INTERIOR PHOTOGRAPHY
THE INS AND OUTS

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Interior Photography
The ins and outs

By

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"Sakura"

For all my
friends
and
family
especially
my parents

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SUMMARY

This script contains information about most of the equipment and techniques used in interior photography. The script is written in such a way that the information could easily be read and understood, eventhough this is a highly technical and precise field of photography.

After reading the script it would become a lot more clearer to the reader what interior photography is all about.

LIST OF ILLUSTRATIONS

LIST OF AUTHORS WORK

INTRODUCTION

The aim of this script is to help future students in this field to understand it better. The author has made use of everything to his disposal to explain interior photography without getting to technical or getting lost in too much descriptive words. The script is divided into two sections, the first section deals with the equipment used in interior photography and is discussed very shortly. The second section describes the practical side of an interior photographer and also includes images of the authors own work and a discussion. This section also includes work of professional interior photographers form across the world.

The title of the script is called "Interior Photography The Ins and Outs" as the techniques and equipment used are the ones mostly in use, "the ins" and thoughs mentioned but not described, "the outs".

One thing that all aspiring photographers must remember is that the camera is only a device used to capture what they see. It is a means by which a photographer express his or her creative vision and in interior photography it is no different than in any other field of photography.

SECTION 1: EQUIPMENT

Introduction

In any field of photography the right equipment is necessary and in interior photography it is no different. The wrong choice in equipment can be very costly and in this specialized field of photography the choice is immediately restricted because of the subject matter.

In our economy today it is not practical (or flexible) to go out and buy the best equipment one can afford, even if it meant taking out a loan. There are two reasons for this. Firstly, the best equipment that usually produces the best results is also the most expensive. Although unaware of the difference in quality now, later one will acutely become aware of those differences. Secondly, familiarizing oneself with one's camera is essentially important. It must be as such that it actually becomes second nature. This can only happen through regular use of equipment. Distractions one do not need is having to concentrate more on setting up the camera than on an assignment.

Apart from the two above mentioned reasons, the better the equipment, the more it retains its second-hand or collectable value should you ever decide selling it.

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1. Cameras

The various camera systems available to the interior photographer are the 35 mm format, medium format 120 roll film single-lens reflex (6 x 7) and the large format 4 x 5 and larger monorail view camera. Each format has different characteristics for different types of assignments. As a rule no single camera is ideal for all photographic requirements.

1.1 The 35 mm camera system

This is an easy to use lightweight camera system for interior photographers. The camera itself and the necessary accessories are less expensive than the medium and large format cameras. What makes this system largely unsuitable for high-quality interior work is its small film size that renders a poorer image quality than the larger formats even with the latest advances in film structure. The lack of interchangeable film backs, particularly Polaroid backs are also a reason that makes them less practicable for interior photography. (See appendix C Fig. 1.c, p 48)

1.2 The medium format cameras (6 x 7)

This is a format that borrows technical features from both the large and small formats. As in the case of the 35 mm system, the most popular medium format configuration is the single lens reflex. Interchangeabilities of lenses, film backs, and view-finders are some of this formats major advantages. Another advantage is that the film size is much greater than those of the 35 mm system and so gives a much greater image resolution. The only true disadvantage of this format is that it's bulky and that it weighs more than the 35 mm system. (See appendix C, fig. 1.b, p 48)

1.3 The large format cameras (4 x 5) + larger

This is a format that is in a class of its own, heavy, bulky and technically difficult to use because of all the movements it can perform. Bracketing is expensive when using this format because of a larger film size and only two shots can be taken on a time unless you have more than one darkslide that can only take two exposures. Another disadvantage of these cameras is an inverted image on the ground glass focusing screen when looking through it.

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A major advantage this camera has over other systems is its unequaled camera movements, its superior image quality because of its larger negative size and its modular construction that allows for easy repairs and upgrading of a system. My own personal view of this camera format is that it's technically rather complicated but great fun to use even if you have to drag it around on location. (See appendix C, Fig. 4. p 51)

1.4 Camera movements

Camera movements are restricted to large format cameras mostly. Movements achieved by small and medium format cameras are made possible by special lenses or lens attachments. Movements the large format cameras are rising shift, cross shift, swings and tilts. Rising shifts and cross shifts are known as shift movements and swing and tilt movements are known as Scheimpflug adjustments. Movements can be made with the front standard that holds the lens panel, the back standards that hold focusing screen or both can be used depending on the results desired. Of the two types of movements mentioned the shift movements are mostly used for interior work. (See appendix C, Fig. 2, p 49)

1.4.1 Shift movements

These movements are parallel movements of the front and or rear standards. (See appendix C, Fig. 2, p 49)

1.4.2. Rising shifts

These movements are made in the vertical plane and are used to eliminate diverging verticals in interiors and converging verticals in exterior architectural work. The panel holding the lens remains parallel to the focusing screen and is either shifted up or down from its neutral, central position. The film back therefore remains perfectly vertical which is essential for perfect verticals in an captured image. This means that if you had too much ceiling in an image when viewed from eye level with the film back vertical, the film back or lens panel could be shifted up or down to include more foreground and less ceiling. Doing this you avoid tilting the camera downwards and causing diverging verticals to start, or having to lower the height of the camera to an unnaturally low position. Converging or diverging verticals that are exaggerated can be used to great effect some times and some times it's a distraction to an image. (See appendix C, Fig. 2, p 49)

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1.4.3 *Cross shifts*

These movements are made in the horizontal plane and are used to correct diverging and converging horizontals in images. Another advantage of cross is known as the "magical" ability of the camera to avoid reflections off highly reflective surfaces in the image are by moving only the front stand slightly to one side. In actual fact the lens only shifts sideways to include areas of an image that are not normally included within the area of the focusing screen when all movements were neutrally positioned. This movement is useful in interiors for either detailed shots of reflective subjects within an interior or if camera positioning were restricted. Cross shifting of the lens can be the only way to include all the necessary elements of an interior at an angle the photographer can't normally achieve. Combining both rise and cross shifting one could get the desired results. (See appendix C, Fig 2, p 49)

1.4.4 *Scheimpflug adjustments*

On a monorail view camera these would be the swing and tilt movements. The panel holding the lens or the focusing screen or both can be swung around on a vertical axis or tilted over a horizontal axis to control the focus plane and depth of field. By using these movements on a view camera the Scheimpflug principle can be achieved to obtain the maximum depth of field of ones flat image plane. To obtain this principle of maximum depth of field the lens would have to be swung around its vertical axis a few degrees so that the subject plane, the focal plane that are the focusing screen of film path plane, and the lens panel plane intersect at an imaginary point. Theoretically according to the Scheimpflug principle it does not matter whether the front or rear standard, or a combination of the two are adjusted, just as long as the three planes intersect at a common point. In practice it makes a difference however as the swing of the lens panel is limited to the covering power of the lens, and movements of the camera back have a tendency to alter perspective a little especially in foreground subjects.

As Scheimpflug adjustments control only depth of field of a specific plane of focus it makes them useless in interior photography as most interiors are three-dimensional. An alternative to the Scheimpflug principle to get the best depth of field throughout the full three dimensions required for interior photography, is to reduce the size of the aperture. Should this also fail one should have to use a lens with a wider angle. This would be done as the smaller image is produced on film, the greater the effect of depth of field around it. (See appendix C, Fig. 3, p 50)

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2. Lenses

Introduction

The right lens for the assignment is very important as good quality lenses are expensive. A selection of lenses of different focal lengths is an absolute must for any interior photographer and these must range from wide angle lenses short telephoto lenses. Again lenses will be looked at which are used with the three formats mentioned before.

2.1 The 35 mm camera system lenses

Lenses used with this system vary from an angle 8 mm fisheye lens for very special and tight situations for creativity and where space is a big problem, a 15, 20 or 24 mm ultra wide angle lens also for tight situations where space can be a problem but with much less image distortion as in the fisheye lenses and lastly a 28 or 35 mm lens that is a moderate wide angle lens also for situations where space is restricted. These wide angle lenses are used to increase the depth of field and to create the feeling of space in images.

Then you should also have a standard lens that is a 50 or 55 mm lens that is for normal straight forward work. One should also have lenses with longer focal lengths such as a 85, 105 of a 180 mm lens for special occasions.

Zoom lenses are hardly used in practice as it is said that the fixed focal length lenses give better quality images with higher resolution. But with today's technology of lens design, zoom lenses can easily compare to any fixed focal length lens and the quality images is renders. Zoom lenses are very versatile as they can incorporate a few lenses into one lens. This not only saves money but it also takes up less space when one have to carry everything around.

A very important lens in this system is a PC (Perspective Correction) lens. In interior photography this lens is used to correct distortions of the vertical of horizontal lines and can even be used to exaggerate the distortions for special effects.

2.2 The 6 x 7 camera system

Lenses in these system would include a very wide-angle lens of 47 mm; a medium wide-angle lens of 65 mm; a standard lens of 100 mm and a short telephoto lens of 180 mm. This format is a little restricted because it has no zoom lenses and that there are no PC lenses for this system. In other words the lenses are only of fixed focal lengths without any camera movements.

2.3 The 4 x 5 camera system

Lenses in this system would include a very wide-angle lens of 75 mm, a medium wide-angle lens of 90 mm, a moderate wide-angle lens of 120 mm, a 150, 250 and 300 mm lens. This system also allows the most camera movements for correcting of distortions.

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3. Filters

Introduction

Filters for photographic use are generally colored or textured discs of glass, plastic or gelatin placed in front of the lens in order to modify the colour of quality of light passing through it onto the film-plane and so doing altering or enhancing the captured image. Filters can be divided into three categories: Colour correction filters; colour compensation filters; and special effects filters.

Colour correction and compensation filters are the main filters used in interior photography and are used to balance out the colour of the light source with the type of film being used. Special effects filters uses however are limited in interior photography.

3.1 Colour correction filters

These filters alter the colour content of light passing through the lens. They are either a strength of amber, to "warm" up the light, or a strength of blue to "cool" it down. They are necessary because while our human eyes readily compensate for variations in colour temperature, colour films on the otherhand tend to emphasize it. Colour temperature measured in degrees Kelvin, measures the colour of the light radiated by an incandescent light source when heated to different temperatures. At 1930 K candle-light together with domestic 100 K tungsten lightbulbs with a medium-low colour temperature of 2900 K forms the bottom end of the scale. Light sources with low colour temperature radiate colours from deep red through orange to yellow and yellowish-white. To correct these low colour temperatures a blue filtration is required to correct the balance of their colour temperature to that of photographic daylight. In the middle of the colour temperature scale is direct noon sunlight, or "photographic" daylight, at 5500 K: neutral white light in photographic terms to which all general purpose colour films are balanced. (See appendic C, Fig 5, p 52)

Sources of light with colour temperatures higher than 5500 K include sunlight filtered through an overcast sky at between 6000 K and 7000 K, to light reflected from a clear blue sky at between 10 000 K and 15 000 K. Light sources like these with high colour temperatures radiating colours from bluish-white to blue, require an amber filtration to correct the balance of their colour temperature to that of photographic daylight.

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As the effects of these filters are not measured in degrees Kelvin, due to the logarithmic nature of the scale which would give the same filtration different values for different source colour temperatures, so they are instead measured in mired shifts. This is an more convenient means of calculating the necessary strength of filtration's to correct the colour temperature of a specific light source, as it gives the filter a constant value. So the colour correction filters for positive mired shifts above zero are strengths of amber in the 81-and 85-series, and for negative mired shifts are strengths of blue in the 80- and 82-series.

Example: Using daylight-balanced film balanced for white light at 5500 K (a mired value of 1 million 5500 = 182) with tungsten photographic lighting at 3200 K (a mired value of 1 million 3200K = 312), the difference and incompatibility between the two are 182 - 312 = 1130 mireds. Reading the scale it can be seen that a blue 80A filter would be the appropriate filtration to correct the colour temperature of the light source to that of the film.

For the professionals there are a choice of colour-transparency film in two different colour balances: daylight balanced (5500 K) film the most common, for use when daylight of flash is the dominant light source; and tungsten-balanced (3200 K) film where tungsten light is primary source. With this film and negative film colour correction filters can be used as mentioned above to balance the colour temperature of particular light sources with the film-type being used.

Another frequent use of colour correction filters is to convert the balance of daylight film to tungsten, and vice versa. Strong colour correction filters used specifically for this use are known as 'colour conversion' filters. An 80A filter (deep blue) will for instance convert a daylight-balanced film for use in tungsten lighting, and an 85B filter (strong amber) will convert a tungsten-balanced film for use in daylight on with flash.

