

HERITAGE INFORMATION SERIES

PHOTOGRAPHIC RECORDING OF HERITAGE ITEMS USING FILM OR DIGITAL CAPTURE



Heritage Office

ACKNOWLEDGEMENTS

This document was prepared by Lawrie Greenup in 2006 based on the original guidelines, *Guidelines for Photographic Recording of Heritage Items* produced by Don Godden for the Heritage Office in 1994.

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Photographic Recording of Heritage Items

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INTRODUCTION

These guidelines provide an outline for making a photographic record of sites, buildings, structures and movable items of heritage significance. They are particularly relevant to the recording of items of industrial or technological significance and domestic items and interiors.

Making a photographic record of a heritage place or object documents it for the future, before it is lost or changed, either by progressive alterations or by the ravages of time. Photographic records are often required by authorities such as the Heritage Council of NSW or local councils as part of a conditional approval for work to be carried out on a heritage place, or, in some instances, before demolition.

This document revises the earlier guidelines on photographic recording published by the Heritage Council of NSW. It includes the use of both film-based and digital-based technology as acceptable methods of photographic recording for heritage purposes. The guideline takes into account changing photographic technologies, but provides a system that does not compromise the overall goal of a stable and long term photographic record. It addresses concerns about print permanency, long-term stability of digital storage media and software obsolescence, and has been written with safeguards in mind.

A recent development in colour prints, using specific archival inks and photographic paper, has shown, under accelerated ageing laboratory tests, to have long-term permanency similar to archivally processed black and white prints. Digital storage media and software obsolescence have been addressed by following the guidelines that have been developed by key Australian archival authorities.

WHAT YOU NEED TO KNOW ABOUT PHOTOGRAPHIC RECORDING FOR ARCHIVAL PURPOSES

What is a photographic recording?

A photographic recording is an archival record of a heritage place or object. Its purpose is to document a heritage item for future generations. Specific requirements on photographic equipment, archivally stable materials and photographic method aim to ensure optimum survival of the photographic record.

A photographic recording can be made using film-based technology, OR digital technology.

When is a photographic recording needed?

A photographic recording of an item on the State Heritage Register may be required by the Heritage Council of NSW as part of conditional approval for work to be carried out on the place or object, or before full or partial demolition. It can also be required as part of an archaeological investigation.

Local councils may also require a photographic recording be made of a heritage item on their local environmental plan as part of the approval process.

These guidelines have been written for items listed on the State Heritage Register, but may be cited by local councils as a reference document.

What are the requirements?

A model brief is provided to guide those commissioning or carrying out photography for heritage purposes [see page 30]. Below is a summary of the Heritage Council's final requirements for a photographic record of an item on the State Heritage Register. For more detailed information, turn to the page indicated:

Film-based Projects:

- Three copies of the photographic report including catalogue sheets, photographic plan, supplementary maps [see pages 18 & 23];
- B&W materials:
 - o One set of archivally processed and numbered B&W negatives stored in archival sheets or envelopes [see page 23]
 - o Three sets of archivally processed proof (contact) sheets, labelled and cross-referenced to the catalogue sheets [page 23];
- Colour materials:
 - o Three sets of colour transparencies (either original transparency plus two duplicates or three original images taken concurrently) numbered, labelled and cross-referenced to the catalogue sheets and stored in archival slide sheets [see page 23].

Digital Projects

- Three copies of the photographic report including catalogue sheets, photographic plan, supplementary maps [pages 18 & 25];
- Three sets of thumbnail image sheets (e.g. A4 page with six images by six images) showing images and reference numbers. The thumbnail sheets should be processed with archivally stable inks on archivally acceptable photographic paper and cross referenced to catalogue sheets [page 25-26];
- Three copies of CD or DVD containing electronic image files saved as TIFF files with associated metadata, and cross-referenced to catalogue sheets [page 27];
- One full set of 10.5x14.8cm (A6) prints OR, if a large project, a representative set of selected images processed with archivally stable inks on archivally acceptable photographic paper [page 25].

How should the report be presented?

The report should be presented in a suitable archival binder and slipcase, and all storage of individual components must be in archival quality packaging suitable for long term storage. [page 26]

Has everything been included in the report?

Use our checklist to ensure that you include all the required elements of the report [page 34].

Where should the report be deposited?

The placement of material depends on whether the record was required by the Heritage Council or NSW, or a local council [see page 28 for details].

Reports required by Heritage Council	Required by Local council
First set: deposit at Heritage Office	First set: deposit at local council
Second set: deposit with State Library of NSW for public access	Second set: deposit with local council library for public access
Third set: deposit with owner/client	Third set: deposit with owner/client

PHOTOGRAPHER'S REQUIREMENTS

The photographer undertaking the recording of a heritage place needs to have:

- requisite training, skills and equipment to undertake heritage assignments;
- awareness that heritage sites and surrounds often have a range of hazards, which have to be considered in undertaking the photography, including:
 - o dangerous substances
 - o confined spaces
 - o demolition activity
 - o adverse environmental and weather conditions
 - o moving machinery and vehicles
 - o noise
 - o dust
 - o overhead hazards
 - o remote locations
 - o working at height, or over, near, on, in or under water;
- public liability insurance, as well as workers compensation Insurance (if assistants or support staff are used);
- an understanding of the requirements of the Occupational Health Safety and Rehabilitation (OHS&R) Act, a Hazard Control Plan and Work Safety Plan, and an understanding of environmental considerations generally;
- ability to meet the client's working and safety requirements. The photographer needs to visit the site prior to commencing the project. Preferably this should be with someone who has an understanding of the heritage photographic project. This allows the photographer to assess what photographic equipment is required, as well as being able to assess the site's safety requirements;
- access to safety clothing such as safety helmet, safety glasses, ear protection, highly visible safety vest, steel-toed boots or shoes. The client may have requirements for additional safety equipment for the photographer if working at heights or over or near water;
- materials for recording and documenting the photographic undertaking including such things as notebooks, pens, pencils, maps, torches and a compass;
- personal items such as sunscreen and insect repellent.

EQUIPMENT – FILM-BASED RECORDING

CAMERAS

35mm Single Lens Reflex (SLR) Camera

This is the most popular and versatile camera format and, when combined with quality lenses, is entirely adequate for most heritage photography.

There are a large number of brands available and the most suitable ones for heritage photography have the following specifications:

- full exposure control, especially manual control and the ability to override full autoexposure;
- range of shutter speeds, including the ability to take long exposures in dark places or dull light;
- remote release devices, such as cable releases and electronic releases, to minimize camera vibrations;
- mirror lock-up which is useful to stop camera shake, especially with larger lens;
- depth-of-field preview to see what's in or out of focus;
- connections for external flash.

Medium Format Cameras

Medium format cameras, especially SLR systems, are often used. However, these cameras are generally heavier and less versatile for field work than 35mm SLRs. The format is ideal if large, quality enlargements are required. Some types have interchangeable backs allowing one camera body to be used with different film types.

Large Format Cameras

Large format cameras are for specialised use, such as architectural photography, and are best when a slow and studied approach can be undertaken. Their bulk restricts their use in the field.

Lenses

The following deals primarily with 35mm SLR camera systems but the principles can be applied to both medium and large format camera systems.

