A CASE FOR COLLECTIONS MANAGEMENT POLICY

FOR

PASSIVE COLLECTING INSTITUTIONS

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Thesis

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CHAPTER I
INTRODUCTION

This paper suggests that nonprofit institutions engaged in passive collecting could benefit on many levels from a solid collections management policy. The instituting of an established and active policy facilitates the systematic accepting of collections of materials with cultural importance. Solid collection management policy allows for smooth transition from private to institutional care, and provides guidelines for the care, use, and public access to a collection. A collections management policy provides the organizational structure and documentation required for the collection to be used for research; it helps to validate the institution as a creditable collector in the eyes of potential donors; and it helps develop public awareness of the institution.

There is an important distinction to be made between institutions that collect actively and those that collect passively. Actively collecting institutions, such as museums, have policies that function as the basis for decisions made within the institution in regard to acquisition. These institutions already fulfill the recommendations suggested by this paper. Institutions that collect passively may range from public and private universities and colleges to local historical societies and archives. Both types of institutions usually have been designated as 501(c)(3) charitable nonprofit corporations according to the United States Internal Revenue Service. This status is directly linked to the institution’s broad based public support of its mission, and makes it eligible to receive
charitable gifts from individuals, corporations, foundations, and government agencies. Nonprofit institutions are heavily dependent on donors who may use their donations as tax deductions. Because contributions may be in the form of real property, the establishment and implementation of a collections management policy can be a vital tool for fundraising as well as helping to define the mission of institution. A collections management policy is a safeguard against ethical or legal issues that might arise related to the act of collecting and caring for collections. It provides clear guidelines for determining the value of the collection/gift, and the extent to which it fits the mission of the institution.

A collections management policy provides a consistent system of managing the gifts and loans acquisition process—including such functions as handling, evaluation, authentication, accessioning, determination of disposition (referring to the actions to be taken), placement, and possible future de-accessioning. There is great variation in the process according to the specific material. A historic text collection will require different processing than 1850’s tool or a prehistoric pot. Thus the process requires the expertise of different scholarly and technical disciplines. This interdisciplinary strategy assures a consistent application of procedures and information management as well as the implementation of standards. Ideally, a centralized location and allocated personnel would allow for more efficient and effective management of this process as well as provide a space for safely storing and showcasing these gifts, thus assuring the institution’s responsible stewardship of donor gifts.

As a fundraising tool, the collections management policy would enable the institution to better practice the very important philanthropic principle of stewardship.
Alayne Metrick in the paper *Successful Strategies for Effective Stewardship*, states that “In the nonprofit sector, the success of many organizations and their future growth potential is defined, to a large extent, by the effectiveness of their fundraising [and] effective stewardship can be a powerful element in winning and retaining donors who have continuing ability to make major gifts” (29). The concept of stewardship is made up of four ”strategies”: reciprocity, responsibility, reporting, and relationship nurturing. These strategies, if applied properly, lead to increased donor trust, satisfaction, and commitment. A collections management policy enables the institution to responsibly handle donated materials. The institution’s staff and visiting scholars would be capable of producing general reports, construct exhibits, and provide public access to the material. These policies often engage the donors, thus nurture the relationship.

Nonprofit institutions differ in the types of services they provide, but all are similar in that their purpose is to serve the public and its constituents. The passive collecting institutions that would benefit from a collection policy share the mission of educating, either directly as teaching institutions, or indirectly as entities handling cultural property and public information. The fulfillment of a nonprofit institution’s mission establishes the goals by which its success will be determined. The implementation of a collections management policy enables teaching institutions to provide educational opportunities for students interested in museum studies, as well as research options for students, faculty and professionals in the fields pertinent to a collection. This implementation can also prove successful for historical societies and archives, as these organizations are often abundant resources for local historians, artists, and other professionals interested in learning more about the cultural heritage of an area.
As well as being able to create learning and research opportunities for students and professionals, these institutions play a large role in making information and knowledge available to the population at large through the production of exhibitions and publications.

This paper’s focus on collecting institutions and the implementation of collections management policies also addresses potential ethical and legal issues associated with the collecting of materials and cultural property. Through the establishment of a policy, procedures that ensure the care and maintenance of objects, as well as their study, interpretation, preparation, and access insures that all constituents benefit from the collection. Donors appreciate knowing their objects are cared for and shared with a wider audience. The public and students benefit from having access to research and cultural opportunities.

The implementation of a collections management policy within an institution promotes community outreach and is a source of institutional success. It is an important tool for educational growth and community service.
Chapter two of this thesis places in context the key elements and concepts that build the argument for the implementation of institutional guidelines for a collections management policy. It is important to note two critical steps that must initially be addressed when creating a collections management policy: first, is the establishment of the types of collections/objects that the institution will accept, and second is the process through which the donor and the institution mutually determine the value of objects and collections. Neither of these steps are addressed in this thesis. This thesis begins once a collection has been accepted and focuses on addressing institutional stewardship, donor’s rights, collections, faithfulness to cultural heritage, and responsibilities as a cultural depository. How these elements are addressed form the basis for policy and standards of collections management.

As mentioned in the introduction, this paper is aimed towards institutions such as universities, colleges, and historic houses that frequently practice passive collecting—that is to say institutions that collect without a purpose, and it makes the case that a collections management policy is a beneficial tool in the fundraising process. Through the proper management and care of collections, institutions are not only acting responsibly towards the donors, but also towards a greater audience, both regionally and nationally, as they are the stewards of cultural property. When institutions lack the
systems and strategies to properly care for objects and amass collections, they are practicing "passive collecting." They are then compelled to develop some type of plan in reaction to opportunities. To improve upon an institution’s passive collecting behavior, both a vision and a will to implement are necessary.

Institutions attain collections through various avenues; most commonly collections originate and grow as a result of “gifts” or donations. It is this aspect of collecting that brings about the very important issue of donor stewardship. The American Association of Museums Accreditation Commission’s Expectations Regarding Collections Stewardship defines this concept as the following:

The careful, sound, and responsible management of that which is entrusted to an [institution’s] care. Possession of collections incurs legal, social, and ethical obligations to provide proper physical storage, management, and care for the collections and associated documentation, as well as proper intellectual control. Collections are held in trust for the public and made accessible for the public’s benefit. Effective collection stewardship ensures that the objects the museum owns, borrows, holds in its custody, and/or uses are available and accessible to present and future generations. An [institution’s] collections are an important means of advancing its mission and serving the public (AAM).

Cultural repositories are increasingly being held accountable for the care and the use of objects delegated to their custody. This has meant that cultural institutions have been encouraged to inspect their existing collections and to analyze their collecting habits. Some of the main concerns raised during this process include identifying why objects were acquired and to what extent the institution has control over them, including the issue of ownership transfer. Institutions also must demonstrate knowledge of an object’s location at all times, as well as keeping documentation of the physical condition and efforts made to preserve or conserve its holdings. Finally, institutions must demonstrate that policies are in place to provide appropriate public access to the material.
All these functions must be performed in accordance to policies and standards applicable to the institution itself, and must meet the guidelines established by accrediting agencies such as the International Council of Museums. The use of a collections management policy is critical for the fulfillment of the institution’s expected stewardship towards donors.

In November 1993, the Association of Fundraising Professionals (AFP), the Association for Healthcare Philanthropy (AHP), the Council for Advancement and Support of Education (CASE) and The American Association of Fund-Raising Counsel (AAFRC), developed and implemented a Donor Bill of Rights, to assure that philanthropy merits the respect and trust of the general public, and that donors and prospective donors can have full confidence in the nonprofit organizations and causes they are asked to support. This bill establishes that “philanthropy is based on voluntary action for the common good, [and] it is a tradition of giving and sharing that is primary to the quality of life” (AFP). In order to protect those that wish to participate in philanthropic endeavors, the above-mentioned institutions compiled a list of ten rights that covered a broad variety of issues such as governance, transparency, and recognition of donors. Of these, two rights pertain especially to donor stewardship concerns and state the rights of donors “to be informed of the organization's mission, the way the organization intends to use donated resources ... of its capacity to use donations effectively for their intended purposes, [and] to be assured their gifts will be used for the purposes for which they were given” (AFP).

Although many donations to nonprofit institutions are monetary, gifts can also be rare books, sculptures, paintings or other types of objects. In many instances these
tangible objects have been collected with a theme or other purpose. Regardless of the type of object or the reason for collecting, collections may be defined as “a set of material or intangible objects (works, artifacts, mentifacts, specimens, archive documents, testimonies etc.), which an individual or an establishment has assembled, classified, selected, and preserved in a safe setting” (Desvallées, 26). Collections come in all shapes and sizes, and are housed by various entities, such as museums, historical societies and other types of cultural repositories. A cultural repository is described broadly as a place that exists for the purpose of collecting, caring, and sharing the contents of one or many collections. David Bearman in *Functional Requirements for Collections Management Systems* notes “despite the differences implied by organizations variously naming themselves libraries, museums, archives, botanical gardens, aquaria and zoos, [and/or universities], the management of collections is more similar from one cultural repository to another than it is different” (4).