3.2 *Colour compensating filters*

These filters like colour correction filters are usually made of thin gelatin, but have a wider range in the sense that they are available in the six colours of the photographic process: red (R), green (G), blue (B), and their complementary opposites cyan (C), magenta (M), and yellow (Y), all in varying densities. Alone or combined these filters

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can be finally tuned to the colour balance of almost any lighting situation when used in conjunction with a colour-temperature meter.

The filter tables as seen (See appendix C, Fig 10, p 57) refers to the appropriate colour compensation in terms of numerical density or strength, followed by the initial of the colour of the particular filter, or filters, required for the situation. They also frequently give the exposure increase needed in terms of f-stops necessary for the recommended filtration.

Example: The filtration needed to compensate the colour of light from a "daylight-fluorescent" lamp for reproduction on a daylight-balanced film is recorded as 'CC40M + 40Y', 1 stop. This means that a CC (colour compensating) filtration with a strength of 40 Magenta plus 40 Yellow is needed over the camera lens, with an increase of one stop in the overall exposure.

These filters are useful especially when compensating for colour casts created by discharge lighting, like non-incandescent light sources such as fluorescent, mercury vapour and metal halide lamp which creates light by means of an electrical discharge vaporizing a metal. The light produced might only cover narrow bands of the spectrum but the fluorescent coating on the inside of the glass tube of a fluorescent light expands the spectrum of the light produced. This enables this type of non-incandescent lighting to be corrected fully in most cases. These filters are also useful for correcting colour balances due to reciprocity failure of the film. Fluorescent lighting unfiltered appears green on daylight-balanced film. Correcting this, a magenta filter is placed infront of the lens. If any supplementary lighting, like flash, was needed and used and left unfiltered it would appear magenta on film as it has to pass through the compensating filter on the lens. Overcoming this, green coloured filters needs to be placed in front of the flash unit to convert the white light output to the equivalent colour balance of the fluorescent tubes output. These filters can be bought as large sheets of gelatin which can be cut down to size and clipped to size and form of the flash unit.

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Mixed lighting situations are problematic, especially sometimes when only the best colour compensation has to be achieved. Under sodium vapor lamps which are discharge lamps that emit light of such a narrow yellow waveband it renders them uncorrectable. In situations of fluorescent lighting where critical colour compensation is required with the use of a specific combination of colour compensation filters for perfect results. There are readily available fluorescent compensating filters for either "daylight-fluorescent" (FL-DAY) or "white-fluorescent" (FL-W) which are adequate for most general uses, and when one's not in possession of a colour-temperature meter.

In short, the basic colour correction filters 80A and 85B are essential for interior photography, and the others in the series can be very useful. With colour compensation filters, the basic standard fluorescent filters are a necessity, while the full set of compensation filters of varies densities are only needed for critical work, when using a colour-temperature meter.

3.3 Filter mounts

Filters used can be mounted onto the camera either by screwing it onto the front of lenses or the filters are square and can slide into a filter holder to which different sized adaptor rings are attached to. These adaptor rings corresponds to different diameters of the different lenses being used.

B & W and Hoya are the names mostly associated with the screw type mounts. Both mounting types are excellent with the screw type mount being the fastest to use, but not as flexible as the Cokin filter holder mount system. The holder system is cheaper, one only have to buy one filter holder with the different sized adaptor rings to fit the lenses, and it can be used for all sizes. Another advantage of this system is that it can also carry colour compensating filter mounts.

4. Meters

Introduction

In interior photography there are three different types of meters that are used. They are light meters, flash meters and colour temperature meters. These instruments are essential for any photographer as lighting is very crucial in any photographic field. The interior photographer probably uses these meters the most although the colour-temperature meter is optional and is only used for critical precision work. The other two types of meters can be considered as essential on the equipment list.

4.1 Light meters

These meters are used to measure the "natural" available light on scene before any supplementary lighting is added. Sight readings taken with these meters are to be considered as the dominate source of information on lighting as interiors should look natural in appearance to the viewer or client, so correct measurement is very important. Measurements can be made with hand-held meters, spotmeter or with the cameras build-in light meter.

A hand-held meter measures light as a incidence or reflected source. In the one method a reading is taken of an area on which direct light is reflected off the subject. In this case the quantity of light reflected off the subject is measured. With the other method, the amount of light falling on the subject is measured. The incident method of taking light measurement can be considered as more consistent than the other method as it is not affected by reflectivity's of materials on which light falls. Whichever method used, an average brightness has to be measured for the area you are going to photograph.

The useful spotmeter measures reflected light with a 1° angle of measurement and with it one can determine variations in light levels across an selected interior.

The photographers own 35 mm camera with it's centre-weighted metering system is especially useful for deducing working averages from several different readings across an picture area. (See appendix C, Fig. 6, p 53)

4.2 Flash meters

These meters measure the strenght of a very short, bright burst of light emitted from

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unit. They usually only record incident light readings. Measuring the intensity of light reaching the subject, they display the necessary information such as aperture for average exposure at pre-set shutter and film speeds. Although essential these meters act only as guide as the flash is most often the secondary light source to the dominant natural light in the room. (See appendix C, Fig. 6, p 53)

4.3 Colour-temperature meters

These meters measure the colour quality of light in an interior, relative to the type of film being used. They record the colour temperature, colour casts and then calculates the filters needed to balance the colour of the available light to the particular type of film being used. Incident reading are taken and the light passes through a diffuser onto three separate silicon photocells, individually sensitive to blue, green and red light. The relative responses of these photocells to the light are compared and a read-out of the necessary filtrations needed is displayed.

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5. Films

Introduction

This is one of the most important elements in photography. The choice of makes such as Agfa, Fuji, Kodak and film speeds is much greater today than when photography first started. The quality and the consistency of the quality of film bought today is also one of our edges which we have over yesteryears photographers. We all have our favorite film manufacturers.

Todays variety in film include colour transparency, negative, black- and white and instant print films like Polaroid.

5.1 Colour transparency film

This type of film is my favourite, but a drawback is that the exposure has to be spot on or one would have to bracet ones exposures. This type of film is also the most popular choice of most commercial photographers and is mostly used for mechanical reproduction. In the professional field of interior photography there are two types of colour transparency films: "daylight-balanced" and "tungsten-balanced".

The general purpose interior film is the 100 ISO rated daylight- balanced film which is extremely versatile and of very high quality. Other characteristics are that no filtration is required when daylight and flash combined is the main light source. It suffers no reciprocity failure as long as exposures are not longer than a couple of seconds, and it is the ideal choice of film when time is an important factor.

The specialist interior photographer uses the 64 ISO rated tungsten-balanced or Type B film. Though useful where tungsten light is the only, or dominant light available but it is specifically designed for long exposures. Other characteristics are that this film has no significant reciprocity failure during long exposures and corrective filtration's might be required during exposures. The advantages of these long exposures is that it enables the photographer to fire his flashes up to several times if necessary.

Most transparency films are developed by the E-6 process (except for Kodachrome films).

5.2 *Colour negative film*

Colour negative film has the advantage that the exposure does not have to be spot on and if colour correction filters were not used the colour cast could be corrected in the printing stage. With colour negative film excellent colour prints can usually be made from a negative. Colour negative film is still the most popular option when colour prints are the only desired end- product. Mostly the customer want prints and not transparencies to look at and put up on a wall or in a book.

The colour negative films are developed by the C41 process.

5.3 *Black-and-white film*

Black-and-white film in comparison to colour film and transparency film is simple to use and very forgiving. Forgiving in the sense of its exposure tolerances and due to the fact that it is not affected by mixed lighting conditions. Similar to colour films, film rated at 100 ISO to 125 ISO is used for general interior photography and film rated at 25 ISO or 32 ISO which renders the sharpest images and have a greater contrast and the smallest grain for the best results.

Black-and-white interior work is mostly for archival recordings but can also be applied artistically.

5.4 *Instantaneous material*

Polaroid is the most commonly known instant print film and is very important for the professional interior photographer. Instant print film is available in colour, black-and-white and tungsten. It is used to check exposure on-site immediately. The photographer can also check for colour balances, composition and unwanted flash reflections.

5.5 *Reciprocity*

With the reciprocity law in theory, (exposure = illuminance x duration) it is presumed that illuminance and its duration is reciprocally interchangeable, meaning that by doubling the exposure and halving its duration, it would have no photochemical effect. In practice, however, the reciprocity law has its limitations. For example the film emulsion does not respond as determined by the reciprocity law, particularly when very long and very short exposures are made.

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All film material are effected by reciprocity, some like Colour film material, are more prone to it than black-and-white film material. (See appendix C, Fig. 7, p 54)

Appendix C, Fig 7 shows the recommended exposure duration for a 100 ISO daylight-balanced Colour transparency film and for a 64 ISO tungsten-balanced film. Reciprocity failure requiring up to a strength of CC05 filtration is negligible. The graph shows how tungsten-balanced film is designed for the longer exposures needed for high-quality interior work.

5.6 Storage

For good results the storage of film before and after use is important. Film must always be kept away from warm, damp situations and be protected from chemical fumes and X-ray radiation as these conditions, chemicals and radiation can change or alter the finely adjusted emulsion layers, especially in colourfilm material.

To protect ones film it is best kept in its original packaging holder and in a domestic refrigerator. When kept there, sealed film will remain usable beyond its printed expiry date without change to the films characteristics. Expiry dates on film are only a guide. Much depends on the storage conditions. After use it is also good to have it processed as soon as possible. The effects of bad storage before or after use are loss of speed, contrast and in the case of colour film material colour shifts. (See appendix C, Fig. 8, p 55)

5.7 Electronic image capturing

At present electronic image capturing of interiors is impractical because of the cost of the equipment required. In the future when costs have been cut and the equipment is more mobile and compact then perhaps interior photography may be done digitally.

6. Lighting

Introduction

Lighting is one of the most important element in photography. Supplementary lighting is often used in interior photography as mentioned previously. Lighting used can be divided into two main categories: flash and tungsten. Flash naturally being the choice to simulate white daylight in terms of colour temperature does not require any colour correction. Tungsten on the other hand is a "warmer" light source appearing redder and requires colour correcting. Above all, natural light is still the most important source of light.

6.1 Flash

This source of lighting is the most practical and useful of photographic for interior work. As it closely approximates photographic daylight without any filtrations, it's a great help in creating that natural unobtrusive look, when used with other attachments of just bounced of a wall or umbrella. One very important factor in using flash is that it has to be portable for the photographer to carry around all day. The Technikon's flash kit is ideal for interior work as it is portable, relatively light and easy to use. These lighting kits contains three flash heads with build-in tungsten modeling lamps for previewing the lighting setup of the scene being photographed. The integral flash head consist of a circular flash tube surrounding a modeling lamp at one end of the housing and controls at the opposite end. The controls consist of 2 main switches, one for the modeling light and the other for the flash switch. Another switch is the infrared flash sync slave unite also found on these units. When one flash goes off it triggers the rest to go off at the same time.

The flash units also have holes through them from one end to the other which acts as a socket for attaching umbrellas and reflectors. Most of the attachments mentioned in Appendix C, under lighting equipment can be attached to these flash heads. The Technikon have some of these equipment, but has to be booked out additionally. The Flash kits also has specially made cases in which to carry the units for protection and portability. With these kits come the lightweight collapsible stands. These are carried around in tailor-made-shoulder-bags.

I personally prefer to make use of these lighting kits, but I tray to make more use of the available light.

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6.2 *Tungsten*

This type of lighting play a secondary role and is as such not very essential in interior photography. It can however be used for creating special effects. The Technikon owns a tungsten lighting kit, but the author has only made use of it on only a few occasions. The flash kits of the Techincon has build-in tungsten modeling lamps which can also be used on there own or with the flash lighting. The tungsten lighting kit, like the flash light kit, also contains three lighting heads. The integral photo flood lights consists of only a tungsten lamp at the one end of the housing and controls at the opposite end. The controls consists of two controls, one for switching the lamp on, on a four output and also a fan inside the unit. The second switch is for higher output. Triggering devices like those found on the flash kits are not found on the tungsten lighting kits as they are not used in the same way as the flash kits. The tungsten units also has holes through them form one end to the other which acts as a socket for attaching umbrellas and reflectors just like the flash units. This kit also has specially made cases and shoulder bags for carrying the Tungsten light heads and collapsible lightweight stands. This lighting kit has the advantage that it is lighter than flash lighting kits and that the position of the bulb to reflector and lens to bulb can be adjusted to alter the beam diameter and control edge sharpness of the light spot on some models. The results of these adjustments is that the light unit forms either a spot light with a narrow beam of light, or a flood light with a broad beam of light. (See appendix C, Fig 9, p 56)

7. Mixed lighting conditions

Introduction

Mixed lighting conditions is the problem that interior photographers faces the most. Most conditions encountered are usually daylight and tungsten, tungsten and florescence orf florescence and daylight. Correcting the colour balances which may occur is what challenge interior photographers mostly and it is this that is going to be disgusted next.

