ARCHITECTURAL CONSERVATION RECORDS: DRAWING UPON MUSEUM AND ARCHAEOLOGICAL CONSERVATION RECORDING MODELS

by

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THIS MASTER REPORT IS DEDICATED TO

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Preface

In 1993, I went to Mexico City for a summer internship with Jose Manuel Mijares, the architect who was in charge of the preservation plan of Las Vizcainas, a Spanish Colonial building located in the center of the city. It was my first direct experience with the preservation of a building. During the daily visits to the building for nearly two months, I had the chance to interview different people involved in the project; architects, craftsmen, contractors, art conservators, and many others. I realized how difficult it is for architects, engineers, conservators, archaeologists, contractors, and any other professional working in the preservation of a building to organize and keep a vast amount of information about the project. The reason for it is perhaps due to the interdisciplinary aspect of most architectural preservation projects and the fact that recording is usually not even considered as a part of the project, neither for future repairs or maintenance work nor as part of the building's history.

After more exposure to the field of archeological and museum conservation, I realized that these two fields base their conservation work on recording, monitoring and maintenance in order to avoid significant interventions. Therefore, recording is such a vital part of museum and archaeological conservation projects.

Unfortunately, this does not happen very much with buildings. Changes, problems, repairs, and maintenance of a building are almost never recorded.

I realized that museum, archaeology and architecture share many similarities in their approaches to the conservation and preservation of our patrimony. For this reason, I

decided to design an architectural conservation recording methodology using the museum and archaeological conservation recording systems. Thus, the ultimate purpose of this study is to enhance the importance of keeping architectural conservation records.

This study is a qualitative comparison among museum, archaeological and architectural conservation which has been reinforced by the presentation of three case studies, one in each of the three fields.

The information of this study has been divided into six main chapters: one for introduction, one for each conservation field, one for a proposal and last one for the conclusion. The organization of all chapters has been specifically selected to be concise with the rest of the study and avoid misinterpretation by the reader. Both museum and archaeological case studies are presented according to specific recording methodologies used in the two conservation projects. On the contrary, the architectural conservation case study is only a description of the process itself in order to demonstrate the lack of concern from architectural preservationists and architectural conservators toward records. The study concludes with a proposal of an architectural conservation record which is a model of data collection methodology for a building.

Chapter 1: Introduction

The field of architectural conservation has many similarities with museum and archaeological conservation. The three fields are concerned with materials, their characteristics, maintenance and permanence. The three of them depend on strong scientific support. More importantly, the three fields have the same overall goal, this is, to contribute to the protection of the worldwide heritage and cultural property.

In recent years, there has been an increasing number of professional practitioners involved in the protection of buildings. This development has produced an entire spectrum of interventions for extending the life of buildings. One of these approaches is architectural conservation. It emphasizes in conservation rather than in replacement of existing fabric, maintaining the structure of a building as it has evolved, and considering changes in its fabric as part of the building's significance.

Architectural conservation is only one approach in the protection of buildings. It can take advantage of several improvements that have been carried out in other fields such as museum or archaeological conservation, particularly concerning conservation recording techniques applied in the conservation of museum objects and archaeological remains.

There has been several efforts to bring all conservation fields to work closer. Perhaps, the most well known attempt in the United States was the meeting of experts practitioners and professionals involved in the protection of cultural property held in Williamsburg and Philadelphia in 1972. This meeting set the precedent for developing a

closer communication and cooperation between experts working in fields like architecture, archaeology and museums.[1]

In addition, the architectural conservation specialty group was created within the American Institute for Conservation of Historic and Artistic Works, most well known as AIC. Over the past 20 years there has been a close collaboration and growth between museum, archaeology and architecture professionals involved in conservation.[2]

1.1 Architectural Conservation versus Museum Conservation

Most artifacts or objects discovered in a dig, ruin or even inside a house cannot survive when exposed to uncontrolled conditions. The only way to conserve them is in a protected environment. The museum, with its security and controlled environment, is the most appropriate repository for these artifacts.

Despite the controlled museum environment, even museum objects and artifacts deteriorate and display all the pathologies of aging. For this reason, most conservation expertise has developed under laboratory conditions, carried out on rather small artifacts or objects destined for the controlled climate of a museum.