The classification of “cultural repository” implies the handling of objects with cultural heritage and/or significance. The United Nations Educational, Scientific and Cultural Organization (UNESCO) Convention Basic Texts of 1970 includes a comprehensive list of international classifications of cultural heritage. UNESCO describes cultural heritage as the legacy of physical artifacts (cultural property) and intangible attributes of a group or society that are inherited from past generations, maintained in the present and bestowed for the benefit of future generations. Cultural heritage includes tangible culture (such as buildings, monuments, landscapes, books, works of art, and artifacts), intangible culture (such as folklore, traditions, language, and knowledge), and natural heritage (including culturally significant landscapes, and
biodiversity). Cultural heritage also includes rare collections and specimens of fauna, flora, minerals and anatomy, and objects of paleontological interest and property relating to history, including the history of science and technology and military and social history. It also incorporates products of archaeological excavations, elements of artistic or historical monuments or archaeological sites which have been destroyed, antiquities more than one hundred years old. Objects of artistic interest such as rare manuscripts and incunabula, old books, documents and publications of special interest, postage, revenue and similar stamps, archives, including sound, photographic and cinematographic archives, articles of furniture more than one hundred years old and old musical instruments are also considered as cultural property (UNESCO).

Institutions that practice active collecting have policies in place. Examples of active collecting institutions are museums, archives, historical societies, and some universities. Through the establishment of policy which dictates collecting and management strategies these institutions are striving to follow the standards that have been developed and established by governing agencies, which, although specific to the type of institution (museum, archives, historical societies), and unique in each aspect; they share common expectations of institutional behavior and object management. These will be generally considered under the three basic categories of preservation, information, and access, which will be addressed later in this thesis.

As stewards of these materials with valuable cultural content, cultural repositories and collecting institutions are required by international law to act in the best interest of collections of cultural property, and maintain the best methods of preservation and care, as well as create and expand access to the material for the benefit of widespread public
knowledge. Institutional policy should always be aligned to the institution’s mission and vision. Its development and establishment allow the institution to more clearly delineate its goals. Thus, the decision of what types of objects will be accepted into the institution, what measures will be used for managing and caring for them, and how will these collections further the institution’s mission become vital concerns within the policy discussion. In essence, a collections management policy insures that objects will be rationally acquired, conserved, used, and managed.

A collections management policy is a detailed written document that explains a collecting institution’s or cultural repository’s purpose and provides precise description of procedures and articulates the institution’s professional standards regarding objects for which it is responsible. Whereas this argument for a collections management policy deals with the care of objects after they have been accepted, it excludes important topics to be addressed. These include collection goals, acquisition methods, valuation process, object/collection de-accession, incoming and outgoing loan policies, object custody, and insurance procedures. In summation, policy ought to function as a guide for the staff and as public information on policy.

The concepts that compose collections management policies and procedures have been developed in conjunction by many international and national agencies that provide oversight over the management of materials with cultural value. The most recognized internationally is the United Nations Educational, Scientific and Cultural Organization (UNESCO) and its subdivisions: the International Council of Museums (ICOM), the International Council on Archives (ICA), and the International Centre for the Study of the Preservation and Restoration of Cultural Property (ICCROM). The principal agencies
within the United States are the Institute of Museum and Library Science (IMLS), the American Institute for Conservation and Historic Works (AIC), the American Association of State and Local History (AASLH), the American Association of Museums (AAM) and the Society of American Archivists (SAA).

All of the agencies have developed policies and procedures to meet standards for respective fields, and the guidelines are specific to each type of collecting institution. For institutions practicing active collecting, these expectations are easily met as these generally already have a collections management policy in place. On the other hand, most passively collecting institutions do not have policy, management procedures, space or financial resources to properly acquire and care for collections. Examples of these locations are universities, historical societies and archives. Exceptions that apply are university museums, which function both as university and collecting institution, and their policy and mission reflects this. These museums tend to collect materials related to a specific field, such as psychology, art, or fashion.

This paper focuses on how objects/collections are handled once accepted, and the implications for these institutions. David Bearman successfully summarizes the importance of establishing a collections management policy in the following quote:

In establishing themselves as public, or not-for-profit organizations dedicated to enriching our understanding of the world around us, both man-made and natural, cultural repositories put themselves in a position to acquire their holdings with subsidy, whether directly or indirectly, from the public purse. As such, they become accountable for the care and disposition of the objects they have, in this subsidized fashion, acquired. They also make implicit and explicit guarantees to donors of culturally valued objects which are entrusted to their care, and these assurances have, increasingly, been protected by the courts (Bearman, 4).
CHAPTER III
COLLECTIONS MANAGEMENT

Within the field of museology and sub-field of collections management, procedural standards were established and are continuously reviewed and updated by two major organizations: The International Council of Museums (ICOM) and The American Association of Museums (AAM). ICOM is an international organization of museums and museum professionals established in 1946. It is committed to the conservation, protection and education about the world's natural and cultural heritage, present and future, tangible and intangible. The AAM is a non-profit association that has brought museums together since its founding in 1906, helping develop standards and best practices, gathering and sharing knowledge, and advocating on issues of concern to the museum community. Both of these entities have developed codes of ethics, standards and best practices for museums and collecting institutions to follow. The principles provided in the codes of ethics function as ideological platforms from which institutions find guidance and should govern all the aspects of behavior within an institution. The standards are generally accepted levels of procedures that all museums are expected to achieve. Finally, best practices are the suggested methods of procedures that should be used.

ICOM has prepared a statement of ethics statutes for museums called The ICOM Code of Ethics for Museums.
The Code reflects principles generally accepted by the international museum community and it represents a minimum standard. It is presented as a series of principles supported by guidelines for desirable professional practice and it is the whole philosophy of the document that it serves society, the community, the public and its various constituencies, as well as the professionalism of museum practitioners.

The Code’s statutes are as follows:

1. Museums preserve, interpret, and promote the natural and cultural inheritance of humanity.

2. Museums that maintain collections hold the in trust for the benefit of society and its development.

3. Museums hold primary evidence for establishing and furthering knowledge.

4. Museums provide opportunities for the appreciation, understanding and management of the natural and cultural heritage.

5. Museums hold resources that provide opportunities for other public services and benefits.

6. Museums work in close collaboration with the communities from which their collections originate as well as those they serve.

7. Museums operate in a legal manner.

8. Museums operate in a professional manner (ICOM).

The AAM “Code of Ethics for Museums” describes in the “Collections” section that the stewardship of collections entails the highest public trust and carries with it the presumption of rightful ownership, permanence, documentation, care, use, accessibility, and responsible disposal. It states that when museums follow the code of ethics they are “affirming their chartered purpose (mission), ensuring the prudent application of their
resources, enhancing their effectiveness, and maintaining public confidence” (AAM Code of Ethics for Museums, 2).

Standards and best practices are also applicable at a more ‘hands-on’ level. These exist for all areas of museum endeavors, but this paper focuses only on collection management. In Collections Management, by Anne Fahy, collections management is described as a blanket term applied to the physical care and documentation of collections. This broad description covers a wide range of activities which are intended to protect objects and related information from ruin, theft or damage, as well as activities that permit and promote the physical and intellectual access to the object (2).

Collections management has often been perceived as being deeply practical aspect of museum work, and on a day-to-day basis it is. However, it is essential to recognize that an understanding of the principles of collections management is critical to the development of good practice. Without a knowledge of the development of collections and of material culture, it is impossible to construct new ways of collections development and understand the role of museums in contemporary society (Fahy, 2).

Collections management tasks include numbering, handling, measuring, condition assessment, marking, photography, preventative care, storage, inventory, preparation, rigging, packing and crating, shipping and couriering. They also include the oversight and management of various processes, such as acquisitions and accessioning, deaccessions, loans, and exhibitions. More advanced levels of collections management include the administrative functions of budgeting, personnel training, quality management, contracts and policies; as well as risk management responsibilities of insurance, disaster mitigation planning, security and fire protection planning, pest management, and architectural planning. Standards are organized according to an object’s ‘life-
cycle’ stages. The stages include: deliberation, acquisition, registration, research/study, interpretation/use/accessibility, and de-accessioning/disposal. Each stage involves various steps, documentation, information managing and tracking, as well as object handling. These tasks are continually performed throughout all of the life-stages of an object. This is an ideal/theoretical procedure, but in reality, the order of the steps will vary from one situation to another, and in some circumstances, not all stages will be executed.

