower-res image.
For example, a pixel on a black/white boundary would become grey, smoothing the edge.

Gamma Correction

Process of compensating for different brightness responses from different devices (e.g. different monitors).

Screen Buffers and Double Buffering

The technique of using an area of your computer's RAM to draw an image into, before transferring it to the screen.   "Double buffering" is using two such image stores, so one can be displayed while the other is drawing, then they can be quickly exchanged, giving smooth animation.

Z-buffer

A z-buffer goes along with an image of a 3D scene, and records the "depth" of each pixel in the scene.   This way, when a new object needs to be rendered into the scene, it can be correctly drawn in front of, behind, or intersecting with what is already there.

Mesh

A representation of an 3D shape, describing the coordinates of each of its vertices, and the way the vertices are joined up to form faces.   Can be visualised as a "wire frame".
For the meshes available in Organic Art, see the <u>Graphics Help</u> file.

Texture Map

A 2D bitmap image which is painted on the surface of a 3D object.
For the texture maps available in Organic Art, see the <u>Graphics Help</u> file.

Specular Highlights

The white spots of reflected light you see on shiny objects, particularly when their being lit by "point sources", like lightbulbs (rather than diffuse lighting).
In 3D graphics, specular highlights make objects look more realistic.

Red/Green 3D Stereo

A process of making a composite image, which contains a left-eye image in red, and a right-eye image in blue/green.   The brain, seeing a different image in each eye, interprets this as depth information.   This is due to "stereoscopic disparity" - something very near your eye has a very different image in each eye, something far away is almost the same in each eye (try closing each eye in turn to see this).

Real-time 3D

Graphics generated entirely "on-the-spot", for when you never know what the scene is going to do next (Organic Art, or fast 3D game environments).
Needs to run very fast, so an entire new image can be generated perhaps 30 times every second. As opposed to "pre-rendered" graphics, which are generated over a matter of hours or days, then recorded; this means they are always the same, (and need to be played back from CD).

Win32s

Microsoft's 32-bit extensions to Windows 3.1, allowing some 32-bit applications to run (if the developers have ensured it works ok - Win32s has some limitations).

Windows Swapfile/Virtual Memory

The amount of memory space available for your applications when they are opened.   Since this space can be larger than your installed RAM, some of the space is on the hard disk, in the swapfile.   Increasing your virtual memory allows more applications to run at once, or larger applications to run at all.   However, transferring data to and from the swapfile takes time, so adding more RAM to your machine means less is swapped onto the disk, making things run faster.

Recommended System

A Pentium 75MHz, with 16MB RAM running Windows 95 or Windows NT.   Even better is a P100 or faster and 32MB.

Minimum System

A 486/66 with 8MB of RAM running Windows 3.1.

Stills Scenes

Complex scenes involving perhaps thousands of informs, which generate a new variation every few seconds, as opposed to continuously animating.

Mutate Button

This randomises each setting automatically.   You can control which settings are mutated by using the Mutate Options dialog box.   This is in the Options menu, or you can quickly access it by right-clicking on the button itself (Windows 95 and NT only).

The Mutate Button can be a source of great variation, taking you to starting points you might never have discovered otherwise.

Trails

When the trails effect is on, objects moving in the scene leave copies of themselves behind, building up a sculpture over time.
The Trails effect is fully 3D ("Z-buffered"), so trails move in front of and behind themselves correctly.
See the scenes under "Trails" in the Scenes Menu for examples.
[Note Trails images cannot be saved with "Save Image As..."].

Branches

Some <u>Generators</u> are "branched".   Branching is a geometric operation used by Organic Art, which replicates each branch, i.e. strand of <u>Ribs</u>, and spins them round into a spherical pattern.
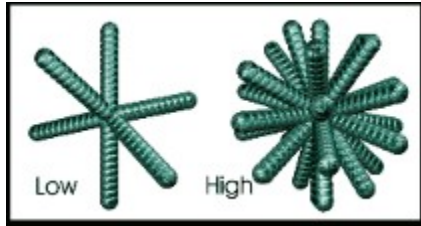
Ribs

The number of <u>Informs</u> in each section of a form.

Graphics Help File

An extra help file, containing thumbnail images of all the Generators, Meshes, Textures and Backdrops in Organic Art.   Can be accessed from its icon / Start Menu entry, or from the Help Menu.