7.1 Daylight and tungsten

This combination of lighting is mostly found when photographing residential interiors can be corrected. How it is going to be corrected depends on the effect sought. For this specific combination of lighting there are a few ways of correcting it and it will be disgust in short below.

The simplest and most preferred method by some interior design magazines are to leave all the tungsten lamps off, and to just work with the dominant daylight and fill-in flash.

For tungsten lamps to appear lit in photographs the ideal method for optimum overall exposure and colour rendition is to make use of multiple exposures. For mixed lighting situations a general rule is that the total exposure of a single frame of film can be divided into as many parts as there are different types of light source in the interior being photographed, assuming that each light source can be controlled independently from the others.

Dividing exposures into two: the first for daylight and fill-in flash with all tungsten lights off and the second exposure only for the tungsten lights, with the windows now blacked out when using tungsten-balanced film. The first exposure for the daylight and flash would have to be increase by one stop to compensate for the 85 B amber colour filter being used. A light reading should be taken with full available light for a specified aperture. For the most natural balanced appearance on film to be maintained between daylight and tungsten of an actual situation, the exposure reading should then be used for both parts of the exposure independently. For a difference in balance between two light sources the exposure time for each part could be adjusted accordingly.

Another method of correcting the tungsten colour balance is to make use of special blue-coated bulbs which has a whitening light effect and it also approximates the colour temperature of daylight. Large rolls of gelatin filters are alternatively available for covering windows in order to balance the colour of the daylight to that of the tungsten lights. There are other methods also available but the above are mostly used. (See appendix C, Fig 10, p 57)

7.2 *Tungsten and fluorescent*

This combination of lighting is mostly found when photographing commercial or industrial buildings and can be corrected by making use of the double- or multiple exposure technique. An overall light measurement should be taken with both sources of light switched on, for a specified aperture. If tungsten photographic lighting is used supplementary any fill-in flash will have to be filtered appropriately. These purely artificial lighting conditions is as such that it is mostly evenly lit and that it does not warrant any extra photographic lighting. A light reading will give the necessary exposure for a photograph, and it will be the basis for each part of the double exposure as each light source can independently be switched on and off. By using the same exposure as each part of the overall exposure will maintain the existing lighting balance of tungsten to fluorescent as they naturally appear. Before making the double exposure an appropriate increase in the exposure must be calculated for the fluorescent part of the exposure to take into account the necessary filtration, assuming a tungsten balanced film was used. (See appendix C, Fig 10, p 57)

Example: Making use of tungsten-balanced film rated 64 ISO; and a light meter reading, indicating an exposure of 10 seconds at f22 with all the lights switched on. The tungsten part of the exposure will be straightforward 10 seconds without filtration. The fluorescent lighting in this example would be White Fluorescent.

The Colour compensation filters needed to balance the colour of the fluorescent lighting to the tungsten-balanced film would be CC40M + 40Y, as read from appendix C, Fig 10, p 61. The filtration would require a one stop increase in exposure, therefore the fluorescent part of the exposure will have to be doubled. A 10 second meter reading was taken , but a 20 second exposure would have to be made. This double exposure would work as follows: Make an 10 second exposure at f22 without filtration and the fluorescent lights switched off. Make a second exposure after resetting the shutter and placing a filtration value of CC40M + 40Y over the lens with the fluorescent lights switched on and the tungsten lights off. Then make another 20 second exposure under these conditions. All these exposures together would give us a perfectly balanced end result.

7.3 Fluorescent and daylight

This combination of lighting is mostly found when photographing large, open-plan offices and can also be corrected by making use of double-exposure technique. Again firstly exposing for daylight alone and then just the fluorescent with the daylight blacked out.

These large areas makes it very difficult to control the daylight and working with daylight-balanced film without filtration, would create a unpleasant green colour-cast on the image, but filtering the fluorescent light would make the daylight coming through the windows appear magenta in colour.

One could leave the fluorescent lights off and work with a combination of daylight and flash lighting or one could wait till nightfall and only work with fluorescent lighting and supplementing that with flash lighting of course filtered with the appropriate gels. The appropriate filtration filter would be placed over the camera lens.

For the best result one could cover each fluorescent tube individually with a sheet of gelatin daylight conversion filters, but it is a very time consuming business. This however would have the effect of balancing the colour of the fluorescent light with that of the daylight. (See appendix C, Fig 10, p 57)

SECTION 2: THE PRACTICAL SIDE

Introduction

The assignments given at the Technikon gives the aspiring interior photographer more of less an idea of what it might be like in the working world. In the Technikon one works for marks, but out there in the working world a photographer works for a living and to satisfy his or her clients. This comparison is not so far off especially if one put it in this way that the lecturer can be considered as the client and the time they give in which to complete the assignment is the same time a prospective client would give to a photographer to complete his assignment. You as the photographer would then have to complete this assignment within a time schedule and represent it to your client or lecturer. If the lectures is pleased with assignments, he might give good marks, but if the clients are pleased they would not just pay the fee, but also make further use of your services in the future. A satisfied client is also a good advertisement for future or prospective clients.

As a student, one can only imagine what it really must be like, but that would be answered in good time sooner or later.

8. The working world

Introduction

The working world is a fast moving, rapidly changing and demanding place for any photographer. And within all that, a photographer is expected to adapt and chance with his surroundings to get a better understanding of how his competitions are thinking and also what is his clients tastes, likes and dislikes are. The modern day photographer is not just a photographer, but they are also businessmen in today's working world. To work really well a photographer and his client need to know and understand each others needs and objectives.

8.1 The right photographer

It is very important that once a prospective client has decided to make use of a professional photographer that he or she get the right photographer to do the job, otherwise they are only going to waste their time and money. To get the right photographer the client firstly has to see some of the photographers work which would most certainly influence the clients decision. The prospective client could also talk to someone who has experience in working with photographers and that can recommend a good one or call a respected publication for a recommendation or they could contact there nearest photographic association lsuch as the P.P.S.A. (Prefession Photograhers of South Africa) for a list of respectable photographers. Out of all these canals the right photographer should be found easily.

8.2 Timing and scheduling

The availability of the interior photographer is a crucial factor. The greater the time a photographer is allowed for photography, the more likely the varies conditions and everyone's schedules will synchronize and thereby promote a less stressful completion of assignments. With a tight timetable dictating sometimes, compromises would frequently have to be made and may adversely affect the end results, leaving everyone unsatisfied. For greater success one must plan ahead and anticipate when conditions would be favorable and likely to prevail and then complete the assignment.

8.3 Costs, fees and contracts

After determining if everyone's schedules are mutually compatible, cost would be the next matter to disgust. The fee photographers charge would vary according to the

type of rights the client requires. These rights are determined in advance so there are no misunderstandings. Costs of an assignment should be doubled if the rights or exclusive rights to the work are essential to the designers. Some photographers quote rates for particular jobs, but most have daily rates, which could vary according to both location and reputation. A contract, if one is being used, should be disgust in detail before any work is done to avoid unnecessary problems. Contracts should include information on length and duration of the assignment, method of payment, amount, rights, copyrights, the use of the work, formats to be used, which type of film to use, what the client is looking for, his sense of style and lighting, and other information setting out the assignment.

8.4 Rights

By far the majority of architectural photographs taken today falls under the category of limited rights. This allows the client to make any direct use of the material including portfolio uses, displays, office references, slide presentations, local and national competitions, when the release of copyright is not needed. If a book is being prepared by the client then the reproduction right for this may also be included. The right however to publication by other parties than the assigning is usually not part of the agreement, and practices on this matter may differ. Rights may vary form one assignment to another and depending on the photographer who is the copyright holder of the work. These rights and others should be set out in the contract and the client must be made aware of them to avoid misunderstandings.

8.5 Copyright

These laws are extremely complex, very confusing and very often ignored. A photographer can relinquish ownership only by consciously signing an agreement to do so. The signing of the agreement can be done either before or after an assignment is completed. When signing an agreement which uses the term "work for hire," the copyright is then transferred from the photographer to the client. Each country in the world has different copyright laws so it would be advisable for a photographer to contact an legal adviser or a photographer association like the P.P.S.A. for more information.

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9. A probable history

There is not much information on the history of interior photography so the following account is only a probable history without being certain.

The worlds oldest surviving picture produced with a camera in 1826 is probably the first interior exterior photograph ever. (See appendix C, Fig. 11, p 58). The photograph then called a heliograph was taken by Niepce and it required an eight hour long exposure. It shows the view of his top floor workroom window. Also seen on the image is a sloping barn roof, a pigeon house left, and a part of his house right. This photograph or heliograph was the first big success and start in photography in general and to us now also interior photography.

In 1835, only nine years after Niepce's historical photograph, William Fox Talbot took a photograph of a window at Lacock Abbey. The photograph was given an exposure of 1½ hours and was taken with a little "mousetrap". (See appendix C, Fig. 12 & 13, p 59) Tablot made use of the Calotype process which he invented himself to capture the image of the window.

In the years there after and with the invention of the Daguerre retype process, almost all the photographers mostly became still life or architecture photographers. (See appendix C, Fig. 14, p 60) Exposures in this time also became much shorter and was measured in minutes rather than hours like in the years before. The exposure time became even shorter in the 1850's with the invention of the collodion process. (See appendix C, Fig. 15, p 61) And just when photographers became used to faster exposure times it become even faster in the 1870's with the invention of dry plates and later roll films. (See appendix C, Fig. 16, p 62)

Up until the 1900's advances made in every field of photographic equipment has made photography a lot easier, and broadened photography's horizons with every evention. At thirst, one could not believe that interior photography could be done with those early metal plates, but as the emulsions keep getting better and faster one can see how interior photography could have evolved together with the emulsions.

Now in the 20th century emulsions and equipment are even better and faster and we now even have the advantages of portable flash lights, filters, computers, one hour photo labs, transparency films, advanced light and colour meters, greater

variation of shutter speeds and f-stops and many more. Since the invention of colour film, interior photography took off very slowly but it became a field of photography. Just in the last twenty years, interior photography won more ground as a field of photography than it did the previous hundred years since photography first started in 1826.

10. The Author's work

Introduction

A short discussion of the author's work will be given under headings such as style, location, camera formats and lenses, problems and influences. (See appendix B Plate 1 to 10, p 38 - p 47)

10.1 Style

The author does not have a set style of doing his work, but breaks away from the stuff straight forward approach and makes use of strange angles, available light sources without correcting and sometime correcting just a little bit and the photographer mostly used transparency film and black and white film which he prefers above colour negative film.

10.2 Location

The author likes to photograph residential areas which has cramped space to work in, and industrial areas which has wide open space in which to work. The author also enjoyed photographing public places like O'Hagans and the Kines, and where ever the author feels it is interesting or striking enough to photograph.

10.3 Camera formats and lenses

The author has the knowledge and expertise to make use of the 6 x 7 and 4x 5 cameras, but still prefers using his 35 mm SLR. The author enjoys working with the 6 x 7 and 4 x 5 cameras, but prefers his 35 mm SLR camera because it is light weight and easy to use. All the work of the author in this script has been taken with his trusty Pentax 35 mm camera and with his Pentax 28 mm to 80 mm zoom lens. The lens usually used on a wide angle setting.

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10.4 Problems

Problems the author experienced during his course was that some people did not like the establishments to be photographed, the equipment at the Technikon was limiting, like the lenses found in the various camera kits and the light kits that does not work or is broken all the time.

10.5 Influences

E. Dedekind, the Author's first year lecturer, had a profound influence on the author's way of thinking and seeing photography and this influenced the author to become interested in interior photography. The author likes challenges, so he took up the challenge of interior photography and is enjoying every moment of it.

11. Conclusion

11.1 Summary

Interior photography is an exiting and challenging field of photography explained in this script, Interior photography -The ins and outs. In section one all the necessary equipment used in interior photography is discussed under headings of cameras, lenses, filters, meters, films, lighting equipment, and lighting and mixed lighting conditions.

Section two deals with the practical side of interior photography. It also contains a short discussion of a probable history of interior photography as it is not clearly set out to us in other books, so it is approximated by the author.

This is followed by some of the authors work.

