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presents

Peter Oldorf

German 3D artist Peter Oldorf took two days to create 'Tomczak House' for lichtecht, the 3D content creation company where he works. He used 3ds Max 2012, V-Ray, Photoshop, and a host of third-party plugins. "Usually, projects for clients don't have beautiful architecture, and it's often hard to find a good look, but in this case I had a vision of the picture in my mind," says Peter. "I really enjoyed setting the lights as well as displacing the walls and the concrete on the floor."

Peter is always trying to find new ways to make his renders look more realistic. "I search for new solutions to work more efficiently. That's the most exciting part about working as a 3D artist – it's all about learning, and working in new ways every day.

"Next to client projects I'm experimenting with simulation, sculpting, tracking and environment software such as RealFlow, ZBrush, boujou and Ozone. We're also working with augmented reality techniques to combine 3D with real-time camera footage of cellphones and tablet PCs."
www.lichtecht.de

• *The making of 'Tomczak House': Portfolio – In Focus, page 18*

Portfolio: In focus

German 3D artist Peter Oldorf reveals how he modelled and rendered this modern villa

Artist **Peter Oldorf**
Title **Tomczak house**
Software **3ds Max, RailClone, MultiScatter, PixPlant, V-Ray, Photoshop, Magic Bullet PhotoLooks**

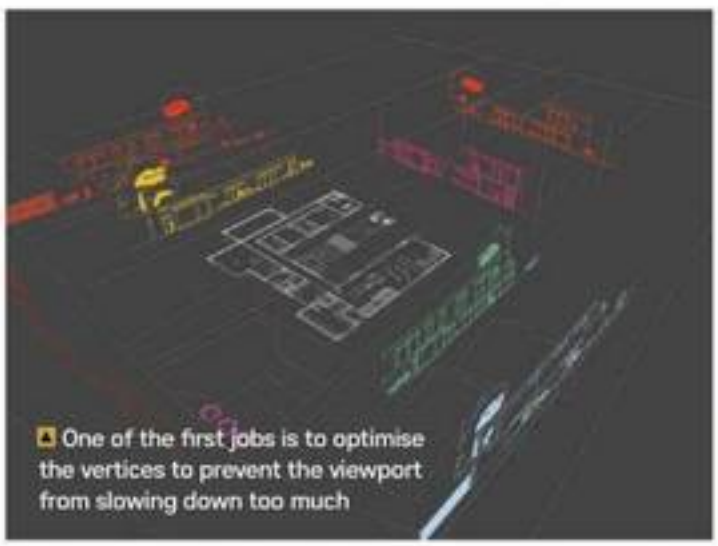
"I had my first experience with 3D design while studying graphic design in Rostock, Germany. It became obvious to me that I wanted to do it professionally. In November 2008 I started working for the lichtecht company in Hamburg, Germany. Here I learnt all about 3D modelling, animation, simulation, texturing and architecture.

"This image was a job for Tomczak-Bautraeger (www.tomczak-bautraeger.de). The villa will be built in Hamburg, Germany, where I was born. I really enjoyed this project because it's quite rare to build up such beautiful architecture for clients with so much opportunity to exercise my own creativity.

"Usually, we render with an irradiance map and light cache for outdoor shots because of the short render times and the pretty good quality. In this case I had the time to work with brute force, which is especially good for night shots and is the easiest way to get a perfect result without any problems. With brute force you don't have to think about ugly dots in the shadows or noisy refractions. Of course, this would be impossible if we didn't have a lot of 24-core Macs for distributed rendering."

