George Eastman House International Museum
of Photography and Film & Image
Permanence Institute, Rochester Institute of
Technology

A GUIDE FOR ESTABLISHING A PHOTOGRAPH CONSERVATION LABORATORY

Karina Beeman

Andrew W. Mellon Fellow, fourth
cycle Advanced Residency Program
In Photograph Conservation

Advisors:
Grant
Romer, Gary
Albright

2007

ACKNOWLEGEMENTS

I wish to first acknowledge Grant Romer, who established the current conservation laboratory at George Eastman House in Rochester, NY. This department serves the museum's collections and hosts the Advanced Residency Program in Photograph Conservation (ARP). Grant Romer has been a conservator at GEH since 1978, and has provided guidance to me all throughout the two years of my fellowship with the ARP.

I wish to give special thanks to my second advisor Gary Albright, a professional photographic conservator for 28 years. He has worked at the Northeast Document Conservation Center in Andover, Massachusetts, and George Eastman House, later establishing his private studio in Honeoye Falls, New York. His rich experience was a great benefit to this research.

I also wish to thank all of the people with whom I have visited, who shared their thoughts and experiences and were so kind with me. I really appreciate the time that they spent with me. I am extremely grateful for the contributions from: Nora Kennedy, Sherman Fairchild Conservator of Photographs at the Metropolitan Museum of Art; Hanako Murata, Conservator of Photographs at the Metropolitan Museum of Art; Peter Mustardo, Conservator and the Director of the Better Image; Connie McCabe, Senior Photograph Conservator at the National Gallery of Art , Washington DC; Andrew Robb, the Senior Conservator of Photographs at the Library of Congress; Ann Cartier-Bresson, the Atelier for the Restoration and Conservation of Photographs of the City of Paris.

Also, thanks to Paul Messier, Conservator of Photographs, Works on Paper and Electronic Media, who kindly shared his document on lab equipment with me.

Thank you to my Hermitage colleagues, who constantly encouraged me in this work.

I wish to give special thanks to Douglas Nishimura, research scientist at the Image Permanence Institute, who helped me to compile

statistical information about the conservation field in the United States, and gave me welcome advice throughout my two years of study.

Fortunately the entire Faculty of the ARP effectively gave me much to think about. If not for all of their help, and these thoughts, I would not be able to write this project.

And I wish to thank Mark Beeman, who helped me very much to work on this project.

I wish to express a special acknowledgement to the Andrew W. Mellon Foundation for its great financial support.

ABSTRAC
T

Currently there is no publication for the professional charged with creating a photograph conservation laboratory. Instead each professional must make critical decisions based upon an often limited survey of existing models. Further, they are frequently unable to make convincing arguments for resources.

An illustrated guide with suggested space, layout, equipment, and staffing would greatly facilitate the task of planning and creating a new photograph conservation laboratory appropriate to institutional needs and resources.

This paper is intended to serve as practical guidelines for those who have the challenging duty of planning and establishing an institutional facility for the conservation of photographs. It is divided into three parts. Part 1 offers a theoretical background of the development of photograph conservation as a specialized field. It presents the distinguishing characteristics of photography as major arguments for establishing a separate facility dedicated especially to photograph conservation. Part 2 outlines the important steps an individual should take in planning for a photograph conservation laboratory. In this section we share from the personal experiences of professionals from a variety of laboratories—the compromises they made and what they would have accommodated for had they foreseen how the field would develop. Practical information about the conservation laboratory, specialist materials, tools and equipment has been amalgamated in Part 3. Information such as addresses of professional organizations, a brief overview of the current demographics of the profession in the U.S., bibliographical references and a list of useful questions complete the paper.

A number of well-established institutional and private laboratories, reflecting a range in size and mission, were chosen for visitation and consultation with their staff to help in writing these guidelines.[1] My

[1] These institutions are: George Eastman House, Rochester; The Metropolitan Museum of Fine Art, New York; The Museum of Modern Art, New York; Library of Congress,

visits included interviews, documentation, and the gathering of related information. This information was then analyzed in consultation with experienced professionals before being organized into this document.

I chose not to discuss any specific financial matters due to the deep difference among countries, funding situations and the constant change in the prices of products over time. Mention of particular products and companies within this text does not constitute specific endorsement by the author, George Eastman House, or the Andrew W. Mellon Foundation. The ultimate goal has been to compile basic advice, not to make any specific suggestions[2].

PROJECT ADVISORS Grant Romer—Director, Advanced Residency Program, George Eastman House, NY. Gary Albright – Photography conservator, private practice, Honeoye Falls, NY.

Albright private studio; Atelier de Restauration et de Conservation des Photographies de la Ville de Paris, Paris, France; [2] During work on this project I prepared a list of equipment and furniture for the new photo conservation laboratory at The State Hermitage Museum, Russia (In Russian), including some links to suppliers that met their specific needs and requirements.

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"The Pond—Moonlight" by

Why not use the Paper Conservation Lab?

PART 1. INTRODUCTION

Developing a New Awareness

Currently there is increased worldwide awareness of the value of photography. The prices that Fine Art Photographs sell for at auction continue to rise with each new lot, and the advent of digital technology is quickly making silver-halide photography an historical process. Institutions with photograph collections are ready to enhance their exhibition and preservation strategies for these previously neglected objects. Today it is greatly understood that there is a need for trained

professionals, safe storage and qualified working space.

Many institutions have increased activity related to their photographic collections. Yet in many cases paper conservators are in charge of photograph conservation. The more we know about the nature of photographs and the different problems that photographs can present, the more we understand that institutions with large collections need a special conservation division dedicated only to their photographic holdings.

[3] For suggested reading please refer to the Bibliography beginning P. 22

Paper conservation laboratories have many projects of their own and have little time or information to properly care for photographic collections. The time when it was

appropriate to simply secure or clean photographs has passed. Photograph Conservation is far more complex than initially imagined; often photograph conservators have different specializations within the field. The need for a special division can be explained by the complex challenges of photograph conservation.