11.2 Comments on South African interior photography

Interior photography in South Africa is still new compared to other countries in the world where it flourishes, but the author is proud to say that he has seen many magazines with photographs of interior in it and that it compares very well to that of other overseas countries.

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APPENDIX A

(Fig. 1)

(Norman McGrath, Photographing buildings inside and out, p 68)

(Fig. 2)

(Norman McGrath, Photographing buildings inside and out, p 69)

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(Fig. 3)

(Norman McGrath, Photographing buildings inside and out, p 85)

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(Fig. 4)

(Norman McGrath, Photographing buildings inside and out, p 88)

(Fig. 5)

(Roy Genggam, Interior shots, A guide to professional lighting techniques, p 19)

(Fig. 6)

(Roy Gengam, Interior shots, A guide to professional lighting techniques, p 75)

(Fig. 7)

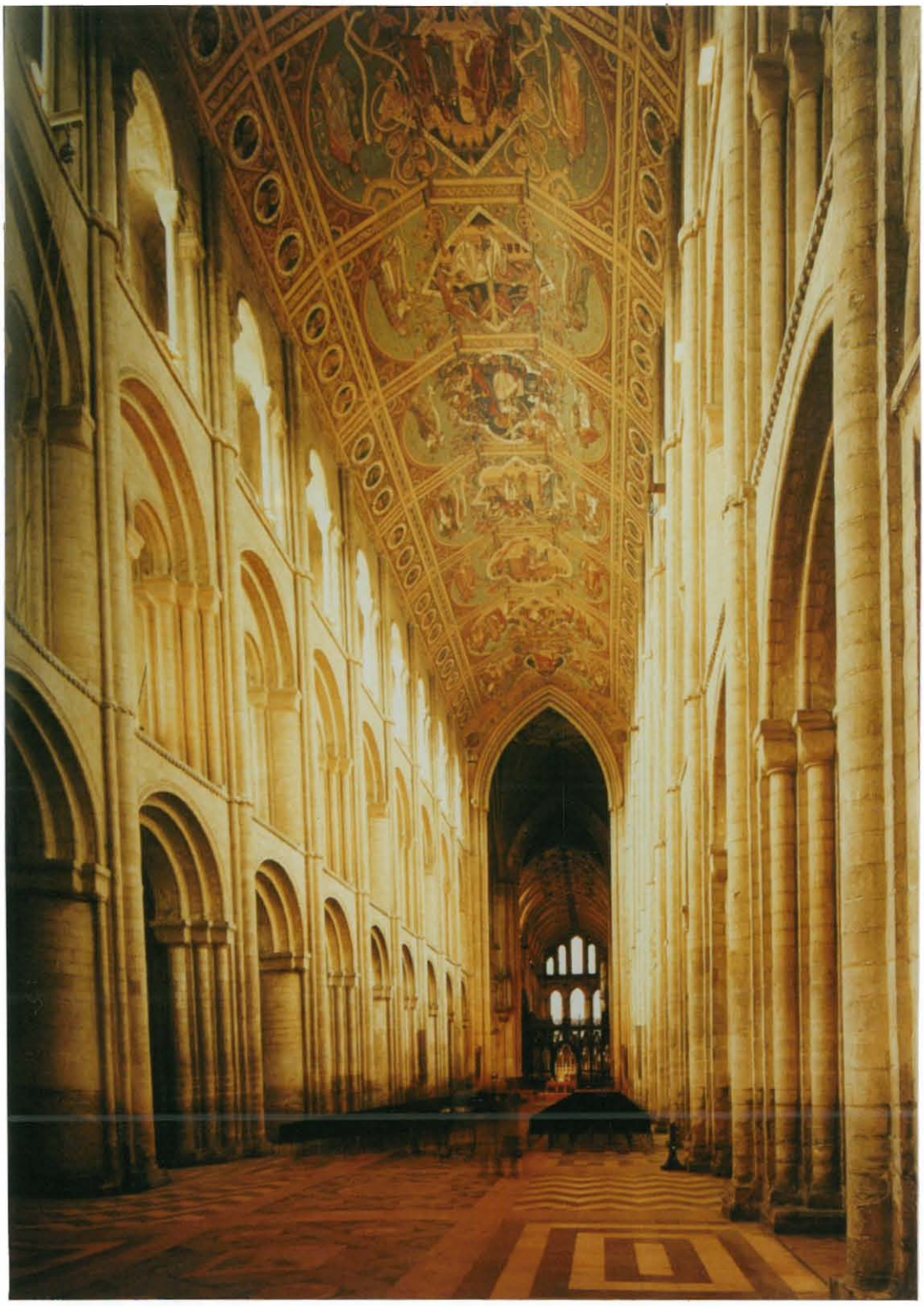
(Brendan Anthony Walker, Interior shots, A guide to professional lighting techniques, p89)

(Fig. 8)

(Francesco Bellesia, Interior shots, A guide to professional lighting techniques, p 93)

(Fig. 9)

(Tim Edwards, Interior shots, A Guide to professional lighting techniques, p 95)



(Fig. 10)

(Quintin Wright, Interior shots, A guide to professional lighting techniques, p 109)

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APPENDIX B

Plate 1 "[illegible]

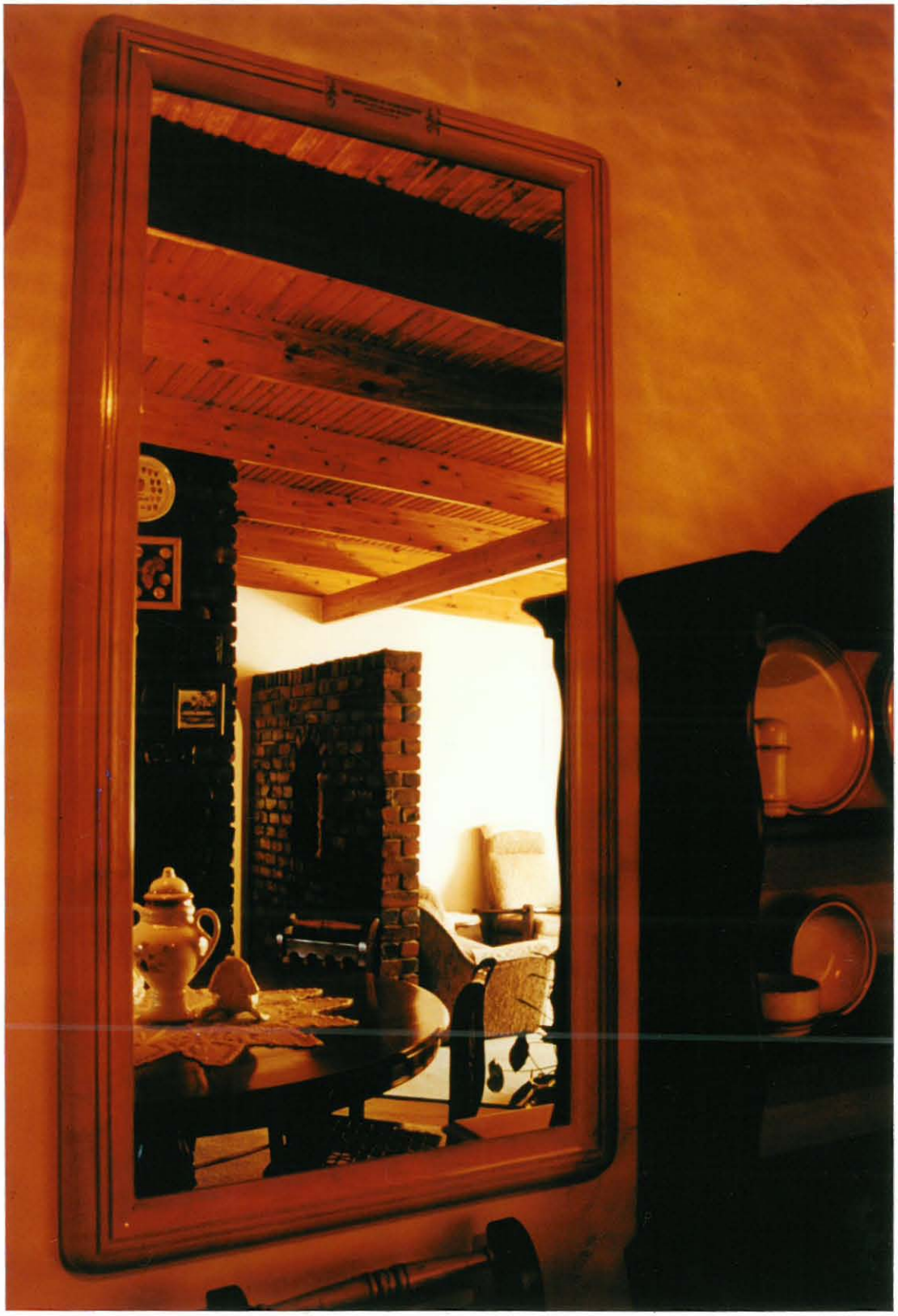


Plate 2 "Mirror, Mirror on the wall"

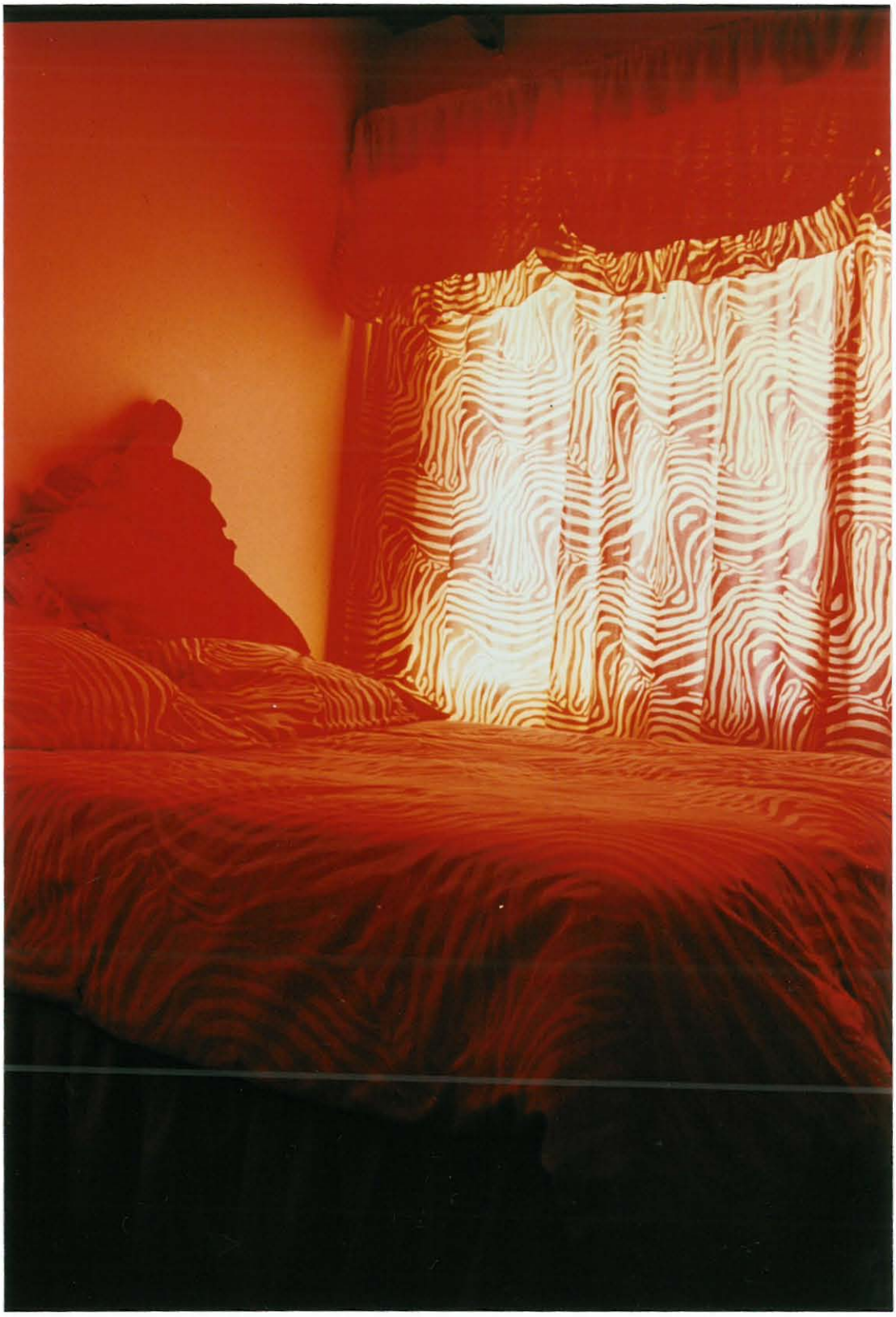


Plate 3 "Just red"

