



In a world of your own

Benjamin Woolley marvels at the 'instant-world' landscaping engines currently in development.

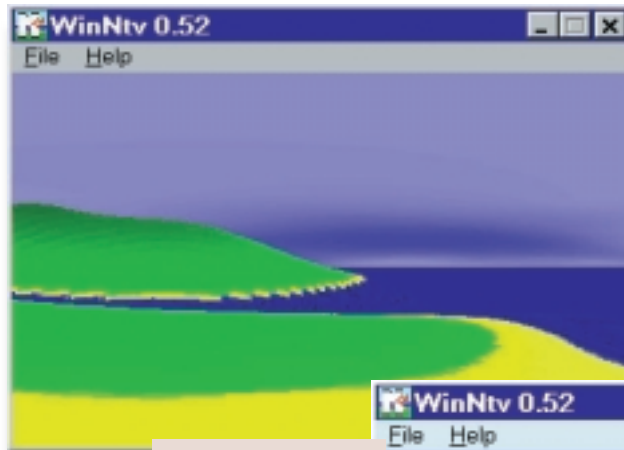
It is unusual for a software developer to complain about the amount of publicity they are getting, but that was the impression given by Tom Barbalet, an Australian programmer.

He has developed a 'large-scale, natural landscaping engine' called Psi, and it has caused quite a stir. The US writer Douglas Rushkoff mentioned it in a column, and Barbalet's server

(www.nervana.com) was swamped. 'I was not ready for this kind of publicity!' he protested.

The cause of the kerfuffle was a series of algorithms Barbalet developed in his spare time, and with the support of (unlikely though it may seem) the Australian Film Commission. This 'engine' could generate rendered land and skies in real time. He promoted the results of his efforts by distributing a CD with a game that used the engine to create a virtual reality island.

Recently, Barbalet also posted a little demo version of the engine on his



A LANDSCAPE GENERATED IN REAL TIME BY THE PSI LANDSCAPE ENGINE. YOU NAVIGATE AROUND THE ISLAND USING THE MOUSE

website, which produces a crude fly-by of a simple island landscape (see screenshots above). The resolution is low and looks crude, but the entire package – engine and landscape data – is an 80KB file, and it shifts like lightning, with the clouds skimming across the sky at the speed of time-lapse photography.

Work is still at a preliminary stage, but it will be well worth keeping an eye on future

postings to Barbalet's site, just as long as he can cope with the pressure.

Meanwhile, you can try out an altogether different kind of landscaping package called Genesis II from Geomantics (www.geomantics.com). My namesake Kevin Woolley, who works at Geomantics, invited me to have a look at it, and I'm glad



EXAMPLES OF WHAT CAN BE CREATED USING GENESIS II. THE VEGETATION IS PARTICULARLY REALISTIC



he did. The interface (screenshot on the opposite page) is not very elegant – indeed, ugly compared to its nearest rival, Bryce from Metacreation. It took me a day or two to get a grasp of it, but once I had, I found the package to be very powerful and good fun. Some of the examples of its output (below) show exactly how powerful.

Bryce and Genesis II both use a fractal generator to build their landscapes. But in other respects they are very different.

With Genesis, you clothe your landscape with what is called a 'terrain'. Among the types of terrain supported are vegetation and urban.

If you create a vegetation terrain, then you can select a series of plant types (examples included in the package are oaks and bushes), which will then be laid over a specified area of the landscape.

If you create an urban terrain, then you can specify a 'height' map (an image that determines the height and shape of the buildings),

Questions & answers

Q I produce animations in a 3D package and render them out to the AVI file format. I have spent the past 18 months learning the program. Now, however, I want to go one stage further and transfer my AVIs to video tape, but there seems to be a general lack of any written information.

My first problem, though, is after my AVIs are finished and rendered – when I play them back full-screen on my 17in monitor the picture is slightly jumpy. Does this mean that my computer setup is not powerful enough to play back full-screen video without the judder, and would a simple upgrade cure this problem? My computer setup is 266MHz Pentium II, 96MB SDRAM, a Diamond Fire GL 1000 PRO graphics card, and 10GB ATA 33 hard drive.

RICHARD HOARE

a Your question is representative of several emails I received following my columns in July, August and September 1999 concerning video.

