

**Topic 052****Communication**

The lighting designer must be able to VISUALIZE his proposed design in three dimensions. Further he must have the necessary skills to VERBALIZE or describe the proposed design in words and visual images. Finally, he must be able to DOCUMENT the proposed design on paper and DIRECT the design in practice. Communication is fundamental in design and art of stage lighting relies on the art of communication.

Technically speaking, it really doesn't matter how a designer communicates his design intentions to others, just as long as he does so clearly and effectively. In professional situations, certain conventions and expectations of the designer have been established over the years. Crews expect clear, concise, detailed information, so that they can work efficiently and within time restraints. It is the responsibility of the lighting designer to ensure that the lighting crews receive whatever direction and information necessary, to ensure that all details of the lighting installation, are absolutely clear.

The lighting designer must develop verbal and other skills, necessary to fully describe and illustrate the artistic components of his proposed lighting design. He must be able to visualize his design intentions and then clearly communicate them to the director and to other designers. The designer must be able to describe lighting styles, painting styles, architectural styles, detail and periods, atmospheric conditions, moods, emotions and feelings. The use of renderings may often help. Sometimes paintings from the 'Old Masters' are immensely usefully in discussing and illustrating the styles and qualities of lighting.

Once the designer has a full understanding of all the ingredients, a rough 'lighting concept' drawing, is usually prepared for each scene. These sketches summarize the actor's blocking and provide other important lighting details including; mood, atmosphere, time of day, and indication of any natural or artificial light sources.

**Drawings**

Ultimately, the lighting designer must produce a PLAN drawing, showing all the required lighting fixtures, precisely located in scale and in relationship to the stage. This is the LIGHTING PLOT, (or LIGHTING PLAN) and it is this drawing that the stage electricians will use to install, cable, plug and color all fixtures. The designer should take great care and pride in the quality of drawings and paperwork produced for the lighting crews. Often if the crew sees that the designer cares about the production, they will also.

**Schedules**

Any information that cannot be shown CLEARLY on the light plot must be shown in the form of separate schedules. Further, the electrical crew will expect summary schedules showing, fixture; hook-up, color, focus and accessories. These schedules will facilitate both the set-up and daily maintenance of the production lighting. Take pride in your work.

Designing lightings in a 3D-scene is a general complex task for building conception as it is submitted to many constraints such as aesthetics or ergonomics. This is often achieved by experimental trials until reaching an acceptable result.

Several rendering softwares (such as Radiance [Ward 94]) allow an accurate computation of lighting for each point in a scene, but this is a long process and any modification requires the whole scene to be rendered again to get the result. The first guess is empirical, provided by experience of the operator and rarely submitted to scientific considerations. Our aim is to provide a tool for helping designers to achieve this work in the scope of global illumination.

We consider the problem when some data are asked for : on one hand the mean lighting in some zones (for example on a desktop) and on the other hand some qualitative information about location of sources (spotlights on the ceiling, halogens on north wall,...). The system we are conceiving computes the number of light sources, their position and intensities, in order to obtain the lighting effects defined by the user. The algorithms that we use bind together radiosity computations with resolution of a system of constraints.