

Indirect Lighting of Commercial Interiors

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SUMMARY

Lighting is relatively a new profession but is one of the most important aspects of Interior design. Indirect lighting is an advanced form of lighting which requires a lot of creative work coupled with scientific calculations. It is also perhaps the most suitable lighting design solution for today's interiors which use CRT Screens most extensively.

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Lighting is relatively a new profession and it has taken some time to develop and get established as an independent design entity, especially in this part of the world. Perhaps that is why it is sometimes missed out in the process of design in some of our architectural or interior design firms. It is quite unfortunate that lighting design remains on the bottom of the list of services. Although the real problem in our case is the absence of Interior design schools and lack of holistic approach to lighting design education in (a few) architectural schools that already exist. Therefore it is not surprising that proper knowledge and application of lighting and lighting design is very poor. Majority of the practicing design consultants' bank on whatever professional help they get from associated electrical consultants.

"Indirect lighting" is an advanced level of lighting design in which the "lamp", the light source is concealed in a "luminaire", an enclosed box or a contraption that houses the lamp, and the light is bounced off another plane or surface and used on the working plane or wherever required. In the original development of the indirect lighting in commercial interiors in Europe and America the "ceiling" was used as a reflecting plane illuminated with high powered lamps like HID, high intensity discharge lamps. This is called "Uplighting".

General lighting installations for buildings are usually designed assuming that rooms within the interior are empty. Working buildings, however, contain objects such as furniture, file racks, office equipment or humans which occupy space between the luminaires and the working plane. The human factor and these objects should be taken as *obstructions* in the quantity and quality of light, as they can adversely affect the same. Creative uplighting is one of the lighting design solutions to overcome this problem.

The current trend towards open plan offices demands flexibility of lighting systems to suit the frequent modification of interiors and compatibility of luminaires to suit the modern ceiling systems. Besides the element of flexibility in layouts etc. the extensive use of computers, CRT screens and monitors in every interior and on almost every workstation calls for better lighting design solutions. Indirect lighting which is gaining world wide popularity is definitely one of the smartest solutions for a modern computerized internal environment.

Uplighting increases the *visual satisfaction* factor in commercial interiors because of the general diffusion of light in almost all directions. Generally speaking the lighting code of practice mainly specifies for horizontal illuminance, incorporating a working plane and standardized direct lighting method. Therefore the average lumen method of calculating and specification becomes the catchall situation for every interior environment, because it is simple and quick to use. Also it is easy to calculate and measure. This restrains the lighting engineers or the electrical engineers (in our part of the world) to use creative lighting methods and stick to

direct lighting. The advantages of indirect lighting need to be studied in depth and exploited for the benefit of our internal environment.

The advantages of Uplighting are:

- a) generally diffused and even light
- b) glare free light
- c) space free of harsh shadows
- d) takes care of brightness contrasts
- e) flexibility in open plan
- f) can emphasize a decorative ceiling
- g) highly economical if intelligently used
- h) ideal for today's extensive use of CRT screens (provided the light cut off angle has been taken care of in the layouts i.e. the edge of the luminaire from where the light emanates is not reflected on the screen)

The traditional belief and perhaps the only apprehension that Uplighting is not economical because high powered lamps are required to achieve the required lux levels and a lot of wattage is lost is questioned by this author and a new outlook is presented today with the help of various completed projects. Each project employs a different lighting design solution to achieve required lighting levels.

The most favorite of all is the elimination of false ceiling, partly or wholly, which otherwise has become a regular feature of interior spaces. This calls for a careful handling of HVAC and other systems, but offers reduction in overall interior costs. Big savings invariably become very attractive budgetary criteria and deciding factor in project planning. With indirect lighting the elimination of standard expensive luminaires, which are normally used in a repetitive grid matrix, is another big saving. The use of energy saver lamps and high lumen output lamps becomes an integral part of economical indirect lighting plan.

Today's enclosed and internal environments, where we spend 90% of our time need creative lighting solutions, for economy and for aesthetics, last but not the least for better vision and health in general.

Lighting design Projects review;

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Liberty mills ltd. Head Office
Liberty mills ltd. Textile sample room
Grand Optical House, opticians
Optylo, Opticians
Jharoka restaurant, Holiday Inn Crowne Plaza
Meeting Halls, Karachi Sheraton
Pak Sind Housing, Head Office
Wellcome furnishing, furniture showroom
Daz Interiors, design consultants office
Glaxo Laboratories, Pharmaceuticals, Corporate office
Optec, opticians
J.B.Saeed, Office
Sami Pharmaceuticals, Head Office
Caesers Tower, Hotel and Office Block lobby
Habib and Habib, Head Office
Chacha's Restaurant

Enclosed:

Summary

Paper

Lux levels for JB Saeed, office
Glaxo Laboratories, corridor
Caesars Tower, lobby
Sami Pharmaceuticals, hall

Lux levels and Cost comparisons: Lighting design
DAZ Interiors
Habib and Habib, office, hall

Visuals: Interior spaces and Indirect Lighting design proposals for
Cake and Oil, office
Liberty mills, sample room
Sweethearts, sweet shop

List of epidiscope slides

References;

topic papers by

Uplighting: Mr. Roland D'Souza

Uplighting: R.S. Viswanathan

Design of General Lighting Systems for Obstructed Interiors: D.J. Carter

Lighting Design Education in the Modern World: David Loe

Search for Visual satisfaction: S. Chakraborty