PART 1

Modelling

Start with concept artwork for reference and build up a base model using Maya and ZBrush

Before I dive into modelling something, especially if it's from another artist's concept, I like to make sure that my interpretation of the design is correct. In this case, I talked through the work with Greg, and he made many aspects of his thinking clear. We also shared notes and work-in-progress images throughout the whole project.

It is important to make sure this happens, if at all possible. Often designers despair when they see what happens to their work further down the pipeline. A carefully considered idea or detail can be easily overlooked, or things can be assumed to be something they're not. Remember: 'assumption is the mother of all fuck-ups'. This is a collaborative project, after all...

Until recently, I've always modelled my meshes entirely in *Maya*, and done my bump and displacement maps the 'old' way – with some UV and *Photoshop* guesswork! This is not such a problem when you're doing stylised work, but for achieving organic and realistic results, there is no real substitute for good sculpting software.

Specialised sculpting software has revolutionised the 3D process by breaking down the barrier between a good artist and beautiful digital artwork. With rapid prototyping systems getting better and cheaper, digital sculpting will become increasingly integrated into concept production.

Initially, I was going to use *Mudbox* for this part of the project, but some of the features in *ZBrush* – especially for other aspects of the project – sold me on using it instead. The real-time shading is also a bonus: it just 'feels' right. Because of this decision, this was to be my first *ZBrush* sculpt.

It's important in an animation pipeline that this stage of sculpting is kept 'neutral'. Expression and posture comes later, when the rig is implemented. Receiving a posed, snarling dino to rig isn't much use. After sculpting, I'll export the model at its lowest subdivision back into *Maya*. This mesh will become the base skin that I use during the rigging process. Using this mesh rather than the original *Maya* OBJ will result in much better displacement, and is more accurate to the final shape – there were several silhouette modifications during the process.

Time-lapse recordings of my whole blocking and sculpting process are on the DVD. In retrospect, building my mesh with ZSpheres in *ZBrush* might have been quicker, but I'm more familiar with *Maya*. Sometimes it can be more about working with what feels comfortable, rather than the latest tools.

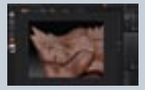
FACTFILE

FOR
Maya, ZBrush

DIFFICULTY
Intermediate

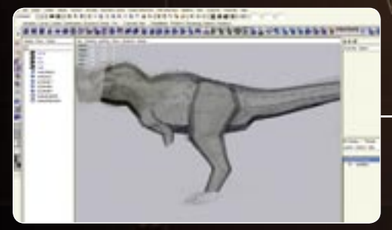
TIME TAKEN
15-20 hours

ON THE DVD
- Scene files
- Reference artwork by Greg Broadmore
- Screen-capture video of the entire process



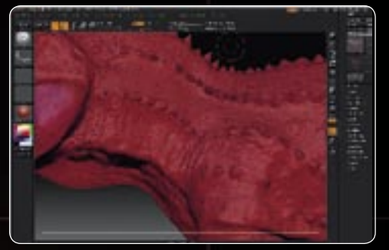
ALSO REQUIRED
Photoshop

01 Concept art and sketches
Having good reference before you begin is essential. Greg Broadmore supplied me with WIP drawings, two final artworks and several supporting diagrams. Greg's encyclopaedic dinosaur knowledge and detailed art rendered made additional research unnecessary. Having orthographics is helpful for getting your modelling under way quickly.



02 Blocking
Just as with sketching, mashing in the large shapes first is always a good idea. Getting the proportions correct early makes the workflow much smoother, since tweaking things at a high detail level can be a headache. At this point I'm keeping topology at the back of my mind while focusing more on overall form – the topology can be tweaked as you go. Don't worry about keeping the mesh all in one piece to begin with: I find it simpler to build with separate blocks that can be joined together later.

03 Topology
The closer the model gets to being ready for *ZBrush*, the pickier I get about the topology. I want to get things right first time: while *ZBrush* has a brilliant toolset for rebuilding your mesh, I don't have the time to be adding in another labour-intensive step. Topology is a bit like Sudoku: every line you place needs to connect smoothly into the puzzle. I take the time at this point to build a quick test rig, to check that the mesh moves and bends well.



04 Sculpting form
Now for the fun part, where hours can just disappear. My focus in *ZBrush* is in defining the muscles and refining the form. I keep the model moving as much as possible to 'feel' it out from all angles. As I'm impatient and am dying to do the face, it isn't long before I start there, working from large details to small ones, and marquee-isolating each part of the body as I go. There's no need to use the entire brush library: I basically just use the Standard, Pinch and Inflate brushes.

05 Sculpting detail
I work slightly backwards to create the wrinkles. I start by hatching in all the 'noise' of small skin wrinkles and scales, then I go back over them, adding the larger folding wrinkles using the Standard and Inflate brushes. I find this helps get the contrast and balance of detail right, without needing to go back in and emphasise anything later. I lay in a soft line for the bigger wrinkles, then kept hitting [Ctrl]+[1] to repeat my stroke until the wrinkle is deep enough. My brush alphas are quite simple - I prefer to layer up a few basic strokes rather than rely on one large texture stamp.