When an institution already has a Department of Photographs, the creation of a photograph conservation lab is a logical step, and is easier to start. But sometimes it is difficult to establish the appreciation for this need. Photographs do not yet share the same market value as other museum collections, and this fact can make it difficult for a conservator to request a specific lab with specialized equipment. A conservator has to be able to clearly express the reasons for a photograph conservation division.

The Specific Challenges of Photographs

"No. 5, 1948" by Jackson Pollock reportedly holds the

Photography has had change as part of its nature from its very inception. Fixing a permanent record of the image in a camera obscura record price for a painting: $140 million, Nov. 2006 was the initiative that created the technology. Many additional improvements in photographic processes came from a direct response to problems of deterioration. This child of technical progress, greatly affected by industry's growth and profit motive, has always changed, inundating society with many variations in its processing, binding material, supports, mounts, etc. The incredible variety of supports and different materials provide a wide range of conservation problems, treatment procedures and preservation planning. As listed in Artronix Index, there are as many as 144 different photo-chemical processes (common and very rare) and 32 different toning processes[4].

The unifying and essential nature of photographs is their common origin in a chemical response to radiant energy. A responsible conservator must have in-depth knowledge of all aspects of the work of art. Distinguishing a daguerreotype from an ambrotype is but a small part. A conservator needs to know the artistic temperament and historic environment of its creation. He or she must have strong familiarity with the technical elements (chemistry and materials that were used) and the manner and style in which the photographs were presented in the period of their origination. A conservator will especially need to know how the various photographic processes

[4] As listed in Photo-chemical processes: Karia, Bhupendra, ed. *Artronix Index: Photographs at Auction, 1951-84*. New York: Artronix Data Corporation, 1986, Pp. XIX-XXV.

deteriorate. Today the photograph is recognized as an object, not just an image, and this object requires a special conservation approach.

This concept is still new to many institutions all over the world. For many collections photography has been considered material for documentary support—no more. We know there are fine photographs

to be appreciated regardless of the motivation for their original production. There are photographic advertisements, photo-journalism, scientific imagery, private documents of our history, and creations of art. Many museums are reconsidering the value of their photographic holdings and some institutions continue to acquire new photographs. In many cases photographs are rare (such as daguerreotypes in Russia) and in many cases they are valuable acquisitions.

Institution and museum staff do not want to blindly take care of photographs anymore. Conservators will help by providing their expertise in safe storage, handling, display and treatment of these photographs. But conservators also need a proper working space, equipment, and additional education. Those who make decisions on where to invest institutional resources need to be educated about the value and vulnerability of photographs. A great way to spread the word is to organize conferences, workshops, seminars and publications.[5]

Since the medium has evolved technically from its beginnings, it is difficult to define what the role of a photograph conservator is, and therefore what specific needs he or she will require in the workplace. As we've seen, many types of photographs can appear in a lab from traditional black and white photography to rare 19th century processes, and various varieties of color photographs.[6] Then there are various supports and different materials which provide a wide range of conservation problems, treatment procedures and preservation criteria.

Photograph conservation is unlike conservation of many other disciplines such as paintings or furniture. It can best be compared to

[5] Recent international activities in St. Petersburg played a big role in bringing increased attention to the state of Russian photograph collections. During a seminar at The State Hermitage Museum, "Survey and Conservation of the Collection of the Daguerreotypes in The State Hermitage Collection", March-June 2007, the museum decided to purchase the important private collection of Dr. Larionov. This was a great step forward in understanding the value of our photographic heritage. [6] With today's change of photographic technology there are also digital prints that need attention from the conservator. And special consideration ought to be given to the fact that most contemporary artists produce prints that are becoming larger and larger.

contemporary art conservation due to the complexity of materials and definition of the object of conservation itself. Material constraints have resulted in the practice of a minimum intervention philosophy; and conservators now have reduced the extension of their actions upon the object.

Now the question may arise—if conservators perform few treatments, why spend precious resources on a lab? The answer is that even without treatments photographs need to be properly examined (one has to know what it is he is looking at and what he is supposed to see), preserved in a safe environment and stored in the proper protective housing. Special care must be taken for photographs according to how they are used by the institution.

Unfortunately many problems are not yet resolved. We still need to know more about the nature of deterioration of many types of photographs. There is a great need for more documentation of their condition and precise monitoring of photographs in storage and during display. This has to be accomplished by a professional with specific equipment. It should be considered a part of the preservation plan for photographs, and the best person to do it properly is a conservator.

Treatment is the most noticeable action of the conservator and affects the object directly. Conservators have always performed treatments and paid attention to changes in the objects. They very often undertake research in treatment methods and record results. Over time this has actually increased our treatment options. There was a generalized paralysis of action on the part of the conservator (that still exists in some cases). Obviously, approaches cannot be directly imported from the conservation of other materials; although collaborations among conservation disciplines continue to be an important source for the development of photograph conservation. Photographs have proved to be some of the most complicated and delicate objects for treatment procedures.

It is clear that it is risky to simplify photograph conservation and directly

use treatment methods from paper conservation. Obviously, unique combinations of different materials and many different supports in one object leads to the need for thoroughly considered preservation, exhibition and treatment decisions. All arguments about the specific nature of photographic objects, their complicated construction and special requirements in preservation and treatment, will help to make the case for a photograph conservation laboratory.