A range of lenses with different focal lengths is required to cover all aspects of heritage photography. Either fixed focal length lenses or zoom lenses can be used and should cover the focal length range of 20mm – 300mm. The following is recommended:

- **fixed lenses:** 20mm, 28mm, 35mm, 50mm, 105mm, and 300mm focal length;

- **zoom lenses:** 18-85mm; 70-200mm; 1.4X or 2.0X extender lens. Other combinations can be used as long as they cover the 20mm – 300mm focal length range;
- **specialised lenses:** perspective control lens and macro lens for close-up images. Macro lenses are usually available as 50mm, 60mm, 105mm 180mm or 200mm focal lengths. These lenses can be substituted for fixed focal length lenses.

Only some of these lenses may be needed for a particular assignment.

Camera Accessories

These will vary depending on the project. Again, the following is relevant for both 35mm SLR cameras and medium and large format camera systems:

- tripod - heavy duty;
- flash units – one or more flash guns and slave unit;
- scale rods - for inclusion in the photographs, where appropriate;
- polarising and other filters;
- cable or remote electronic releases;

FILM

There is a range of black and white, colour transparency and colour negative films on the market. Films vary in their sensitivity to light. If the film is highly sensitive to light, it needs only a little light to form an image and is called a fast film. A slow film needs a lot of light to form the image so therefore is called a slow film. ISO is the standard way to indicate film speed or its sensitivity to light. A high ISO number indicates a fast film; a low ISO indicates a slow film.

Slower films are preferred for heritage photography as they give fine-grained images, with excellent contrast and sharpness. Sometimes faster films may be necessary because of low light conditions.

Most good quality, brand-name film from recognised manufacturers is acceptable.

Black and White Film & Processing

Black and white film, if properly processed and stored, is the preferred medium for archival recording. Slow and medium speed black and white films, 50 – 125 ISO, are preferred, although faster films, 400 ISO or faster, may be required under low light conditions.

Black and white films designed to be processed using the chromogenic C41 process are not acceptable because they are not sufficiently stable and are unsuitable for long term storage.

Processing Film for Long-term Stability

Careful processing of the negatives under clean and controlled conditions is the first step in achieving optimum long-term stability. This includes developing and fixing of the image followed by washing and drying of the negatives. Photographic companies producing black and white films have fact sheets outlining the correct procedures to follow in the processing of their film products. Film processing should be done by professional laboratories or by the photographer, if they have darkroom facilities.

The following steps should be followed for maximum image stability:

- **step 1 – developer** is used to develop the image. The appropriate film developer should be used to achieve the finest grain and sharpness;
- **step 2 – acid stop bath** is used to stop the action of the developer;
- **step 3 – fixer** fixes the visible, but unstable, image formed during the developer process. Best results with frequent agitation and adherence to recommended fixing times;
- **step 4 – good washing** in clean water is important for image stability;
- **step 5 – drying** in an environment that will avoid contamination by chemicals or dust.

Processing Contact Prints and/or Prints for Long-term Stability

As with film negatives, processing of black and white papers should be undertaken under clean and controlled conditions. The steps are similar to those followed for negatives. Again, photographic companies producing black and white films and papers have fact sheets outlining the correct procedures to follow in the processing of their paper products. Processing can be done by professional laboratories or by the photographer, if they have darkroom facilities.

The following steps should be followed for maximum image stability:

- **step 1 - developer** is used to develop the image;
- **step 2 – acid stop bath** stops development immediately, reduces the risk of staining, and will extend the life of the fixer bath;
- **step 3 - two-bath fixing** is best for both fibre-based and resin-based papers. Best results with intermittent agitation and adherence to recommended fixing times;
- **step 4 – good washing** in clean running water is important;
- **step 5 - drying** in an environment that will avoid contamination by chemicals or dust.

Either resin-coated or fibre-based photographic papers can be used. Optimum permanence is achieved with fibre-based papers, although they may not be as readily available. Long-term stability with fibre-based paper is ensured by adequate fixing and washing. This is achieved by following an optimum permanence sequence after and including **step 3**. The sequence is:

- **fixing** with intermittent agitation;
- **first wash** in fresh and clean running water;
- **rinse** with a wash aid with intermittent agitation, and;
- **finally washing** in fresh and clean running water;
- **drying** in an environment that will avoid contamination by chemicals or dust.

Colour Transparency Film and Processing

Colour transparency film (colour reversal film or colour slide film) should be taken, as well as black and white, because it provides colour information about the heritage item. Also, it can be digitally scanned and used in electronic presentations. The long-term stability of modern colour transparency film has improved considerably, although black and white is still the most stable.

Colour transparency film to be stored for maximum longevity should not be projected.

Slow and medium speed colour transparency films, 50 – 100 ISO, are preferred, although faster films, 400 ISO or faster, may be required under low light conditions.

Processing (E6 chemistry)

Colour transparency film needs to be developed using E6 processing. This should be done at recognised commercial laboratories which meet the quality assurance standards of the major film companies. This ensures consistent and professional results.

Colour Negative Film or Prints

Colour negative or print films using chromogenic C41, processing are not acceptable for heritage recording as their longevity is poor and they do not meet the permanence standards. Colour negatives and prints often fade, lack the detail and sharpness of colour transparency film, and have restricted contrast and colour range. *

Black and white prints produced by C41 processing have the same problems as colour negatives or prints.

Colour prints have a limited life as the colours are chemically unstable. However, they can be useful for digitising and for use in reports and publications. If colour prints are to be included as part of the archival recording, they should be labelled as such and, only be used to SUPPLEMENT the B&W film and colour transparencies .

Storage of Black and White and Colour Transparencies

The following conditions will ensure optimum survival of records:

- storage must be in archival quality packaging suitable for long-term storage. If plastic packaging is used it should be polypropylene, **not** PVC;
- black and white negatives can be stored in polypropylene sleeves which are manufactured to hold a range of image formats;
- black and white contact sheets can be stored in polypropylene sleeves, as can black and white prints. A range of sleeves, which take various image sizes, are available;
- colour transparency slides, both 35 mm and other formats, can be stored in polypropylene sleeves. Note that in a high humidity environment plastic sleeves can cause problems as they restrict air flow and stick to moist film emulsion. In circumstances where there are problems with high or fluctuating humidity store slides in appropriate and archivally suitable storage units.
- negatives, prints and slides require a temperature and humidity controlled environment for optimum long-term storage;
- annotate and cross-reference the negatives, contact sheets, prints and transparencies using archivally stable ink.

EQUIPMENT - DIGITAL RECORDING

A comparison between film-based recording and digital recording reveals many similarities, as well as differences. The following is a brief summary of some of the features of digital recording:

- **digital camera** – a camera is basically a box that holds a lens that focuses the image. With digital photography the camera converts the light to an electronic image. Further processing can be done within the camera to the captured image;
- **LCD Monitor** - major advantage of digital cameras is the image can be reviewed on the LCD monitor within seconds of taking the shot. This gives the photographer the opportunity to evaluate the image and re-take, if necessary;
- **histogram** - checking the camera's histogram, shown in the LCD monitor, enables the photographer to see and assess the brightness range of the captured image;
- **digital sensors** - digital cameras expose pictures using methods identical to film cameras. The sensitivity standards for both film and sensors are similar and the shutter and aperture mechanisms are the same;
- **memory cards** - instead of film, digital cameras use memory cards which are used to store the images. These come in a range of sizes; most have the capacity to hold more images than film. Images on a memory card can be deleted, transferred or kept any time. Once the images are transferred to a computer or other storage device, the memory card can be re-used;
- **ISO** - digital cameras can be set to record different light sensitivities or ISO speeds. This can be done at any time and the ISO setting can be changed from image to image. Technically, digital cameras do not have a true ISO, but for practical purposes a digital camera's ISO equivalent settings correspond to film;
- **noise and grain** - noise in digital photography is equivalent to grain in film photography. It appears as an irregular, sand-like texture and, if large, can be unsightly and hide details. This is undesirable in heritage photography and, as with film photography, lower ISO settings should be used where possible;
- **resolution** - in digital cameras resolution is expressed as the number of pixels contained in the sensor area, usually expressed as the number of megapixels (MP). Generally, the higher the number of pixels the higher the resolution and the corresponding increase in detail;
- **light settings** - digital cameras can automatically check the light and calculate the proper settings for the light's colour temperature. This is done based on an internal setting called the white balance. This enables digital cameras to be set to specific light conditions, such as daylight, shade, fluorescent or tungsten, removing the need for most filters.