Plate 4 "kitchen"

Plate 5 "kines"

Plate 6 "Come and sit"

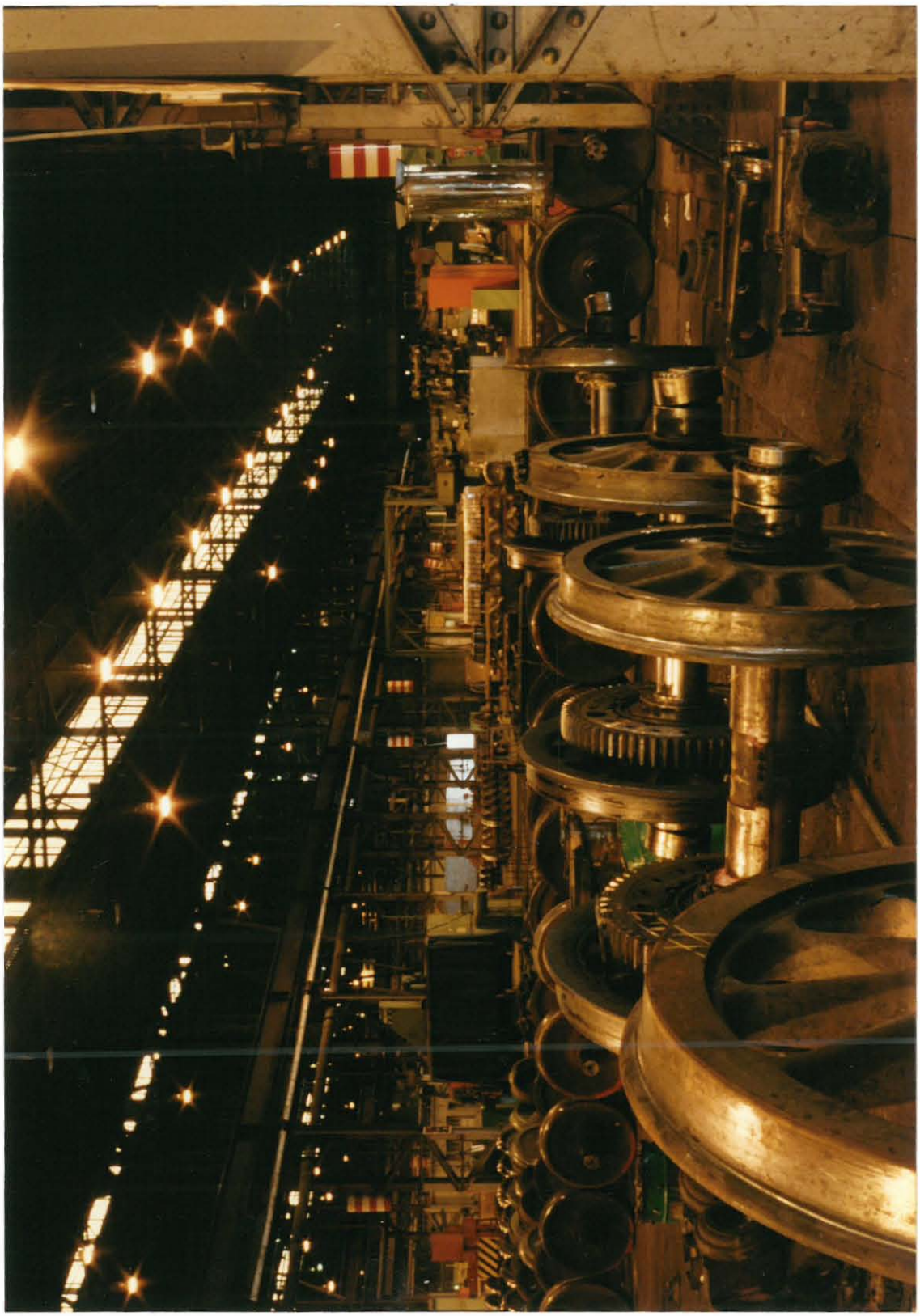


Plate 7 "Colour-industrial"

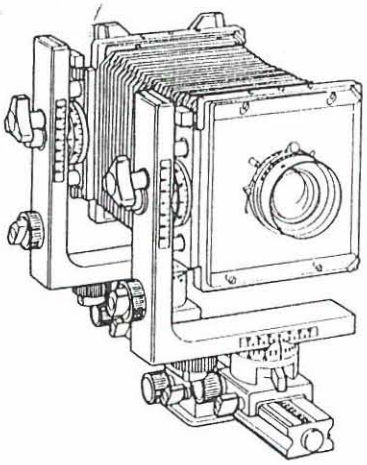
Plate 8 "Black and white industrial"

Plate 9 "O'Hagans"

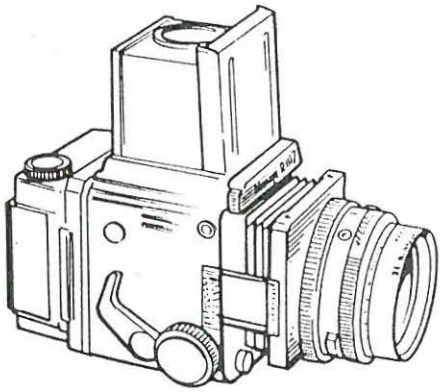
Plate 10 "Abstract"

APPENDIX C

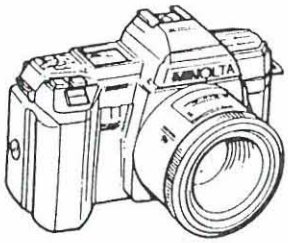
(a)



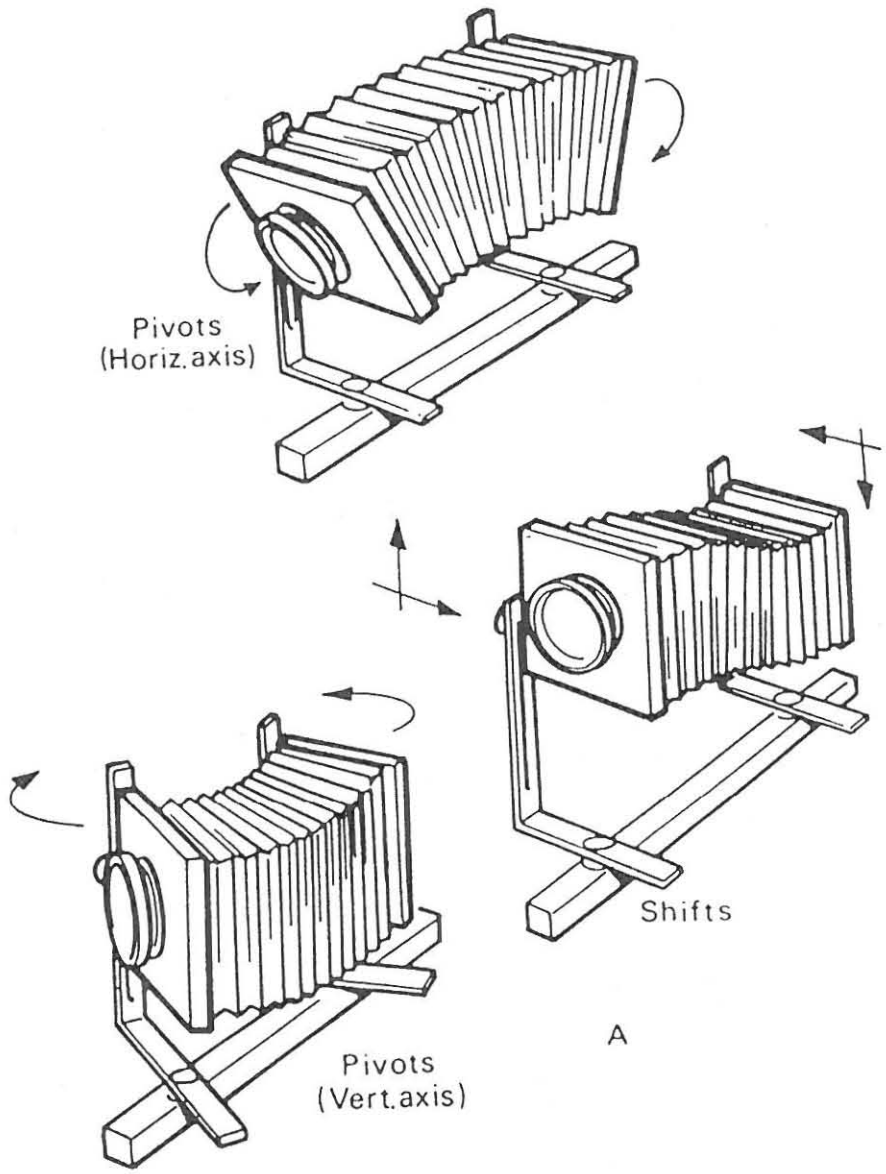
(b)



(c)



(Fig. 1) The three basic camera types used in general commercial work. (A) The monorail view camera; (b) the medium format camera; (c) the 35 SLR camera. (Harris M, 1993. The manual of interior photography, Oxford: Local Press)



(Fig 2) Camera allowing movement. A: a monorail offers greatest variety and range; shifts and pivots can be used simultaneously.

(Harris M, 1993, The manual of interior photography, Oxford: Focal Press)

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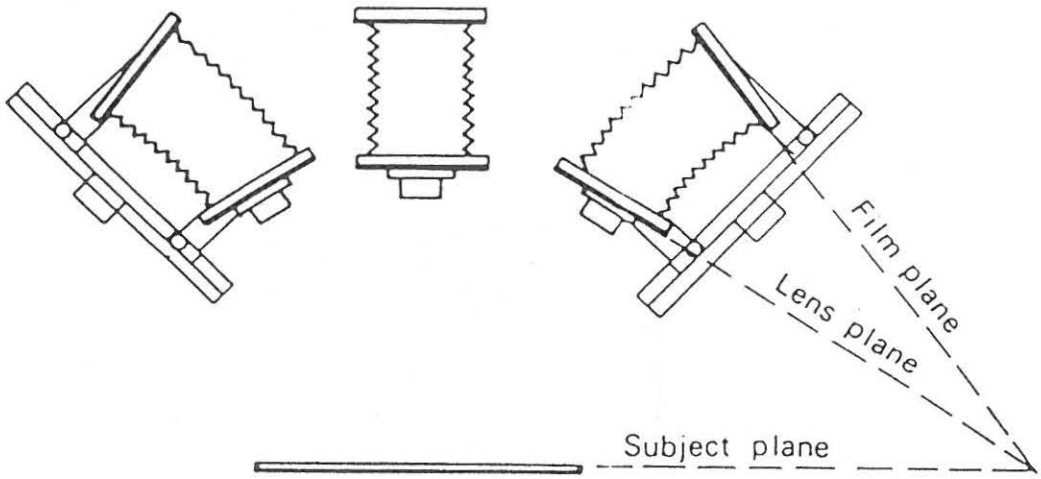

(Fig. 3) The Scheimpflug correction, to maximise depth of field. This uses some swing of both front and back, minimising the side effects of each movement. (Harris M, 1993, The manual of interior photography, Oxford: Focal Press)