**Deliberation**

The deliberation stage is the initial step that most commonly occurs within institutions that have a collections management policy, for example when donors approach the institution about donating an object. It involves, at least, the examination of an object’s relevancy to the institution’s area of interest (scope), it’s usefulness for exhibition, educational or research purposes, and it’s monetary value. Also, if the object/collection fits the institution’s area of interest then it must be appraised for monetary value. This appraisal is ideally undertaken by a third-party, independent appraiser, and the results must be reviewed by the receiving institution before a final decision about accepting the collection is made. Also important is the object’s physical condition and the institution’s ability to fund conservation needs and provide storage.

Some ethical and legal considerations to be addressed include the object’s title transfer process, its authenticity, state, national, and international laws, and/or donor restrictions. This initial step of the process is an important one, as it determines whether an object should be accepted and accessioned or not. In institutions practicing passive
collecting, this step tends to be omitted, as these considerations have not been considered in policy. Documentation required at this point of the process involves a notice of entry/receipt form. This includes the assignment and recording of a temporary number, date of arrival, object description, reason for entry (identification, exhibition, gift, loan, purchase), name and signature of both receiving and delivering individuals, and temporary storage location. This information and registration form is kept in different repository files for each object.

Three options exist at this point: a) the object will not be acquired for the collection, b) the object will be accepted as a loan, or c) the object will become the institution’s property. If an object is deemed appropriate to be accepted into the permanent collection, it will then go through the stage of acquisition. In the case of a long-term loan the object will be assigned a unique loan number. When loaned objects are returned, a form will contain the following information: date of return; reason for return; name of person with return destination address; and name and signature of the individual processing the transaction. The institution will attach a copy of the returned object receipt form with the object and retain a copy for their records.

Acquisition

Once an object has been considered and accepted to be part of an institution’s collection it goes through the process of acquisition, which is when legal title is transferred and the institution becomes the legal owner. Acquisitions are accessioned into the permanent collection through the assignment of a unique accession number, which is
physically attached to the object and recorded on the notice of entry form. When this unique number has been assigned the object goes through the registration stage.

**Registration**

The registration process in itself includes various steps and “is an important professional responsibility [that] ensures that all items accepted temporarily or permanently by the [institution] are properly and fully documented to facilitate provenance, identification, condition, and treatment” (ICOM- No.1). The steps that are necessary when an object or collection of objects enters a collecting institution or cultural repository are tracked in an inventory or accession register which is the ”formal” record of items which have been incorporated into a permanent collection. Accession records should be created as soon as possible after a decision has been made to retain an item for permanent collection. The accession register is a record of objects an institution legally owns. The collection management policy establishes the form and the content information based on the institution’s collecting scope. Basic information to be captured includes the institution name, acquisition method and date, donor information (name, address, phone number, email). But also required are numbers associated with the object and these include any previously assigned numbers as well as the institution’s temporary and accession numbers, object keywords/description and title/type, material/technique, dimensions, condition, cultural/historical/natural history references, price (value), conservation needs, and storage locations (both temporary and permanent). It is important that photographs and their locations are carefully noted in the files. A different method of information gathering is the use of indexes, which provide other search alternatives to the
numerical accession number sequence. Indexes can be used to categorize objects by qualities such as donor/source, object type or subject, artist or maker, region/culture.

An initial step of the registration process is the creation of object condition reports. In this step measurements and notes regarding the physical appearance, qualities and condition of object are collected and saved both in the register and the object file. When objects arrive at an institution, especially if there is any obvious damage or physical problem, it is important to record that such condition was present upon arrival and often the most efficient method of recording such information is through photographs. Photographs are also used to facilitate research when it is a long-distance inquiry, when objects are not physically available, or when they are too fragile to be handled. Photographs also provide wider access to a collection, as these can be implemented on online databases such as ContentDM, as well as on printed educational materials and exhibitions.

**Research/Study**

After an object or group of objects has been selected and registered, it is ready to be studied or researched and then interpreted. To study an object is to read or examine it for research purposes in a secure facility set aside for the purpose, where objects are retrieved and studied on site. These steps in the object life-cycle are tied to a collecting institution’s most important responsibility of widening the public’s knowledge about human experience, culture, and environment. This responsibility is motivated by humanity’s desire to remember the stories of thought, art, survival, identity, and community. According to John Henry Merryman, cultural objects “tell us who we are and
where we came from; [they give us a sense of] cultural identity, ... a sense of significance; ... reassurance about one’s place in the scheme of things, ... a “legible” past and answers to the greatest existential questions about our nature and our fate” (*Cultural Property*, 349). It is because of this enormous cultural content that collections not just should, but must be researched, after all, “[the] study of objects is really [the] study of man” (Glaser). To ignore research by having objects stored away with little or no scholarly access can be considered a practice of cultural hoarding. Hoarding may not actively damage objects but it hinders access and contributes to the cultural impoverishment of people.

The argument for research of cultural property can be made not only because of the basic human right to be provided with at least access to knowledge, but also by considering that it is a base from which progress in cultural achievement becomes possible and that it gives pleasure and enriches life (Merryman-“The Public Interest”, 354). But it is most important to understand that everything that is significant about a particular object is contingent on it’s authenticity, thus increased efforts on preservation, verification, attribution, and interpretation become of utmost important in its determination of value. Both ICOM and AAM address these issues in their codes of ethics documents.

The *Code of Ethics* from the International Council on Museums places great emphasis on a collecting institution’s role regarding knowledge, appreciation, and understanding of the community and society at large. One of the most important issues associated with the information related to collections is that it must be factual and accurate. The AAM’s Accreditation Commission’s expectations regarding collections
stewardship, also stipulates that an accreditable collecting institution must conduct collections-related research according to scholarly standards and provide regular and reasonable access to, and use of, collections/objects in [their] custody.

The lack of information on an object may be due to its previous owners lack of records or provenance or because of decontextualization, but most often it can be attributed to erosion, destruction, careless removal, improper conservation and lack of documentation.

Interpretation, Use and Accessibility

Although cultural objects are sometimes displayed to the public during the research process, usually the repository completes significant research and interpretation before the objects are available to the public. Common approaches that serve both these purposes are exhibitions or displays, publications, both printed and online, and through open lectures and discussions. A major distinction is made between an exhibit and a display. A display purely “shows” the objects and the exhibit “shows and interprets.” Exhibitions or exhibits are also not all the same. Depending on purpose, they may be designated as aesthetic/entertaining, factual, or conceptual and they may be organized in many different ways. There are two methods commonly used to organize material for exhibitions. Objects may be systematically organized according to similarity of the objects and their genetic relationship, or they can be grouped by their ecology, which means the objects are arranged according to area of origin or living relationship. Regardless of the type of exhibition and the method of organization a good exhibition must always use objects that are significant to the theme of the exhibition, must have a
defined purpose, and must be planned and executed professionally. Given many visitors
go to exhibitions to entertain themselves, learning is often secondary. It is thus a
challenge for exhibition-planners to design an exhibition that stimulates understanding
and learning, while remaining interesting and entertaining (Burcaw).

Deaccession and Disposal

An institution can decide it no longer wishes to own an object/collection and can
therefore deaccession it. The deaccession of an object means that it has been formally
removed permanently from the museum collection. The collections management policy
should dictate the criteria for making decisions about deaccessions; collection managers
must document the rationale and process of deaccession. Some common reasons for de-
accessioning are as follows:

- Objects do not fall within the institution’s scope or mission,
- Institution is unable to maintain the collection,
- Not useful for research, exhibition or educational purposes,
- Object is a duplicate,
- Physically deteriorated or hazardous,
- Illegal or unethical acquisition, and/or
- Donor restrictions are no longer feasible (Burcaw,70).
Sustained Procedures: Object Conservation/Preservation

Conservation is a blanket term that refers to the profession devoted to the preservation of cultural property for the future. It encourages effective methods by which an institution can keep cultural property in as close to its original documented condition as possible.

Preventative conservation refers to any measure that prevents damage or reduces the potential for it. It focuses on both collections and individual objects and non-treatment rather than treatment. In practical terms it refers to the avoidance of object deterioration through the elimination of damaging causes, and the fostering of proper handling, storage, and management of collections. Preventative conservation calls for safety measures that include climate control and environmental monitoring, design and implementation of safe mounts, display and storage cases, pest management, safe and appropriate storage, use of proper packing and shipping methods and materials, and the mitigation of natural disaster effects. These measures are critical elements in a preventative conservation methodology as they are more effective and less expensive than repair (Buck, 103).