Studio of Gary Albright

Conservation lab at MoMA

value and use, will affect the treatment planning
institution might best utilize their resources for
nt choice. For example, a collection consisting of
ival historical material rarely exhibited and never
tutions would benefit by following the proper
advice given after a specialist in photograph
a survey of the collection's condition. Note that
eatest amount of time is utilized in thorough
lition reporting. Sometimes, when a collection is
lot of "dirty room"[7] treatment will have to be
rehousing for stabilization of the collection.

structure can be broken into the four general onal, Scholastic, Regional, and Private. In the ɔnal laboratories include, but are not limited to - eum of Art, MoMA, The Library of Congress, the , the National Gallery, and George Eastman

n laboratories have much in common with one another yet

PART 2. PLANNING FOR A PHOTOGRAPH CONSERVATION LABORATORY

Type of
Facility

A lab that works for a single department in an institution is not the same as one that has to serve different collections in many locations. When designing a conservation lab, start with a clear understanding of the type of collection it will serve, the institutional structure and their development goals.

Whereas if an institution is actively collecting, exhibiting and loaning, or possesses high value fine art photographs, planning for a permanent conservation laboratory ought to reflect the objects in the collection, the goals of the institution and the key studio activities to be performed by its staff.

[7]With a collection in overall poor condition, or with specific types of objects in poor condition (for example, negatives), it is good to dedicate a “dirty room” for treating very soiled, often molded pieces (if construction of the space has allowed for the planning of separate rooms). Mechanical cleaning a significant amount of photographs can produce a lot of dirt, which is sometimes difficult to control. Cleaning molded photographs needs to be performed with caution, as mold can spread to undamaged objects and be unsafe for our health. The dirty room can also be helpful in the situation of treating objects that have suffered from a disaster.

House. There are some differe
the institutions they are serving
collections but they are all qu
support for the artifacts acquire
at schools are exemplified by th
College, New York University a
that make the structure of the
research and training of futu
Regional Conservation center
Conservation Center in Andove
Center for Art and Historic A
services to a broad expanse
private. Many conservators in
cooperative with conservators o
documentation equipment as we
steel sink with deionized water
startup and operating costs. So
the studios of Paul Messier, Ga
Image. Each person is a distin
attracts clients from around
independent of any immediate c

A view from within the light court of the George Eastman House; in the center, on the second floor, is conservation; the most visible part - classroom

tman House expanded into a second building,

r remembers being asked about which location he would

Prior to planning the photograph conservation lab, it is very important to clearly understand what services will be performed by the lab. This may sound obvious, but it is very complicated. With poor planning, the choice of equipment and organization of the space will force unintended limits on the future uses of the lab.

Plan Now for the Future

What is the most important characteristic of a room to consider when choosing the site for a photograph conservation laboratory: space, lighting or access?

Choosing among the strengths and weaknesses of the inherent characteristics of a room will be one of the most basic decisions that in most cases will require some element of compromise. Rarely will a room possess all of the ideal qualities and yet this choice will especially affect what future activities can be performed in the lab.

[8] See Appendix 1, P. 31

ongress

Anne Cartier-Bresson's atelier
and even though a bigger spac
the center of the city, her choice
to the collections; and split her
buildings. Whereas Peter Musta
Better Image studio in New Jer
with high ceilings and a large op

characteristics of the chosen site are greatly
tion it is intended to serve. Ultimately one of the
ecisions will be finding a space in a convenient
rge enough to support the anticipated objects. At
ss, with its huge collection of millions of artifacts,
the largest secure and available space with
to running water, fume extraction, and electrical

Lab at the Library of

[9] In some opinions, the color choice for the walls and working surfaces can affect the retouching procedures performed in their environment. Guidelines in the next section

will suggest what limitations should be placed on this palate.

prefer for their conservation lab. He chose the space that could be renovated and rearranged in the future, making the sacrifice of using an environment illuminated solely with artificial light.

Very often natural lighting is desirable when a space is chosen. It is very good for staff to have large windows that will allow natural light into a room. Research has shown that it is psychologically difficult to work for a long time in an artificial environment. But today, when cast light is available in a wide range of spectrums, natural light should not be the most important aspect of lab choice.

Photographs are very light sensitive, so too much sunlight can be a problem, especially when windows are located on the south side of a room. In this situation, different screens and shades for the windows will be necessary to protect the objects from direct sunlight. Careful choice of lighting in the lab can make a major difference to the lab's ambiance, but there are other important choices which can both affect peace of mind and proper treatment for the artifacts.[9]

If windows are not available for the laboratory, consider the possibility of locating the offices, libraries, or reception areas in a place where natural light is more accessible. It is a short walk from the conservation laboratory at the George Eastman House to a courtroom infused with natural light from large windows up above.

Sometimes we have the possibility to plan all technical parameters, but sometimes not. The primary concern at this stage will be organizing the communications: outlets for energy and water, as well as the fume intakes and access to electronic networks. Determining the institution's priority for the activities to be performed in the lab—the immediate and long term goals— will facilitate definition for the locations of these firmly fixed communications.

On the scheme shown are different components of a photograph conservation lab. Each of these areas can be separated in different rooms, or they can all be in one space. When there is a choice to have several rooms the planner has to decide what is to be separated.[11]

[10] "In 2006 The Better Image expanded their photograph conservation practice to include a new studio in New York

City. While their facility in New Jersey continues to serve for larger photographic works and projects, this new location makes it easier for their New York City clientele to bring in photographic materials for examination and consultation prior to treatment."— www.thebetterimage.com [11] "The aim must be convenience with maximum efficiency, in accordance with relevant regulations, established safety procedures and principles of good practice... Familiarity with the basic principles of safe space design and use of equipment, specifications for security, appropriate lighting, flooring,

museums, and New York City galleries to bring to him the oversize contemporary photographic objects in need of a spacious site for proper evaluation and treatment.[10]

Each lab visited for this project was similar in their basic equipment selection yet different at the same time. What makes them different is their function. An understanding of the intended studio functions is the essential step in planning. Foreseeing the potential for future growth and preparing for the activities to be performed in the laboratory over time are aspects of planning for a lab that will otherwise make impossible choosing the right decisions for space, equipment or anything. Always remember these plans must support the facility for many years to come.

