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**MAURIZIO ROSSI LIGHTING DESIGN**  
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**“ PERSONAL CONSIDERATIONS IN HOTEL LIGHTING DESIGN “**

**FOREWORD**

The Title of this paper will perhaps seem too generic to those who have actually confronted the problem of hotel lighting and useless to those who think that it is only a question of using nice lamps and expensive chandeliers. The truth of the matter is that hotel lighting follows specific rules and a line of reasoning which is far from simplistic, and which I, with the help of my professional experience in the field, will try to expound to you. Obviously, given the necessary limits of the brevity of this talk, I don't intend to address the technicalities of lighting calculation nor do I pretend to offer any "truths" as such, but only to explain, in the simplest possible way, my own personal philosophy on the subject.

**INTRODUCTION**

Before starting any lighting project, we need to ask ourselves two questions. "What are we lighting?", and "How are we going to light it?". The answers, given the subject under consideration, seem obvious. We are lighting a hotel and we want to light it well. But more specifically, "What is a hotel?", and "What do we mean by well"?

In answer to the first question, I'd say that a hotel is a business that sells services and, as such, must produce the highest profits through the best use of its means of production. These means of production are its public spaces: Restaurants, coffee shops, bars, swimming pools, gardens, etc., and its private spaces - rooms, suites etc. Furthermore, over the years, the "hotel" whether large or small, or more or less deluxe, has evolved from merely offering a bed and a meal to become a true recreation and work centre, with an enormous variety of services.

Now we are getting closer to the second question, "What do we mean by lighting a hotel well"? First of all it means that it is necessary to analyse who will use these spaces. For example, a restaurant in the U.S. however it is decorated, will have a lower lighting level, for cultural reasons, than an equivalent restaurant in Italy. Good lighting in a hotel in Las Vegas will not be the same as good lighting in a hotel in Madrid, even if I must say that the largest hotel chains, for various reasons, tend to treat all their products in the same way, often ignoring different cultural realities. But the element that must remain constant to good lighting wherever it is, is economic management, and so we can say that good hotel lighting means maximum enhancement of the means of production (that is the spaces) with minimum operational costs, a pretty hard task!

**HOTEL AND THEATRE**

Hollywood was perhaps the first to see the analogy between the hotel and the theatre and produced films like "Grand Hotel" that pointed out the stage - like life or a hotel with its clients, actors and spectators. Let us now look at how the hotel compares to the theatre.

In the theatre the actor wants to be seen, heard and admired. With the help of scenery, lights and a director, he creates dreams and illusions, in short, the show on stage. The spectators are in the theatre to hear and to see him, but not to take part directly in the illusion. They can only choose to applaud or not, thus declaring his commercial success or failure.

In a hotel the client, whoever he is, with the help of the furnishings (scenery), architectural lighting (lights) and the management (the director), is the spectator because he sees and admires and, at the same time, is the actor because he wants to be seen and admired. In a hotel, as in the theatre, dreams, illusions and shows, are created but without the division between the stage and the audience. The participants are simultaneously actors and spectators and their satisfaction will lead to commercial success or failure.

So with an analogy, that many people might find exaggerated, we have equated a hotel to a theatre but, I must add that there are important differences. In a hotel the problem is that the scenery (furnishings) and the management (the director) are usually not subject to change, or only very slightly, but the clients-actors-spectators, on the other hand, are constantly changing, from day to day, even hour to hour and with them, their moods, their attire and their numbers. This problem of incompatibility between the almost completely static physical structure of the hotel and the constant variability of its clients-actors-spectators can be satisfactorily solved by lighting which changes during the 24 hours of the day and even season to season.

Lighted can be varied in a choice of ways but all require a careful study of the type of public, the furnishings, the decorations, the colours, the materials of interior and exterior spaces, an analysis of the amount of daylight available in the various areas and finally, when there are gardens, the growing cycle and the colours and flowers of the plantings in all the seasons.