In addition, the museum conservation field has evolved based on maintenance and recording, both performed during the life of the museum object in order to collect data for further conservation and future generation of conservationists. Thus, museum conservation can provide the architectural conservation field with invaluable conservation

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[1] Buck, 1976, p. 403
[2] Ibid. p. 403.

and technical expertise and recording techniques to be applied in the conservation of buildings. However, the size and complexity of buildings and the fact that they remain standing exposed to the uncontrolled environment may limit the application of museum conservation techniques to architecture.

Professionals in the architectural conservation field are usually unfamiliar with using conservation and/or maintenance recording techniques. Hardly any conservation record of a building is left for future reference. Thus, it is museum conservation which can provide basic conservation principles to the field of architecture, especially concerning recording techniques.

1.2 Architectural Conservation versus Archaeological Conservation

Archaeological remains are site oriented and like architecture, archaeological conservation faces immense problems. The uncontrolled and open environment can cause physical degradation and leave archaeological remains open to vandalism.

Sometimes little can be done in terms of treatments to safeguard an archaeological remain due to its exposure to uncontrolled environment, degradation and abandonment. For this reason, archaeological conservation is a discipline strongly based on recording techniques which most of the times provides the only way of safeguarding archaeological remains and sites. Due to similarities between buildings and archaeological remains, there is a great potential for applying many recording techniques of archaeological conservation in architectural conservation.

However, archaeological remains have lost their original use and they are protected to safeguard their values as part of our heritage. On the contrary, buildings are often in use and there is a closer relationship between buildings and the users and people related to them along with their activities. Thus, architectural conservation should readapt recording conservation techniques borrowed from archeology to consider the interaction between a building and its site, as well as the social, historical, cultural, and financial characteristics of its context.

As we can see, there are many similarities between architectural and museum conservation and between architectural and archaeological conservation. However, when conservation is applied to architecture, it should cover a broader spectrum of elements to protect, this is the fabric of the building, its site and context. Just as information from monitoring and maintenance of museum objects and physical remains is kept as vital part of them, the information collected from a building can provide invaluable data for architectural conservation. In addition to all the information required for architectural conservation; such as countless architectural and engineering drawings, photographs, graphics, specific reports and surveys; it is also important to keep an easy accessible system of records with important information concerning the building conservation process. In this manner, it is possible to follow up or monitor the conservation project once it has concluded and keep record of all the conservation interventions of the building. This documentation can also provide valuable data with respect to the conservation of a building as well as contribute for future research and advances in the field of architectural conservation.

1.3 Definition of Terms

The historic preservation field commonly uses an extensive, sometimes highly confusing terminology, which has been translated to different languages by the field. Thus, most countries and cultures of the present world, in their own languages and dialects, share the same confusion and terminology debate. This is not to disregard the importance of terminology. On the contrary, terms by themselves are very useful. However, the terminology used by historic preservation, specifically when dealing with the protection of cultural property is too extensive and hard to understand.

The following terminology presented and explained in this section, which is used throughout the entire study, has been selected not only to give consistency to the study but also to clarify the author's thought and posture in the subject.

Preservation, Restoration, Conservation

Though the present study is focused in conservation, it is necessary to define also the terms preservation and restoration. Almost all historic preservation bibliography consulted for the present study goes through different explanations and debates over the definitions of these three terms. It seems that there is not much difficulty or confusion in the fields of archaeology or museum studies . However, confusion arouses in architecture, where not only the three terms seem to be used or misused more or less as synonymous. Other terms, such as reconstruction and replication, are not discussed in this study.

Apparently, the confusion of terminology started with the evolution of the philosophies and postures in historic preservation that proposed the use of different

terminology to define an intervention in a historical building. This is another part of the controversial nature that has always characterized the historic preservation movement, especially when related to architecture. Lately, it seems that when dealing with buildings the tendency of historic preservation is the expansion of its language in order to name the different specialization and divisions that continuously seem to emerge in the field.

