BSc. H&HA – VI Semester Accommodation Management

LIGHTING

**Chapter Outline**

Light types

* Based on its source – Natural, Artificial (Incandescent, DischargE
* Based on the way it is directed - Direct, Indirect, Semi direct, Diffused
* Based on its function - General, Task, Accent, Safety

Methods of lighting - Architectural, Non- Architectural

Lighting consideration in hotels

**Learning Objectives**

At the end of the session, the student must be able to

* Report on the Lighting employed in hotels
* Design a lighting plan for guestrooms and Restaurants.

Light is a form of energy which enables the eye to see. Lighting plays  a  very important part in general  function  aspects,  for safety  and  for esthetic purposes. A room can be made to  look more attractive by night than by day by planning and  controlling the artificial light. With a mere flick of the switch, you  can manipulate  light in myriad ways. With the right light, you  can make an average room look spectacular, disguise flaws and emphasize assets. Light makes colors come alive, color and texture in turn affect the quantity and quality of light. Light hues  and smooth surfaces reflect more light and make dark and boxy rooms look brighter. Dark and rough surfaces absorb more light and make overly large rooms more intimate.

**Light Types**

Based on its source

Light can be of two types - Daylight  and Artificial Light.

Daylight: Though only 10% of the daylight enters a room, it is much brighter than artificial light. Colors look different in sunlight and artificial  light. Daylight varies in intensity through out  the day,  changing  the mood of the environment.  Brilliant sunlight fades  colors and rots fabrics. The heat produced can cause discomfort.  Rooms facing North, do not get as much light as rooms facing South, East and West. Sometimes supplementary lighting may be required during the day, as sunlight do not light up  a  room uniformly.

Artificial Light: Artificial light sources or lamps can be classified  broadly into two categories; Incandescent lamps and Discharge lamps.

Incandescent lamps are also known as  tungsten  or  filament lamps. When an electric current is passed through a filament, it gets heated to such a high temperature that it glows  white and gives off light. Depending on the gas filling, it can be divided into GLS lamps (General Lighting Service) and Halogen lamps.

A wide  variety  of GLS lamps are available. Some of  them  are listed below:

1. GLS Clear.
2. GLS Argents : Milky coating. Gives a glare  free  diffused lighting.
3. Superlux: Silica coated Opal - Gives a silvery lighting.
4. Special and Miniature lamps.

Halogen lamps are filled with a halogen added to the normal  gas filling. The halogen prevents the tungsten particles from condensing on the bulb wall. Halogen lamps are mainly used in floor lighting and as light source in projectors and motor vehicle head lamps.

1. Discharge lamps: Depending on the pressure inside  the  discharge tube these lamps can be classified into Low Pressure Lamps and High Pressure Lamps.

i.  Low  pressure lamps : Most widely  used  tubular  fluorescent lamps  are basically low pressure mercury lamps.  The lamp  is generally  in the form of a long tubular bulb with  an  electrode sealed  into  each end, contains mercury vapor at  low pressure, with an inert gas for starting. When a discharge is started ultra violet energy is produced. The fluorescent powder coated at the inner surface of the tube converts this uv radiation into visible light. Conventional fluorescent lamps have a 38 mm diameter with 20W,  40W  and 65W range. Slimmer versions with a 26mm diameter tube is also available in a range of 18W, 36W and 58W. They save about 10%  energy. Another group of energy saving  fluorescent lamps  is the PL & SL series of compact fluorescent lamps.  These lamps are available in 5W, 7W, 9W, 11W range.

Low  pressure  sodium vapor lamps are the  most  efficient  light sources  and  are used in yard and street  lighting.  The light produced is yellow in color.

ii. High Pressure Lamps : includes High Pressure  Mercury  Vapor (HPMV), High Pressure Sodium Vapor lamps (HPSV). HPMV produces a bluish white light where as HPSV produces a golden yellow light.