In order for the architectural lighting to be as flexible as possible, we must also provide the widest possible use of dimmers in the preliminary project phase. These sophisticated electronic devices will enable the programming of turning on, turning off, increasing and decreasing the lighting of both single and entire groups of lamps. The dimmers, though rather expensive machines, are used to regulate the luminous flow, providing energy savings and therefore also real savings, proportional to the actual decrease in energy consumption. Furthermore the life of the individual lamps, as a direct consequence of the use of dimmers, is increased. It is however necessary to remember that almost all lamps, when they receive less electricity, change their chromatic value. This is particularly true for incandescent lamps which veer towards a more or less intense shade of yellow/orange, therefore giving a "warmer light".

The lighting is exactly that variable, that the hotel, with its unchanging scenery and director, must use to permit the clients-actors-spectators to interpret and admire new scenes, new illusions and new moods and the more this is facilitated the more financially successful the enterprise will be.

#### THE PSYCHOLOGY OF LIGHTING.

A lighting designer can be compared to a painter in that he works with shadows, lights and colours. His brushes are obviously lamps and fixtures, and like a painter, his work is judged by its psychological effect on the observer.

If we are convinced that lighting must also be confronted on a psychological basis, one of the first things to clear up is the meaning of the word "light". We immediately think of large spaces, vast quantities, knowledge, airiness. These definitions don't really apply to architectural lighting where "light" should be interpreted as "perception" or better still "sensorial perception" and should have a whole different set of meanings.

To clarify what I just said, let's imagine a rectangular form immersed in absolute darkness. We can't see it, but if we put four low wattage lamps at the four corners, the shape would still not be lit but we would know that it was rectangular. The four lighted corners confirm to us that we are looking at a rectangular form. In fact if we turn off one of the lights, we no longer see a rectangle but a triangle, turning off one more, a line then a point, finally .... nothing. However, the same rectangle, let's say it's a tennis court, if used for its real purpose, must be rationally lit as a playing surface and the lighting must depend upon precise calculations and parameters.

Another example of "sensorial" lighting, is the lighting of meat counters in supermarkets. Fluorescent lamps which give off pink light are mounted in shelves above the meat, giving it a pleasant bright red colour. The customers automatically "see" the meat as very fresh, even if this, unfortunately, is not always the case.

Following this line of "sensorial" reasoning, a person in the middle of a long dark hallway with a lighted door at each of the two ends will not feel lost and would almost always go towards the lighted door. Fear of the dark and of the unknown, is a strong determinant and thus the unconscious attraction towards light and colours is a very efficient tool in the design of hotel lighting.

These examples explain some of the numerous concepts of "sensorial" lighting and utilitarian lighting (i.e. tennis court). The first has multiple applications in the public areas of a hotel, the second in kitchens, offices, maintenance shops, luggage rooms, sports courts etc.

Some of what I have referred to above, is certainly extreme and touches on the relationship between light, consciousness and the unconscious. However, with a minimal amount of reflection, you can see that "sensorial" lighting is virtual and as such its use opens vast horizons in perception. In fact in the above example about rectangular form, the reality is, and will always be, that of the original shape. With only three corners lit, you see the "reality" of the triangle but it is virtual, not real. In the case of the meat, it appears very fresh even if it isn't. In the hallway the two doors are always there, but you choose to perceive only the one that is lit. And so we can say that the use of lighting, as explained above, is a tool with practically unlimited flexibility, and in hotels, just because of the sense of the imaginary that they possess, it is a fundamental tool that needs to be used to the maximum extent.

#### LAMP TYPES

One of the dilemmas that a lighting designer has to confront when lighting a hotel is which kind of lamps to use - incandescent, fluorescent or discharge? Up until a few years ago the problem didn't exist. Almost all the lamps used in lighting the public spaces in hotels were incandescent, with their corresponding high maintenance costs. The reasons for this choice was that there really was no choice. Fluorescent lighting was only available as straight tubes varying lengths, or at best small round shapes, creating obvious design difficulties. The chromatic tones of light that it offered were rather limited and it always gave poor colour rendering. Furthermore it could not be used with a dimmer, while incandescent lights could be rather easily dimmed.

These lamps aside from other problems, had colour renderings which were completely unacceptable for hotel lighting.

