



*David Penfound Artworks:
making the digital content of
your project come to life.*

How investment in AMD processors and professional graphics helped David Penfound create giant 18,000-piece puzzle





AMD Firepro™ & David Penfound Artworks Case Study

One of the brightest stars

You MUST have seen David Penfound's fantasy art by now – and if you haven't, you should! David became a professional airbrush painter in 1994, creating artwork for greetings cards, posters and fine art, with subjects from wild life to native Americans. These days, his work is everywhere: on puzzles, calendars and dust jackets and more. Stars wear his t-shirt artwork in their films and at the Oscars. David's images are featured in high-end visual effects for film and TV, architectural and product design visuals and animation, too. His ability to paint a wide range of subjects, his visually stunning use of vibrant colour together with his unrestrained imagination sets his work apart. David had his first major overseas exhibition at the Franklin Museum, Philadelphia, U.S.A., when he was just 24. David is highly skilled in Autodesk® 3ds Max®, Autodesk®, Adobe® Photoshop®, Adobe® After Effects®, mental ray®, ZBrush®, and other leading digital products. Most recently, David has been responsible for much of the interactive 3D work at the Sheikh Zayed Desert Learning Centre at Al Ain Wildlife Park and Resort, currently under construction and due to open towards the end of 2011.

Speeding up the process

Why adopt technology? According to David, "It's tough and time consuming to make changes when painting by hand. If you are asked to change the shade of the sky for example, you might as well start from the beginning again. Then I saw Autodesk 3D Studio Max – now called 3ds Max - and everything changed as I realised how much it could help speed up my work." He continues, "Initially, I scanned in my airbrush paintings and worked them up into 3D in 3D Studio. That way I learned how to do it, yet still got the results I was known for and that pleased my clients." David adds, "Within a few years I didn't bother with the hand painting stage at all. Before I knew it, I was working directly on the computer in full 3D."

Millions and millions of polygons

David says, "Much of my work involves stills that are printed to a very large size. Puzzle clients for example want detail on more or less every single piece. This means that the scenes can be huge with millions and millions of polygons. I am currently working on one that will be printed 2.5 metres by 1.5 metres at 300 dpi. The detail has to hold up at that sort of size. I don't think that any one texture is under 8K and one elephant is actually 32,000 pixels high."

He adds, "I really need to see how the whole thing looks there and then without waiting until it is all rendered. I also need to have scenes with all the textures showing as I need to see what that yellow fish would look like against its purple coral background. As the composition builds I might also want to try different camera positions. I need to be able to go where I want to go and place things where I want to place them without any delay and without any time lags."



For David, rendering performance is a key issue, too. He says, "It's not necessarily the big animation renders that slow you down – you can always wait till the end of the day and run them overnight. It's the test renderings that use up the time. I have to do lots of these: make the change, test render, change again, test render.... all that just ties up most normal machines."

The solution? AMD

How did David resolve all these issues? He says, "I currently have three Amari workstations that use 64 bit AMD processors. I have two AMD Opteron™ 2356 quad core processors in my main workstation. That means I have 8 processors and that means my test renders are done very quickly." David continues, "I've used 1GB ATI FireGL™ 7350 professional graphics for a number of years, though I have just upgraded to an ATI FirePro™ V8800 graphics card. Working as I do on such large images – puzzles, billboards, that sort of thing, with lots of Photoshop work, I need to see as much of the image as possible on the screen so I use a 30" landscape monitor. This is flanked by 2 x 24" portrait monitors where all the menus and palettes are permanently open. That means that I don't ever have to spend time opening, minimising and closing them."

David's initial reactions? "With the ATI FirePro V8800 graphics card," he says, "everything is so fast and smooth. I'm working on another massive puzzle at the moment, another under water scene. It has a huge amount of detail – lots of coral, numerous fish for example. Even with all that data, I can just pan around the viewport at will. The new DisplayPort to HDMI fittings are a good idea, too and I no longer need the bulky VGA cables. However, I'll continue using the three displays but now that there is room for more, who knows?" David has also had the opportunity to run the ATI FirePro™ V8800 graphics card with V-Ray™ for 3ds Max™ version 2.0. which embodies V-Ray™ RT GPU. David comments, "My first impressions are wholly positive. It works, it works well and it works more quickly, too."

Trusting your business to AMD

However, raw performance on its own is not enough for David, who comments, "When you are trusting the success of your business to hardware and software technology, you need to be certain it is going to work. That is why I chose the suppliers I did – AMD and bluegfx, the award-winning Autodesk Gold Partner for Northern Europe, Media & Entertainment." Looking forward, David points out, "I do work for feature films but I am not producing huge massive hour-long renders at the moment. Once I get my render farm up and running, that will change, although currently, there is a lot of interest in GPU-based rendering. From my research, it isn't ready to take over from farm rendering quite yet. The software is coming out for it but you have to make sure you have the right graphics card, another reason I stick with AMD."

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Giant 18,000-piece puzzle

David says, "My work goes all round the world. One minute I may be doing creature designs or T-shirts –artwork licensing - and the next minute I may be doing a TV commercial for Tesco or something. 10 years ago I created the image for the biggest jigsaw in the world and I've now gone one better the new 18,000 piece puzzle was released at this years Nuremburg toy fair." He concludes, "My investment in AMD technology has made all this possible and has been well worth while. I get a lot of my business through recommendations from London agencies and production companies and if I didn't do a good job, on time and within budget that just would not happen."





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