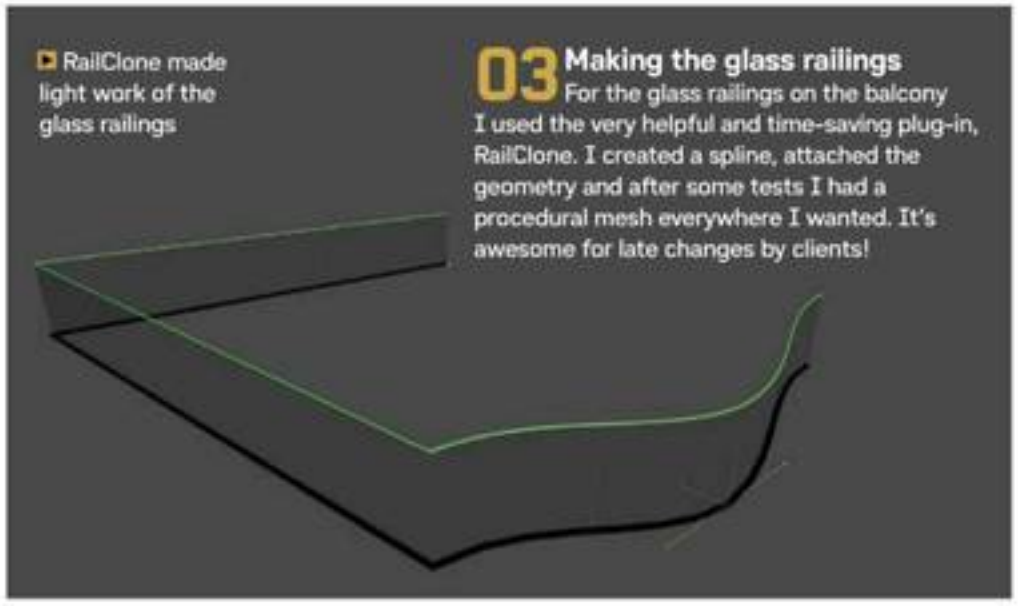
Stage 1
Modelling

01 Loading the plans
The architecture, materials, details and surroundings were already set by the client, so I just had to base my work on the plans they gave me. I decided to fix most parts directly in 3D to save time when doing the post work, and to make it easy to make changes for the client. I arranged the plans in 3ds Max 2012 and set the units to metric and meters. It's important to check the measure of the plans to get the right scaling (otherwise the house is about 150 meters long) and to weld the nearby vertices in each plan. Sometimes there are 60,000 useless vertices in the plan.



One of the first jobs is to optimise the vertices to prevent the viewport from slowing down too much

02 Adding detail
Next I built it up, bridged the windows and put them in. I also built additional detail such as the metal plates on the roof and the wooden planks on some of the walls.



RailClone made light work of the glass railings

03 Making the glass railings
For the glass railings on the balcony I used the very helpful and time-saving plug-in, RailClone. I created a spline, attached the geometry and after some tests I had a procedural mesh everywhere I wanted. It's awesome for late changes by clients!

04 Making the pond
The little pond is just a plane with a noise modifier and water material. Under this 'water plane' I put some plants and low-poly fish. The plants in the front are standing on hundreds of little stones, which I made with the MultiScatter plug-in.

05 Placing the foliage
The Evermotion and iCube plants in the scene are mainly proxies. There are trees in the background and some bushes around for reflection. The plants in the front are still meshes.

> "I had the time to work with brute force, which is especially good for night shots"

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Stage 2
Scene setup

06 Set up the lighting

The scene is quite simple. Just a dome light with an HDR texture from www.viz-people.com for global lighting, which makes a good diffuse look, and has awesome reflections.

The scene's lighting setup was kept simple

A dome light with an HDR texture was used for global lighting

The camera's white balance is set to yellowish white

07 V-Ray lighting

The rest of the lighting is set using V-Ray lights and the camera. The lights are deep orange and the camera white balance is set to yellowish white. This creates a good contrast of blue and yellow in the pure rendering. The 'light cubes' are simple boxes with milky glass material and a V-Ray light inside.