DIGITAL CAMERAS

35mm Single Lens Reflex (SLR) Digital Camera

As with film photography this is the most popular and versatile camera format. Again, when combined with quality lenses and a range of accessories, the 35mm digital SLR camera is very suited to most heritage photography needs.

There are a number of brands available and the most suitable ones for heritage photography should have the following specifications:

- 8 megapixels or more resolution.
NB A good quality 8 MP digital SLR camera can produce high quality A4 or A3 images or prints which are suitable for most heritage studies. If larger images or prints are required cameras with a 10 MP or more may be needed.
- ISO range 100/200 – 800 (noise reduction function an advantage);
- interchangeable-lenses;
- good image histogram;
- image shooting information – metadata;
- comprehensive viewfinder display;
- comprehensive flash control features;
- flexible white-balance controls;
- raw capture and high quality raw-conversion software;
- full exposure control, especially manual control and the ability to override full autoexposure;
- range of shutter speeds, including the ability to take long exposures in dark places or dull light;
- remote release devices, such as cable releases and electronic releases, to minimize camera vibrations;
- mirror lock-up, a useful device to stop camera shake, especially with larger lenses;
- depth-of-field preview to see what's in or out of focus;
- facilities for external flash.

Medium and Large Format Cameras

Digital backs are available for both medium and large format cameras.

Lenses

The following deals primarily with 35mm digital SLR camera systems but the principles can be applied to both medium and large format camera systems.

Digital cameras sensors can vary in size and are frequently smaller than a 35mm-film frame. If the sensor is smaller a focal-length magnification or lens conversion factor is applied to the focal length of the lens.

An example: a digital SLR camera has an APS sensor, which is smaller than a 35mm film-frame, and has a focal length conversion factor of 1.5X. This means a 50mm lens on the digital SLR camera would be equivalent to 75mm (50mm x 1.5 = 75mm) on a film SLR camera. Some digital cameras have a full size (35mm) sensor and, therefore, do not have to apply focal length conversion factor.

As with film or analogue SLR cameras, a range of lenses with varying focal lengths are necessary to cover all aspects of heritage photography. These can be either fixed focal length lenses or zoom lenses. Either fixed focal length lenses or zoom lenses can be used and should cover the focal length range of 20mm – 300mm.

As there is range of sensor sizes used in digital SLR cameras the lens focal lengths are given for a full size (35mm) sensor. The focal length conversion factor will need to be applied for cameras with smaller sensors.

- **Fixed lenses** (35mm equivalent): 20mm, 28mm, 35mm, 50mm, 105mm and a telephoto lens of 300mm focal length.
- **Zoom lenses** (35mm equivalent): 18-85mm; 70-200mm, 1.4X or 2.0X extender lens. Other combinations can be used as long as they cover the 20mm – 300mm focal length range.
- **Specialised lenses** (35mm equivalent): macro lenses are used for close-up images. Macro lenses are usually available as 50mm, 60mm, 105mm 180mm or 200mm focal length. These lenses can be substituted for fixed focal length lenses.

Only some of these lenses may be needed for a particular assignment.

Image Storage

Digital cameras use some form of removable storage, usually memory cards. Memory cards come in a range of sizes and the type to use varies between camera brands. The number of images stored depends on the capacity of the storage device and the resolution at which the image is taken.

As an example: - a 1GB memory card can store approximately 80-90 images captured in RAW format with an 8 MP digital SLR camera. This is equivalent to 2.2 rolls of 36 exposures of 35mm film. Cameras with higher resolutions than 8MP will have larger image size resulting in fewer images being able to be stored on the storage card.

The photographer needs to ensure there is sufficient storage capacity on the available memory cards to undertake the assignment.

The photographer in the field has two options:

(1) have sufficient capacity on the memory cards to be able to record images without having the need to transfer the images to another storage device; or

(2) use a portable downloader or have access to a computer, normally a portable laptop. The images can be transferred each time the storage card is full. Laptop can be a problem on difficult sites because of their weight and fragility.

Image File Size, Format and Digital Image Management

Heritage photography requires quality images and the photographer needs to make choices about image sizes, compression, and file formats. These choices determine the image quality and image file size.

The photographer should undertake the following:

- photograph at the highest quality;
- record image in RAW format to capture the maximum amount of information; and
- provide client with a copy of the image in RAW format and a copy converted to TIFF format, a universal format.
- **DO NOT** save images in JPEG format as this uses lossy compression which degrades the image to some extent.

There are a number of software packages which can be used to sort, label and file captured images. The labelling should relate to the specific project and to the catalogue sheets.

Digital Camera Accessories

These will vary depending on the project:

- tripod - heavy duty;
- flash units – one or more flash guns and slave unit;
- scale rod/s - for inclusion in the photographs, where appropriate;
- filters, such as polarising and UV filters;
- cable or remote electronic releases;
- additional batteries;
- battery charger.

PHOTOGRAPHIC METHOD

Every photographer has an individual technique. When photographing for the purpose of making an archival record, however, it is the information content rather than the artistic effect which is paramount. Photographs of a particular scene should be uncluttered with extraneous material and should emphasize the subject.

The photographer should be aware of all plans and documentary evidence available on the place and should have an understanding of its history and operations. This is especially important with industrial sites. Without this knowledge significant items may not be treated appropriately. If necessary, the photographer should be accompanied on the site by a person familiar with the site's heritage significance and the processes related to it.

The preferred shooting method is to proceed from the general to the specific. There are two methods which can be used.

1. In the first method the context photo is taken first, then the structures or items showing their relationship to each other, followed by the external facades of each building, the relationship of the elevations to each other and to all equipment or relics housed in each space. Internally, the main elevation of each room or space should be photographed. Finally, each piece of equipment in each space should be carefully and completely photographed.
2. In the second method, the external content photographs are taken initially and the individual buildings and relics are then photographed in a sequence determined by either geographic location, a precinct convention, or, in the case of industrial sites, by a material flow chart.

Whichever method is used the photographer must be aware of the appropriate sequence, and the site must be inspected and the project planned before commencement.

BASE PLAN

The photographer must be equipped with a map of the site on which each building, structure or movable item is shown. Each building, structure or movable item must be given its correct name or it must be denoted by a symbol such as a number or letter of the alphabet. Identify movable items. Where there are a number of buildings on a site, it may be necessary to draw each building separately. In some cases, each space may have to be drawn separately.

Some photographers like to draw a sketch plan themselves as it increases their awareness of the buildings and their contents.

SCALE RODS AND MEASURING STICKS

It may sometimes be useful to include a measuring stick placed in the plane of the photograph's subject which will serve as an indication of the relative scale. (Note: this will be essential for an archaeological excavation, but may not always be practical or necessary for other kinds of photographic recording.)