Today hotel lighting is drastically changed and this is for two reasons, the first, market availability, the second, managerial. The European market, compared to what it used to offer, now has a vast choice of incandescent, fluorescent and discharge lamps, but most importantly, fluorescent and discharge have made enormous progress. These lamps now have reached excellent standards regarding colour renderings, most of them can be used with dimmers and have been redesigned with regard to their size and incumbrance. Most importantly they are economical, because they last longer and are much more efficient compared to incandescent lamps. For example, a fluorescent lamp which has an average life of 6,000 hours, gives more or less three times the light of the equivalent incandescent lamp, which anyhow has an average life of only

1.000/2.000 hours. Discharge lamps have an average life more or less the same as fluorescent but in some cases they give off ten or more times as much light as incandescent. Nevertheless fluorescent and discharge lamps continue to enjoy a terrible reputation among hotel designers. In my opinion this is an unjustified prejudice, among hotel designers. If they are properly and carefully used, their numerous chromatic hues can be a decisive factor in varying the colours of a given space. At the same time, compared to the past, operating costs have become unbelievably high. Both the energy costs and manpower for hotel maintenance are high enough so that they must definitely and seriously be given priority in the design phase.

So based on these facts, and on my own professional experience, I feel safe in saying that hotel lighting slowly but surely is going in a new direction - less incandescent lamps, very nice but uneconomical, more fluorescent, also very nice but economical, and more discharge lamps, super economical but still with certain problems such as the light tonality and the very limited possibility of dimming. These problems, I believe, will be solved or minimised in the near future.

The hotel lighting designer should be free of preconceptions about which type of lamp to use, but nevertheless must be always aware of operating costs in order to avoid that the hotel manager, tired of changing and repurchasing burnt out lamps after the hotel opening, substitutes all the lamps carefully specified by the lighting designer with the first G 40 fluorescent globes that some very enterprising salesman offers him.

#### LIGHT FIXTURES

Finally we can talk about the tools available for putting these various theories into practise: the lighting fixtures. I want, first of all, to make clear that I don't have any prejudice for or against any type of lamp or fixture. There is never, or almost never a single solution to any problem and so I think that any lamp, let's say for example a fluorescent, which in a certain situation isn't a solution, in another could be perfect and viceversa. The important thing is to achieve the effect that you set out to achieve. Given the enormous availability of different fixtures offered by the international market, it is a difficult task to make choices for hotel lighting, or any lighting. Obviously I can't really be of any concrete help in this, but I can give you my thoughts on the matter.

A first important subdivision exists between fixtures that are to be seen, or decorative lighting fixtures, and fixtures for seeing, or architectural lighting fixtures. Both kinds, depending on what effect you want to create can mount incandescent, fluorescent or even discharge lamps. Obviously the decorative lighting fixtures are meant to be fully visible, while the architectural lighting fixtures should give off their light, while remaining themselves non invasive or even invisible. When the lamps of the decorative fixtures, (and by this I mean, chandeliers, wall brackets, floor lamps, table lamps, glass or plastic decorative ceiling or wall fixtures, etc.) are visible, either directly or in transparency, they should not give off much light. If they do, and they often do, they would dazzle anyone looking directly at them, thus losing all their aesthetic value. A typical case is the ballroom with enormous crystal chandeliers that mount tens of incandescent 60 or 100 w lamps. The human eye can generally tolerate looking at a 15 w. or 25 w. incandescent lamp for a few seconds without blinking or other disturbance, and therefore those are the lamps that these chandeliers should mount, in quantity sufficient enough to provide the necessary light. One should remember that once upon a time, the chandeliers and the wall brackets were made to mount candles and the human eye had no trouble tolerating that very simple and beautiful solution!

Having defined what I mean by decorative fixtures I would now like to add that, ideally, the lighting design project for a hotel should only consider the light from the architectural lighting fixtures and proceed as if the decorative lighting fixtures did not exist, even if during the design phase they must obviously be taken into consideration. In other words all the decorative fixtures should be primarily considered as luminous accessories, luminous decorations to be seen and admired, but not sources of light.

## LIGHTING DESIGN AND INTERIOR DESIGN.

In my professional life I have often found myself in the unfortunate situation of being called to consult on a hotel project when, near the completion of the interior design, some good soul posed the question: "And what about the lighting?". Unfortunately the results of a job like this are never as good as they could have been. This is not due to the lack of ability on the part of the professionals involved but because of the number of decisions already made and impossible to change that I have been forced to work around in my design work.