For the purpose of this study, I will use the definitions of preservation and restoration given by the National Advisory Council:

> *"preservation is the maintenance of the structure in the same physical condition as when it was received by the curatorial agency... Wen applied to the preservation movement, it basically denotes halting the demolition of old and or [cultural property] and finding means for its retention and use"*[3]

> *"restoration is the process of accurately recovering, by the removal of later work and the replacement of missing earlier work, the form and details of a structure, together with its setting, as it appeared at a particular period of time"*[4]

When applied to architecture, the National Park Service defined preservation as:

> *"the application of measures designed to sustain the form and extent of a structure essentially as existing when the National Park Service assumes responsibility. Preservation aims at halting further deterioration and providing structural safety, but does not contemplate significant rebuilding".*[5]

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[3] National Conservation Advisory Council, 1977, p. 45.
[4] Ibid. p. 45.
[5] Ibid. p. 45.

To define conservation, I will use Bernard Fielden's definition because I consider it the most applicable to museum, archaeology and architecture s well as the most suitable to the purpose of this study:

> *"conservation is the action taken to prevent decay. It embraces all acts that prolong the life of our cultural and natural heritage".*[6]

Fielden adds that minimum effective action is always the best and whenever possible it should be reversible and not interfere with future interventions. For him, the basis of conservation is established by legislation through listing and scheduling, through regular inspection and documentation, and through conservative actions which delay the inevitable decay of our heritage.[7] In this chapter, conservation has been defined in a general context that can perfectly apply to museum, archaeology and architecture. However, conservation applied to these three fields are defined in more detailed in chapters 2, 3 and 4.

Preservation and conservation may be considered similar terms. Richard Buck, a museum conservator; who, when discussing conservation and preservation differences, stated:

> *"... for instance, I am concerned with the maintenance of the structural and aesthetic integrity of museum objects, I call myself a conservator and my vocation conservation. I would willingly use these same words with reference to architecture. However, it appears that the maintenance of the structure and aesthetic integrity of a building is called preservation. Is there a defense for this apparently duplicating terminology? ..."*[8]

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[6] Fielden, Bernard, 1982, p. 3.
[7] Ibid. p. 3.
[8] Buck, 1976, p. 404.

Conservation should be the term used when dealing with the protection and maintenance of the structural and aesthetic characteristics of all our natural and/or cultural heritage. In this way, it is possible to be consistent with other disciplines, like archaeology, museum and environment conservation and thus, avoid further confusion.

Immovable and Movable Cultural Property

The term immovable property is currently used to describe the many kinds of cultural properties that possess a unique relationship to their site. This include artistic and historic works such as buildings, engineering structures, monuments, landscapes, and archaeological remains.[9]

In archaeological conservation, cultural property usually includes physical evidence, ruins, archaeological sites. On the other hand, building or historical building is the common term used in architecture conservation. In my study I will use to them archaeological remain to refer to all type of immovable cultural property in archaeological conservation, and the term building when referring to architectural conservation. Both terms are defined in chapter 3 and 4 respectively.

On the contrary, movable cultural property refers to that cultural property which usually does not retain its original use and once discovered or exposed in an excavation or purchased by an institution or museum, it is moved from its site and kept in a more controlled environment, such as a museum. Movable cultural property applies to prehistoric, historic and artistic objects such as furniture, paintings, archaeological

artifacts, clothes. Both archaeological and museum conservation, deals with movable cultural property and both fields also use different terms. The terms objects or artifacts are commonly used in conservation. To avoid confusion, in this study I will only use the term artifact when referring to the archaeological movable cultural property and museum objects when referring to the movable cultural property housed in museums.[10]

1.4 Conservation Methodology

Museum, archaeological and architectural conservation share a similar conservation methodology when dealing with the protection of cultural property. According to Richard Livingston and Roberto Frassetto (1987) conservation of the cultural property, this is museum objects, archaeological artifacts and remains and buildings, can be compared to the treatment of an ill patient by a physician. Thus, it involves three major steps: diagnosis, pathology and treatment.

Diagnosis

Diagnosis of cultural property is the process of noting the set of symptoms and performing tests in order to establish the illness. The main steps in the diagnosis of cultural property are: (1) data collection and (1) inspection.

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[9] Matero, 1993, pp. 15-21.
[10] Both of this terms are defined in chapter 2 and 3 respectively.

(1) Data collection

The first step in the diagnosis of cultural property is to collect and classify the data related to it. In general, cultural property can provide two types of information: direct and indirect.

Direct information is all the data obtained from the examination of the cultural property in itself, this is material classification, manufacture, style, changes/alternations. This type of information may be collected using different techniques, this is visual, chemical, analytical, according to the characteristics of the cultural property and the purpose of its examination.