Laboratory Functions

Documentation room/area
Matting/ framing

Chemistry area
Coffee/food

Wet/dry treatment area
Photograph conservation laboratory

Reception
Storage
Offices
Microscopy
Library

Most conservation labs perform much more than just treatments. There are many activities occurring in conservation laboratories which enrich the field of conservation, cultivate the preservation of our heritage, and expand the network of educated practitioners. How significant a role the conservation lab will partake in educating future conservators, constructing exhibition and storage material, documenting the collection artifacts, and participating in further research needs to be considered before designing the laboratory.

The degree to which the conservation department will participate in building the exhibition and storage mounts for the museum's artifacts will determine how large a space will need to be reserved for the materials and staff needed to manufacture them. Although special training will be required, a conservation degree may be unnecessary for a technician's ability to construct protective mounts. Often these individuals work in concert with photograph conservators in the lab, but

sometimes institutions already have separate departments for their construction. If the latter is the case, conservators will need to advice, train, and assist where necessary, but accommodations for the often massive projects of preservation housing will not need to consume laboratory space.

Documentation is an essential part of conservation. Room for proper documentation of the artifacts will need to be reserved in a clean, light controlled space. Who will do the imaging? Will it be performed in the lab? A copy-stand, camera with multiple lenses and a computer reserved solely for capturing and storing these high resolution images will be necessary.

Will the lab participate in research? Analytical tools will have to be in the list of equipment if one of the goals of the institution is to facilitate increased understanding of why photographs deteriorate and what composes their chemical makeup. For example, a densitometer/colorimeter unit will be needed for research on the deterioration of photographs while on exhibition. These and most analytical equipment are expensive but necessary for furthering research. Usually big institutions already have some analytical tools that can be accessed, yet regardless the lab will have to have at least

ventilation or dust extraction, and the quality of construction materials are all necessary requisites. Consulting the obligatory statutory regulations with regard to health and safety at work (and any other relevant codes of practice) can be instructive and helpful when writing the design brief."— Kosek, Joanna M. *Conservation Mounting for Prints and Drawings*. Archetype Publications: London, 2004.

one dedicated microscope for their private use. Minimally, a comfortable microscope for work with magnification and examination, up to 50X, should be included in the lab plans.

Will the lab host an education program or have interns? An essential element of training for any photograph conservator will be firsthand experience with historic photographic processes. Therefore, a darkroom facility as well as office space, room for a study collection, extended library, and presentation space will also need to be

incorporated.

When designing a photograph conservation laboratory, start by identifying the key studio activities and follow with a list of essential items necessary to perform these activities. Then, after compiling the list of equipment, it is useful to think about what equipment should be in it at the beginning and what is desired for future development. The actual planning of a studio layout can be achieved by creating top-view scale outlines of the furniture and equipment and arranging these on a scale plan of the studio.[12] When answers to all of these general questions are solved, it is time to make a list of furniture, lighting units and basic equipment.

[12] Detailed on the following page is an example of the current plan for George Eastman House's main conservation laboratory. Not included are the arrangements for the separate rooms: classroom with library and presentation ability and the current darkroom space. Over the past year the original darkroom has been radically rearranged into a space for microscopic research.

Storage
Room

Storage: Flatfiles, File cabinets,
object & paper material

Microscopy
room

Documentatio
n Room

Offic
e

Offic
e

Offic
e

Plan for George Eastman House's conservation laboratory

PART 3. BASIC RECOMMENDATIONS ON FURNITURE AND EQUIPMENT

Staff

Before perusing the list of basic materials and equipment look back over the initial designs for your lab and bear in mind the staff needed to operate the facility. A conservation laboratory in a museum with

Guidelines for studio layout

• Identify main studio space versus storage and wet and dusty areas.

large photographic collections least—five employees[13]:

should allocate space for a staff of—at

• Identify transit and 'quiet' work areas.

• Position the incoming/outgoing area near the main exit and allow space for a trolley, large format folders or portfolios, whichever is applicable.

1. Chief Conservator
2. Conservator of photographs

• Allocate appropriate transit space 3. Conservator of negatives near exits including the fire exit and main transit areas around

4. Specialist for mounting

and/or near the equipment used by all staff.

• Plan the position of individual work stations so that each member of staff has an allocated personal territory and there is minimum intrusion into that territory of the other member(s) of staff to access the communal working/storage areas.

5. Technician[14]

"Plan the position of individual work stations so that each member of the staff has an allocated personal territory and there is minimum

• Plan the position of fire-fighting equipment, first-aid and 'disaster' kits in visible and easily accessible locations, ideally near the exits.

intrusion into that territory by the other member(s) of staff to access the communal working/storage areas. Identify the transit and 'quiet' work areas. Allocate appropriate transit space near exits including the (Kosek, 141)

fire exit and main transit areas around and/or near the equipment used by all staff. Position the incoming/outgoing area near the main exit and allow space for a trolley, large format folders or portfolios, whichever is applicable."[15] Organize work tables so they can be easily moved around and note that a very narrow long-shaped room is not

as comfortable an environment to arrange and rearrange as a square room.

[13] When planning the lab it is important also to keep in mind that it might host at least one to two interns or students each year. For instance, in Russia there is no special academic program for photograph conservation, therefore The Hermitage should help to prepare professionals in this field by accepting more interns. [14] Although in practice the separation of conservators to specific duties (conservator of photographs, conservator of negatives) might cause difficulties, for planning purposes it helps to ask for more positions when establishing a lab; in the case of The State Hermitage Museum it was recommended to have a conservator of daguerreotypes and cased objects. As a general rule it is better to ask for more as you usually get less than what was requested. [15] Kosek, 139

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Work Environment

The size of the facility is an essential issue. One should always plan and seek the largest space possible – as it is very difficult to expand in the future. Yet remember there are a few issues that should be taken under serious consideration while designing the space:

The laboratory space should have the following zones:

1. Work zone
   a. Dry Treatment
   b. Wet Treatment
2. Storage for chemicals
3. Documentation area
4. Offices
5. Library/conference area

These zones could be located in separate rooms, or they could be effectively arranged in one space. It is good to have a separate room for working with soiled or molded objects. For security reasons, the temporary storage areas for museum objects should have an alarm system.