What many planners don't realise is that lighting is part of interior design, with the added complication that it should be planned prior to the rest of the interior design project. For example in designing a banquet hall it's necessary to plan the lighting at the very first stages around an initial idea of the interiors. The reason is that, based on these and other parameters, the electrical engineer will calculate the necessary amount of power and the heat load which will in turn determine the air conditioning requirements. As can be clearly seen then, a whole series of preliminary information for the installers depends on the lighting.

In hotel design, the interior designer and lighting designer must work as a team right from the beginning. It's utterly futile to choose materials, fabrics, colours, finishings etc. without the immediate advice of the professional who through use of the light will be responsible for making these choices appear as the interior designer wants them to appear. This is particularly true in hotels where natural daylight is actually minimal and therefore artificial light becomes crucial. I have often witnessed agonising decisions, prolonged for days and days, over the choice of a precise colour for drapery material when, given the finite type of lighting to choose from, it would never have been appreciated for its exact hue value. Artificial light, in any combination and of any kind, whatever we say, is completely different from natural daylight and it always falsifies, in a more or less obvious way, colours and forms. For this reason the various decisions about the interior design must always be made taking into account the kind of lighting that will probably be used. Moreover when the interior designer and the lighting designer work together from the very beginning they can study all the details and the modifications of the architecture and the interior structures, in order to rationally implement the special lighting treatments which will harmoniously enhance spaces, colours, people etc.

## COMPUTERS Vs. EMPIRICISM

In the past years the most disturbing thing that I have noticed in my profession is the generalised blind love of computers and their offspring. When their use is proposed unconditionally in hotel lighting, I think this shows bad faith. When they are used to make the designer seem technically avant-garde, it simply shows foolish superficiality. This however does not preclude my firm conviction about the usefulness of computers in fixture design, in lighting calculations for sports stadiums, in lighting research generally speaking and in many, other specific applications.

Why then am I, at the moment, so opposed to leaving hotel lighting to computers? First of all, because a hotel is a collection of diversified luminous effects, supplied by an array of different lighting fixtures which, through the project planning, provide a basic lighting situation in each area. After the conclusion of the installation, every fixture is fixed at the manufacturer

's suggested output, thus the technical data is all, or almost all, available. At the opening of the hotel however, the lighting designer will programme the dimmers by areas and this will break the original basic situations into a series of several other unpredicted lighting situations, the computer calculations of which, the new data not being available prior, is obviously not realistically imaginable. Another rather important reason is that there are always a large number of

decorative lighting fixtures and special decorative elements which increase and influence the quantity and quality of lighting in a hotel but whose technical lighting data, to be brought to completion just prior to the hotel opening with the lighting designer working with the interior designer on "fine tuning" the previous decisions. These are the reasons why, at the moment, I cannot envision a financially viable computer programme, based on innumerable and often unforeseeable lighting scenes, which could provide reliable lighting calculations.

What on the other hand I have found professionally necessary in the field of lighting design, is a good dose of empiricism, just because, as I have tried to explain, sensibility and professional experience cannot be replaced by a computer. When in doubt about a design solution, I always prefer to have the reassurance of the mock-up of the installation, of the visible light and/or the help of past observations.

In truth, I can say that at the opening of every hotel, for which I have designed the lighting, it is always a surprise how some of the solutions differ, sometimes better, sometimes worse, from how I visualised them in the design phase. The fault, if one can call it fault, lies in the total intangibility and the fleeting quality of light.

## CONCLUSIONS

As must now be clear architectural lighting is a double edged weapon. Used incorrectly it can completely destroy splendid spaces and beautiful architecture but with its enormous evocative power it can save spaces that would otherwise be common place or worse.

One more thing, when no one notices the lighting, it means that the designer has succeeded in his task - that of having the architecture, the spaces, the sensations seen "naturally" without revealing the absolute artificiality of the means.

It's rather difficult for me to conclude these remarks, but in any case, after having touched on everything or almost everything that I consider fundamental to the subject, I will end by underlining again that the lighting of a hotel cannot be an empty stylistic exercise, but must be the search for the best use of all the interpretive means that can make a hotel remunerative commercial activity.