Characteristics of filament and fluorescent lamps

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| Filament lamps  | Fluorescent lamps  |
| Average life is 1000-2000 hrsLow in cost Comparatively poor efficiency Gives direct or diffused light with varying intensities Generates a considerable amount of heat and soils the walls Used with many different types of shades and fittings Ideal for pendant lights, spot lights, table and floor lamps   | Burning hours is any where between 5000 hrs (Hot Cathode 15000 hrs (Cold Cathode) Initial installation cost high Running cost is low and gives thrice as much light Gives diffused light with a flat appearance. Operating temperature is much lower. Does not cause any soil  Not the same demand for shadesSuitable for cornice lights and obscure corners  |

Fiber Optic

Laser Light

LED Light

Based on the way light is directed:

* Direct.  : The light shines directly on to the object  or  a limited area. This type produces sharp shadows and if improperly shaded, produces a glare. Direct lighting is used for most reading lamps, floor lamps, spot lights.
* Indirect : All the light is directed to the ceiling or  wall from which it is reflected back to the room. It creates no shadows and if used alone, it’s flat and uninteresting. Wall washers and floor standing uplighters are examples of indirect lighting.
* Semi-direct. : It is a combination of both direct and indirect light.  Some of the light rays fall directly, whereas the others reflect off a surface.
* Diffused : Here the light source is completely enclosed  and the light is diffused through a translucent shade or material.

Light based on its function.

* General or Area Lighting: bathes an area in a pool of  light. Glare-free indirect lighting that bounces off walls and  ceiling, provides comfortable background illumination. One may use  direct lighting  or lighting diffused through glass,  shades,  crystals, perspex.  For  example, pendant lamps,  chandeliers,  fluorescent tubes. The light source is usually above the eye level. The amount of  effective illumination depends on the color and texture  of the  ceiling,  wall  and floor. A dimmer switch can  be  used  to soften the mood for entertaining.
* Task  lighting: delivers essential illumination  for  specific jobs  : reading, writing, sewing, cooking, grooming. It's localized,  shadow-free,  easy-on-the-eyes  lighting,  such  as study lamps, countertop illumination for the kitchen.
* Accent/  Spot lighting: It generally utilizes  direct, controlled,  intensified  beam on to an object. Accent  lighting is purely decorative and is used to highlight artwork, collectibles or  architecture.  Spot  lights mounted  on  tracks, uplighters, downlighters are examples of accent lighting.
* Safety Lighting: Lighting used for safety reasons along  the corridor, stairway and emergency lighting.

**Methods of lighting**

There are two basic methods:

Architectural : It supplies light that is functional and unobtrusive and is particularly good for contemporary rooms.

* Valance lighting: A horizontal fluorescent tube is placed behind a valance board casting uplight which reflects off the ceiling and downlight which shines on the drapery, thus producing both indirect and direct lighting.
* Cornice lighting: A cornice is installed at the ceiling and directs the light downward only. It can give a dramatic effect on drapery, pictures and wall covering.
* Cove lighting: Consists of placing a continuous series of fluorescent tubes in a groove placed on one or more walls of a room about 12" from the ceiling. The light reflects off the ceiling and bathes the room in light (indirect).
* Soffit lighting: refers to the underside panel of a built in light source. It may be fixed to a ceiling or under a cabinet. Soffit lighting is often used over a sink or other work areas.

 Non- architectural lighting:

* Ceiling and wall fixtures.
* Portable lamps.

Lighting Fixtures

When  buying fixtures to implement a lighting scheme,  their appearance as well as the light they produce should be satisfactory.  Shades, globes and even lamp bases can look quite different when illuminated. They should look good in both their daytime and night time roles. Translucent shades contribute a distinct  color cast  to  their surroundings while opaque shades give  localized pools  of  light  rather than  all-round illumination.  Material chosen  for the shade should not discolor, fade or become  ruined by the heat.

Pendant light, Desk light or Anglepoise, Table lamp, Floor lamp, Ceiling mounted spotlights/Spotlights on tracks, Eyeball Spot light, Cylindrical Down lighter, Cylindrical uplighter/Floor canister, Recessed down lighter, Wall washer or Wall sconce, Floor standing uplighter, Swivel -arm wall light, Ceiling Dome, Novelty light, Hollywood lighting

**Factors to be decided while planning a lighting system**

A  variety  of lighting is necessary in rooms and  public  areas. Provide  first for efficiency and safety. Once that  prerequisite is  met with, customize lighting to highlight a room's  appealing aspects,  enhance color, spark drama and interest, change  moods, cozy up large spaces....

The entrance of any establishment should look inviting and  the lighting  should be in keeping with the character and  atmosphere of the place. In a large area, a chandelier, cove lighting, wall brackets or  any  pelmet type fittings can be  used  to  provide general  illumination. A false ceiling with mirrors can  reflect light  and give the impression of greater height and may  provide an interesting reflection of the light fittings.

In the lobby there should be areas of brighter light to attract guests'  attention  to such places as the reception desk  and  to enable them to see clearly to sign the register.

