Virtually Universal
an industry op-ed by Steve Wright

The Future is Here

Avatar was a block-busting jaw-hanger for several reasons - stunning 3D stereo, fantastic worlds, great characters, brilliant CGI, fabulous art direction, etc. But one of the most important production innovations James Cameron made was creating a virtual set where he could freely move a camera around and view his three-dimensional world in realtime. While this gave him unprecedented freedom of camera movement, building this all up took many weeks and was a major science project. Not any more.

Universal Studios has opened their awesome 6,800 square foot "Universal Virtual Stage" that does James Cameron one better. First of all, it is a giant 40 foot by 80 foot greenscreen cyc. Second, it has built-in witness camera for on-set motion capture. Third, it has a motorized lighting rig for lickity-split lighting changes. Fourth, it has built-in realtime camera tracking. Fifth, it has on-set high-speed computer systems that can display a low-poly 3D set and 3D characters in the camera viewfinder and on a 9 x 16 foot projection screen in realtime.

Universal Studio's Virtual Stage (UVS1)

The bottom line is that on the Universal Virtual Stage (UVS1 they call it) you can mix live action characters with CGI characters and a CGI set and see them all together in the camera viewfinder in realtime. With the camera mounted on a massive 24 foot Technojib camera crane (see illustration above) the camera can fly around and view virtually anything from virtually any angle. A DP's dream.

More than just a greenscreen stage with integrated mocap, camera tracking and CGI, it is fully equipped production studio with production offices, edit bays, and brawny workstations equipped with Maya, MotionBuilding, and Nuke, 60 TBytes of on-line storage, and a dandy cafeteria. You could move into this thing and never leave!

The UVS1 represents a massive integration of all known computer animation technologies - mocap, cyber-thespians (CGI characters), camera tracking and virtual sets - into one facility that can now be rented for any production job - films, commercials, and episodic television. Because it is no longer a science project with massive development budgets and schedules it is now far more accessible and affordable then building a custom one-off virtual production studio. I expect to see other studios responding by building their own virtual sets. Deluxe? Sony? Disney? Are you all going to be left out in the digital cold?

This awesome setup even comes with its own digital docent in the person of Ron Fischer, a cinematic CGI guru (Alice in Wonderland, Beowulf, Polar Express). His on-set expertise and enormous experience in digital visual effects well quell the qualms of the most nervous newbie director. And with the digital pipeline developed by Zoic Studios you know it is both robust and reliable.

The future is here now with Universal's Virtual Stage as it represents the combined accumulation of all known computer animation technologies and is now available at an affordable price and on a timely schedule. As other studios add their own versions this type of production facility the price will come down and the use will go up which will ensure the future expansion of computer animation in all of its forms and prosperous employment for all cgi artists.

Steve Wright