Indirect information is usually obtained from other sources than the cultural property itself, this is through bibliography, owner/people/culture's information, archival research. Usually, indirect information involves archival research which may include graphic documentation such as photographs and graphics.

All direct and indirect information should be carefully kept with the cultural property as an important part of it. Usually, all the data collected and a complete record of the condition of each cultural property is done following certain standard forms, such are the cases of museum and archaeological remains (see chapters 2 and 3 respectively), which work as a checklist for the collection of data. This information is extremely important not only because it allows the establishing guidelines related to the care, treatment, exhibition of cultural property but also because it is a communication device among the different experts involved in the safeguard of the cultural property itself.

(2) Inspection

The second step in the diagnosis of a cultural property is its inspection. Inspections refer to observations which are carried out in the cultural property itself, this is museum objects, archaeological artifacts and remains and buildings. Observation reports should be kept as a permanent records and should be continuously updated through periodic rechecks made at given intervals through maintenance. Thus, the accumulation of this data as well as recommendations for special care and treatments provide a valuable body of technical history of the cultural property. This information helps in the estimation of needs, special treatments, costs, budget estimation, etc.

In the case of immovable cultural property, specifically buildings, the security of the resource should be a concern for conservationists. Different measures should be taken in order to make them temporarily resistant to a sudden change in their condition. In some cases, this action should be immediately taken to avoid further damage or deterioration and make them accessible for examination and treatment. During this stage control devices, such as monitoring systems and alarms could be installed to inform about the behavior of the building and/or the archeological remain.

Pathology

After the diagnosis has been established, through pathology it is possible to understand the nature of illness or deterioration of the cultural property. Usually, diagnosis is based on testing and monitoring which leads to the preparation of the condition report of the cultural property.

The condition report usually comes with documentation, photographs and other data resulted from tests and analyses. Finally, the report is accompanied by a proposal of treatment and care of the cultural property that has been prepared according to its condition.

Treatment

The treatment is *"the prescription of the remedy to be undertaken with controlled observations"* (American Heritage Dictionary). According to the National Park Service (1990) treatment is defined as:

> *"the interventive, hands-on work of repairing cultural property which usually requires the service of a conservator who is trained and experienced in dealing with different deterioration problems".* [11]

In other words, a treatment is a step-by-step proposal of measures to be taken to correct the condition of a cultural property and should logically follow the condition report.

Conservation treatments depend on several considerations and characteristics of the cultural property. According to the National Park Service Management Policies (1990) and in accordance with the conservation ethics of the American Institute of Conservation (AIC) ethics (1995), there are certain guidelines that should be used when deciding a treatment.

The conservation methodology applied to a cultural property should not finish with the performance of the required treatment, then moving to another conservation project.

[11] National Park Service, 1990, p. 8:1.

Maintenance and monitoring should always be also part of a conservation plan. Professionals involved in the protection of the cultural property should understand that once repaired, constant maintenance and even monitoring should be performed in the cultural property in order to test the results obtained through the treatment process.

A conservation methodology outlines a series of steps to follow when dealing with the protection of cultural property, either museum objects, archaeological remains, and buildings. Conservation methodologies, specially in archeology and architecture may vary according to the characteristics of each conservation project in particular. On the contrary, museum conservation usually follows the format of the Standards for Practice of the American Institute for Conservation.

Chapter 2: Museum Conservation

Museum conservation is a field that deals with objects and its primary goal is to safeguard and prolong their life by retarding or stopping deterioration. According to the National Park Service this is *"... to preserve whatever still exists of an object as nearly as possible in an unchanging, stable state"*.[12]

Since projects are the primary subject of museum conservation, it is necessary to define this term. For the purpose of this study, I will define a museum object as both prehistoric and historic movable cultural property with functional, aesthetic, cultural, symbolic and/or scientific value. Museum objects may or may nor be movable by nature or design. This means that not only pots, coins, furniture, garments, documents, photographs, but many other movable elements are objects. Fragments or parts of buildings and archaeological structures, all originally designed as immovable, when moved to a museum they are also considered museum objects. This is when interior decoration, frescoes, statuary and many other elements are safeguarded in a museum due to inevitable demolition or deterioration of the building or archaeological remain which they used to be part of.