- Proximity to the collection
- Security
- Possibilities for reorganizing the space
- Location in the building (in terms of climate control; it is not recommended to locate the lab underground)
- Location of the windows (preferably to the North)

While selecting particular equipment, furniture and materials for this space, look up the list of recommended suppliers at Conservation OnLine http://palimpsest.stanford.edu/. Conservation OnLine (CoOL) is a project of the Preservation Department of Stanford University Libraries and Academic Information Resources, is a full text library of conservation information, covering a wide spectrum of topics of interest to those involved with the conservation of library, archives and museum materials.

Some useful information can also be found in the archival records of the Conservation DistList: http://palimpsest.stanford.edu/byform/mailing-lists/cdl/. The Distribution List is an interdisciplinary forum created by conservators, conservation scientists, curators, librarians, archivist, administrators, and others whose work life touches on the preservation of cultural property.

Also, there is a Lab Design Bibliography (85 NN) published at Conservation OnLine and compiled by Heather Caldwell Kaufman, Preservation Services Librarian & Collections Conservator, MIT Libraries[16].

[16] See Bibliography P. 22

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Guidelines for lighting

• Use tri-phosphor florescent lighting and preferably one of 930 color. This has a color rendering index greater than 90, a color temperature of 300K and a very low UV light output. (Since objects may be exhibited under a different light source, it might be useful to examine works of art using the same light source for true color appearance.)

• For precision work, allow a general illumination of the working area of between 850 to 1000lux. Note that these light levels may result in veiling reflections for VDU operators and also that at such a high lighting level, the UV output will be higher too.

• To protect artwork from UV light consider introducing a UV filter regardless of the low UV output of the tri-phosphor florescent lighting. UV filters can be purchased on a roll and inserted between the light source and a holder around the lamp. Not that UV filters can alter the color temperature of the light source. Choose a filter with a cut-off point of 400nm. Measure the actual emission, following the installation of the filter. The UV level should not exceed 75^watts per lumen. Films will require regular checking and replacing.

• Request high-frequency dimming control gear, operating at around 33,000 hertz, which will cut out flicker. Low-frequency florescent lighting is known to cause headaches.

• If daylight is the main light source, consider putting the UV film (with a cut-off point of 400nm) on the window as well as fixing blinds for even distribution of light and protection of the artwork.

• Allow for localized illumination to provide adequate raking light when required.

• Consider incorporating a light box into a table so that its use will not inconvenience standard operations.

(Kosek, 140)

c. d.

Unless otherwise noted, all images were taken in the conservation laboratory at the George Eastman House.

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Lighting

a. Fill lighting

d. Micro fiber lamps -halogen -full spectrum daylight e. Large retouching lamps

f. UV protection film b. Task lighting, ceiling

-for windows -halogen -controlled spectrum c. Task lighting, table

g. Hanging sunrise reflector

w/ metal halide bulb -for light bleaching

Guidelines on the principles of ergonomics

• If space is not specified, allow approx. 7-10 square meters per person including equipment and body space.

• Allow a minimum height of 2400mm, although large equipment and some activities may require more height.

• Allow space between worktops and equipment of 975-1200mm for one person and through traffic, 1050- 1350mm for one person plus passageway, 1350-1500mm for two people back-to-back and no traffic, and 1650-1950mm for two people back-to- back plus passageway.

• Allow 500-900mm for chairs around a worktop.

• Allow kneehole space of 600mm x 600mm on plan.

• For standing at worktops when performing manipulative and delicate tasks allow 50mm above worktop to elbow height; consider adjustable height worktops for flexibility and bear in mind that an ‘average’ worktop height may prove inconvenient for all users.

• For standing at worktops when performing heavy tasks, allow between 100mmand 300mm below elbow height.

• Place video display unit (VDU) screens at a distance between 900 mm and 1000mm from the user. Note the requirements of display screen equipment regulation, in particular adjustable seat, footrest and appropriate lighting.

• For storage and retrieval of heavy/most frequently needed articles place shelves between 700mm and 1300mm from the floor.

• Use seats with adjustable height, backrest and back support in the lumbar region.

• Make sure that the feet rest flat on the floor otherwise provide footrests. (Kosek, 140)

Furniture-Working Space
a. Working Tables
b. Office Tables -adjustable height
c. Taborets -mobile
d. Chairs -cover for large sink
(adjustable height) -heavy & stable for microscope

b, d.

Furniture-Storage
e. Flat files i. Glass cage f. Filing cabinets j. Small laundry machine g. General storage cabinets
-for rolled material -with netted drying racks -small equipment
k. Waste baskets
-large near wet area -small for working tables -small for offices h. Refrigerator l. Drying racks for felts

g. **Guidelines for construction materials**

• Paint and varnish coatings as well as construction materials may give off acidic gases or other substances which could be detrimental to artwork. Oil paints, MDF and plywood should be avoided altogether.
• Seal any new wood surfaces with an appropriate paint or varnish such as an attested inert water-based polyurethane coating.
• If using metal furniture choose anodized aluminum, stainless, steel, non-plasticized synthetic resin or powder-coated steel. (Kosek, 141)

i.