Through the life-cycle of an object, it will be subjected to several on-going procedures. These procedures are continually performed and do not exist purely in one stage, as they are commonly referred to be part of the registration process. These procedures can be broadly described as object handling, care, documentation, and information management.
The assessment of an object’s condition and the procedures performed during the intake process requires that objects are often being touched and moved. Proper object handling and care requirements need to be established in order to protect any material from damage. These requirements must follow preservation/conservation and security/safety standards. Basic conservation requires the study of the physical nature of an object and understanding and applying all possible methods that will prevent deterioration. It is important that individuals with direct access and permission to handle objects have been trained in proper handling techniques, the application of preservation measures, and packing and shipping methods. The repair and restoration of objects may only be performed by conservators, but the staff must be able to recognize signs of damage.

It is an unfortunate reality that a majority of smaller institutions use re-appropriated spaces as storage and exhibition spaces, which generally lack the optimum environmental requirements for safe storing. In these cases, it is important to closely monitor collections, and to plan a course of gradual improvements.

The following sections present procedures useful for most collections, however some extremely sensitive materials and situations are not directly addressed and will require additional technical inquiry.

**Object Handling and Care**

The safe handling of objects must be practiced with the highest level of care and attention, cleanliness, and common sense. The development of a training manual with
clear instructions and procedures is a crucial step in the continued and consistent safe handling of objects.

Supervisors have the responsibility of training, instructing and setting the example of following the rules. Rules may only be bent or broken in special circumstances, and may be performed only by supervisors. In such situations it is important that the supervisor expresses the reasons for making such a decision. When working with a crew, it is necessary for the supervisor to verbally communicate and to understand the physical capabilities of the individuals involved (Rowlison).

When moving objects from one location to another, no matter how short the distance, the following steps must be taken. First, it is crucial to inspect the object’s condition to make sure it is in stable condition for handling, and if any special needs are required. The object’s trajectory must be clear and the final destination needs to be prepared for the object’s arrival. When moving the object the appropriate personnel and equipment must be available, always take time and move as slow as necessary. It is important that only the supervisor or designated person give any orders or instructions (Rowlison).

Objects differ in size and materials and specific handling techniques exist for each particular type, yet general handling and moving rules apply to all objects that are stable, and pest-free. Unstable objects must be assessed by a conservator for appropriate stabilization treatment, the prevention of further damage or contamination of other objects (when dealing with infested objects). The following is a list of basic guidelines for handling and moving objects:
• Handle objects as little as possible as this minimizes the chances of potential damage,
• always use clean hands, surfaces, materials and equipment,
• objects must be handled with gloves unless the object surface is too smooth for gripping or has a surface that may ‘catch’ the gloves,
• handlers must remove jewelry, buckles, badges, hanging tools, or anything that may accidentally damage objects,
• all movements must be calculated and carefully completed,
• objects should be carried no farther than necessary and the use of equipment (eg: carts) when available is highly recommended,
• handlers should always walk forward and be aware of the space and elements in the transportation path,
• objects must never be dragged,
• two or more people must assist the move of an objects unless it is small enough and can be safely transported by one person,
• never leave objects sitting directly on the floor: use padded surfaces instead,
• safely pad, pack or otherwise secure every object before moving it,
• when packing objects into a vehicle: only pack similar types of objects together, and similarly sized ones at one time, and never overload the vehicle,
• when unpacking objects never discard packing materials before thoroughly inspecting them for any possible broken pieces or loose parts, and
• if damage occurs, a written and visual report must be created. If object suffers major damage all parts must be saved and a conservator must be contacted immediately (Rowlison).

Storage

When registration is completed, objects must be located in a safe setting and the location recorded. Older manual systems relied on ‘location cards’ index system which has generally been replaced by digital indexes. This location can be temporary or permanent depending on the object’s purpose, but regardless of the type of location it must be recorded on the registration form/inventory so that it may accessed at any time. Safe and accessible storage is more important than is generally perceived. Good storage protects and preserves collections from theft, disasters, environmental factors and physical damage. Rebecca Buck, in *The New Museum Registration Methods*, suggests that objects of a collection will spend more time in storage than in exhibition or study. Yet, “traditionally, storage is not a high priority in the budgeting process because it has limited appeal to the public” (109). This is especially true for institutions with limited funding. These institutions should strive to meet as many standards as possible set up a plan for future renovations that mitigate poor quality storage and materials. Each decision made about storage should consider how changes would improve the protection and preservation of the collection.

Storage systems include three levels of containment: the facility or space, equipment and storage containers. Each level of containment in a collection storage system adds additional protection to your collection by shielding it from the agents of
deterioration. A factor to consider is the possibility of specific needs for sensitive or
delicate objects, which may require specific storage and accommodations, not being
described below (Buck, 109).

The purpose of a storage space is to keep collections secure while not in use
(exhibition, study, educational collection) and to prevent theft and vandalism, yet it must
be easily accessible in order to facilitate the use of the objects. The monitoring of access
to the collection is one of the most important efforts against these acts. Ideally, storage
space access should be controlled with computerized key cards (which record the time
and date a particular individual accessed the space), and equipped with closed-circuit
video and alarm systems. The unfortunate reality of smaller institutions is quite different,
since the implementation of advanced security measures can be very expensive. In these
common situations monitoring can be accomplished through simple manual measures of
control and through physical changes to the space (Buck, 109).

An important and simple approach is to minimize access to the collection through
the limitation of entrances or exits and controlling the access by minimizing the number
of key-holders. In cases where visitors are accepted into the storage space, they must be
limited and always monitored. One of the most important tools regarding the security of a
collection is the maintenance of a regularly updated inventory. This measure allows
management to identify missing, misplaced or damaged objects in a timely fashion. A
simple measure of security is to eliminate extra doors and to block all windows. This is
especially efficient for older buildings such as those of historical societies, which
normally allocate storage to pre-existing spaces, such as attics and basements.
Collection safety also includes the conservation of objects through the maintenance of a stable environment. The implementation of advanced systems that monitor water infrastructure, fire, smoke, light, temperature, relative humidity and infestations are highly recommended since natural and manmade disasters, both small and large scale, present threats of varying degrees to collections. Catastrophic damage or complete loss may be caused by the interruption of environmental control systems, fires or floods. For institutions with simple or no monitoring systems, preparedness is the best protection as many of these concerns can be monitored and prevented through the upkeep and maintenance of basic building infrastructure and smart object positioning and protection (Buck, 103).

Although water damage is most commonly associated with re-appropriated storage spaces such as basements (these tend to have uncovered and outdated pipes and sprinkler systems), it is important to always take caution against this type of threat, since the water damage may be the result of a fire suppression system. When overhead pipes are inevitable, it is recommended that no objects are positioned directly underneath and that they are stored in enclosed cabinets that provide water, dirt and smoke protection. Objects should never be left sitting on the ground and without some type of protective material. When considering fire/smoke suppression systems it is important to keep in mind that “in most instances, the potential fire damage, possibility of the fire spreading, and smoke damage are considered higher risks than water damage from the sprinkler system, but this should be evaluated carefully for each particular collection with input from local fire officials and conservators” (Buck, 111).
Another important environmental element that a good storage space should address is light level. Light is radiant energy that can permanently damage light-sensitive materials by catalyzing degradation reactions. Both the type (proportion of ultraviolet and infrared light) and intensity (amount of illumination) of light affect an object’s condition. Damage, such as fading and chemical reactions are permanent and irreversible, but easily reduced by keeping objects in low light levels. Three different types of radiation affect the condition of objects: visible light, ultraviolet (UV) light and infrared (IR) light, and different types of lamps emit different combinations of light. Fluorescent bulbs have a high UV output and should be fitted with filters and halogen bulbs generate significant heat in confined areas. Although the maintenance of premium light levels is important, storage areas can simply be illuminated by indirect lighting by using high-pressure sodium lamps and low UV fluorescent lights (Buck, 106). More information on light standards can be found on appendix E: Visible Light Level Standards.

The maintenance of stable temperature and relative humidity is one of the most basic and important measures to prevent object deterioration. Fluctuations in either of these will cause materials to expand and contract on a microscopic level, which although hardly noticeable, causes major long-term stress on collections.

“Relative humidity is the proportion of the amount of water vapor in a given quantity of air compared to the maximum amount of water vapor that the air could hold at the same temperature, expressed as a percentage. As air temperature increases, so does its capacity to hold moisture. Therefore, as the temperature goes up, the relative humidity goes down, and vice versa. These two measurements are usually considered together.” (Buck, 104).