For large scale photographs the stick or rod should be similar to a field surveyors levelling staff, at least one metre long calibrated in bands from 10mm to 1 000mm wide. For photographs of smaller details prepare a ruler approximately 300mm long with calibrations from 1mm to 10mm. The markings on the scale rods must be bold to be able to be read in the print or slide.

RECORD OF PHOTOGRAPHIC METHOD

Photographic records are taken on behalf of a client and it is essential that the client, or the client's representative, is able to review the catalogue and be satisfied that the coverage is complete.

Photographic Catalogue

Each image must be catalogued. By adopting a set sequence the catalogue recording is much simpler. With film it is normal to assign a number or alphabetical prefix symbol to each type of film, then to number each roll of film and finally to number each frame. Digital images have a unique image file number.

It is normal practice to have a catalogue sheet and enter as much information as possible in the field. Further annotation may be made off-site if required. This may be done when the images are available to be viewed or it may be done simply by reference to the original field notes. The catalogue sheet is then typed. The typed version then becomes the image catalogue. In the case of film this is stored with the negatives and all copies of the contact sheets. With digital recording the catalogue sheet should be stored with the 'thumbnail' image sheet and the CD-R disc.

When cataloguing information for each image it is essential to record data in a consistent manner. Again, different photographers will vary the way they enter information in the catalogue. It is important that the method of entering the information remains the same throughout the project.

It is recommended that the catalogue sheets be specially prepared for each project. In the case of film photography the catalogue sheet should list the site name, date, photographer's name, camera type and lenses, film type, roll number and a description of each frame. Digital recording catalogue sheets need to list site name, date, photographer's name, camera type and lenses, image file number, and a description of each image.

See Appendices A-1 & A-2 for examples of photographic catalogue sheets.

Photographic Plan

A plan of the site, each building and of each space within the building should be obtained and each image or frame exposed should be entered directly on that plan. Each entry should show the position of the camera and the direction in which it was fired. (see Appendix B). The nomenclature should be identical to that used for the catalogue sheets. Normally, a map of the site or a plan of a building should be lodged with the catalogue sheet and contact sheet in the case of film photography or the catalogue sheet and 'thumbnail' image sheet with digital recording. The plan should have a north point which can be true north or a nominal north.

The plan should show the sequence in which the photographs were taken.

PHOTOGRAPHIC TECHNIQUE

CONTEXT PHOTOGRAPHS

Each site, place or movable item or collection should be recorded in its context. This means that the surrounding landscape with the site and structures in it should be photographed from several distant points. Buildings, rivers, landform and other items should be included and their relationship with the subject defined. Photograph the site, room or space where movable items are located and show how the items relate to each other and their setting. In some cases this will require 8-10 images.

RELATIONSHIP OF BUILDINGS ON SITE TO EACH OTHER

The spatial relationship of each structure to another, and to surrounding buildings or structures should be shown. This will allow functional connections to be recognised. Quite often, this can be done by placing the camera where four or five buildings are in view and taking a series of images radiating from the point where the photographer is standing. On a complex site five or six positions may be required before each building is defined in its relationship with those surrounding it. In other cases, one or two shots are all that are required.

INDIVIDUAL BUILDINGS OR STRUCTURES

External images should be taken of each façade with a perspective control lens or a telephoto lens where possible. Wide angle lenses tend to distort the perspective of building facades.

The detail of each façade should be approached in a logical manner usually working from the upper left-hand corner to the bottom right. Details such as eaves, soffits, rainwater heads, downpipes, window reveals and sills, doorways and steps, and balustrades will require individual treatment.

Where individual features are outstanding because of their form, texture, historic nature or condition, several images of one item may be necessary. This may include images taken from a distance as close as a few centimetres, in which case a macro lens will be required.

INTERNAL SPACES

Internal spaces of an individual building are usually more complex. Here knowledge of the operation of the space is essential. Images should be taken in a sequence to show all internal elevations, including floors and ceilings, where possible. Special attention should be placed on structural elements, fittings and any movable items. Do not forget spaces which are difficult to get to, such as the roof, basements, shafts and underfloor spaces.

ITEMS AND RELICS

Individual relics and movable items such as the machinery on an industrial site or furniture in a building should be photographed perpendicular to each face and from each corner. Where possible they should also be photographed from above or from a high vantage point. Normally each item is completely photographed before the photographer moves on to the next one.

Relics and movable items usually exist as assemblages, collections or systems and this should be taken into account by the photographer.

An **assemblage** is a relic or structure including all the artefacts, tools and items normally associated with it when it was operating. In the case of a workshop machine, it would include spanners and wenchers used to tighten nuts, the tools needed to adjust gears or belts, the safety screens which prevent contact with moving parts and, if applicable, samples of completed or partially completed work. It also includes signs, pipe work and associated services.

The term **collection** describes a number of relics, movable items or structures which belong to a group because they perform the same function or produce the same finished product. Items in a collection are usually photographed concurrently.

A **system** is more than a collection of artefacts. It is an operational group of related relics or structures which cannot function effectively if any of them is removed. Where a system is being recorded the sequence in which the items are photographed will be determined by the operation of the system.

Photographers, who have not worked extensively in recording buildings and sites, should be walked through the complex before work starts by someone who knows the process related to the site.

ACCUMULATED CULTURAL MATERIAL

On some sites accumulated cultural material or rubbish may be so distracting that it has to be cleared before photography can be undertaken. Details may be partially obscured or completely hidden and a clean-up is essential. This is particularly necessary if the site has been vacant for some years and is subject to weed growth, bird infestations, squatters and vandalism.

Care should be taken not to disturb materials that are a legitimate part of the historic record. Material which appears disruptive to the photographer's eye and which belongs to a structure or relic, such as an oil can, may be relevant to the operation of the machine and should not be removed. It may, however, be repositioned if such action will not compromise the relationship of the items within the assemblage.

FINAL PHOTOGRAPHIC IMAGE REPORT - FILM-BASED REQUIREMENTS

MINIMUM REQUIREMENTS FOR FILM PHOTOGRAPHIC REPORT

When the survey is complete the minimum requirements for the **photographic report** and materials are:

- an introduction which explains the purposes of the report and gives a brief description of the subject, as well as details of the sequence in which photographs were taken. The report may also address the limitations of the photographic record and may make recommendations for future work;
- the report should include all technical details including camera and lenses, film types and processing, and photographic prints and processing;
- the report should also contain the catalogue sheets, photographic plan, and supplementary maps or plans.

MINIMUM REQUIREMENTS FOR FILM MATERIALS

Black and White Film

The minimum requirements for black and white film are as follows:

- one set of archivally developed and numbered negatives in strips and stored in archival sheets or envelopes;
- three sets of proof sheets, labelled and cross-referenced to the catalogue sheets.

The black and white negatives, one set of proof sheets, and one copy of the photographic report should be stored together in a public archive. One set of proof sheets and the photographic report should be stored together in a second archive. The final set of one set of proof prints and photographic report should be located with the client. (see section: Lodgement of Final Film or Digital Photographic Report for details)

In the case of movable items and collections, it is recommended to keep one set with the items and another in the archives.

Colour Transparencies

The minimum requirements for colour transparencies are:

- three sets of colour transparencies (either original transparency and two duplicate or three original images taken concurrently) numbered,

labelled and cross-referenced to the catalogue sheets and stored in archival slide sheets.