Safety Equipment-Personal

Guidelines for security requirements a. First Aid Kit f. Nitrile gloves • Plan the position of fire exit(s) and appropriate fire-fighting equipments in accordance with best practice.
• Provide a ventilated metal storage cupboard for chemicals.
• Ensure appropriate security for the art objects such as a locking system for the external doors and windows, lockable internal cupboard(s) and a burglar alarm.

Guidelines for flooring specifications

• Choose a non-slip surface finish that is easy to dust and mop.
• Choose non-reflective, contrasting and restful colors.

b. UV-protection goggles g. Respirators c. Chemical-protection goggles h. Thin, white, cotton gloves d. Emergency Shower i. Latex Gloves e. Eye wash station j. Lab coats: white, black
(Kosek, 141)

Guidelines for colors & surface finish

• Use color(s) that will be restful for the eyes.
• Use a surface finish that will not cause reflection.
• For color matching aim to use a color such as grey which will provide the least interference.

(Kosek, 140)

Safety Equipment-Laboratory

k. Ventilation system

w/ filters

(Kosek, 141)

p. RH-meter

l. Fume hood m. Benchtop fume extraction n. Chemical storage cabinet

q. Densitometer

-504 SpectroDensitometer

XRite o. Acid storage cabinet r. Filter for tap water

l. m

d. c, h, f, g.

p. q.

22

Conservation Equipment

a. Deionized water system

b. Stainless steal sink c. Wash tub for dishware d. Light box

-large and small -flexible light panels -built into work surface e. Book press

-w/ acrylic panels f. Cart

-for safely moving objects g. Electronic weight scale h. Hot plate w/ magnetic stirrer i. Warming plate j. Sauser j. Electro spatula

-w/ multiple tips k. Hand iron l. Heat gun m. Airbrush

-airbrush compressor n. Powerstat o. Darkroom clock timers

p. Vacuum cleaner

-handheld vacuum q. Ultrasonic mister

-for consolidation

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Documentation
Equipment

a. Copy Stand b. Professional digital camera(Canon 20D-5D) c. Various camera lenses(50-60mm, 80 mm) d. Computer for storing images -external hard drive -licensed image manipulation Program (Canon Digital Photo Professional) e. Set of color filters f. Set of color and gray scales g. Scanner w/ resolution not less than 160 dpi -consider flat bed size -licensed program for scanner h. Lamps -halogen -daylight w/ controllable spectrum -UV and UVC

Mounting Equipment

a. Matt cutter
b. Guillotine
-board chopping
-board folding c. Heat or Ultrasonic welder d. Drymount press e. Wall mounted cutter
-for glass and acrylic f. Oval matt cutter

Analytical Equipment

g. Microscope
i-Binocular microscope by Nikon (up to 60X)
ii-Microsope Zeiss Stemi 2000-C iii- Optical Microscope Olympus BX60 iv- Zeiss Discovery V.12 stereomicroscope h. Camera for microscope
-Spot Insight 2 by Diagnostic Instruments -Spot Insight 4 i. Microscope Stand
-Zeiss Universal S2 j. Dual Binocular Heads
-for teaching

b
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b
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j
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Small Hand Tools

a. Hand sprayers -Daliha h.s. b. Various brushes -synthetic, sable, squirrel -multiple sizes from 0000 up -for common use, retouching -for application of adhesives -Japanese brushes c. Sieves -large Japanese -small for small portions d. Squeegee e. Various dental tools -spatulas -awls f. Spatulas -bone, Teflon, metal, bamboo g. Scalpels h. Scissors i. Bulb style blower/duster j. Tweezers k. Awls l. Sand papers (various) m. Assorted weights -thick glass -marble -small sand bags n. Cutting tools

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i. g.iii

m.

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g, h. i.

Expendable
s

a. Papers

-Europea
n
-Silversafe
-Phototex
-Japanese b.
Boards
-100% lignin-free -art
boards -colored paper
board c. Films
-Polyester
-Holitex
-Bondina
-Gore-tex d.
Tapes
-Filmoplast P90
-Linen Hinging
-Clear J-Lar
-Teflon tape e.
Erasers

f
.

-magic rub -magic rub
crumbs -Mars plastic f.
Adhesives -PVA
-Lascaux 498 -Gelatin
-Klucel G -Wheat Starch
-Acryloid B-72 -Aquazol
500 g. Chemicals h.
Retouching Materials
-pastels -color pencils
-watercolors -acrylic colors
-retouching matte colors
-dry pigments -mica
powder -mortar and pestle
i. Bookbinding materials
-Textile
s
-Leather
Miscellaneou
s

d
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f.
e.
h
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f.
e.
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f.
e.

ıen Table k.
Machine l.
obe closet w/
ers m. Office
omputer
chief conservator -for

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other conservators -in documentation area n. Laser printer -b&w for quantity -color for photo documentation o. Copy machine p. Various printer paper

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PART 4. CONCLUSION

We can not always plan the ideal conservation laboratory due to budget, time constraints and other factors. However, it is very important to prepare a carefully considered plan before making initial purchases, because these decisions can affect the lab's future, success and comfort for a long time.

One should think about the future of the lab and future work. If an institutional lab is treatment-oriented what will happen when all of the photographs finally are cleaned and housed? What will happen when there is a request to treat an object nobody knows how to properly perform? The photograph conservator must think how they can further develop the field of photograph conservation to have a job, to expand treatment options and to prove the need for a photo conservation laboratory. Photographs have to be cared for with the entire attitude. We have to be able to validate the need for new positions and funding for research.

Although the body of almost all current collections are traditional photography, all contemporary photographs are digital. Conservators have to be aware of the reality of this new technology. More and more museums have started to acquire digital prints. There is an opportunity for conservators to work with digital photographs and to create specific labs for their study and preservation.

