acornphoto

Thanks for coming along to the Acorn Photo Agency Art Documentation Seminar.

The following notes are a reasonably comprehensive precis of the seminar intended only to save people from having to take their own notes during the seminar.

Acorn Photo are specialists in art documentation. Our contact details are at the end of the notes, please contact us for professional photography of your work.

Results

The seminar is designed to improve the standard of documentation achievable within the limitations of low cost equipment. The key is creating a workflow with an emphasis on consistency and therefore repeatable results.

The practical application of the techniques learned is in improving the quality of reference images used for grant applications and acquittals, condition reports and for insurance purposes.

For best results photographing works for reproduction requires specialist equipment and experience.

Lighting

Colour Temperature of the light source

The human eye and brain are very good at reconciling differences in light source colours. Moving from skylit shadows in the city to a halogen light reception area our subconscious reads and interprets colours on the basis of context, known values and expectation. Cameras are less forgiving.

Most light sources emit a mix of wavelengths across the visible spectrum. They have biases to certain areas of the visible spectrum that are expressed as a tendency to warm or cool colours. Some light sources, typically discharge lamps such as fluorescent tubes, low energy globes, high output lights like metal halide and sodium vapour and LEDs are missing certain wavelengths of light making them unsuitable for photography of artwork.

This aspect of lighting is quantified using the Colour Rendering Index (CRI). Sunlight and tungsten filament lights have a CRI of 100. A CRI over 90 is generally considered good and many fluorescent

tubes fall into this category. The CRIs of LED lights varies widely. In general warmer toned LEDs have better CRIs than cooler ones

http://en.wikipedia.org/wiki/Color_temperature

http://www.sizes.com/units/color_temperature.htm

Cheap reliable light sources

The Sun - it's as bright as a very bright thing despite being about 150 million kilometers away. Atmospheric conditions influence the colour temperature of the Sun's light reaching Earth. On an average cloudless midday in Washington DC the colour temperature of the sunlight reaching the Earth's surface is 5600°K. Depending on the season, latitude and weather this will vary between 5000° and 6000°K. "Daylight" colour balance settings, where available, in digital cameras will generally be in the range of 5400 -5600°K. Apart from the slight variation in colour temperature the Sun has one significant drawback - it cannot be repositioned.

Tungsten filament lamps

Household globes use a thin tungsten wire or filament suspended in a vacuum. Light is emitted as the filament is heated by passing an electric current through it. Tungsten burns off the filament (leaving sooty deposits on the inside of the globe). Household globes emit light in the vicinity of 2500°K and are generally too dim to light artworks of any size with. Filaments that could normally run on low voltages can be overdriven by filling the globe with halogen gas which helps keep the tungsten filament intact. These globes are more efficient, emit a higher colour temperature and brighter light. High output halogen lights are expensive but most hardware stores carry affordable versions in the guise of painters' lights.

LEDs

Light emitting diodes are now cheap and widely available. As mentioned above they can suffer from low CRI making it difficult to accurately render all colours.

2d works

The reflective qualities of 2 dimensional works can be loosely characterised as existing on axis with a mirror at one end and paper at the other. Typically works on paper are the easiest to photograph and may tolerate flash on camera lighting. Reflections become more apparent with acrylics, oils and works under glass.

Ideally to achieve even lighting two lights are needed. They should be positioned at approximately 45° to perpendicular from the surface of the work and at a distance from the edge of the work equivalent to at least the width of the work itself. Moving the lights closer to the plane of the work will help minimise reflective qualities, but will also reduce the effective amount of light falling on the work and may create unwanted shadows if the work is heavily textured or framed. If only one light is available it should be positioned as far from the work as possible to minimise falloff across the work.

When photographing works under glass minimise reflections by avoiding having the area around the camera lit. Black cloth behind the camera or conducting photography outdoors at night may help.

Telephoto lenses (longer focal lengths) will generally help reduce both reflection and lens distortion.

3d works

In general lighting from the side will produce modelling on the work that will emphasise it's depth. Soft lighting can be achieved by "bouncing" a light source off a wall or ceiling adjacent to the work. Shadows can be "filled" by positioning a white board on the side of the work away from the light source. Positioning the board close to the work will result in greater detail in the shadows. Shadows can be deepened by positioning a "light sucker" (black board or fabric) on the shadow side of the work.

Consideration should be given to the tonal qualities of the background.

Anticipate the Sun's position when planning an outdoor shoot.

Digital image files

Resolution

DPI = dots per inch - the measure of the potential resolution of a printer

PPI = pixels per inch - the measure of the nominal resolution of a digital image file

300 ppi (120 ppc) is regarded as high resolution. Be aware that ONLY the absolute pixel dimension will determine the largest reproduce-able size. For example; an image that is 600 x 400 pixels will be only 2 inches (~5 cm) at 300 ppi. The same image at 72 ppi will be reproduce able at 8 ⅓ inches across (~21 cm).

300 ppi is an appropriate resolution for printed material, 72 ppi is good for screen based viewing.

A typical point and shoot cameras with an 8MP sensor will generate a file that is about 3250 x 2500 pixels. (3250 x 2500 = 8125000 pixels or 8 megapixel). At 300 ppi the file is about 11 inches (~27 cm) across.

Further reading;

http://en.wikipedia.org/wiki/Dots_per_inch#DPI_or_PPI_in_digital_image_files

Formats

JPEG. Joint Photographic Experts Group. JPEG is a "lossy" compression format which results in small, easily transmissible files. It is the default format for most cameras. Be sure to set your camera to best quality or "Fine". Re-saving JPEGs re-compresses them and will reduce their quality.

TIFF. Tagged Image File Format. JPEG compression is available in TIFFs but generally TIFFs are saved uncompressed making electronic distribution slow.

Maintaining a strict Master/Derivative file naming system will ensure always having ready access to the highest quality file your camera can deliver.

Cameras

Reading a histogram

Most digital cameras have a button on the back panel labelled "Disp", short for display. Pressing this button will cycle the camera through various display modes, including displaying the histogram.

http://www.workshopsforphotographers.com/photo-imaging-tips-techniques/reading-histogram

Fooling an automatic camera

The cheaper the camera the less control will be possible. Some of the automatic exposure functions can be used to trick the camera into giving you better exposures.

The Backlight setting will over-expose about 1.5 stops is are suitable for photographing white or very high key works.

The Night setting will underexpose and is suitable for photographing works with predominantly dark tones.

If your camera has an auto bracket function it can be used to generate three files of varying exposure. Select the best exposure and discard the two unsuitable ones.

Many digital compact cameras have an exposure lock. Usually this will be a (fiddly) half press and hold of the shutter button. You can auto meter on an 18% grey card or similar, lock the exposure setting and remove the card prior to shooting. Unless you are particularly gifted with your legs and feet you may need someone to help!

RTM

Read the manual. If you can't find it check online - all major manufacturers publish manuals electronically.

Tripods

Are great. Aside from keeping the camera steady and eliminating motion blur they allow you to check composition and alignment carefully and to maintain composition and alignment while changes to lighting are made.

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