

Lighting

Unit

6

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Lighting

Learning Outcomes:

On successful completion of this unit the candidate will be able to:

- ✓ Investigate different aspects of lighting schemes
- ✓ describe how to Select the right fittings for different rooms.

When planning a home, rooms should be allocated according to the amount of natural light they receive, as well as for other practical reasons. The traditional artists' studio for example had a large north facing window, so that the painter had as much pure and cool light as possible to avoid distorting colours on the canvas. Morning light is brighter and clearer than afternoon or evening, which has a mellower, yellowish cast. By contrast a warm evening light will be comfortable and relaxing for a night-time sitting room. But as the day wears on, natural light fades and we need more artificial light to carry on the activities.

There is an enormous range of artificial lighting available today and we need to plan lighting for a scheme just as carefully as for any other structure or service in a home, so that it becomes an integral part of the whole environment. You will have to plan the direction, strength and type of lighting that would be required in a room, where the cables would be sited, where the light fittings and sockets would be placed - all these things are as important as any other feature when planning a design scheme. Light, like colour, can create both mood and atmosphere in a room and therefore should be planned very carefully. It has the ability to dazzle, or enhance, dim or brighten any space. Light and colour are closely linked; the amount of light a colour receives can change its appearance subtly, so the two should always be considered very carefully.

Light has a major impact on our enjoyment of a room. Good lighting can alter the apparent size of a room, can enhance the good features and diminish the ugly ones. Natural light contributes greatly to a sense of well being but it is rarely enough on its own. Both natural and artificial lights affect colour, and must be taken into account when choosing the decoration for a room.

Natural Lights

Daylight alters in intensity from season to season and even from hour to hour. It changes in colour from the clear light of the early morning to the lavender glow of dusk; and from burnished golden light of high summer to the white dazzle of winter. With the change in the intensity of light the interior of the building also seems different; therefore it is useful to see a room in as many changing lights as possible before choosing a colour scheme and furnishings for it.

There are several factors to consider with natural light. First, decide if there is sufficient light in the room for its intended use. For example, if the kitchen is to be the hub of the

household at all hours of the day, then it should be a room with lots of natural light. Consider also how light changes during the day and how it falls in different areas of the room. Dark corners may need a subtle boost of artificial light.

If the amount of natural light is not enough for how you want to use the room, you have two options: to explore ways of bringing in more natural light, perhaps by adding another window or by changing the solid doors to glass ones; or to boost the existing daylight with artificial light. In that case you will have to plan the lighting scheme.

Light through Glass

Glass is another light producer. Glass topped tables on metal legs give the appearance of floating which helps to increase a feeling of spaciousness. Glass shelves, lit from above or below, and perhaps used to display a collection of coloured glass or plants will effectively increase light and reflect any sunlight that does come in through the windows. Stained glass windows or doors also create interesting coloured shadows when light shines through them.

Adapting Windows

If structural planning has been planned for a home, special consideration should be given to increase the amount of light by replacing existing windows with the larger ones and by installing the energy saving sealed double or triple glazing at the same time. Picture windows and sliding patio doors are particularly effective ways of bringing daylight into the home but bear in mind the architectural features of the property.

The positioning of the home also affects the amount of natural light available, south facing rooms receive full light. East facing rooms will face light from the rising sun, west facing rooms light from the setting sun. North or north east facing rooms will not receive much direct light.

Light Enhancers

The use of beautiful colours, light reflecting textures and clear space all encourage a sense of lightness. Light reflecting objects such as crystals or mirrors can be strategically placed to enhance light, boost energy levels and direct energy around the house. By day mirrors will reflect natural light, and by night they will reflect light from the candles or lamps.

Planning a Lighting Scheme

A well-planned lighting scheme not only makes a room more generally pleasing, but it is very important - whether you write letters, cook or apply makeup - all these tasks will be helped if undertaken in appropriate lighting conditions. Once the furniture is shown on the plan, we can see exactly how many light points, circuits and sockets will be needed, and their best positions. There are many points to keep in mind when planning a lighting scheme for a room. You should consider the following points:

Activities

What will be happening in the room and where? What type of lighting would be most appropriate?

Balance of Light throughout the Day

Have you ensured that there are no dark areas?

Highlighting of Features

What about the stunning pictures, the magnificent marble fireplace or the beautifully beamed ceiling: are they all bathed in light and shown off to their best advantage?

Flexibility

What of room changes? Do you have enough free-standing light fittings that can be repositioned to provide new functions?

Decorative Style

Does the selection of fittings compliment the room or do they clash with the decorations?

Ambience

Decorative or reflective? The choice is yours.

Overall Light Level

How many fittings would be required to achieve a good overall level of light?

Variety

A scheme composed of all the same type of fitting can be boring and is unlikely to satisfy all the room's requirements. Be imaginative in your selection.