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APPENDIX 1 A BRIEF OVERVIEW OF THE CURRENT PHOTOGRAPH CONSERVATION DEMOGRAPHIC IN AMERICA

Conservation, or rather restoration attempts to return object to what it looked like when it was first made, usually emerge at the same time as a medium comes into the life. Icon paintings were restored by the painters; and photographs were restored by

photographers too. As photographs showed signs of deterioration, photographers started to be concerned with preserving their creation. Their treatments have little in common with what we understand as conservation today. Photograph conservation in practice is a relatively young field. The first museum photograph conservation laboratory in the world was established in 1975 at the George Eastman House, under the supervision of Dr. Walter Clark. He combined models of a Kodak research laboratory and a paper conservation studio[2]. The oldest fine arts conservation treatment, research, and training facility in the United States was established in 1928 by Edward W. Forbes, Director of the Fogg Art Museum at Harvard University. Today, in North America, a few institutions provide graduate programs specializing in photograph conservation[3]: They are:

- The Art Conservation Department at Buffalo State University. After 1993 the department has offered a Master of Arts degree and Certificate of Advanced Study in Art Conservation following a three year program of study. Photograph students work in the paper conservation lab.

- Art Conservation at the University of Delaware. In the first year of the Master's program, during the photograph conservation block, students study daguerreotypes, tintypes, albumen and silver gelatin prints, glass-plate and film-based negatives, electronic media, storage and handling practices, and stabilization treatments including surface cleaning,

[2] P. Maynes and G. Romer "Research into the History of Photograph Conservation: George Eastman Legacy" (2001). [3] AIC web-site; Northern Graduate programs in the Conservation of Cultural Property, ANAGPIC, 2000.

tear mending, and consolidation. The preservation of photographic documentation is also emphasized.

Second-year M.S. level students majoring in photograph conservation work on a variety of examination, documentation, treatment, and preventive care projects. M.S. level photograph conservation majors are supervised by Debra Hess Norris and Barbara Lemmen.

• The Conservation Center at New York University, Fine Art Institute. Started at 1994 from the workshop by Nora Kennedy. Currently has a full semester, which occurs biannually.

• Preservation and Conservation Studies at the University of Texas. The Certificate of Advanced Study (CAS) in Conservation of Library and Archival Materials emphasizes the application of conservation science and conservation treatment procedures. Typically, a full-time student (taking 9 to 12 hours each semester) will complete the MSIS and the CAS in 2.5 to 3 years. University also provides internships. Unfortunately, photograph conservation is not a part of the curriculum.

• The Advanced Residency Program in Photograph Conservation (GEH) is a postgraduate program with a rich curriculum that provides exclusive opportunity for study and research in all areas of photograph conservation, preservation and history. It is hosted by George Eastman House and the Image Permanence Institute in Rochester, NY, and funded by Andrew W. Mellon Foundation. The program is a 2 years residency, will have 5 cycles of Fellows. It begun in September 1999. The co-directors of the program are Grant Romer, Director of Conservation Department of GEH, and James Reilly, Director of IPI.

• The Master of Art Conservation Program (MAC) offered at Queen's University, in Kingston, Canada.

Many photograph conservators have a background in paper conservation, sometimes in objects conservation. In the USA,

current graduates with a photograph conservation concentration in chronological order are[4]: 1. Porter, Mary Kay, (1978, The Art Conservation Department

at Buffalo State University) 2. Young, Christine, (1978, Art Conservation at the University

of Delaware) 3. Ness Norris, Debra, (1980, Art Conservation at the

University of Delaware) 4. Kennedy, Nora, (1986, Art Conservation at the University

of Delaware) 5. Brown, Barbara, 1987, Art Conservation at the University

of Delaware) 6. Messier, Paul, (1990, The Art Conservation Department at

Buffalo State University) 7. Watkins, Stephanie B., (1990, The Art Conservation

Department at Buffalo State University) 8. Andrews, Theresa M., (1991, The Art Conservation

Department at Buffalo State University) 9. Lemmen, Barbara, (1991, Art Conservation at the

University of Delaware) 10. Reinhold, Nancy, (1991, Art Conservation at the University

of Delaware) 11. Robb, Andrew, (1994, Art Conservation at the University of

Delaware) 12. Fischer, Monique, (1994, Art Conservation at the University

of Delaware) 13. Daffner, Lee Ann, (1994, The Art Conservation Department

at Buffalo State University) 14. Gann, Lyzanne, (1996, The Art Conservation Department

at Buffalo State University) 15. Shpargel, Sara, (1997, Art Conservation at the University of Delaware, and 2001, M.A. and Certificate of Advanced Study in art conservation specializing in paper and photographic materials from the State University of New York College at Buffalo). 16. Tafilowski, Diane, (1997, The Art Conservation Department

at Buffalo State University) 17. Bernier, Brenda, (1997, Art Conservation at the University

of Delaware)

[4] The main source was the book “Northern Graduate programs in the Conservation of Cultural Property”, ANAGPIC, published in 2000, and listed graduate conservators in different institutions. Since they not list their specialization, the University of Texas are not included on this list.

18. Koseki, Toshiaki, 1997, Art Conservation at the University
of Delaware) 19. Penichon, Sylvie, (1998, The Conservation Center at New
York University, Fine Art Institute) 20. Hemmenway, Dana, (1998, Art
Conservation at the
University of Delaware) 21. Chen, Jiuan-Jiuan, (2001, The Art
Conservation
Department at Buffalo State University) 22. Passafiume, Tania, (2001,
ARP) 23. Lundgren, Adrienne, (2001, Art Conservation
at the
University of Delaware) 24. Weaver, Gawain, (2005, The Conservation
Center at New
York University, Fine Art Institute) 25. Wetzel, Rachel, (2005, The Art
Conservation Department
at Buffalo State University).

the University work currently in mu
this is according to my data on 5
Rachel Wetzel for her Light Bleac
in 2007, and edited by D. Nishimu

According to the 2007 Directory of The American Institute for Conservation of Historic & Artistic Works (AIC), there are:

- □ AIC members who noted their interest in photograph conservation[5] 198
- □ Between them members in USA 168
- □ AIC members who noted that photograph conservation was their only area of interest[6] 33

[5] Not only includes conservators, but also res
involved in all aspects of the practice of pres
did not note ANY interest; of these there wer
and were counted as interested in photograph

The diagram below shows that most photograph

APPENDIX 2 INTERVIEW QUESTIONS FOR DISCUSSING THE PHOTOGRAPH CONSERVATION LABORATOY

When lab was established? What was the story of creating the lab? Whose idea it was? What was previous place? What was the political environment at time of creation – place of photograph conservation (comparing with other conservation divisions)?