An object’s ideal relative humidity level is that which minimizes the possibility of molecular change. Different types of materials have different optimum temperature and relative humidity ranges that are based on chemical composition. For storage spaces
housing mixed collections, a constant relative humidity ranging between 50-60 degrees Fahrenheit has been established as acceptable. In these cases, close attention must be paid to objects with higher or lower RH needs. Temperature is intricately connected to relative humidity levels, thus it must be closely monitored and controlled. An range of 68 to 72 degrees Fahrenheit with a 2-3 degree fluctuation within a 24 hour period is considered optimal.

Temperature and relative humidity levels and fluctuations are monitored through Hygrothermographs and (easily) maintained through centralized HVAC (heating-ventilation-air conditioning) or climate control systems. Although these two instruments are considered the preferred methods of monitoring and control, they are also much more expensive. An alternative to wide-scale control is the use of humidifiers and dehumidifiers that can be implemented locally. The costs of care and implementation of the systems mentioned above need to be part of the long-term institutional planning regarding collections care (Buck, 104). See appendix C: Relative Humidity Ranges by Materials and appendix D: Temperature Ranges by Materials for more information.

The care of collections, especially objects made with organic materials, requires the continued control and monitoring of infestations such as insect or rodent pests. The most recommended method of pest control is known as Integrated Pest Management (IPM). This approach requires intensive monitoring, routine maintenance, cleaning, and a ban of food in collection areas, as these ‘invite’ rodents. IPM advices chemical treatment as a last resort and in consultation with a professional conservator and pest control manager. If the case infestations occur, a conservator will address the problem, but staff must quickly isolate infested material so that it is treated and cleaned and prevent
spreading. Pest ‘problems’ exist in four overlapping categories: stored product feeders, fabric feeders, wood destroying insects and general feeders (Buck, 255).

The most important pest threats to collections are stored product and fabric feeders. These are small insects, beetles and moths that feed on dry organic matter that are highly prevalent in many environments. Some of the more common known ones are: carpet and hide beetles (*Dermestidae*), drugstore/cigarette beetles (*Anobiidae*), spider beetles (*Ptinidae*), and clothes moths (*Tineidae*). Wood destroying insects attack objects made of wood or other type of cellulose. Common examples are powderpost beetles (*Lyctidae, Bostrichidae, Anobiidae*), furniture and deathwatch beetles (*Anobiidae*), bark and timber beetles (*Scolitidae*), and termites. General feeders include a variety of common insects or rodents that may cause damage through feeding or defecation, such as cockroaches, silverfish, crickets, or mice (Buck, 255).

A well-organized, well-labeled, classified and inventoried storage space creates better access to a collection as well as minimizes the movement of objects/containers thus eliminates potential damage. For these purposes it is important to maintain a tracking system that informs users where objects are located at all times as well as a storage space map. When organizing a storage space, it is recommended that objects are situated according to their material composition (wood, bone, glass, cotton fibers). Also, if possible, different material types should be stored in separate spaces where temperature and relative humidity are adjusted to meet the needs of each. Within material categories, objects are usually grouped by type (e.g. textiles) or arranged by size, geographic origin, cultural area or accession number. This ideal approach to storage organization is not always possible due to space and financial restrictions. Yet, even financially limited
institutions must always strive to avoid creating a “dead” storage space which is characterized by blocked hallways, irresponsibly packed and stored objects, and stashing and piling of boxes without any method (Burcaw, 103).

Safe and secure storage of collections requires a dedicated space. The National Park System’s *Museum Management Handbook* Part I recommends the following:

Make sure the collection has suitable and sufficient space for proper storage. Suitable space is planned space that has been evaluated for its adequacy for storing museum objects. Outbuildings, closets, and unimproved basements and attics are not suitable space. These inadequate spaces rarely contribute to the preservation and effective use of a collection (5).

An ideal storage space will be housed in a centralized location with separate spaces for different purposes. A permanent storage will be used for housing the permanent collection and have minimal traffic and limited access. A temporary storage space can be used for objects ‘in transit’ or loan materials and for the packing and unpacking of objects. A workroom will provide space for staff to inspect, measure and photograph objects and allow visitors and scholars to spend time studying objects without having to remove them from the premises. Finally, materials and equipment used for the storage, care and packing of objects are stored in a supply room. The storage space must be large enough to accommodate the existing collection as well as the projected growth of the collection over the next ten years (Buck, 109).

Storage equipment refers to furniture such as shelving, cabinets, racks or drawers used to safely accommodate objects. The types (in terms of size or shape) of furniture used in a particular institution will vary depending on the types of objects within a collection. Good storage equipment provides basic protection against light, temperature
fluctuations, pollutants, leaks and pests. In general, the furniture selected should be as flexible and adaptable as possible to accommodate changing needs.

An important factor of the furniture is its construction material. Sherelyn Ogden in Storage Furniture: A Brief Review of Current Options states that:

The selection of suitable storage furniture and the specification or modification of wooden storage furniture are complicated tasks. Poor-quality storage greatly accelerates the deterioration of collections. Opinion on what constitutes acceptable storage furniture is changing rapidly. A preservation professional should be consulted for the most up-to-date information before decisions with far-reaching impact are made. Making the right choice will add immeasurably to the useful life of collections.

Powder coated steel furniture and anodized aluminum are the two most recommended options. These are desirable, especially for the storage of highly sensitive objects, but are also expensive. Baked enamel furniture, until recently, was also highly recommended, but “questions have been raised about the possibility that the baked enamel coating may give off formaldehyde and other volatiles harmful to collections if it has not been properly baked (not long enough at high enough temperatures)” (Ogden).

A commonly used inexpensive material for storage furniture is wood. Unfortunately, the use of wood is discouraged because of the acids and harmful substances exuded by wood and wood sealants. Some wood and wood composites are less damaging than others, but all are problematic, especially if these are in enclosed environments, which intensifies the concentration of acidic vapors. When these materials can not be avoided, caution must be taken to have all inner surfaces of the unit effectively coated. In addition to coating, shelves and drawers made of wood can be lined with an effective barrier material. If wood storage must be used, it should house no object except
those made solely of wood, stone, ceramic, or glass, and shelves and drawers should be lined, preferably with Mylar®.

Regardless of the construction material chosen, storage furniture should have a smooth, nonabrasive finish. If steel furniture is painted or coated, the finish should be resistant to chipping, because chips will leave steel exposed and susceptible to rust. The furniture should be free of sharp edges and protrusions; exposed nuts and bolts are particularly hazardous. The furniture should be strong enough so that it will not bend or warp when filled. To protect collections from water damage in the event of a flood, the lowest storage area within the furniture should be at least four inches above the floor.

The third level of object containment refers to the different types of containers used to house objects. Examples are folders, sleeves, envelopes, trays, boxes, mounts, and supports. The types of materials and supplies used in storage can directly affect collections, thus it is recommended that common office supplies and unknown materials are avoided, and that a conservator recommends materials used for special situations. All materials used must be benign, meaning they are inert and acid-free (PH neutral) without dyes or other additives. These materials will remain stable over a long time-period and will not damage objects. In addition, the use of cellulosic material inside storage containers will buffer fluctuations in RH and temperature (Buck, 105).

Objects should never be crowded or stacked against each other and when positioned closely, adequate padding and support should protect objects from collisions and vibrations. In an ideal situation, objects will be individually packed, but most commonly due to space and financial restrictions objects have to be packed and stored in
company of others. In situations like these, it is most important to understand that certain types of materials may react with each other if stored in closed environments. These are serious situations to avoid. See appendix G: Storage Materials Recommended and appendix H: Storage Material to Avoid, for more information.

**Information Management/Documentation**

Information management refers to the logical, ordered and rigorous creation, compilation, organization and maintenance of legal paperwork, history of use of objects, physical accounts, and any other pertinent information regarding objects in the care of an institution, whether these are part of the permanent collection, borrowed or loaned items. These documents describe the objects, record transactions or events involving the objects, and describe the legal status of ownership or custody.

Documentation embraces all the records and information associated with museum collections. A museum without any documentation is useless: it cannot legally prove that it owns any of its collections; it cannot account to donors for what has been given, or to auditors for what has been bought; it cannot maintain proper security; and it has probably destroyed most historical and scientific value of its collection (Fahy, 49).

Four fundamental activities of collections management are obtaining objects, maintain documentation of objects, conserve objects, and provide interpreted access to objects. In order to successfully and responsibly accomplish this it is important to consider basic factors of management (in general), which include a cycle that revolve around the establishment of objectives, planning, allocating resources, and monitoring.