One set of transparencies (original images) together with the photographic report should be stored together in a public archive. The second set of transparencies (original or duplicates) with the photographic report should be stored together in a second archive. The final set of one set of transparencies (original or duplicates) and photographic report should be located with the client. (See Lodgement of Final Film or Digital Photographic Report on page 28 for details.)

In the case of movable items and collections, it is recommended to keep one set with the items and another in the archives.

Digitisation of film material

All film material, black and white negatives and prints, colour transparencies, and colour negatives and prints can be digitised by the use of scanners. Details relating to the use and storage of digital images are dealt with in the next section on the digital image report and placement of digital materials.

Australian National Library Guidelines for the digitisation of film-based materials are as follows:

- coloured photographic prints: 24 bits per pixel, 300 or 600 pixel per inch (PPI), RGB colour space;
- colour transparencies: 24 bits per pixel; 2000 PPI; RGB colour space;
- colour negatives: 48 bits per pixel; 2000 PPI; RGB colour space;
- black and white prints: 8 bits per pixel; 300 or 600 PPI; greyscale;
- black and white negatives: 8 bits per pixel; 3000 PPI; greyscale.

FINAL PHOTOGRAPHIC REPORT - DIGITAL REQUIREMENTS

MINIMUM REQUIREMENTS FOR DIGITAL PHOTOGRAPHIC REPORT

When the survey is complete the minimum requirements for the **photographic report** and materials are:

- a very brief report or introduction which explains the purposes of the report and gives a brief description of the subject, as well as details of the sequence in which images were taken. The report may also address the limitations of the photographic record and may make recommendations for future work;
- the report should include all technical details including camera and lenses, image file size and format, technical metadata associated with the images, and colour information;
- the report should also contain the catalogue sheets, photographic plan, and supplementary maps or plans.

MINIMUM REQUIREMENTS FOR DIGITAL MATERIALS

The minimum requirements for digital work are:

- three hard (paper) copies of the photographic report including catalogue sheets, photographic plan and supplementary maps;
- three sets of thumbnail image sheets (e.g. A4 photographic paper with six images by six images) showing images and file numbers. Thumbnail image sheets should be processed with archivally stable inks using approved archival photographic papers and cross-referenced to catalogue sheets;
- three copies of archival quality CD-R discs containing electronic images files and associated metadata, cross-referenced to catalogue sheets. If there are a large number of images, then DVD media can be used;
- one set of 10.5 x 14.8cm (A6), prints using archival quality paper and archivally stable inks. If the project is very large and includes a considerable number of digital images, key or representative images may be selected for reproduction at 10.5 x 14.8cm.

Digital Thumbnail Sheets and Prints

The thumbnail image sheets or prints should be printed on archival paper using archival inks or dyes. This will ensure optimal longevity.

Image stability, a problem in the past, is improving rapidly with new technology, improved inks and papers. A number of printer manufacturers offer printers which, with correct inks and specific papers, can produce prints with an expected life comparable to traditional black and white prints, provided storage conditions are suitable. These results are based on laboratory accelerated ageing techniques.

This technology is available through professional photographic laboratories.

Currently, there are three acceptable systems:

- Epson PictureMate Printers (or Epson equivalent) using Epson UltraChrome K3 inks and Epson archival photographic paper (Epson PictureMate paper (dye-based inkjet printing);
- Hewlett-Packard (HP) Photosmart Photo Printers (or HP equivalent) with HP Vivera Inks and HP Premium Plus photographic paper papers (dye-based inkjet printing); or
- FujiFlex utilising Fujicolor Crystal Archive Type One or Type Two Paper printed with Fuji Frontier digital minilab and Fuji washless chemicals (silver-halide colour prints).

Photographers are advised to check each company's website to keep up-to-date on improvements in printers, inks, chemical processing or photographic papers. In the future other companies may develop archivally acceptable methods.

Rather than relying on claims made by the various companies an objective assessment of the permanency of any particular system can be found at www.wilhelm-research.com

Costs may be similar to or slightly higher than that charged for producing film proof sheets and prints.

One-hour shops, particularly those using C-41 processing, are not suitable for producing prints acceptable for long-term storage.

STORAGE OF PHOTOGRAPHIC MATERIALS

PROOF SHEETS, SLIDES AND PRINTS

Proof sheets, slides and prints should meet the following storage standards:

- all storage must be in archival quality packaging suitable for long-term storage. If plastic packaging is used it should be polypropylene, **not** PVC;
- colour transparency slides, both 35 mm and other formats, can be stored in polypropylene sleeves. Note that in a high humidity environment plastic sleeves can cause problems as they restrict air flow and can cause the film emulsion to stick to the plastic. In these circumstances appropriate storage containers should be used;
- prints can be stored in polypropylene sleeves which are manufactured to hold a range of image formats;
- thumbnail image sheets (usually A4 size) can be stored in polypropylene sleeves;

- the photographic report and photographic materials should be stored in a suitable archival binder. These include a slipcase to ensure optimal survival and protection from the dust.

All printed material requires a temperature and humidity controlled environment for archival storage.

Any cross-reference notes and details associated with the prints or proof sheets should be written in pencil (preferably B) or with approved archival photo-labelling pen. Any writing should be restricted to the borders of prints or proof sheets.

CD-ROM OPTICAL MEDIA DISCS

With good care and maintenance a high quality CD-R disc is said to last around 30 years, although some manufacturers claim lifespan of 100 years plus. The difficulty is finding out which discs are best and knowing where the disc was manufactured. Another problem with CD-R is the technology may become obsolescent before the disc deteriorates, so the wisest option is to transfer the information to new media every 10 years.

DVDs are a storage option if the project is very large. Again, be careful to select a good quality DVD with long lasting qualities.

To ensure optimum life of CD-R discs and DVDs the following is suggested:

- use high quality CD-R discs or DVDs that are produced by a reputable brand and meet quality controlled manufacturing standards;
- burn CD-R or DVD at 1x or 2x speed to minimise data errors and then verify to make sure there are not data faults;
- it is recommended that TIFF images be saved as a Windows PC file rather than MAC. However, this should be determined with the client based on the client's computer system and future use..
- CD-R discs should be in plastic jewel cases which should be stored upright and under suitable storage conditions;
- CD-R discs should be labelled on their protective packaging rather than directly on the discs themselves;
- ensure CD-R are handled with due care, keeping them away from food, drink and dust. Never handle the underside of the disc and use the utmost care when handling the disc so as not to scratch the surface in any way. Gloves are recommended for the handling of archival discs;
- CD-R discs should never be bent or flexed and must be kept away from direct sunlight and stored vertically in their cases after use.

LODGEMENT OF FINAL FILM AND DIGITAL PHOTOGRAPHIC RECORDS

There should be three sets of the photographic report and film materials or digital materials. The place in which the material is lodged depends on whether the photographic project was requested by the NSW Heritage Council or local government. The following table summarises the lodgement details for photographic records.