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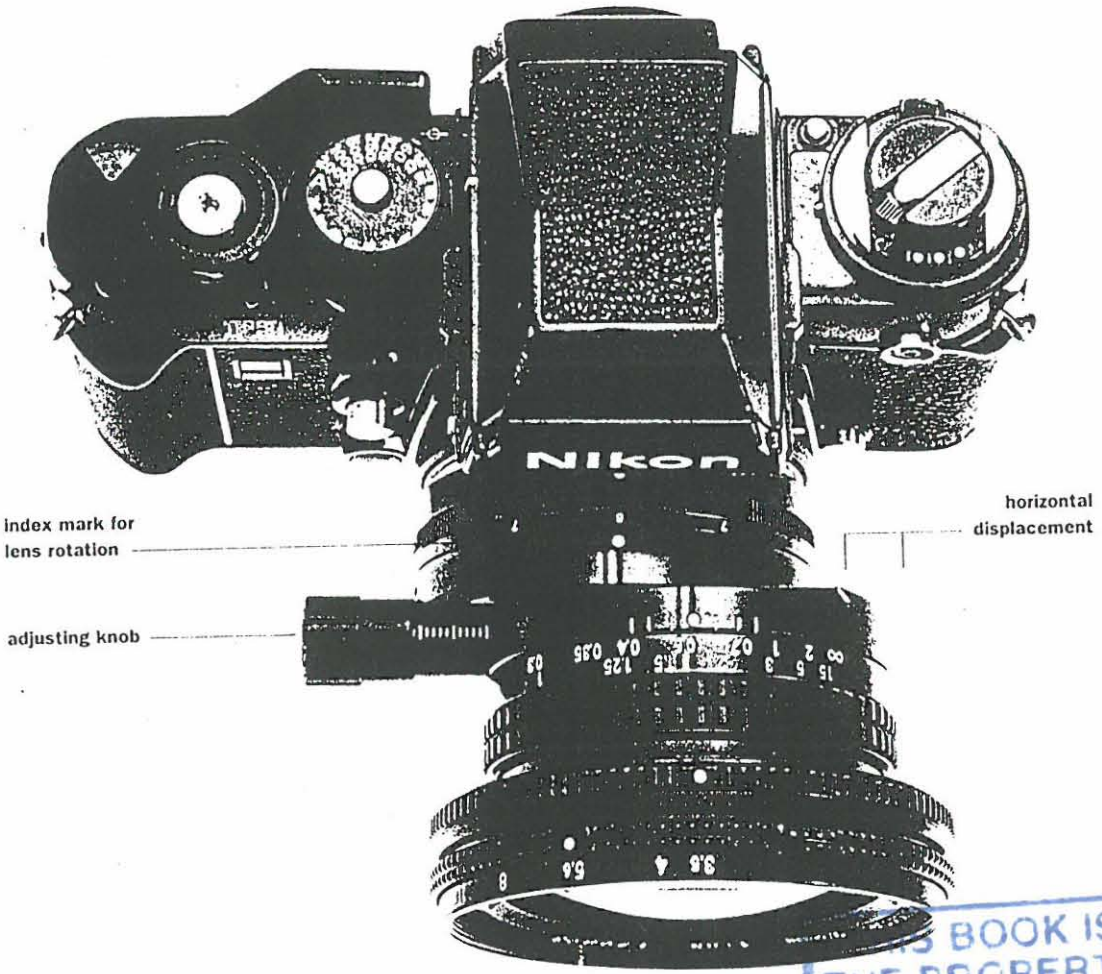
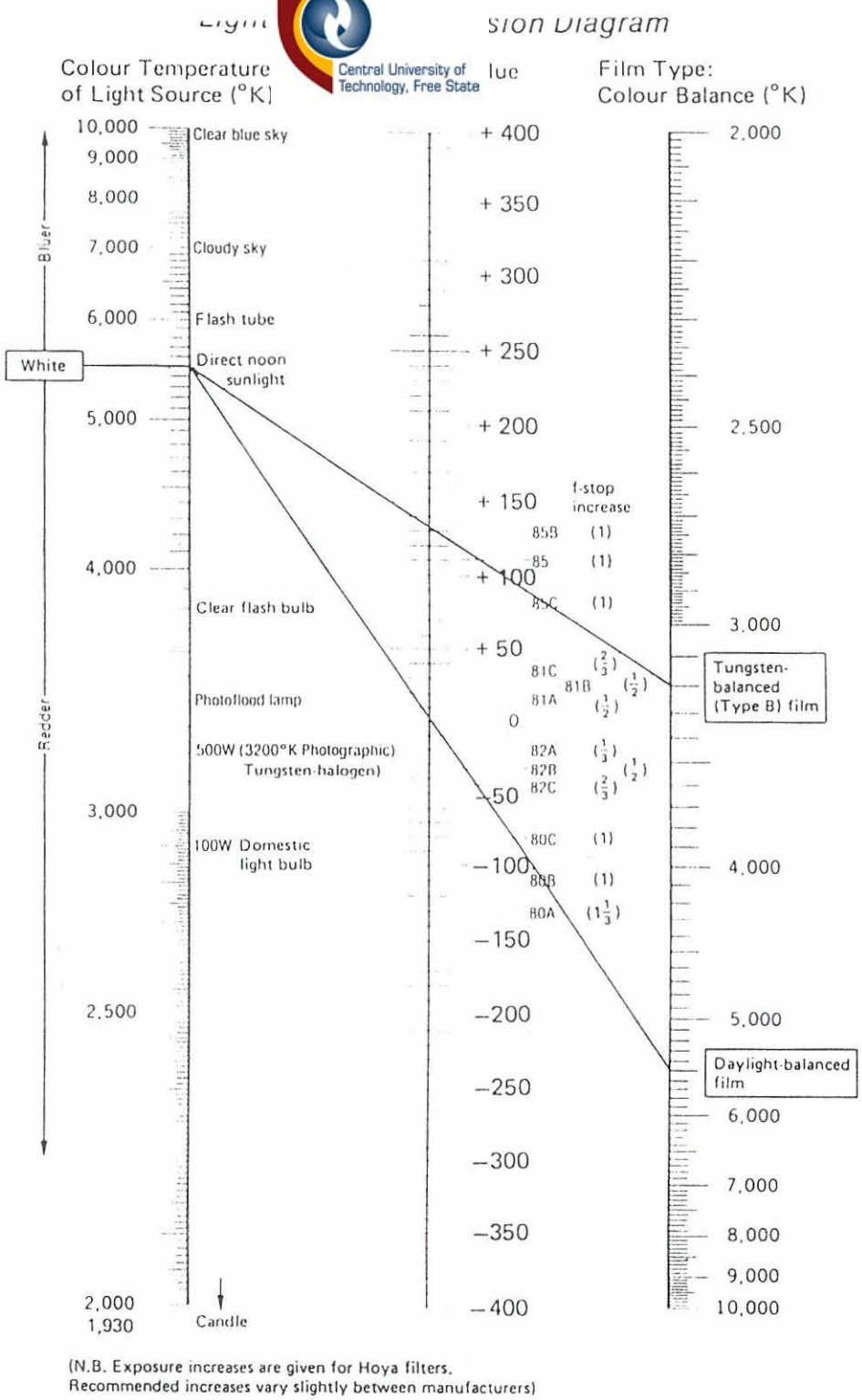


(Fig. 4) 35 mm Camera Movements. This photo illustrates the Nikon 28 mm perspective control lens. The lens is shown here at maximum sideways displacement, although in practice any direction or degree of shift may be used as required.

(Kopelow G, 1993, How to photograph buildings and interiors, New York Princeton: Architectural Press)



(N.B. Exposure increases are given for Hoya filters. Recommended increases vary slightly between manufacturers)

(Fig. 5) Colour correction filters. Draw a straight line between the colour temperature of a light source on the left and the film type in use on the right. The necessary filter to correct the colour balance is indicated at the point where the line crosses the central scale. This also shows the mired shift value together with the necessary exposure increase in f/stops.

(Harris M, 1993, The manual of interior photography, Oxford: Focal Press)

(Fig. 6) Left: A older model, reflected light meter. Center: A modern Minolta incident light meter to measure available light and electronic flash. Diffuser dome is at the top.

Right: A sophisticated Gossen Spot-Master spotmeter for very precise exposure measurements at a distance.

(Kopelow G, 1993, How to photograph buildings and interiors, New York: Architectural Press)

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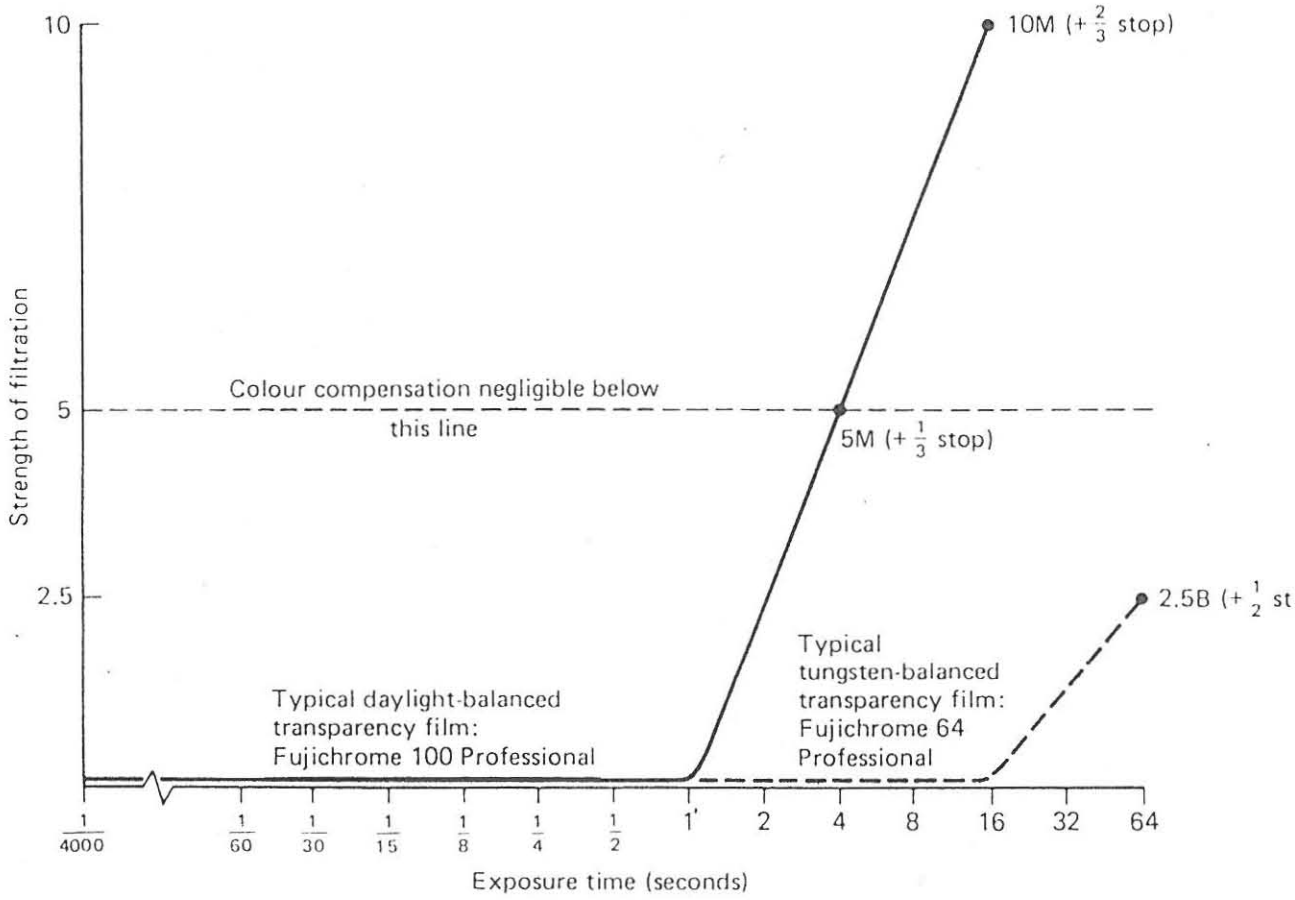

(Fig. 7) Reciprocity graph. This graph shows the recommended exposure duration for a typical ISO 100 daylight-balanced colour transparency film and for a ISO 64 tungsten-balanced film. Reciprocity failure required up to a strength of CC05 filtration is negligible. The graph demonstrates how tungsten-balanced film is designed for the longer exposures necessary for high-quality interior work. (Harris M, 1993, The manual of interior photography, Oxford: Focal Press)