The first requirement of a collections management information system, therefore, is that it must record the objectives and information with which we can plan how to manage the collection. The second requirement is that it supplies tools with which to use that information to control the future management of collections. It must permit allocation of resources to specific actions and objects in the future
and monitor the degree to which planned activity is completed as planned and the degree to which unplanned activity impacts on plans. And it must permit the evaluation of the success of the program as conducted according to criteria derived from the organization’s basic mission (Bearman 46).

Information management systems may be manual or computerized. Collections management activities and the access to information are greatly enhanced by computer technology, and are a recommended investment. With the fast changes in technology and the increased accessibility to software it is difficult to establish a preferred computerized system (program or software), and in the case one is to be selected many technical aspects must be addressed, such as system requirements, database structure, functionality, and hardware comparability, which are not being discussed in this paper. Yet regardless of whether the information system will be manual or computerized, basic information gathering and filing structures need to be followed.

Information about collections can be broadly described as primary and ancillary. Primary information pertains directly to an object (maker, dates, materials, culture, etc) and ancillary information is anything related to that object. Ancillary information categories include events, agents, resources, and actions/procedures. Information related to events tracks the history of participation of the object in events such as exhibitions, lectures, movie background, a course, publication, etc. The agent category keeps track of who does what, when and how specifically related to an object in an effort to maintain accountability. Three subcategories for agents are: a) vendors (shippers, insurers, contractors, etc.), b) life-cycle agents (dealers, brokers, manufacturers/creators, owners, lenders, etc.) and c) users (members, patrons, borrowers, students, scholars, etc). Information about institutional resources is an important category that helps with
planning, budgeting, accounting and projecting for current and future care of a collection (Bearman- Functional Requirements, 13).

Resources can be divided into five fundamental categories: funds, personnel, property, space, and time. Finally, actions is the category which records “a number of discrete actions taken in cultural repositories which generate information that must be recorded for subsequent actions, either within the same sequences or simply later in the life-cycle of an object” (Bearman 25).

Information management systems are set up to keep track of documents created by organizing them into files. The following examples are documents that are created for collections, groups of objects, and individual objects.

- Receipts,
- gift agreements (deed of gift, deed of reconveyance, statement of gift, or certificate of gift),
- IRS forms,
- proofs of purchase,
- inventory/master log/ card catalog (this is a common manual method): An inventory is a systematic record of all the elements that make up a collection.
- worksheets (for the different processes that objects are subjected to. These are an important tool, as they track the progress and creates traces of object handling through dating and signing),
- condition reports,
- copyright licenses, and
- loan agreements (incoming/outgoing) (Buck,1).
Once documents about objects and transactions or events are created, these must be stored in a variety of files. The filing system implemented may be based on the types of information stored or the activities that the information pertains to. It is important to remember that the value of storing information lies on its retrieval, thus the method of storing information must follow a common logic, easily followed by the users of this information. Files should always follow a consistent and uniform format and be alphabetical, numerical or chronological. Filing systems should be simple, clear, consistent and reliable. Typical filing systems in a registrar’s office include the following:

- Card catalog/inventory files – this is a central file that lists all of the objects in the permanent collection containing a record for each object, retrievable in accession number order and incorporating information gathered in the worksheet as well as an image. This central file functions as a stepping stone to the greater information that is accrued for one object. A cross-referencing system by way of codes may be established,

- accession/object/document files,

- object category/subject/classification files – collections may be classified by more than one reference. A hierarchical way of grouping objects and displaying information in separate classes, which facilitates organization and retrieval.

- maker/artist/manufacturer files – the format of names should be consistent and clear,

- source/donor (inheritance) files,
• object location files – this is a tracking system for object location and movements. Constant vigilance is required to enforce reports of object movement. Location files that are simple and straightforward are more easily maintained,
• object photograph/image files – the photographic documentation of collections assist the identification, condition recording, insurance claims, study, research, education, exhibition planning, publication and publicity of collections,
• insurance files.
• incoming loans files – these may be used for exhibition, research and study, long-term custody, or consideration for acquisition. The information gathered in these files include: ownership, object condition, object use, and agree-upon conditions of the loan, such as location, length of loan, and special needs. Long-term loan files are recorded, stored, exhibited or studied the same as collection objects except that registration numbers assigned should be distinguishable from permanent collection objects. Distinctions are made between Long-term and short term loans,
• outgoing loans files – these files must include any correspondence between borrower and loaner, loan agreement spelling out terms of loan, shipping papers, borrower’s receipt, condition reports, insurance certificates.
• exhibition files – these files start as working exhibition files and include planning, installation procedures, which can assist in future planning (Buck,8).
At the current time, computers are widely available and their use encouraged if not expected, thus the creation of digital files and data is almost more if not equally prevalent as physical files. Within an institution documents and records are likely to be collected both in paper and digital form. It is important that both sets of information are managed and organized in the same fashion, so that the systems do not contradict each other. Regardless of the information system implemented, the types of information that are collected and how the information will be used will inform the way it is created.

When dealing with physical documents, the management of files and records includes record maintenance, duplication and protection of documents, and the security of records. The maintenance of records involves the constant updating and addition of data to files and documents. An extremely important consideration here is the reliability of the information provided through the verification of an authorized source. Each time this is done, the source’s name and date are recorded. The preservation of materials is also an important task, which can be addressed through the use of archival products and removal of damaging materials such as paper clips and staples. The duplication and protection of files and documents means that a back-up of information should always be created. When dealing with physical files, it is important to create and secure the duplicates in a safe location.

As mentioned earlier, a responsibility of the collections management information system is to provide access to information. For these purposes, it is important to have an efficient and effective system that reduces redundancies, but allows for easy access to information. The issue of duplication and redundancies is one encountered mainly in manual systems and is difficult to manage. This problem is less prominent in digital
systems. Another consideration that allows for easy navigation of information is the standardization of information and documentation. To standardize information is to use shared and approved standards to describe collections in order to facilitate understanding, retrieval, and dissemination as well as information exchange.

Object documentation constantly takes place throughout the life cycle of an object and it is a substantial part of the job of a collections manager. Not only do collections continue to grow, but the information accrued on a single item will continue to expand due to research and interpretation. A continued system of organization with consistent methods and procedures is an important aspect of a successful information management unit. These consistent methods and procedures will improve the efficiency and effectiveness of the information system. Above all, it is important to remember that documentation and information management ultimately enable the preservation of information and the enrichment of culture.
CHAPTER IV
CONCLUSION

This paper argues that the implementation of a collections management policy serves any institution in various beneficial ways: it provides an organized system of information necessary for the research of collections by scholars, it helps to validate the institution for use in the development of relationships with potential donors, and increases the institution’s community and public awareness. The beneficiaries of a legally, responsibly, and ethically managed collection include many constituents, such as donors, students, faculty, scholars, and the public at large. The results of a collections management policy will be reflected in the products associated with the care and use of collections, such as exhibitions, publications and lectures. These products will represent the organization in perpetuity and will increase its public profile and prestige.

With carefully developed policies and procedures in place, donors can rest assured that their donations are being cared for and used to the best of their potentials. Students, faculty and scholars gain access to cultural and educational materials and sources that may further their studies. The public in general will benefit from the information that a collection can bring to the local community. The opportunity for the creation of greater access to education exists for all institutions dealing to cultural property.
But the educational opportunities extend beyond what the content of a collection has to offer. The establishment of a collections management strategy within a university, specifically, will create inter-departmental opportunities for collaboration which include students and faculty from across many disciplines through classes, internships, and volunteer positions.

A collections management policy offers long-lasting effects beneficial to institutions involved with the collecting of cultural property and its implementation is encouraged and recommended. An efficient collections management policy assists any passive collecting institution to raise public awareness and support for all types of cultural resources. Access to classes, research opportunities and exhibits engage the public in ways that contribute both financially and intellectually to the institution and the community.
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### APPENDIX A

**OBJECT DETERIORATION—DEFINITION, TYPES AND EXAMPLES**

**Deterioration**: Deterioration is any physical or chemical change in the condition of an object. Deterioration is inevitable. It is a natural process by which an object reaches a state of physical and chemical equilibrium with its immediate environment. The types of deterioration can be divided into two broad categories: physical deterioration and chemical deterioration. Both types often occur simultaneously and are interrelated.

**Chemical deterioration**: any change in an object that involves an alteration of its chemical composition. It is a change at the atomic and molecular level. Chemical change usually occurs because of reaction with another chemical substance (pollution, water, pest waste) or radiation (light and heat).