Museum objects are generally grouped and catalogued accordingly to similar attributes forming which is known as a museum collection. The National Park Service defines a museum collection as:

> *"an assemblage of objects, works of art, historic documents, and/or natural history specimens collected according to a rational scheme and*

[12] National Park Service, 1990, p. 3:15.

maintained so that it is preserved, studied, and interpreted for public benefit".[13]

Today the term museum conservation is used to define a field not only related to the repair of damaged objects but also to their protection based on a long-term care, examination, and documentation of the objects themselves and their treatments, to be used as records for the next generation of conservationists.[14]

The American Institute for Conservation of Historic and Artistic Works suggests that conservation of cultural property should be carried out according to a continuous process of preventive conservation. Moreover, the conservation professional should establish guidelines for everyday use and care of objects, either in storage or exhibition, within an appropriate environment and define procedures for their appropriate handling, packing and transportation.[15]

In addition, accordingly to the National Park Service, museum conservation is *"an ongoing process of preventive conservation supplemented by conservation treatment when necessary".*[16] Preventive conservation is a strategy to slow down the deterioration rate of an object. Thus, it includes maintenance of the object itself, a stable environment, proper handling, storage and exhibit techniques in order to minimize the need for conservation treatment. Conservation treatment refers to the actual action/s or practical proceeding/s to stabilize the condition of an object in order to prevent further

[13] National Park Service, 1990, p. 2:1.
[14] National Institute for the Conservation of Cultural Property, 1992, p. 13.
[15] The American Institute for Conservation of Historic and Artistic Works, 1995, p. 26.
[16] National Park Service, 1990, p. 3:1.

deterioration. The National Park Service suggests that conservation treatment should be carried out only when preventive conservation is not enough to reduce deterioration to a tolerable level, or if the object is very fragile and in danger, or if the object is required for exhibition or research.[17]

Finally, the most recent Code of Ethics and Standards of Practice of the AIC (1995) has also expressed that conservation of museum objects should emphasize safeguarding the original materials and minimize restoration in order to decrease the possibility of further damage. Thus, maintaining the archaeological, historic, scientific, or aesthetic integrity of the object.

2.1 The Museum and its Development

Throughout history, collecting rare objects and works of art has been a common practice of different human cultures. Oftentimes, valuable objects were sent to kings, lords and rulers of countries for varying reasons, this is as presents to demonstrate the richness of territories, as tributes, to aid arrange alliances. During Medieval times, uncountable treasures were kept in temples, monasteries, palaces and cathedrals in order to be studied and moreover to be safeguarded. During the Renaissance, princes and lords were collecting different objects due to the "rediscovery" of Classical art.

With the passing of time, these private collections became more accessible to the public. For example, during the 17th and 18th Centuries several important European

[17] Ibid. pp. 3:2-3:3.

collections were transformed into museums for public education. Such was the case of Oxford University in 1659 and the University of Dresde in 1765. In addition, with the discoveries of Pompei and Herculaneum and the development of academies and schools of fine arts during the beginning of the 18th Century, museums became the principal promoters of historical research and as repositories for objects of art. Thus, museums began to serve as a surrogate home for movable property that could no longer survive in their original habitat.

Early on, museum collections reflected the tastes and idiosyncrasies of their owners. More recently, museums have became much more than a simple repository of collections. Instead, the majority of museums have become institutions of public service oriented toward the diffusion of universal and national cultural heritage.[18] Despite their change in mission, the basic task of the museum, which is to provide optimal environmental conditions for the study and enjoyment of rare and/or valuable objects, remains fundamentally the same.

Two different philosophies can be identified in the history of the formation of museums. First, objects were moved, concentrated and grouped in special places mainly to be displayed as rare or unusual objects of ancient cultures. In this way, museums collected different cultural heritage of extensive regions, countries and even continents. Examples of this are the great museums like the *Louvre* (Paris), the Metropolitan Museum of Art (New York), and many other national museums created worldwide. Today, there is an aim of maintain the objects as close as possible to their site of origin. According to this

new idea more specialized museums started to appear, therefore, site, local and regional museums were formed. The archaeology museum (*Museo Arqueológico*) located in Mexico City and the various National Park museums in the United States are only some examples of this. This new type of museum collects and safeguards movable property that especially represents the cultural heritage of a region.[19]

In modern times, museum collections have been gradually enlarged to include not only art work or artifacts but also parts of buildings and archaeological structures. Museums became repositories when saving original pieces from demolition or deterioration of entire prehistoric or historic structures. Therefore, display of decorative arts formed part of museum collections as well. An example of this is the historic room of a museum, where original interior decoration, furniture, sculptures and other elements are displayed in authentic or at least appropriate contexts.