Material	Minimum requirements	Repository	
		For Records Required by the Heritage Council of NSW	For Records Required by a Local Council
Black & White Film (plus any supplementary colour film)	• Three copies of photographic report • One set of negatives • Three sets of proof sheets and catalogue	Report + negatives + 1 st set of proof sheets: Heritage Office Report + 2 nd set of proof sheets: State Library of NSW Report + 3 rd set of proof contact sheets: Owner/client	Report + negatives + 1 st set of proof sheets: Local Council Report + 2 nd set of proof sheets: Local Council Library Report + 3 rd set of proof sheets: Owner/client
Colour Transparencies or Slides	• Three copies of photographic report • One set of original transparencies and two sets of duplicates OR • Three sets of original images taken concurrently	Report + original transparencies: Heritage Office Report + duplicate/concurrent transparencies: State Library of NSW Report + duplicate/concurrent transparencies: Owner/client	Report + original transparencies: Local Council Report + duplicate/concurrent transparencies: Local Council Library Report + duplicate/concurrent transparencies: Owner/client
Digital Materials	• Three copies of photographic report – paper copy • Three sets of thumbnails • Three CD-Rs • One set of selected 10.5x14.8cm prints	Report (paper) + thumbnails + CD-R + prints: NSW Heritage Office Report (paper) + thumbnails + CD-R: State Library of NSW Report (paper) + thumbnails + CD-R: Owner/client	Report (paper)+ thumbnails + CD-R + prints: Local Council Report (paper) + thumbnails + CD-R: Local Council Library Report (paper) + thumbnails + CD-R: Owner/client

APPENDICES

- A Model Brief for Heritage Photography**
- B Checklist for a Heritage Photographic Report**
- C Catalogue Sheet**
- D Photographic Plan Sheet**
- E Photographic Suppliers**
- F References**

APPENDIX A - MODEL BRIEF FOR HERITAGE PHOTOGRAPHY

FILM RECORDING

PHOTOGRAPHER'S DETAILS		
Name		
Address		
Phone:	Mobile phone:	Facsimile:
Email:		
Recent Heritage Jobs:		
Contact/s (re recent heritage assignments)		
Name:		
Contact Details:		
PHOTOGRAPHIC ASSIGNMENT DETAILS		
Assignment Outline:		
ASSIGNMENT REQUIREMENTS		
Public Liability Insurance	Yes/No	Amount:
Additional Requirements:		
Copyright/Image Ownership:		
FILM REQUIREMENTS		
Start:	Finish:	Report:
Camera/s:		
Lenses:		
Accessories:		
Film:	Black & White	
	Colour Transparency	
Processing:	Black & White	
	Colour Transparency	
Archival Materials:	Boxes	
	Sleeves	
	Paper	

Signatures (agreeing to above requirements and/or conditions)

Photographer

Client

SAMPLE MODEL BRIEF FOR HERITAGE PHOTOGRAPHY FILM RECORDING

PHOTOGRAPHER'S DETAILS		
Name	Allan Person	
Address	PO Box 000 Suburb NSW 2000	
Phone: 02 0000 0000	Mobile Phone: 0000 000	Facsimile: 02 0000 0000
Email: john.smith@server.com.au		
Recent Heritage Jobs:	Federation House 2006	
	Wooden Rail Bridge 2005	
	Sewerage Pumping Station 2004	
Contacts [regarding recent heritage assignments]		
Name:	Kate Individual	
Details:	Sydney Archival Agency	
	Phone: 02 0000 0000	
PHOTOGRAPHIC ASSIGNMENT BRIEF		
Assignment Outline: Weatherboard House [a] Photography of house prior to demolition [b] Photographic requirements include cameras, wide angle, standard and telephoto lenses; film - black & White & colour transparencies required [c] Final report to use approved archival standard materials		
ASSIGNMENT REQUIREMENTS		
Public Liability Insurance	Amount: \$5 000 000	
Additional Requirements: [a] completion & signed Heritage Office Client Checklist; [b] adherence to contract details unless changes agreed to by requisitioning authority; [c] work safety plan; [d] on-site induction; [e] confined spaces training or accompanied by qualified person		
Copyright/Image Ownership:	Images property of client	
FILM REQUIREMENTS		
Start: date/month/year	Finish: date/month/year	Report: date/month/year
Camera/s: Camera type/s – Single Lens Reflex		
Lenses: 21, 24, 35, 50, 85, 135, 200 & 300mm		
Accessories: filters, tripods, measuring sticks, flash		
Film:	Black & White	Ilford Delta 100 & Ilford delta 400
	Colour Transparency	Fuji Velvia 100
Processing:	Black & White	negatives & proofs sheets to archival standard
	Colour Transparency	E6 – professional laboratory
Archival Material:	Boxes	Approved archive storage boxes
	Sleeves	Approved archival protector pages
	Paper	Acid-free

Signatures:
Photographer:

Client:

MODEL BRIEF FOR HERITAGE PHOTOGRAPHY DIGITAL RECORDING

PHOTOGRAPHER'S DETAILS		
Name		
Address		
Phone:	Mobile phone:	Facsimile:
Email:		
Recent Heritage Jobs:		
Contact/s (re recent heritage assignments)		
Name:		
Contact Details:		
PHOTOGRAPHIC ASSIGNMENT DETAILS		
Assignment Outline:		
ASSIGNMENT REQUIREMENTS		
Public Liability Insurance	Yes/No	Amount:
Additional Requirements:		
Copyright/Image Ownership:		
DIGITAL REQUIREMENTS		
Start Date:	Finish Date:	Report Due:
Camera/s:		
Lenses:		
Accessories:		
Storage Media:		
Proof Sheets:		
Archival materials:	Boxes	
	Sleeves	
	Paper	

Signatures: (agreeing to above requirements and/or conditions)

Photographer:

Client:

SAMPLE MODEL BRIEF FOR HERITAGE PHOTOGRAPHY DIGITAL RECORDING

PHOTOGRAPHER'S DETAILS		
Name	Allan Person	
Address	PO Box 000 Suburb NSW 2000	
Phone: 02 0000 0000	Mobile Phone: 0000 000 000	Phone: 02 0000 0000
Email: allan.person@server.com.au		
Recent Heritage Jobs:	Federation House 2006	
	Wooden Rail Bridge 2005	
	Sewerage Pumping Station 2004	
Contacts [regarding recent heritage assignments]		
Name:	Kate Individual	
Details:	Sydney Archival Agency	
	Phone: 02 0000 0000	
PHOTOGRAPHIC ASSIGNMENT DETAILS		
Assignment Outline: Weatherboard House		
[a] Photography of house prior to demolition		
[b] Photographic requirements include cameras, wide angle, standard and telephoto lenses; sufficient on-site storage media cards.		
[c] Digital report to consist of paper copy, proof 'thumbnail' sheet/s, prints stored on approved electronic storage media		
[d] Paper copy, proof sheets & digital storage media in approved archival materials		
ASSIGNMENT DETAILS		
Public Liability Insurance	Amount: \$5 000 000	
Additional Requirements:		
[a] completion & signed Heritage Office Client Checklist;		
[b] adherence to contract details unless changes agreed to by requisitioning authority;		
[c] work safety plan;		
[d] on-site induction;		
[e] confined spaces training or accompanied by qualified person		
Copyright/Image Ownership:	images property of client	
DIGITAL IMAGING REQUIREMENTS		
Start:: date/month/year	Finish: date/month/year	Report: date/month/year
Camera/s: Brand Name Digital Camera - Single Lens Reflex [minimum 8.0 MP]		
Lenses: 21, 24, 35, 50, 85, 135, 200 & 300mm [35mm equivalent]		
Accessories: filters, tripods, measuring sticks, flash		
Storage Media:	Approved CD or DVD	
Proof Sheets:	Brand name archival ink/Brand name archival photographic paper	
Archival material:	Boxes	Approved archive storage boxes
	Sleeves	Approved archival protector pages
	Paper	Acid-free

Signatures:
Photographer:

Client:

APPENDIX B - CHECKLIST FOR PHOTOGRAPHIC REPORT

PROJECT NAME:		
FILM-BASED PROJECTS		
	Yes	No
Is there a hardcopy report?		
Does the B&W report contain:		
[a] a set of B&W negatives and proof sheet/s?		
[b] negatives & proof sheets sleeved in archival protective pages?		
[c] B&W prints [if required] sleeved in archival protective pages?		
[d] cameras, lenses, and accessories details?		
[e] film types and archival processing details?		
[f] map showing photographic location and direction of images?		
[g] list of all images, correctly numbered and described?		
Does the colour image report contain:		
[a] a set of colour transparencies, correctly numbered & described		
[b] each set stored in archival protective pages?		
[c] cameras, lenses, and accessories details?		
[d] film types and archival processing details?		
[e] map showing photographic location and direction of images?		
[f] list of all images, correctly numbered and described?		
Is the photographic material and report labelled correctly?		
Are the boxes/folders/containers made of archivally acceptable material?		
Are there two separate containers for B&W and colour material?		
Were the B&W negatives, proof sheets and prints archivally processed?		
Is the paper used in the report acid-free?		
DIGITAL PROJECTS		
Is there a hardcopy report?		
Does the hardcopy report contain:		
[a] thumbnail proof sheet processed in an archivally acceptable method?		
[b] proof sheet properly sleeved in archival protective pages?		
[c] appropriate electronic storage media with report and images?		
[d] cameras, lenses, and accessories details?		
[e] map showing image location and details?		
[f] list of all images, correctly numbered and described?		
Is there an electronic report?		
How is the information stored?		
[a] CD Rom – what type		
[b] DVD – what type		
[c] Other		
Can the storage media be opened?		
Is the information the same as that contained in the hardcopy report?		
Are the images saved as TIFF files, contain metadata and follow guidelines?		
If not, what is the file format & where have they diverted from guidelines?		
Is the storage media filed in an acceptable container?		
Is there a back-up copy stored with the hardcopy report?		
Is there a full set of 10.5 x 14.8 (A6) images processed with archivally stable inks and paper?		
Comments for either film and/or digital reports:		

APPENDIX C - FILM CATALOGUE SHEET

[illegible]

1. include details of the structures and/or object captured on film and direction from which image was photographed

DIGITAL IMAGE CATALOGUE SHEET

[illegible]

- 35mm-equivalent focal length is the relation between the digital sensor and 35mm film coverage.
file numbering systems vary between various camera brands.
image file number, date, lens focal length, exposure compensation, flash and other details are
recorded in the metadata file which must be included with or linked to the image file.
relates to the site or position from which image was taken as recorded on the Photographic Plan
Sheet.
this information is not recorded on in the metadata.

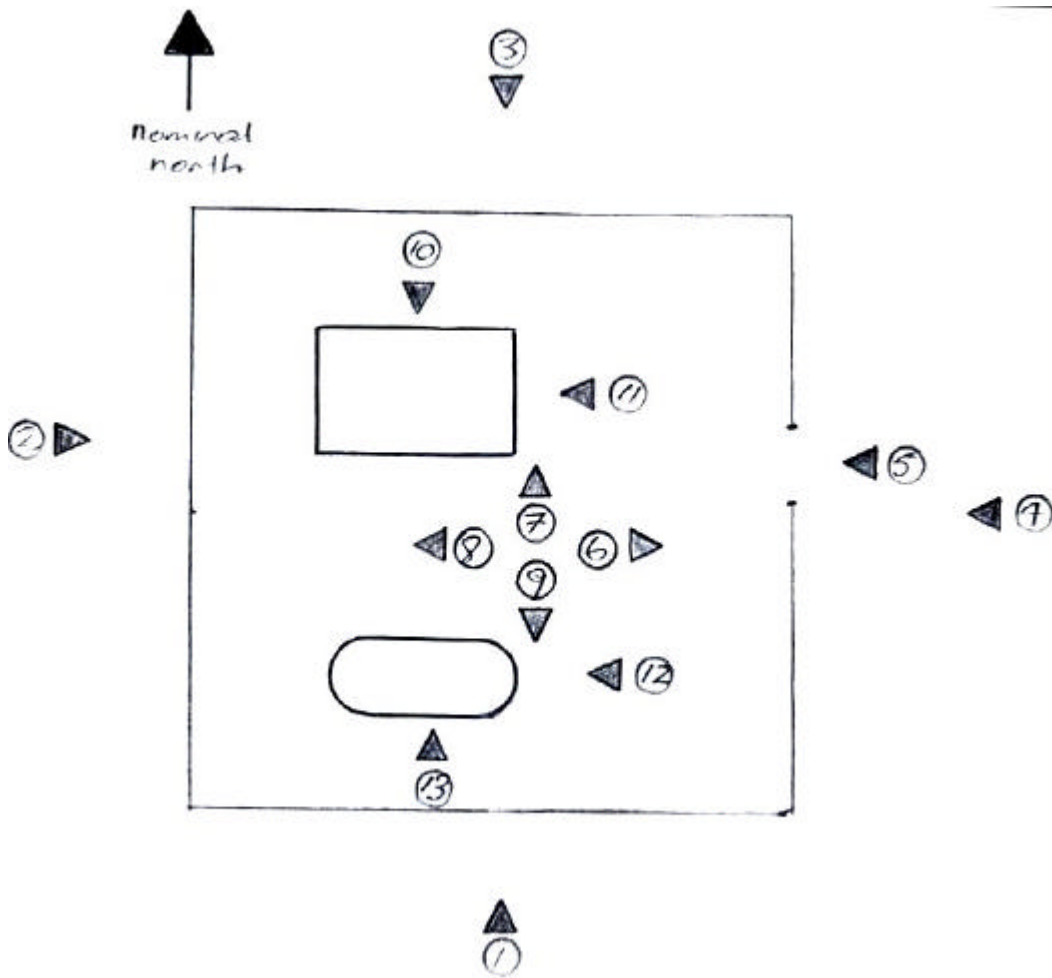
APPENDIX D - PHOTOGRAPHIC PLAN SHEET

Project Name:		
Date:		Photographer:
Camera:		Lens/es:
Film No/s.	Frame Nos:	Film Type:

1. The Photographic Plan Sheet can be used for both black & white and colour film images. Many photographers will have their own established system which will be satisfactory provided all the information can be cross-referenced to the Photographic Catalogue Sheets.
2. With digital photography each location can be labelled as a site which should then be included in the appropriate Photographic Catalogue Sheet cross-referenced to the appropriate digital file number. In this case remove the text File No/s and Frame Nos and substitute Site No.
3. The side of the building or structure closest to true north can be used as 'nominal north' for the purpose of describing the directions in which the images were taken. This is easier than trying to work out exact directions in relation to true north.

SAMPLE PHOTOGRAPHIC PLAN SHEET

Project Name: Sample		
Date:		Photographer:
Camera:		Lens/es:
Film No/s.	Frame Nos:	Film Type:



1. The Photographic Plan Sheet can be used for both black & white and colour film images. Many photographers will have their own established system which will be satisfactory provided all the information can be cross-referenced to the Photographic Catalogue Sheets/.
2. With digital photography each location can be labelled as a site which should then be included in the appropriate Photographic Catalogue Sheet cross-referenced to the appropriate digital file number. In this case remove the text File No/s and Frame Nos and substitute Site No.
3. The side of the building or structure closest to true north is used as 'nominal north' for the purpose of describing the directions in which the images were taken. This is easier than trying to work out exact directions in relation to true north.