- Oxidation of metals (rusting)
- Corrosion of metals and stone caused by air pollution
- Damage to pigments by air pollution or reaction with other pigments
- Staining of paper documents by adjacent acidic materials
- Fading of dyes and pigments
- Darkening of resins
- Darkening and embrittlement of pulp papers
- Burning or scorching of material in a fire
- Embrittlement of textile fibers
- Bleaching of many organic materials
- Cross-linking (development of additional chemical bonds) of plastics
- Rotting of wood by growing fungus

**Physical deterioration**: a change in the physical structure of an object. It is any change in an object that does not involve a change in the chemical composition. Physical deterioration is often caused by variation in improper levels of temperature and relative humidity or interaction with some mechanical force.

- Melting or softening of plastics, waxes, and resins caused by high temperature
- Cracking or buckling of wood caused by fluctuations in relative humidity
- Warping of organic materials caused by high relative humidity
- Warping or checking of organic materials caused by low relative humidity
- Shattering, cracking, or chipping caused by impact
- Crushing or distortion caused by a harder material pressing against flexible material
- Abrasion caused by a harder material rubbing against a softer material
- Structural failure (for example, metal fatigue, tears in paper, rips in textiles)
- Loss of organic material due to feeding by insects and/or their larvae
- Staining of textiles and paper by mold

APPENDIX B

OBJECT DETERIORATION—AGENTS

The agents of deterioration are forces that act upon objects causing chemical and physical damage.

<table>
<thead>
<tr>
<th>Contaminants:</th>
<th>disintegrate, discolor or corrode all types of objects, especially reactive and porous materials. Some examples include:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gases</td>
<td>pollutants such as hydrogen sulfide, nitrogen dioxide, sulfur dioxide and ozone; oxygen.</td>
</tr>
<tr>
<td>Liquids</td>
<td>plasticizers that ooze from adhesives, grease from human hands.</td>
</tr>
<tr>
<td>Solids</td>
<td>dust that can abrade surfaces, salt that corrodes metals.</td>
</tr>
<tr>
<td>Air pollution</td>
<td>can include all these types of contaminants.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Radiation</th>
<th>Ultraviolet radiation that disintegrates, fades, darkens, and/or yellows the outer layer of organic materials and some colored inorganic materials.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unnecessary</td>
<td>visible light that fades or darkens the outer layer of paints and wood.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Incorrect Temperature</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Too high</td>
<td>causes gradual disintegration or discoloration of organic materials</td>
</tr>
<tr>
<td>Too low</td>
<td>causes desiccation, which results in fractures of paints, adhesives, and other polymers.</td>
</tr>
<tr>
<td>Fluctuating</td>
<td>causes fractures and delamination in brittle, solid materials</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Incorrect Relative Humidity</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Damp (over 65% RH)</td>
<td>causes mold and corrosion.</td>
</tr>
<tr>
<td>Above or below a critical value</td>
<td>hydrates/dehydrates some minerals.</td>
</tr>
<tr>
<td>Above 0%</td>
<td>supports hydrolysis that gradually disintegrates and discolors organic materials, especially materials that are chemically unstable</td>
</tr>
<tr>
<td>Fluctuating</td>
<td>causes shrinks and swells unconstrained of organic materials, crushes or fractures constrained organic materials, causes layered organic materials to delaminate and/or buckle, loosens joints in organic components.</td>
</tr>
</tbody>
</table>

APPENDIX C

RELATIVE HUMIDITY RANGES BY MATERIALS

<table>
<thead>
<tr>
<th>Archeological Materials</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Negligible Climate-Sensitive Materials</td>
<td>30% - 65%</td>
</tr>
<tr>
<td>• Climate Sensitive Materials</td>
<td>30% - 55%</td>
</tr>
<tr>
<td>• Significantly Climate Sensitive Materials</td>
<td>30% - 40%</td>
</tr>
<tr>
<td>• Metals</td>
<td>&lt;35%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Natural History Materials</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Biological specimens</td>
<td>40% - 60%</td>
</tr>
<tr>
<td>• Bone and teeth</td>
<td>45% - 60%</td>
</tr>
<tr>
<td>• Paleontological specimens</td>
<td>45% - 55%</td>
</tr>
<tr>
<td>• Pyrite specimens</td>
<td>30%</td>
</tr>
</tbody>
</table>

| Paintings                                      | 40% - 65%       |
| Paper                                          | 45% - 55%       |
| Photographs/Film/Negatives                     | 30% - 40%       |
| Other organics (wood, leather, textiles, ivory)| 45% - 60%       |

| Metals                                         | <35%            |
| Ceramics, glass, stone                         | 40% - 60%       |

APPENDIX D

TEMPERATURE RANGES BY MATERIALS

<table>
<thead>
<tr>
<th>Material</th>
<th>Temperature Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Most objects</td>
<td>68° - 72° F (20° - 22° C) with 2-3° fluctuation within 24 hours.</td>
</tr>
<tr>
<td>Furs, paper archives, textiles</td>
<td>41° - 50° F (5° - 10° C)</td>
</tr>
<tr>
<td>Color photographs</td>
<td>25° - 40° F (-4° - 4° C)</td>
</tr>
</tbody>
</table>

APPENDIX E

VISIBLE LIGHT LEVEL STANDARDS

All types of lighting (daylight, fluorescent lamps, incandescent (tungsten), and tungsten-halogen lamps) emit varying degrees of UV radiation. This radiation (which has the most energy) is the most damaging to objects. No UV should be allowed in exhibit and storage spaces.

**Illumination level (illuminance):** the strength of visible light, measured in lux.

**Lux:** the amount of light flowing out from a source that reaches and falls on one square meter. Illuminance was previously measured in foot-candles. You may find older equipment or references that list foot-candle levels. Ten foot-candles equal about 1 lux.

**Reciprocity Law:** establishes that low light levels for extended periods cause as much damage as high light levels for brief periods.

<table>
<thead>
<tr>
<th>50 lux maximum for especially light-sensitive materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Dyed organic materials</td>
</tr>
<tr>
<td>• Textiles</td>
</tr>
<tr>
<td>• Watercolors</td>
</tr>
<tr>
<td>• Photographs and blueprints</td>
</tr>
<tr>
<td>• Tapestries</td>
</tr>
<tr>
<td>• Prints and drawings</td>
</tr>
<tr>
<td>• Manuscripts</td>
</tr>
<tr>
<td>• Leather</td>
</tr>
<tr>
<td>• Wallpapers</td>
</tr>
<tr>
<td>• Biological specimens</td>
</tr>
<tr>
<td>• Fur</td>
</tr>
<tr>
<td>• Feathers</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>200 lux maximum for less light-sensitive objects</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Un-dyed organic materials</td>
</tr>
<tr>
<td>• Oil and tempera paintings</td>
</tr>
<tr>
<td>• Finished wooden surfaces</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>300 lux for other materials that are not light-sensitive</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Metals</td>
</tr>
<tr>
<td>• Stone</td>
</tr>
<tr>
<td>• Ceramics</td>
</tr>
<tr>
<td>• Some glass</td>
</tr>
</tbody>
</table>

### APPENDIX F

**AIR POLLUTANTS**

<table>
<thead>
<tr>
<th><strong>Particulate Pollutants:</strong> solid particles suspended in the air. Particulate matter comes both from outdoor and indoor sources. The diameter of these pollutants is measured in microns (1/1,000,000 of a meter). Particulates can interact with gaseous pollutants and cause deterioration in three different ways. Particulates may be a source for sulfates and nitrates (These particles readily become acidic on contact with moisture.); catalysts for chemical formation of acids from gases, and attractants for moisture and gaseous pollutants.</th>
</tr>
</thead>
</table>
| • Dirt (sharp silica crystals)  
• Dust  
• Soot  
• Ash  
• Molds  
• Fibers  
• Grease  
• Mold  
• Pollen  
• Skin cells |

<table>
<thead>
<tr>
<th><strong>Gaseous Pollutants:</strong> are reactive chemicals that can attack objects. These pollutants come from both indoor and outdoor sources.</th>
</tr>
</thead>
</table>
| • Sulphur dioxide (SO2) - produced by burning fossil fuels, sulfur bearing coal, and other organic materials.  
• Hydrogen sulphide (H2SO) - produced by burning fossil fuels, sulfur bearing coal, and other organic materials.  
• Nitrogen dioxide (NO) - produced by any kind of combustion, such as car exhaust as well as deteriorating nitrocellulose film, negatives, and objects.  
• Nitrogen dioxide (NO2) - produced by any kind of combustion, such as car exhaust as well as deteriorating nitrocellulose film, negatives, and objects.  
• Formaldehyde  
• Ozone (O3) - produced by sunlight reacting with pollutants in the upper atmosphere and indoors by electric or light equipment, such as photocopy machines, printers, some air filtering equipment.  
• Formic and acetic acids. |

<table>
<thead>
<tr>
<th><strong>Sources (Materials and Object composition)</strong></th>
</tr>
</thead>
</table>
| • Wood, which can release acids.  
• Plywood and particle board, which give off acids from wood and formaldehyde and acids from glues.  
• Unsealed concrete, which releases minute alkaline particles.  
• Some paints and varnishes, which release organic acids, peroxides, and organic solvents  
• Fabrics and carpeting with finishes, such as urea-formaldehyde, and wool fabrics that release sulfur compounds. |
- Glues, used to attach carpets, that can release formaldehyde.
- Plastics that release plasticizers and harmful degradation products such as phthalates and acids.
- Celluloid and other unstable plastics used to produce many 20th-century objects
- Cellulose nitrate and diacetate plastic, used for film.
- Pyroxylin impregnated cloth used for book bindings.
- Residual fumigants, such as ethylene oxide.