Was it difficult to prove the necessity for such laboratory? What was the first step – find partners, funds, or creating plan of lab or strategy of development, establishing as an important idea What was the source of funding? What was the cost of establishing the lab?

What are the main functions of the laboratory? What are the proportions of these functions? What is the administrative structure in relation to other departments? Is there are publications made?

What were the priorities of choosing the space for lab? Could you please tell how much space do you have (measurements at least approximately)? What is the basic equipment? (What is the basic equipment for private lab?) Space and methods for documentation, who is in charge to make it? How important documentation in your lab? Does it take a lot of time? What was the initial assumption of basic staffing for the laboratory space? Did it change over time? Why and how? How many interns lab could have in one time or during year?

What strategy do you have for the future? If you would have to start to create the lab now, what would you change or add?

APPENDIX 3

ILLUSTRATIONS OF THE LABS SURVEYED DURING THE PROGRAM

PHOTOGRAPH CONSERVATION LABORATORY IN THE METROPOLITAN MUSEUM OF ARTS, NYC [2006]

Metropolitan museum, St.Patrick`s Parade View to the lab

Corridor with metal files for storing documentation Climate control devices - reception area

Lab view Lab view to the fume tube

Sink Lab view to the sink

Small sink Rolls with various materials

Detail of design and screens on windows Light table

Lamp for retouching Microscop with camera and computer

Chemistry room Chemistry storage

Dark room, view 1 Dark room, view 2

Dark room, view 3 Library

Library - fragment Sliding shelf in the library room

Lighting in library room Copy stand (in the library)

Marking of documentation files Paper conservation lab door

View to paper conservation
lab

THE BETTER IMAGE
NEW JERSEY [2006]

Opera House - view to the lab building Opera House - closer view to the lab building

Behind the window - office of the director View of the lab 1

View of the lab 2 View of the lab 3

View of the lab 4 Climate control system

Big loupe Drymount press

In the Better Image Ceiling lighting system

Microscope Copy stand

Objects storage Documentation files - underground

PRIVATE STUDIO OF GARY
ALBRIGHT HONEYOYE FALLS, NY
[2006]

Collection In the lab.Gary Albright and Fellows

Showing collection Lab view, tools on the perforated wall

Lab view, flat file Lab view, sink and brushes

Library Heating system

Isolation from floor humidity Multipurpose table

Storage Camera (slides)

Climate control Documentation records files

Documentation station Files storage

LIBRARY OF
CONGRESS,
WASHINGTON DC [2006]

Plan of the lab View of the lab, taken in November 2006

View of the lab, taken in March 2006 View of the lab, taken in November 2006

View of the lab, taken in March 2006 View of the lab, taken in March 2006

View of the lab, files; taken in March 2006 View of the lab with fume tube, taken in March 2006

View of the lab with a book press, taken in March 2006 Book cradle

Fumehood Taken in March 2006

Microscope Documentation room, taken in November 2006

Camera Copy stand

Small room Taken in November 2006

Taken in November 2006 Taken in November 2006

Wardrobe, taken in November 2006

MUSEUM OF MODERN ART
(MOMA) NYC, 2007

View in the lab 1 View in the lab 2

View to the sink and fume tube View with a fumehood

Work table with chair Tables with taboret for tools

Tables, fume tube Pigments

Chest for materials Drawer with brushes

Copy stand Large working surface

Light table Rolls with materials - able to move

Microscope Office cubiculas

Refrigerator In painting conservation - documentation files

In painting conservation - place for documentation of large objects In painting conservation - place for documentation of large objects

In the cold storage Storage

Vertical storage Horizontal storage

PHOTOGRAPH CONSERVATION LAB IN NATIONAL GALLERY, WASHINGTON DC [2007]

Room with documentation files View of the lab - small table

View of the lab View of the lab with sink and fume hood

Work tables During work under microscope

Blotter paper on warming plate Variouse weights

Table with round edges Flat file with materials

Fume tube and sealing lighting Lab view with sink and a lamp

Storage for chemicals System to filter-distill water

Camera (to take slides) Copy stand

Copy stand with light panel on
ATELIER de RESTAURATION et de CONSERVATION des PHOTOGRAPHIES de la VILLE de PARIS, PARIS, FRANCE [2007]

Reception. View in the main room

View to the smaller room Lighting over work surface

Flat files and drawers with materials Drawer with roll with materials

Table with vertical storage Table with light panel

Cutting machine Microscope over working surface

Fume exhaustion system Movable vacuum table - when hidden

Movable vacuum table - when ready to work Special lamp for retouching

Specialist of mounting, near his work table Weights

Coffee table In the storage

PHOTOGRAPH CONSERVATION LAB IN GEORGE EASTMAN HOUSE, ROCHESTER, NY [2007]

View to the light court Classroom - library

Files in the classroom View to the lab 1

View to the lab 2 View to the lab 3

Gillotine, cart and roll for materials Dry mount press and table with net shelves

The sink with fume hood View to the lab 4 - offices are far at the end

View to the small sink. Microscope

Documentation room Chemistry storage in a special room

Instruments in small room Wardrobe and object storage in the corridor