Your diagnosis of the

problem is probably correct, but there are a few things you can try before shelling out for a replacement system. First, if your animations are intended for video, make sure you render them to PAL resolution, ie 720 x 576. Larger resolutions produce larger files and slower playback. Also, make sure that the AVI (or QuickTime) file is stored on a defragmented hard disk.

If this doesn't do the trick, experiment with different CODECs (compression/decompression methods), and adjust the parameters. Generally speaking, if the bottleneck on your system is the hard disk or system bus, use higher compression (smaller file, but demanding more processing power to be decompressed); if it is processor speed, use lower compression (bigger file, less stress on the processor).

One additional and very important tip is to check you are using the latest driver for your graphics card. Visit the card vendor's website (in your case www.diamondmm.com; the latest version is 4.10.01.2359 and was posted 11/4/98).

Another option, mentioned previously in this column, is to use digital video (DV), which is a different format to (analog) VHS. Through an IEEE1394 (Apple calls it 'FireWire', Sony i.LINK) interface, the barrier

between computer and tape becomes much more transparent. The latest versions of video-editing software, such as MGI Videowave II and Adobe Premiere 5 include built-in support for DV recorders. For example, on Videowave II, you can actually control the recording and playback of some DV camcorders through the software (note, however, that some camcorders do not support video-in, ie can't record from a FireWire interface, at least not without modification).

However, if you standardise on DV, you will obviously need to copy your finished DV tape to a VHS machine using tape-to-tape transfer, if you want other people to view your work. You will inevitably lose quality when you make this transfer.

If you do decide to go the whole hog and get a new system, make sure it has a large SCSI hard disk that you can devote to storing captured video.

There is a helpful site on digital video at desktopvideo.about.com/compute/multimedia/desktopvideo. A good UK site, run by a reseller of DV cards, is www.datavision.co.uk.

Q I'm very strong on the technical side of 3D graphics, but I've never had a go at the artistic and

cinematic side. I've read all your old columns, so I'd appreciate any pointers as to where I should go to learn more about this area. I suppose the best way I might describe it, is what emotive techniques should you bring to 3D animation?

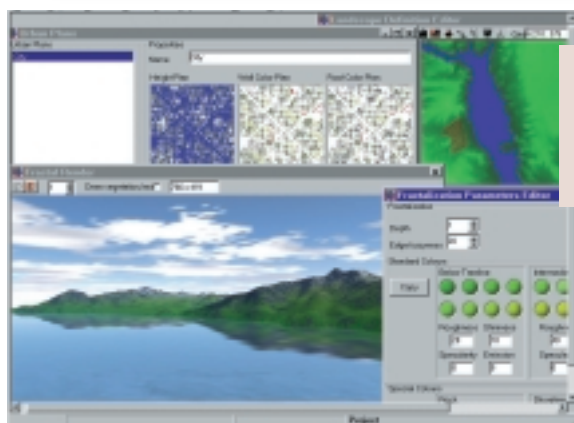
BRUNO BOWDEN

a By learning about the 'cinematic' side, I assume you mean learning about structuring a narrative, building tension and so on.

Unfortunately, I know of very little that covers this area (and I would welcome suggestions from readers). There are several books aimed at wannabe directors and scriptwriters of conventional, live-action films, but I doubt these would be of much use.

The only book I have read relating to computer animation and not tied to one package is 3D Graphics & Animation: From Starting Up to Standing Out by Mark Giambruno (New Riders, £41.99, ISBN: 1562056980). This has ideas in a section devoted to putting together a show reel.

You could subscribe to a specialist magazine – in addition to PCW, of course – such as 3D Artist (published in America, although there is limited availability here, or order copies at www.3dartist.com).



NOT PRETTY BUT EFFECTIVE – THE INTERFACE FOR GENESIS II, SHOWING THE VARIOUS MODULES, SUCH AS THE 'URBAN EDITOR', USED TO ADD TERRAINS

and a roof and wall map to texture them. The resulting city will then be 'built' over the landscape's contours.

However, the best thing of all about Genesis II is

that there is a functional version available as freeware from the company website (the main restriction being that you can only add one terrain to each landscape). It is a fairly hefty 4MB file, but well worth every second of the download.

PCW CONTACTS

Benjamin Woolley welcomes your comments on the 3D Graphics column. Contact him via the PCW editorial office or email 3d@pcw.co.uk