An aperture of f/2.8 was used for a shallow depth of field

Stage 3
Texturing and rendering

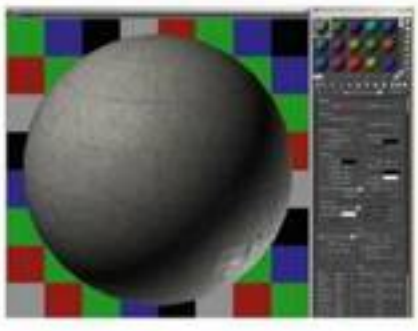
08 Setting up the texture maps

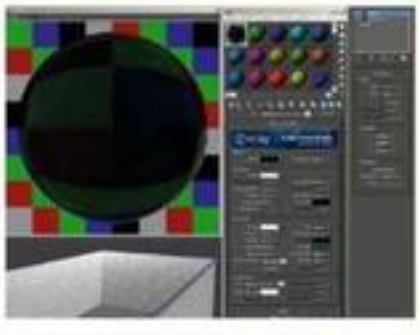
The materials are mainly quite simple. Inside the house I tried to use low-quality textures or just diffuse colours to save on the render time. The only high-resolution textures I used are for the ground and the wall – a 6K Arroway concrete and a brick map from www.cgtextures.com.

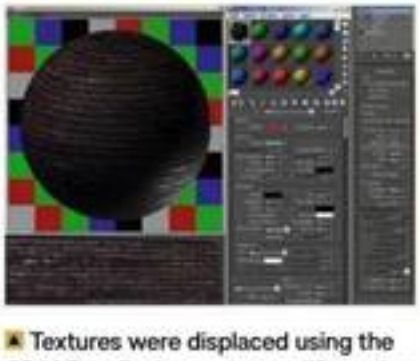
Both are displaced using the 2D V-Ray displacement modifier. Here I used filter blur instead of the diffuse map. This makes the edges softer so it doesn't look too sharp. The quality of this modifier depends on the resolution of the map and the factor resolution on the modifier. I think in this case 2,048 is a good value. Anything higher doesn't have a big effect. For the brick map I needed good displacement and reflection maps, so I used PixPlant, which makes it easy to create normal and reflection maps.

Usually, I try to use normal maps for better render times, but in this case I needed displacement maps to get the deep effect of light and shadows under the lights.

The water is based on a plane with a simple noise modifier. The material has a simple noise in the bump channel and a bit of green fog. I never set the refraction to pure white to get a better fog effect.







Textures were displaced using the 2D V-Ray displacement modifier using filter blur for soft edges

09 Rendering with brute force

Usually, I render with an irradiance map and light cache to save time. But in this case I had the time to render it with brute force. For night shots brute force is awesome. Everything looks good – clean corners, soft shadows and of course no ugly spots. For this shot it took a 24-core Mac over 17 hours to render. That's really long!

Stage 4
Post-production

10 Creating the right mood

This is the step I most enjoy. It's great fun working with passes to make the picture more atmospheric. In Photoshop I used the render channels to tune up the colours, contrast and lights. Mostly I use the Screen blend mode on lighting, raw refraction and reflection, but I always experiment with the different modes for each channel to get the result I'm looking for.

The Screen blend mode applied to lighting, refraction and reflection brightens the image

11 Refining the reflections

I used a bit of raw reflection for more reflections on the glass. What I really love is the effect around the light cubes that stand among the plants. I painted the V-Ray shadows path with a mask around the cubes, using the Screen blend mode. Now it looks like the light shines through the green leaves. Then I gave it some more contrast with a curve and used Selective Color corrections to make the yellow more discrete and a bit more orangey.

The V-Ray shadows path was used to make the foliage translucent

12 Firing the magic bullet

Finally, I used Magic Bullet PhotoLooks to add more contrast, vignetting and intensive colour boosts. I always try to use this carefully, because it's easy to push the edits too far so that the picture doesn't look real any more. ●

The PhotoLooks plug-in was used to finalise the image

Find out more about Peter's arch-viz work at www.lichtecht.de

If you would like to see your work in our Portfolio section, please send your images to: *portfolio@3dworldmag.com*