APPENDIX E - USEFUL CONTACTS

Pro Labs – film and print processing

The list below includes some of the major photographic labs that undertake film and digital processing in NSW and is intended as a directory only. The inclusion of a person or business should not be taken to imply their endorsement by the Heritage Office, Department of Planning, or the Heritage Council of NSW.

Photographers should check the specifications and archival quality of services provided. Rural photographers can also check company websites for details on mail order services.

Campsie Digital Lab*[†]
Unit 3/9 Elizabeth Street
Campsie NSW 2194
Ph: 02 9718 8667[‡]
Fx: 02 9789 1564
www.digitalprolab.com.au

Created for Life Print Studio
2/14 Barralong Road
Erina NSW 2250
Ph: 02 4365 1488
Fx: 02 4367 0850
www.createdforlife.com

Icon Imageworks*
3/52 Champion Road
Tennyson Point NSW 2111
Ph: 02 9966 8781
Fx: 02 9966 87 86
www.iconcom.com.au

Photo King Professional
173 Alison Road
Randwick NSW 2031
Ph: 02 9310 0340
Fx: 02 998 5199
www.photking.com

The B&W Lab Big Image*
71 Palmer Street
Camberay NSW 2062
Ph: 02 9957 4933
Fx: 02 9957 1828

The Lighthouse BPS Pty Ltd*
2/219 Bondi Road
Bondi NSW 2066
Ph: 02 9365 6063
Fx: 9365 6013
www.thelighthousebps.com.au

Vision Graphics
88 Pitt Street
Redfern NSW 2016
Ph: 02 9319 3300
www.visiongraphics.com.au

Vision Graphics
2B Northcote Street
St Leonards NSW 2065
Ph: 02 9902 4000
www.visiongraphics.com.au

* Black & white processing services provided

ARCHIVAL MATERIAL SUPPLIERS

[archival photographic sleeves and storage boxes]

Albox Australia Pty Ltd
56 North Terrace
Kent Town SA 5067
Ph: 08 8362 4811
Fx: 08 8362 4066
www.albox.com.au [retailer supplier list for all states and territories]

Archival Survival Pty Ltd
Ph: 1300 781 199
email: info@archivalsurvival.com.au

Prints & Images
77 Keppel Street
Bathurst NSW 2795
Ph: 02 6332 4410
Fx: 02 6332 6770
email: cottagegate@bigpond.com

Preservation Australia
PO Box 210
Enmore NSW 2042
Ph: 1300 651 408
Fx: 1300 651 406
www.preservationaustralia.com.au

Shared Memories
PO Box 6
Sans Souci NSW 2219
Ph: 1300 554 229
www.sharedmemories.com.au

The Photo Album Shop
105 Hunter Lane
Hornsby NSW 2077
Ph: 9476 2610
Fx: 9476 5192
www.photoalbumshop.com.au

APPENDIX F - REFERENCES

Personal contacts

- Murray Fagg – Australian National Botanical Gardens
- Erica Ryan - National Library of Australia
- Andrew Long – National Library of Australia
- Sheryl Jackson – National Archives of Australia
- Richard Neville – State Library of NSW
- Scott Wagon – State Library of NSW
- Tony Sillavan – Sydney Water
- Jon Breen - Sydney Water (retired)
- Chris Cane – The Lab
- Alan Ward – Vision Graphics

National and State Guidelines

- Australian National Botanical Gardens
 - Photograph Collection Policy
- National Archives of Australia
 - Digital Preservation Guidance Note 3 - Care, Handling and Storage of Removable Media
 - Archives Advice 6 - Protecting & handling optical discs
 - Archives Advice 7 - Protecting & handling photographs
 - Archives Advice 7 - Protecting & handling objects
- NSW Heritage Office
 - Guidelines for Photographic Recording of Heritage Items 2004
- National Library of Australia
 - Still Image Digitisation at the National Library
 - Traditional Format Library Materials
- State Library of New South Wales
 - Digital practice: Guidelines for digitising images in NSW public libraries
- State Library of Queensland
 - Digitisation Policy
- Victorian State Government
 - Electronic Records Strategy – Forever Digital

Magazines

- Australian Photography
- Better Pictures
- Outdoor Photography
- Practical Photography
- Photography Monthly
- ProPhoto

Books, Press Releases and Information Sheets

- Fujifilm Professional Complete Film Line-up for Professionals
- Kodak 2004 Press Release – Kodachrome Film Availability
- Ilford Fact Sheet 2001 Processing B&W Fibre Based Paper
- Ilford Fact Sheet 2002 The Ilford Black & White Photographic Chemical Range
- Ilford Fact Sheet 2002 Processing B&W Resin Coated Paper
- International Digital Enterprise Alliance Inc.2004. DISC Metadata for Digital Image Submission
- Photograph Australia with Steve Parish – Film and Digital Photography Steve Parish Publishing Pty Ltd 2003
- The B&W Lab Big Image 2006 Price List

Websites

Guidelines and Policy

www.anbg.gov.au Australian National Botanical Gardens Photograph Collection Policy
www.archives.com National Archives (USA)
www.asmp.org The Universal Photographic Digital Imaging Guidelines
www.cr.nps.gov National Register of Historic Places and National Historic Landmarks Survey Photo Policy Expansion March 2005
www.diglib.org Technical Guidelines for Digitizing Materials for Electronic Access
www.nmnh.si.edu CoPAR Bulletin 14 – Creating Records That Will Last
www.montana.edu Experts Give Tips for Preserving Photos
www.prov.vic.gov.au Victorian Electronic Records Strategy – Forever Digital
www.nla.gov.au National Library of Australia
www.naa.gov.au National Archives of Australia
www.tasi.ac.uk Basic Guidelines for Image Capture and Optimisation
www.williamsphotographic.com Archival and Storage Issues

Archival Albums and Storage Materials

www.photoalbumshop.com
www.preservationaustralia.com.au

Archival inks, papers, printers and image longevity

www.epson.com.au Epson's New Ultrachrome Ink
www.epson.com.au Technical Brief – Epson Archival Inks
www.fineartgicleeprinters.org Discussion on the color gamut of the new UV pigmented inks from Hewlett-Packard for HP DesignJet 5000 and 5500ps for photorealistic and fine art giclee prints
www.inksupply.com MIS archival Pigments
www.photoreview.com.au The Test of Time
www.wilhelm-research.com Permanent care of colour photographs: traditional & digital, colour prints, colour negatives, slides & motion pictures

Digital storage media

www.cdmediaworld.com CD-R Quality
www.disctronics.co.uk CD-ROM Specification
www.melbpc.org.au How long will a CD-R last?
www.sro.wa.gov.au Preservation Notes – Keeping CDs Safe
www.cdmediaworld.com CD-R Quality

Digital photography – working with images

www.arisedition.com Creating a Digital Master

www.gbbc.org.uk Bit Depth and File Size, File Size and Resolution

www.pictureaustralia.org Australian Heritage Photo Library; ACT Heritage Library

www.scantips.com A Simple Way to Get Better Scans

www.wildlifephotonet.net Digital Workflow

Cameras - film and digital

www.canon.com.au

www.hasseblad.com.com

www.horsemanUSA.com

www.konicaminolta.com

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www.linhof.de

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www.olympus.com

www.pentax.com

www.sigma.com

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Software

www.adobe.com

Printers and inks

www.digitalfilm.com

www.epson.com.au

www.fujifilm.com

www.hp.com.au

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Film and digital processing and printing

www.icon.com.au

www.imx.nl Kodak Kodachrome: a critical appraisal and its role in the future

www.visiongraphics.com.au

www.thelabsydney.com