Types of Light

Well planned interior design lighting incorporates multiple layers of light. There are three main layers of lighting:

- Ambient
- Task
- Accent

Ambient Lighting

Ambient is the overall lighting of a room, from the sun's rays streaming through the window to an overhead fixture providing its primary glow. Examples of ambient light include lamps placed around the room, overhead lighting, as well as ceiling mounted lighting fixtures.

Other examples of ambient lighting include:

- Pendants lights
- Torchieres
- Suspended uprights

Task Lighting

Task lighting is used to illuminate a specific area for a more practical reason: reading, for example. A desk lamp to light a table and an under cabinet light used to illuminate a kitchen counter would be examples of this type of interior lighting. Other examples of task lighting include:

- Swing arm lamps
- Wall sconces
- Adjustable floor lamps

Accent Lighting

Accent lighting provides a way to focus attention on architectural or decorative aspects of a room. An illuminated wall niche or spotlights focused on a painting draw your eyes to these features. Track lighting or recessed 'eyeball' style lighting can be used to illuminate interesting wall features or simply provide a wash of light across the painted surface. A wall wash can be very dramatic in itself.

Types of Bulbs

Halogen

This is the whitest of all lights, and has a cooling effect. It can be a great choice for utilitarian task lighting. It is good for kitchen and for home office.

Tungsten

The tungsten filament bulb is the most common domestic light source. Compared with daylight, tungsten has a warm, yellowish tone and is good for interior use because it does not much alter colour relationships and also provides a good tonal contrast. Tungsten bulbs come in various wattages and designs and therefore suit different kinds of fixtures.

Tungsten bulbs have a relatively short life and also they generate a lot of heat.

Fluorescent

Fluorescent light is long-lasting and efficient, and therefore is less costly to run than tungsten, and therefore it is rising in popularity.

Selecting the Right Fittings

Once you have established your lighting aims it is time to choose the fittings which will help you achieve your plan. The most important thing to remember when settling on a style of lighting is that the performance of a particular fitting should be considered first and foremost rather than the decorative value of the lamp itself. Another problem to be faced is whether or not it is acceptable to mix lighting styles within the same room. Can modern fittings be introduced into a traditional interior? The answer depends very much on your own preference. Generally speaking, if the modern fittings are done in the ceiling, these will not conflict with older elements in the room.

A point frequently ignored while planning light levels is the effect of the chosen colour scheme. A predominantly pastel scheme (with white walls and ceilings) and one with shiny surfaces will need less light wattage, as light is reflected off the various surfaces, than the darker scheme or one which has matt surfaces where the light is absorbed. In the case of the darker scheme you may need to double the wattage or number of fittings.

Choice of light fittings depends upon the room, personal taste, style and colour, how much light is required, and for which purpose it is required. In practice most rooms need a mixture of light fittings.

Pendants and Chandeliers

Pendant

Light suspended from the ceiling by pipe or chain.



Chandelier

A branched light fixture suspended from the ceiling that holds multiple bulbs.



Pendants and chandeliers both provide general or background lighting. Usually suspended centrally from the ceiling, they can generate a dull and unflattering light, leaving room corners in darkness. Some pendants are designed to use over dining tables. Glass chandeliers are particularly elegant. Originally they were candle powered, but when converted to electricity they can be harsh. Therefore low wattage bulbs should be used in them and these should be hung in the centre of the room.

Source

A light fixture attached to the wall.

Task Lamp

This is a lamp with a moveable arm and head that can be adjusted to focus on a task.



Track

Individual fixture called heads can be positioned anywhere along a track.



Wall Lights

Wall lights take the form of: traditional bracket, up lighter, down lighter, picture light, strip light or angle-arm.

Modern or traditional, they can be chosen to throw light up, down or out. Now the question is what is the best height for positioning wall fittings? Actually, around 1.5m or 5ft is a good starting point.

Floor/Table Lamps

The floor/table lamp category covers such fittings as standard lamp, uplighter, table lamp, desk lamp and anglepoise. As these lights are not fixed to the floor, wall or ceiling they offer the greatest degree of flexibility.

Modern Fittings

Lighting has undergone a revolution in the past twenty years. The basic grouping is listed below:

Down Lighters

Down lighters direct the beam of light downwards. The width of the beam of light depends on the lamp and reflector installed.



Up Lighters

Up lighters can come in the form of free-standing models for floor or table as well as pendant and wall fixed versions. They are especially effective when used to illuminate a beautiful beamed or decorative ceiling.



Wall Washers

A wall washer is the type of down lighter which, instead of directing light immediately below the fittings, casts a beam of light to the side.



Spotlights

The spotlights being highly directional allow you to change your lighting arrangement as the room use changes.

Some lights combine several functions. For example, table lamps are useful task lights and they lend atmosphere to a room; spotlights can be used for either task or display lighting as needed.



One of the most easily installed lighting features is a dimmer switch, which will give you the option for instantly changing from bright illumination to subtle mood lighting as the occasion demands.

Most rooms need a mixture of task and ambient lighting, and of overhead and lower-level lights. Avoid too much bright overhead light as it will not create a relaxing environment. Essentially you should aim to create several layers of light in each room: the more layers, the more ways there are of lighting the space, and so of changing activity and mood.