## APPENDIX G

### STORAGE MATERIALS - RECOMMENDED

<table>
<thead>
<tr>
<th>Case Construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Acrylics</td>
</tr>
<tr>
<td>• Ceramics</td>
</tr>
<tr>
<td>• Cotton and linen (unsized and undyed)</td>
</tr>
<tr>
<td>• Glass</td>
</tr>
<tr>
<td>• Inorganic pigments (without sulfur)</td>
</tr>
<tr>
<td>• Metals</td>
</tr>
<tr>
<td>• Acid-free paper and mat board made from rag or lignin-free pulp</td>
</tr>
<tr>
<td>• Polycarbonate</td>
</tr>
<tr>
<td>• Polyester (polyethylene terephthalate)</td>
</tr>
<tr>
<td>• Polyethylene and other polyolefins (e.g., polypropylene)</td>
</tr>
<tr>
<td>• Polystyrene</td>
</tr>
<tr>
<td>• Polytetrafluoroethylene (Teflon®)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Internal Packing - Soft Packing</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Acid-free tissue: unbuffered, neutral pH 12- or 18-lb weight.</td>
</tr>
<tr>
<td>• AirCap or bubble wrap: bubbles should face object, but not touch objects directly.</td>
</tr>
<tr>
<td>• Archival cardboard/blue board</td>
</tr>
<tr>
<td>• Blankets, packing pads,</td>
</tr>
<tr>
<td>• Cardboard – short term use only (very acidic)</td>
</tr>
<tr>
<td>• Fome-Cor® – short term use only</td>
</tr>
<tr>
<td>• Gatorfoam®</td>
</tr>
<tr>
<td>• Glassine – short term use only</td>
</tr>
<tr>
<td>• Kempak – short term use only</td>
</tr>
<tr>
<td>• Kraft paper – short term use only</td>
</tr>
<tr>
<td>• Microfoam</td>
</tr>
<tr>
<td>• Muslin (unbleached and unfinished or desired)</td>
</tr>
<tr>
<td>• Mylar®: neutral pH 100% polyester film.</td>
</tr>
<tr>
<td>• Pellon®: 100% nonwoven polyester.</td>
</tr>
<tr>
<td>• Polyester foam (Esterfoam®): packing foam used for cushioning.</td>
</tr>
<tr>
<td>• Polyethylene foam (Ethafoam®)</td>
</tr>
<tr>
<td>• Polyethylene sheeting: inert plastic protects from humidity, water, dirt.</td>
</tr>
<tr>
<td>• Polystyrene sheeting.</td>
</tr>
<tr>
<td>• Expanded polystyrene pellets and peanuts.</td>
</tr>
<tr>
<td>• Polyurethane foam – short term use only.</td>
</tr>
</tbody>
</table>

### APPENDIX H

**STORAGE MATERIALS – TO AVOID**

<table>
<thead>
<tr>
<th>Case Construction and Internal Packing</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Cellulose acetate (releases acetic acid)</td>
</tr>
<tr>
<td>• Dyes (contains sulfur or other reactive agents)</td>
</tr>
<tr>
<td>• Nitrocellulose (unstable)</td>
</tr>
<tr>
<td>• Polyvinyl acetate (PVA) (releases acetic acid)</td>
</tr>
<tr>
<td>• Polyvinyl alcohol</td>
</tr>
<tr>
<td>• Polyvinyl chloride (PVC) (releases hydrochloric acid)</td>
</tr>
<tr>
<td>• Polyurethanes (inherently thermally and photolytically unstable)</td>
</tr>
<tr>
<td>• Noncollagenous proteins (contains sulfur and can cause tarnishing and discoloration)</td>
</tr>
<tr>
<td>• Wood</td>
</tr>
<tr>
<td>• Particle board</td>
</tr>
<tr>
<td>• Rubber (contains sulfur)</td>
</tr>
</tbody>
</table>

APPENDIX I

DOCUMENTS AND REQUIRED INFORMATION

<table>
<thead>
<tr>
<th>Receipts</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Owner’s Name and address</td>
</tr>
<tr>
<td>• Owner’s contact information (phone, fax, email)</td>
</tr>
<tr>
<td>• Reason for deposit</td>
</tr>
<tr>
<td>• Method of delivery.</td>
</tr>
<tr>
<td>• Object description + image</td>
</tr>
<tr>
<td>• Temporary or catalog numbers associated with object</td>
</tr>
<tr>
<td>• Insurance value, if appropriate</td>
</tr>
<tr>
<td>• Expiration date/ duration of deposit</td>
</tr>
<tr>
<td>• Temporary storage location</td>
</tr>
<tr>
<td>• Date object received at institution</td>
</tr>
<tr>
<td>• Signature of recipient and deliverer</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Gift Agreement</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Institution’s name, address, phone, fax and email</td>
</tr>
<tr>
<td>• Donor’s name, address and contact information</td>
</tr>
<tr>
<td>• Object description (Object type, artist/maker, place of origin, creation date, materials/medium, dimensions)</td>
</tr>
<tr>
<td>• Temporary number and accession number (to be assigned)</td>
</tr>
<tr>
<td>• Credit line</td>
</tr>
<tr>
<td>• Expression of intention to donate</td>
</tr>
<tr>
<td>• Language waiving the right of ownership</td>
</tr>
<tr>
<td>• Language indicating that the person giving the object has the legal authority to do so</td>
</tr>
<tr>
<td>• Language that the gift is unrestricted</td>
</tr>
<tr>
<td>• Language confirming the donor’s belief that the object has not been exported from its country of origin in violation of the laws of that country in effect at the time of the export, nor imported into the United States in violation of laws and treaties of the United States.</td>
</tr>
<tr>
<td>• Statement that the gift was NOT acquired illegally.</td>
</tr>
<tr>
<td>• Language indicating that the donor received no goods or services in consideration of the gift.</td>
</tr>
<tr>
<td>• A statement passing ownership or granting non-exclusive use to the museum (In the case donor is the maker/artist/copyright owner).</td>
</tr>
<tr>
<td>• Statement giving up all rights to the gift.</td>
</tr>
<tr>
<td>• Language acknowledging the institution’s acceptance of the gift.</td>
</tr>
<tr>
<td>• Donor’s signature + date</td>
</tr>
<tr>
<td>• Institution’s authority signature + date</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Condition Reports</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Object owner</td>
</tr>
<tr>
<td>• Object name and number</td>
</tr>
</tbody>
</table>
- Maker/artist
- Description (type, classification)
- Measurements
- Materials
- Condition (general and specific, using standard terminology)
- If with accessories: description and condition (base, frame, cover)
- Date and name of person completing report
- Dated image or image source location

**Loan Agreements**

- Owner’s name, address, phone, fax, email
- Loan purpose (research, exhibition, loan to collection, etc.)
- Duration of loan (beginning and ending dates)
- Credit line (language how donor wishes to be acknowledged in catalog, label, etc.)
- Object description (maker/artist, origin, materials, dimensions, accessories)
- Insurance value and indication of who is insuring it.
- Shipping provisions
- Photography permission
- Lender signature + date
- Borrower signature + date

APPENDIX J

EXAMPLE WORKSHEETS

Object Photographing Tracking Sheet

<table>
<thead>
<tr>
<th>Object Temp #</th>
<th>Photo Digital # (range)</th>
<th>Folder Name (Saving location)</th>
<th>Initial &amp; Date</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Workflow Worksheet

<table>
<thead>
<tr>
<th>Perm #</th>
<th>Temp #</th>
<th>Measurement &amp; Identification</th>
<th>Photograph</th>
<th>Storage Location</th>
<th>Catalog Material</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Check-mark Initial &amp; Date</td>
<td>Check-mark Initial &amp; Date</td>
<td>Box or Shelf Number</td>
<td>Mark only if YES</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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