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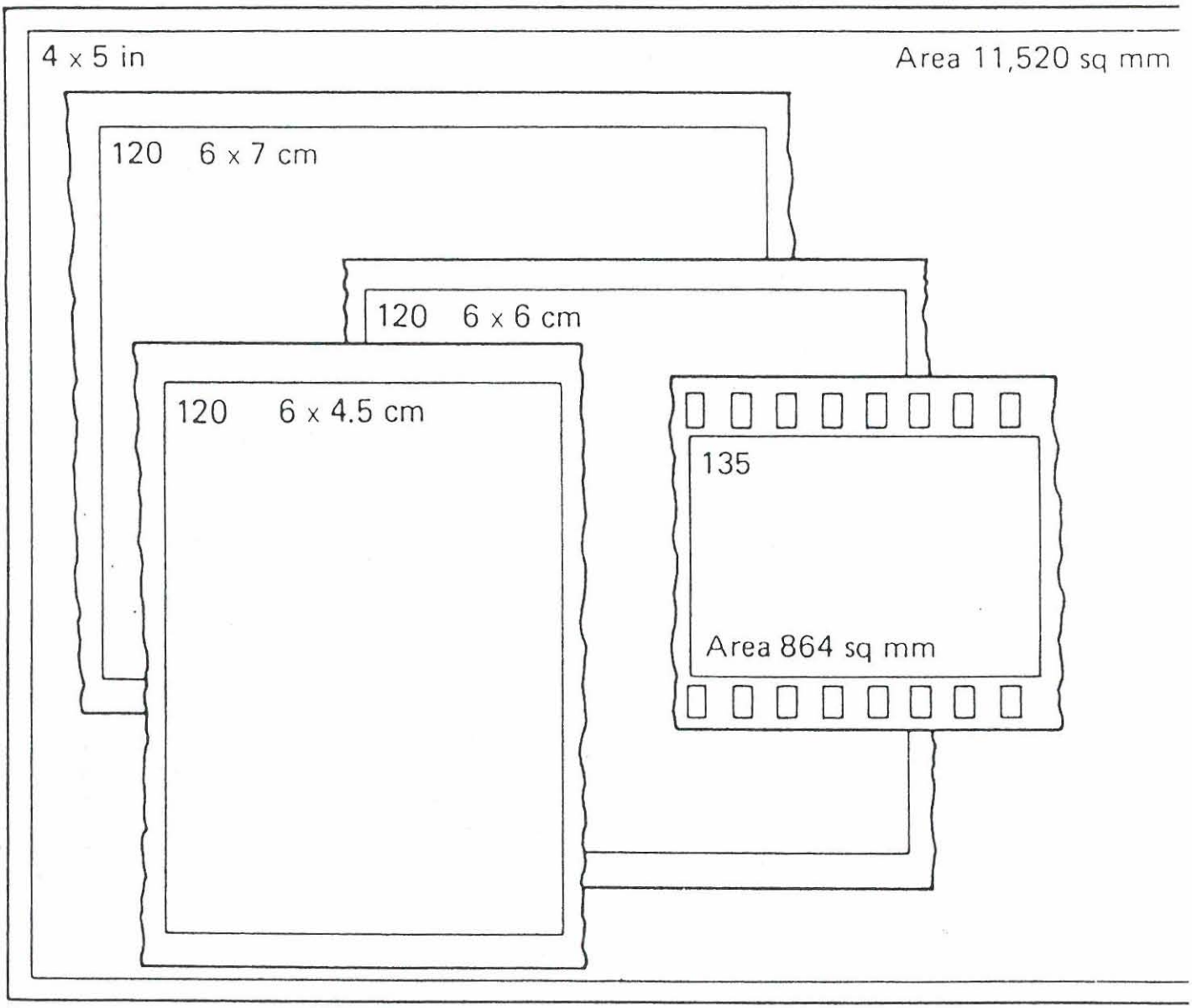
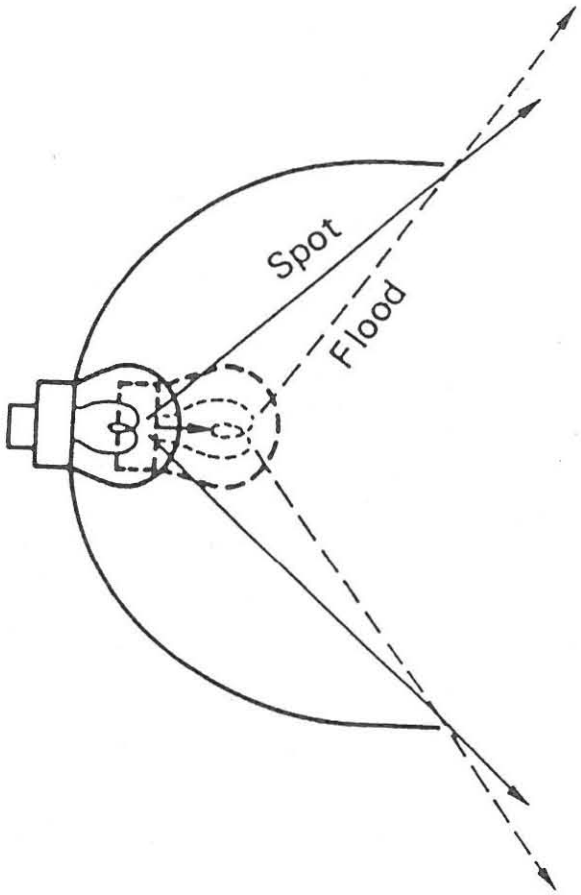


(Fig. 8) A comparison of the actual frame sizes of the different film formats readily available.

(Harris M, 1993, The manual of interior photography, Oxford: Focal Press)



(Fig. 9) The tungsten-halogen lamp. The bulb position can be adjusted within the housing to create either a 'spot' or 'flood' effect. The deeper the bulb is seated in the reflector hood, the more concentrated the beam of light ('spot'); the shallower the bulb is seated, the broader the spread of light ('flood').

(Harris M, 1993, The manual of interior photography, Oxford: Focal Press)

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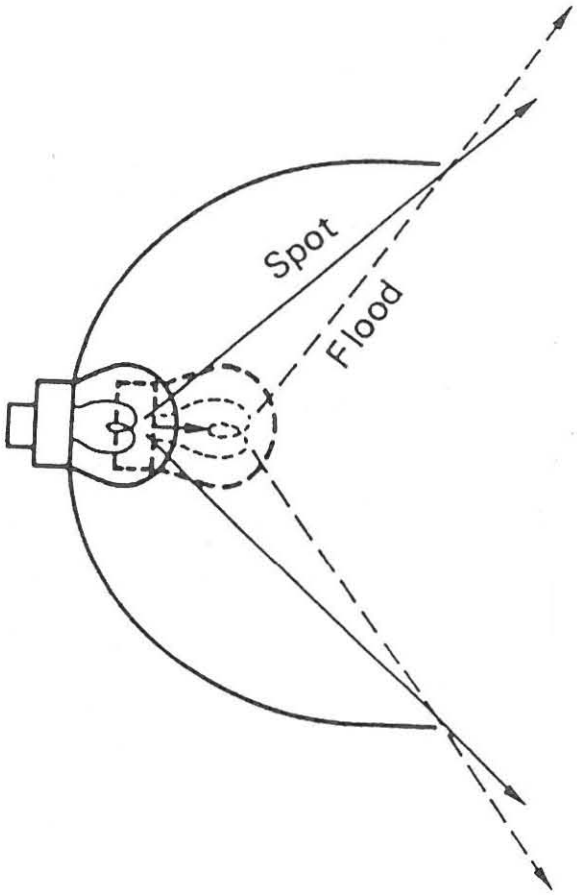

(Fig. 9) The tungsten-halogen lamp. The bulb position can be adjusted within the housing to create either a 'spot' or 'flood' effect. The deeper the bulb is seated in the reflector hood, the more concentrated the beam of light ('spot'); the shallower the bulb is seated, the broader the spread of light ('flood').

(Harris M, 1993, The manual of interior photography, Oxford: Focal Press)

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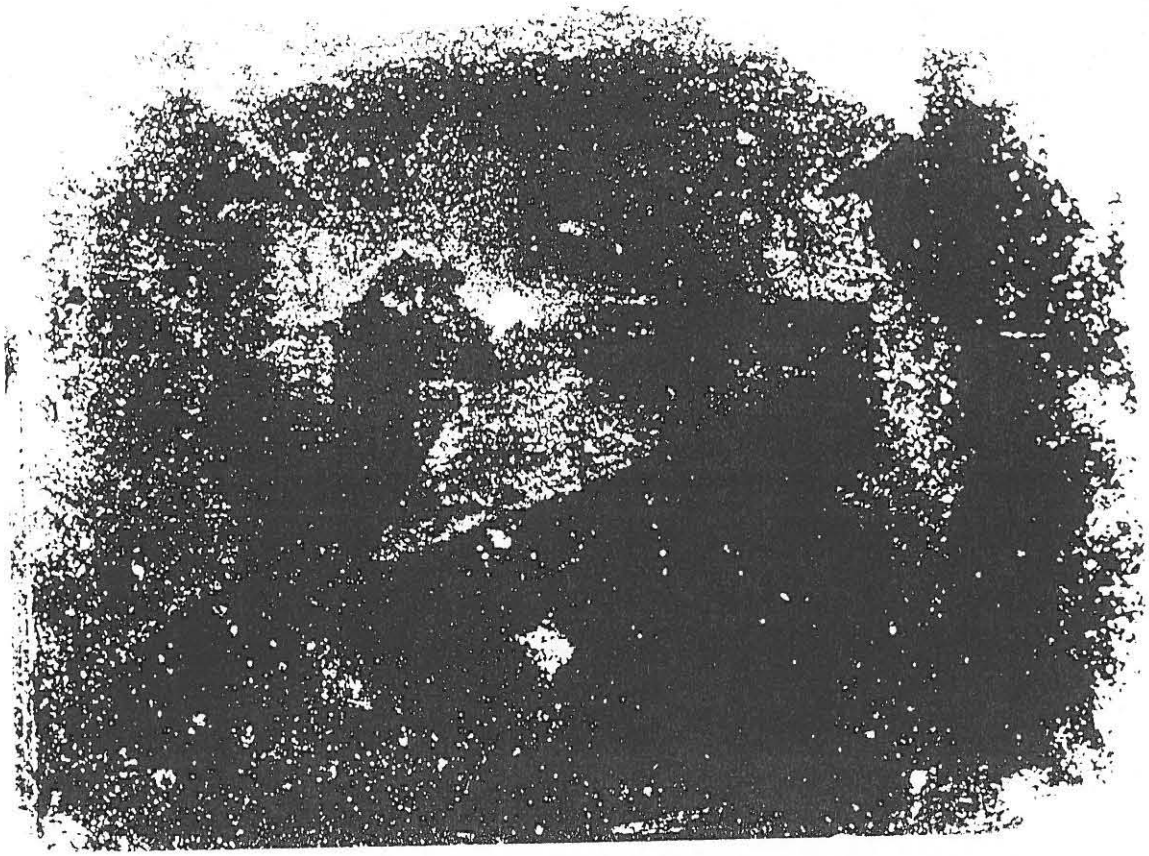
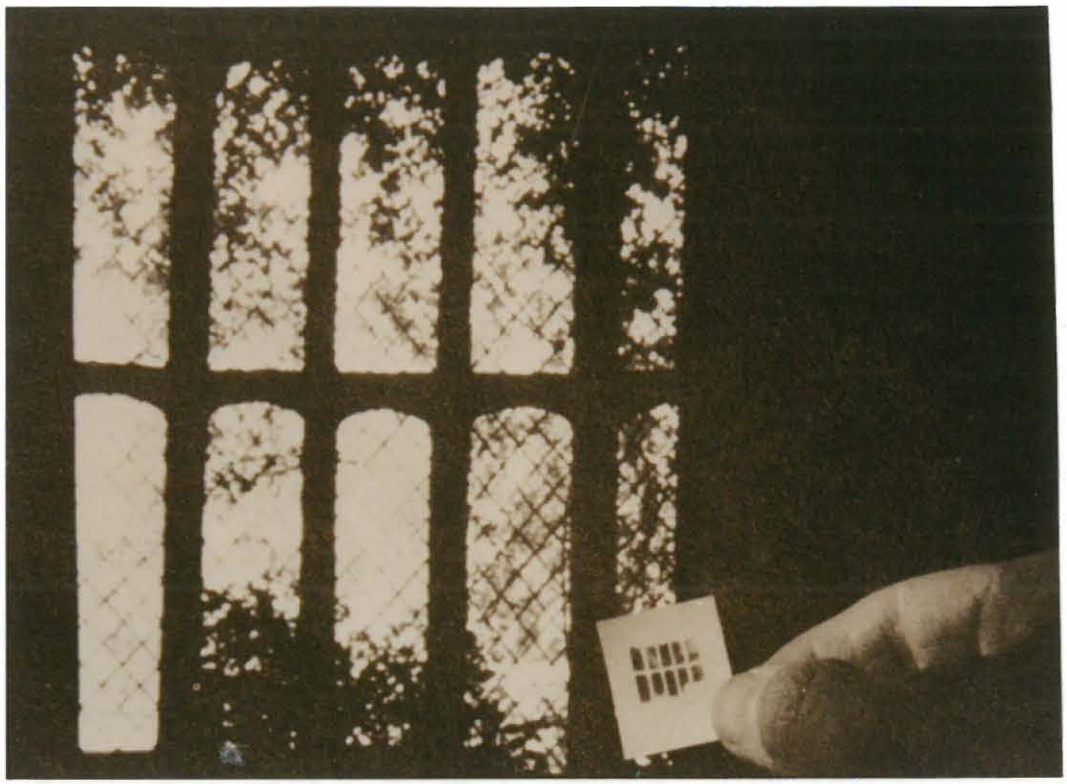
Colour compensation filters for fluorescent lighting		
Type of lamp	Daylight balanced film	Tungsten balanced film (type B)
Daylight	40 M + 40Y + 1 stop	85B + 40M + 40Y + 1⅔ stops
White	20C + 30M + 1 stop	60M + 50Y + 1⅔ stops
Warm white	40C + 40M + 1⅓ stops	50M + 40Y + 1 stop
Warm white de luxe	60C + 30M + 2 stops	10M + 10Y + ⅔ stop
Cool white	30M + ⅔ stop	60R + 1⅓ stops
Cool white de luxe	20C + 10M + ⅔ stop	20M + 40Y + 1⅓ stops
Colour compensation filters for other types of discharge lighting		
Lucalox	70B + 50C + 3 stops	50M + 20C + 1 stop
Multi-Vapour	30M + 10Y + 1 stop	60R + 20Y + 1⅔ stops
De-luxe white mercury	40M + 20Y + 1 stop	70R + 10Y + 1⅔ stops
Clear Mercury	80R + 1⅔ stops	90R + 40Y + 2 stops
Sodium Vapour	Not recommended	Full correction impossible Most neutral appearance without filtration

