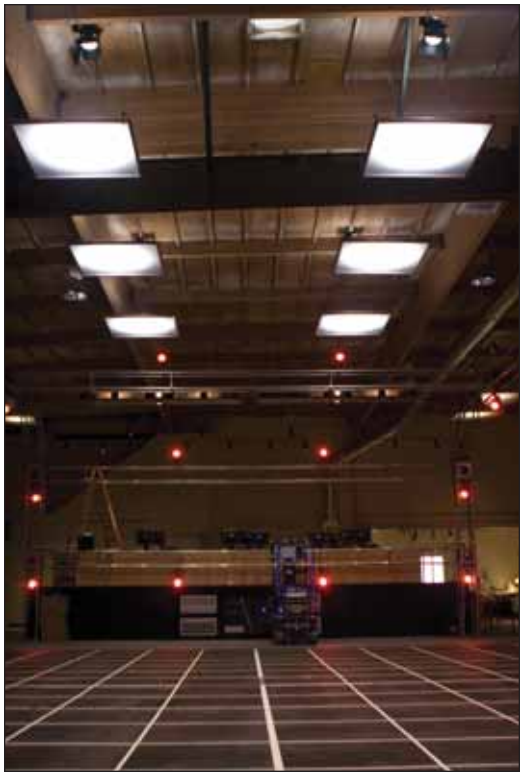
The Motion-Capture Studio



PHOTOS: GENE KIRKLAND

Creating a work-friendly environment for Activision's studio

By: Paul Dexter

One of the most prolific producers of computer games, Activision is responsible for more than 120 titles, including *Guitar Hero, Call of Duty*, and *James Bond*. With these games, all sorts of fantasies come to life: You can fight bad guys just like a qualified black belt, without one day of training, or you can play a guitar like a rock star—without ever having to practice a note.

The company's motion-capture studio, in Marina Del Rey, California, has developed the processes to transfer actors' movements, converting them into the action for computer-animation games. By attaching sensors onto actors' body suits, shoes, and caps, their activities are tracked, using sophisticated infrared cameras that detect movements for each directed action.

As you probably know, anything is possible in virtual computer games. But any professional media creation is labor-intensive. In this instance, hours of repositioning sets, directing actors, and filming multiple takes are required before perfection is achieved. And capturing movement is only the half of it; characters must be developed, sound effects are mixed in, and clever editing is necessary to shape the final product.

At the Activision studio, designers and producers expertly create numerous dream worlds; the task of creating real-life environments requires a totally different set of specialty skills.

Recognizing that in a multi-faceted studio environment work productivity increases, fatigue diminishes, and creative processes are enhanced by the addition of effective lighting, Activision's producer, Nick Falzon, turned to the Internet, looking for a designer to develop the lighting scheme.. He came upon my little company's website, Masterworks Lighting, and made the call.

What's the difference?

My vision is to expand concert and theatrical lighting and scenic design concepts into architectural environments. However, I recognize that the transition from concert and stage design to architectural lighting design isn't simply a matter of taking techniques from live entertainment and dropping them into permanent installation situations.

Architectural lighting is founded on a more scientific approach than concert design, which is often based on gut feelings or one's aesthetic sense. Unlike most concert lighting start-ups, a building-illumination practice doesn't gain wide acceptance until it has passed through a number of formalities; one takes specific academic courses and slowly accumulates experience on the job. By contrast, the concert lighting business is like the Wild West, where you can be hired as a deputy sheriff just by having a good attitude and a crescent wrench in your back pocket.

Thanks to a combination of formal architectural lighting training and an extensive background in touring, my design career is getting really interesting. I've discovered that once the practical considerations for task lighting in a building are properly

addressed, it's possible to apply lighting and set ideas from the worlds of live entertainment.

The space

The day after Nick called my office, I visited the Marina Del Rey studio to survey the 14,000-sq.-ft. venue. The entire space was lit with eight mercury-vapor lamps. Thanks to this scheme, everything, and everyone, inside this space turned a pale shade of green; the color temperature was equal to that of a low-sodium street light.

With a camera and tape measure in hand, I discovered there were plenty of areas to access—32' of work/computer and director stations, a 40' x 32' filming area, extended walkways, carpenter's workshop, kitchen area, and office entrances. The biggest consideration? A custom, complex ground-support truss structure, spanning the entire film area, used purely to maximize myriad camera positions.

It was during this first survey that I received a crash course in the fascinating business of motion capture. I reciprocated with a crash course in replacing the stark industrial-style lighting with a warm, intimate, but practically lit environment.

Combining scenery and lighting

The process of beginning an architectural lighting design is essentially the same as when one is working on a concert. Using measurements and photographs from the site survey, I built a 3-D rendering (in Sketch-up) of the space, then a VectorWorks lighting layout for my working plans. The 3-D rendering acted as a virtual-experiment lab to test location and height for my proposed set pieces and the best way to determine fixtures/bulbs for each area or zone.

The filming and computer workstation zones received the most set-design attention. Because the film cameras just record the sensors, the lighting was solely for practical use, but I still wanted it to have a "studio look."

To create an effect that suggested the use of lighting fixtures placed on stands behind Chimeras, a total of eight 4' square milk-Plexi panels were suspended from the ceiling beams, over the film area. Attached to the beam, directly over each panel, was an ETC Source Four PARnel 150W HID. Each unit focused directly into the milk-plexi, resulting in a beautifully even, soft coverage over the film area.

The computer and directors' work stations formed a task lighting area. With a 32'-long desk configuration, the considerations were to:

1. Avoid computer-screen glare and shadows;
2. Provide clear visibility working luminance (in this instance, about 35fc);
3. Create a pleasant and stimulating environment.

Two custom set pieces—13' long, 12" box-truss replicas, with the sides closed in by decorative milk-plexi cutaway panels—were made and suspended in linear, side-by-side fashion directly over the desks. Each truss piece used four 75W non-glare recessed PAR 30 downlights, and low-watt units were mounted inside the box truss, accentuating the milk-plexi cutaway design.

Sticking with a specific style of fixtures is a means of retaining continuity in the design. In addition, the decision to use as few fixture varieties as possible helps with future maintenance; by not giving the client several different bulb types to remember when they need changing. There were only three types of bulbs used in the entire install—eight 150W HIDs, fifty-three 75W PAR 30s, and six 50W MR16.

The Source Four PARnels, with barn door accessories, led the way for the "studio look" I was after. The remainder of the fixtures consisted of Times Square PAR 30s with barndoors, mounted on suspended track. Lowering the lights closer to the subject areas increased the intensity of the 75W bulbs on the tasks, and helped create the illusion of intimacy, particularly with a high beam ceiling.

The result is a space that facilitates the staff's work, both with motion-capture cameras and computer terminals, while creating a pleasant, atmosphere that recalls a classic motion-picture studio. This architectural design is achieved with theatrical units, yet it will be a low-maintenance design for the client. By crossbreeding two different lighting sensibilities, I came up with the right design for a very 21st-century workplace.

Above: The milk-Plexi panels. Opposite, top and bottom: The studio area. Center: The workstations.

Paul Dexter owns Masterworks Lighting in Los Angeles.
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