The atmosphere in the lounge should be one of comfort and restfulness. Sculptures or paintings can be  highlighted  using spotlights. Concealed uplighters can be used to  dramatize foliage  around waterfalls.

Subdued lighting goes  well in restaurants and  bars.  But in cafeterias and coffee shops, in order to encourage a quick turn over, a higher degree of illumination, especially at the counters and tables, are necessary.

Chandeliers  may look elegant in a banquet hall; but  too  bright unless it's tamed by a dimmer switch to soften the mood.  Placing a chandelier off center or over the buffet makes the room  appear larger. Valance or cove lighting, recessed fixtures and  over-the-buffet spotlights supplement this general source.

Subdued  lighting  may be required in the  corridors,  but  gloom should be avoided. The guests must be able to see the room number clearly.  The  space between the light fittings in  the  corridor should not be greater than one and a half times the distance they are  above the floor. Stairs should be well lit to prevent accidents.  The lights can be set into the stair itself or along the wall  just below the hand rail. If the lights are  overhead, the fittings  should be placed at each end of each flight of stairs. For safety reasons corridor, stairway and fire exit lights should be  left  on during the night and there should  be  an emergency lighting operated from an entirely independent supply.

Rooms do  not  necessarily require general  lighting  but  there should  be  adequate light in the different parts  of  the  room. Switches  must be easily accessible especially at  the  entrance. Normally  an energy saver which acts as a master switch,  can  be activated by the card key.

Bedside  lights  are  provided beside the beds.  To  prevent  the bedside  lamp from tipping off, it can be screwed on to the  bed side table or wall mounted swivel-arm type lamp can be used. Dressing  table lamps should light the face and not  the mirror. Two lamps on either side of the mirror is quite suitable. A light above the mirror can cast shadows under the eyes, nose and chin. For  reading  or writing, there should be a good light which is adjustable, preferably the `Anglepoise' type of light.

A  floor  lamp can be placed close to the sofa for  reading purposes. If  placed behind a reader, the bottom of the shade should be 47" above the floor level; if placed beside, 42" is desirable.

If there  is a painting or a picture in the room,  this  can  be highlighted by using a spot light.

Wardrobe can be illuminated using lights with no heat gains.  The light must shine on the clothes and must be operated automatically using a door switch.

In bathrooms, there should be vapor proof fittings. The fittings should  preferably  be outside the room. Bare bulbs  around  the mirror  give a clear shadow less light for making up. This can be softened by hiding the bulbs behind an opaque  reflector. Adequate lighting must be provided in the shower area. A plug point must be provided for operating shavers and hairdryers.

Considerations for a good lighting system:

-Fully utililizing the potential of daylight when available.

-It is energy effective.

-Design and durability.

-Ease of replacement.

-Easily  maintainable. It has been estimated that at least  50%  of the illumination is lost if lamps and reflectors are not  cleaned regularly.

-Decide on the amount of light needed for the area.

Measurement of light

Lumen: It is the unit for measuring the amount of light emitted at the source.

Lux: It is the measure of illumination level at or on the surface which is being illuminated.

Reception ............. 300 lux

Lounges................. 150 lux

Halls................... 150 lux

Stairs ................. 100 lux

Landings ............... 150 lux

Food Preparation area .. 150 - 200 lux

Dining table ........... 100 lux

Bedrooms ............... 50 - 100 lux

Reading lamp ........... 150 lux

Mirror ................. 150 lux

Bathroom ............... 100 lux

General overall lighting 50 lux.

Activity: Identify the lighting in the visuals

**Further Reading:**

**Assignment**

Draw a Layout of a hotel room to scale. Mark light points. Discuss the type of light and the light fixtures ( visual) you choose.

Presentation(Group):

A Report and Presentation on the lighting system utilized in any hotel .You are expected to cover the Guest Rooms, Corridors, Stairways, Offices, Entrance, lobby, reception, Cloak rooms, Banquets, Conference Halls, Restaurants, Coffee shops, Kitchens...

Put forth your recommendations and suggestions.

1. Conran's Beginners' Guide to Decorating

 Jocasta Innes & Jill Blake

2. New Decorating Book

 Gerald Knox

3. The Complete Home Decorating Book

 Nicholas Bernard

4. The Complete Home Decorating Book

 Caroline Clypton - Mogg, Jane Lot etc.

5. New Classic Interiors

 Alessandra Branca Pub: Stewart tabori & chang