(Fig. 10) Filters required to compensate for fluorescent and other forms of discharge lighting. Necessary exposure increase in f/stop is given.
(Harris M, 1993, The manual of interior photography, Oxford: Focal Press)



(Fig. 11) The worlds oldest surviving photograph.
(Langford M, 1992, The story of photography, Oxford: Focal Press)

(Fig. 12)



(Fig. 13)

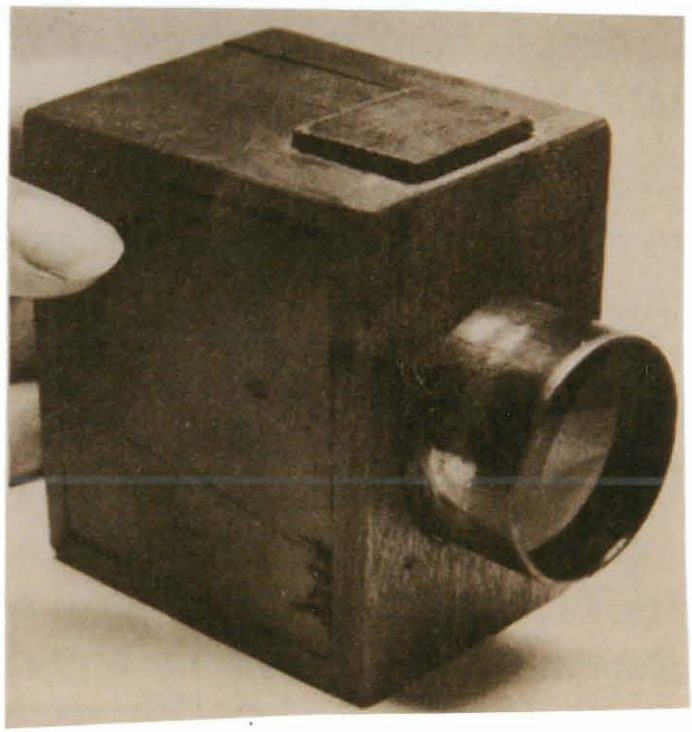


Fig. 12: Photographed windowsFig. 13: A "mousetrap" camera

(Langford M, 1992, The story of photography, Oxford: Focal Press)

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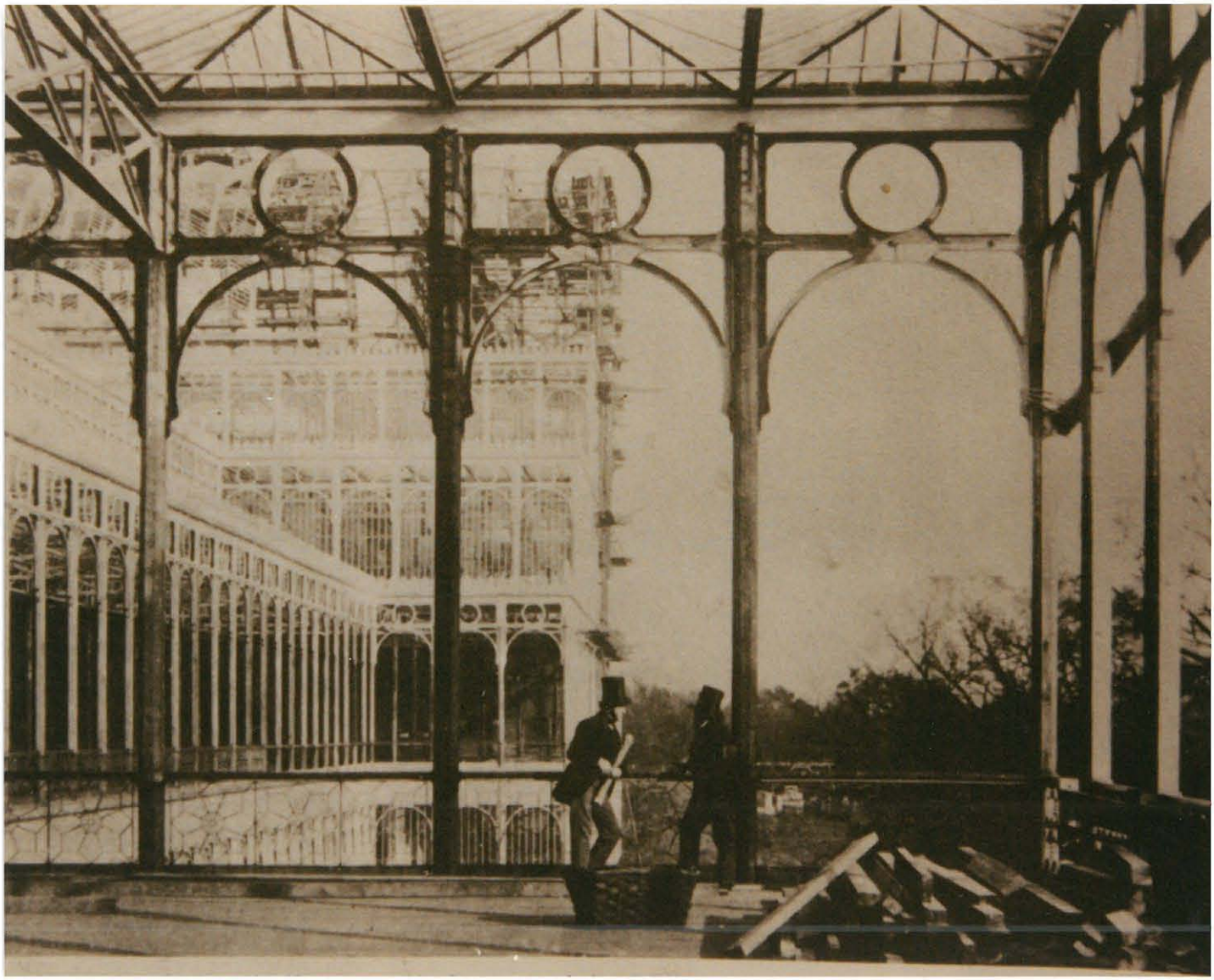
(Fig. 14) Architecture in 1838

(Langford M, 1992, The story of photography, Oxford: Focal Press)



(Fig.15) Collodion record photograph of the Crystal Palace

(Langford M, 1992, The story of Photography, Oxford: Focal Press)

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(Fig. 16) A students room at Trinity College

(Harris M, 1993, The manual of interior photography, Oxford: Focal Press)

Lighting equipment

A glossary of lighting equipment and terms is given below.

* ***Acetate***

  See gel

* ***Acrylic sheeting***

  Hard, shiny plastic sheeting, usually methyl methacrylate, used as a diffuser ("opal") or in a range of colours as a background.

* ***Barn doors***

  These are adjustable flaps fixed to a lighting head which allows light to be shaded from a particular part of the scene.

* ***Boom***

  This is an extension arm allowing light to be cantilevered out over a subject in a scene.

* ***Bounce***

  This is a passive reflector, typically white but also, (for example) silver or gold, fromwhich light is bounced back onto the subject or scene. Also used in the compound term "Black Bounce", meaning a flag used to absorb light rather than to cast a shadow in the scene.

* ***Continuous lighting***

  What its name suggests: light which shines continuously instead of being a brief flash.

* ***Contrast***

  See lighting ratio

* ***Cookie***

  See gobo

* ***Diffuser***

* Mostly translucent material is used to diffuse light, including tracing paper, scrim, umbrellas, translucent plastics such as Perspex and Plexiglas, and many more can be used.

* ***Donkey***

  See gobo

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* ***Effects light***

  This is neither key nor fill but a small light, usually a spot, used to light a particular part of the subject. A hair light on a model is an example of an effects (or "FX") light.

* ***Fill***

  This is extra lights, either form separate heads of from reflectors which "fills" the shadows and lowers the lighting ratio.

* ***Fish fryer***

  A small Soft Box.

* ***Flag***

  This is a rigid sheet of metal, board, foam-core or other material which is used to absorb light or to create a shadow. Many flags are painted black on one side and white on the other, so that they can be used either as flags or as reflectors.

* ***Flat***

  This is a large Bounce, often made of a thick sheet of expanded polystyrene or foam-core (for lightness).

* ***Foil***

  See gel

* ***French flag***

  See flag

* ***Frost***

  See diffuser

* ***Gel***

  This is a transparent of translucent coloured material used to modify the colour of a light. It is an abbreviation of "gelatine (filter)", though most modern "gels" for lighting used are actually of acetate.

* ***Gobo***

  This is also synonymous with "cookie" a flag with cut-outs in it, to cast interestingly-shaped shadows.

* ***Head***

  This is a light source, whether continuous or flash. And then "standard head" is fitted with a plain reflector.

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* ***Honeycomb***

  This is a grid of open-ended hexagonal cells, closely resembling a honeycomb and it increases directionality of light from any head.

* ***Incandescent lighting***

  See tungsten

* ***Inky dinky***

  This is a small tungsten spot light.

* ***Kill Spill***

  This is a large flat used to block spill light.

* ***Light brush***

  It is a light source "piped" through fibre-optic lead and is used to add highlights, delete shadows and modify lighting, literally by "painting with light".

* ***Mirrors***

  It is exactly what its name suggests. The only reason for mentioning it here is that reflectors are rarely mirrows, because mirrors create "hot spots" while reflectors diffuse light. Mirrors especially small shaving mirrors are however widely used, almost in the same way as effects lights.

* ***Northlight***

  See Soft Box

* ***Perspex***

  Brand name for acrylic sheeting.

* ***Plexiglas***

  Brand name for acrylic sheeting.

* ***Projection spot***

  This is a flash of tungsten head with projection optics for casting a clear image of a gobo or cookie. It is used to create textured lighting effects and shadows.

* ***Reflector***

  It is a dish shaped around a light and is bounced into a direction.

* ***Scrim***

  This is a heat-resistant fabric used as a diffuser or it can be used to soften lighting.

* ***Snoot***

  It is conical restrictor, fitted over a lighting head, the light can only escape from the small hole in the end, and is therefore very directional.

* ***Soft box***

  These are large, diffused light sources made by shining light through one or two layers of diffuser. Soft boxes come in all kinds of shapes and sizes ranging from about 30 x 30 cm to 120 x 180 cm and larger. They are also known as a northlight or a windowlight, and can also be created by shining a standard heads through a large diffuser.

* ***Spill***

  This is light form any source which ends up other than on the subject at which it is pointed. Spill may be used to provide fill, or to light backgrounds, or it may be controlled with flags, barn doors, gobos etc.

* ***Spot***

  This is a directional light source. Normally refers to as a light using a focusing system with reflectors or lenses or both.

* ***Strip or strip light***

  It is a light head, usually flash, which is much longer than it is wide.

* ***Stobe***

  It is a repeating light source, mostly flash.

* ***Swimming pool***

  A very large Soft Box.

* ***Tungsten***

  Incandescent lighting. Photographic tungsten lighting runs as 3 200 K or 3 400 K, as compared to domestic lamps which run at 2 400 K to 2 800 K or thereabouts.

* ***Umbrella***

  It is exactly what its name suggests: and is used for modifying light. Umbrellas might be used as a reflector where light shine into the umbrella and the light is then bounced, or it can be used as a diffuser where light is shining through the umbrella.

* ***Windowlight***

  Apart from the obvious meaning of light through a window, or of light shone through a diffuser to look as if it is coming through a window, this is another name for a soft box.