When selecting the lights ensure that the lights themselves suit the style of the room.

Decide whether the room requires additional sockets for table lamps, or whether cabling needs to be installed for wall lights. Such tasks should be carried out by an electrician before you decorate.

Directing Light

Up Light

It projects light up a wall or towards the ceiling. It gives the illusion of more space.

Examples: a sconce pointed upwards, a pendant with an up turned bowl.

Down Light

The light is projected towards the lower part of the room. This can be direct or semi-direct, i.e. a pendant with a down turned bulb.

Diffused Light

Light is dispersed throughout the room, making it work for ambient light, i.e. a paper lantern or a flush globe fixture.

Multidirectional Light

Light is directed in many directions for a combination of lighting, i.e. a multi head track light.

Creating a Lighting Scheme

Mix it Up

A harmonious lighting scheme can be created by a mixing variety of sources. Combining different fixtures offers much needed comfort and ambience, and the alternating levels of light allow the eye to adjust to the changing times of the day.

Take Control

It is best to keep artificial ambient light on dimmer control brightness as the sun rises and sets. Accent and task lighting can be combined for creating a dramatic effect.

Space it Out

Distribute the light. If a room can be lit with a one hundred watt bulb consider spacing bulbs of lower wattage around the room.

Room By Room Lighting

Halls Stairs and Landings

These areas need to be brightly lit, both for safety and to create a welcoming atmosphere. Stairs should be well lit to make the treads clearly visible. A dual switch is advisable for linking the hall and landing. Light at the landing area can be on dimmer switch, which can be kept on for young children. Tables, desks or telephone areas should have separate task lighting. Wall washers can be used to highlight any architectural features or wall hangings. If the hall is long and narrow use mirrors to reflect light; hang an eye catching item on a narrow wall and light it dramatically.

Living Areas

Living areas can be separate function areas; in that case, the individual areas will need appropriate light according to their different functions. Provide soft general background lighting, possibly using a dimmer switch. Use task lighting for reading and play areas or for any desk area. Use accent light or display lighting to enhance any interesting architectural features.

Dining Room

Provide a soft background glow using integral lighting. Light the dining table clearly, avoiding any glare. You may choose an overhead lighting, perhaps a pendant which can be raised or lowered according to what is required. Do not use a very powerful light. Candle light on a dining table provides both light and gathering atmosphere. Food serving areas should be well lit, perhaps with wall lights or lamps which can be switched off, or dimmed once the meal is in progress. Use spotlights to highlight the special features like paintings and beautiful objects. If part of the room has to be used as a study, also use task lighting.

Kitchens

The kitchen needs good lighting as it is the main 'workroom' of the house. Some soft background lighting should also be provided. It needs good task lighting also. Some accent and display lighting should focus on the dresser. Clear and direct lighting is extremely

important in the kitchen. Work surfaces and cooker should be well lit from above. As sinks are often placed under the window, they receive good natural light during the day. At night they, too, will need an extra light source. Eating areas in the kitchen need to be well lit and for this purpose integral lighting can be installed.

Bedrooms

The type of lighting will be influenced by the way the room is used. Use night lighting in children's bedrooms and task lighting in teenagers' rooms. Bedrooms also need soft, background lighting controlled from door and beds. Bedside lighting can be wall mounted or an integral part of the bed head so that it can shine onto the pages of the book when sitting up in bed. Bedside lights should be used for reading rather than down lighters as they have a disturbing effect if they pour light on to readers' head.

The dressing table area will need good task lighting. If television is watched in bed, or there is a computer in the room, avoid any light which will cause glare on the screen.

Bathrooms

Safety is of prime importance in the bathroom again. Do not mix water and electricity. Lights should be switched off by a pull cord system, or switches sited outside the bathroom door. Fittings should be covered by glass or plastic so that metal parts are unaffected by steam. Spotlights, down lighters and up lighters are suitable for using in the bathroom. Light a mirror or the dressing table area with a clear light which shines on the face not on the mirror. Light bath, basin or shower areas well but without dazzle. Shiny surfaces can give off glare and showers especially need sealed fittings.

Play and Game Rooms

These rooms need good background lighting plus some accent or display lighting. Task lighting is an important feature and depends entirely on how the room is used. Desk, play and games areas should be well lit. Billiard, table tennis and pool table need special table lighting.

Conservatories

Low voltage lighting is particularly good for conservatories because it does not become too hot.

Garden

Garden or outdoor lighting is also important to plan properly. It can be used to emphasize, plants, shrubs, trees and architectural features to create a close link between the home and the garden. Front door and entrance should be well lit and should spot any changes in floor level. To enhance the attractive outdoor features use spot lights, or down lighters. All

artificial outdoor lighting should be controlled from inside the house or it can be dual switched.

Suggested Further Reading:

- ✓ *Designing With Light: The Art, Science and Practice of Architectural*, (2014), By Jason Livingston
- ✓ *Architectural Lighting Design*, (2002), By Gary Steffy