

# Computer Artworks' Organic Art

## ***What is it?***

Created by technical guru Mark Atkinson and international computer artist William Latham, the full Organic Art package contains over 175 different virtual sculptures, each a living starting point for millions of genetic variations. Each time it runs, hypnotic 3D imagery is generated "live" in front of your eyes. Organic Art is both a tool to create your own 3D animated artworks, and the world's best screen saver.

## ***For more Organic Art...***

Check out <http://www.artworks.co.uk> for updates and more info. You can also purchase the full version on-line via our secure server, and have it delivered anywhere in the world.

*The full version includes:*

175 screen saver scenes.

70 pieces of backdrop artwork.

54 3D meshes.

100 texture maps.

Ambient CD music.

Saving is enabled allowing you to create your own saver scenes.

## ***Troubleshooting***

*"Failed to create configuration property sheet"*

You may see this message on Windows 95 when you try and start the Organic Art configuration. To correct this you need to update your system either by running "40Comupd.exe" or by installing Internet Explorer 4.

If your copy of Organic Art came on a CD-ROM, 40Comupd.exe may have been included on the CD.

## ***Requirements***

DirectX 3a or higher (not included) on Windows 95, or NT4 Service Pack 3 (you can download DirectX and NT Service packs from <http://www.microsoft.com>).

We recommend at least a P133 and 16MB RAM. A good quality 3D accelerator is highly recommended.

### *Direct3D won't run*

95% of the time this can be fixed by getting the latest driver for your card - older drivers don't support DX well. Otherwise try a different mode in the saver config, or disable mode switching.

### **Known Hardware Issues**

On 3Dfx-based hardware the backdrop graphics look a little blurred, as they are compressed to the 3Dfx 256x256 texture size then rescaled back to 640x480.

On PowerVR-based hardware the trails mode does not operate as intended, as there is no conventional z-buffer. The trails always paint on top of what's already there rather than forming a solid object.

### **Technical Backgrounder**

Organic Art is formed from a combination of disciplines, ranging from art through to assembly language. Each scene has at its heart a "Generator", which is a piece of C++ code built on top of the Organic Geometry system. A Generator is not a conventional image or animation, but an algorithm yielding a near-infinite space of possibilities. Each characteristic of the form has a gene-code associated with it, and by letting the entire set of genes auto-evolve, a unique animation is generated with every run. The underlying "FormGrow" algorithms seek to capture elements from nature and mathematics so that a seemingly random evolutionary path generates forms which are somehow aesthetic and pleasing to the human eye.

After this, the Designer application allows choices to be made about the backgrounds, the lighting, the basic shapes used, textures, speed of motion, special effects and so on, to create a complete scene design. The Generators can produce a remarkably wide range of scenes, so designs strongly reflect the taste of their creators; however, you are never working with a "blank page", but with a set of software technologies which bring a rich space to explore.

Early versions could take up to 20 minutes to generate a single frame of animation, and use around 300MB of RAM in the process. Over the past 2 years, the system has been rewritten from the ground up and ported to the Microsoft RenderMorphics real-time renderers, first Reality Lab 2.0, and now Direct3D. This has allowed us to take the system from mainframes and high-end graphics workstations to everyday PC's, and as

the 3D capabilities of the PC continue to grow, more and more complex scenes will be possible in real-time.

The real-time 3D graphics don't use any "shortcuts" (apart from the pre-rendered backdrops) - all the animation is fully 6 degrees-of-freedom, light-sourced, Gouraud shaded and perspective-correct texture mapped (sometimes also with environment mapping or transparency). The typical resolution of 800x600x16 is 15 times greater than the 320x200x8 used in many 3D games, and each frame of animation is generated from the Organic Geometry system completely in real-time - nothing is pre-recorded, and no two sequences are ever the same.