Nowadays, the scope of a museum collection has been extended beyond a display case, room, or even a building. Thus, collections vary from a group of objects to the structure that houses them or even to an entire urban or rural environment. Two types of museums illustrate this trend: (1) the historic house museum, when the building itself as well as the objects that it houses are considered as part of the same museum collection and; (2) the outdoor museum, when the museum collection is formed by movable (objects and artifacts) and immovable (structures, landscape, natural features)cultural property of a certain urban or rural setting.

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[18] Diaz-Berrio, 1990, p. 166.
[19] Ibid. p. 164.

In addition, as a didactic organism and a diffusion center of culture museums have introduced the conservation of the cultural heritage and particularly the scientific study of objects. To achieve this new responsibility, museums now conduct conservation workshops, laboratories and research sessions involved in conservation of the cultural heritage.

2.2 Museums and the Conservation of Objects

The restoration and conservation of damaged works of art is an activity which can be traced to Antiquity. During the Greek and Roman times, artists were both artisans, well-trained in their craft and also, very knowledgeable of the properties of the material/s they used as well. Thus, artists themselves were the reasonable choice when repairing a broken sculpture or a scratched painting. During the late Classical times, artists not only produced works of art but also restored their own work and the work of others.[20]

The Industrial Revolution brought the massive production of art media such as tubed oil paints, ready to use canvases, brushes, etc. During the 19th Century, artists could for the first time buy their products and avoid long years of apprenticeship that included learning of materials and their properties, and the preparation of many elements needed for their art. As a result, artists no longer treated and repaired works of art. In addition, Romanticism emphasized the image of the artist as an inspired genius rather than the artist as a magnificent artisan.

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[20] National Institute for the Conservation of Cultural Property, 1992, p. 12.

Museum laboratories and conservation workshops started to conduct the conservation and care activities. In 1888 the first scientific laboratory in a museum was established at the *Staatliche Museen* of Berlin, followed in 1921 by the British Museum. In 1928, the Fogg Museum at Harvard University in Cambridge was the first American museum to include an art conservation laboratory which was formed by art historians, scientists and conservators.[21]

Early, conservators were more concerned with the aesthetic characteristics of museum objects; often, conservation treatments were applied in order to make objects look good for exhibits. Such an approach, which focused on visual or aesthetic needs, was often cosmetic in nature disregarding not only the long-term preservation needs of objects but also their historical records.

In recent year, however, the treatment of museum objects requires more involvement on the part of curators. Currently, many objects are preserved not only because of their historical evidence and scientific information but also to document technological achievements and provide data for historical or scientific research. For this reason, it is essential that curators and conservators evaluate all technical, historic, scientific and aesthetic aspects when deciding the appropriate treatment and handling of museum objects.[22]

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[21] Ibid. p. 12.
[22] National Park Service, 1990, p. 8:4.

2.3 Issues of Museum Conservation

The conservation of movable cultural property involves different issues for their protection. Two are among the most important issues: (1) museum objects should be preserved inside a more controlled environment and, (2) museum conservation should be a cooperative relationship between the curator and the conservator.

(1) Museum objects should be preserved inside a more controlled environment

The primary responsibility of a museum is the collection, protection, study and interpretation of objects. This is reflected in the definition of museum given by the American Institute of Museum. According to this association, a museum is:

> *"an organized and permanent non-profit institution, essentially educational or aesthetic in purpose, with professional staff, which owns and utilizes tangible objects, cares for them, and exhibits them to the public on some regular schedule".*[23]

However, this an other definitions only refer to a museum as an institution or organization, this is the non-physical aspect, ignoring the fact that a museum is also a building or structure, this is the physical aspect.

According to the National Park Service, a museum should provide a safe, stable environment to reduce the object's rate of deterioration, prolong its life, and minimize the need of conservation treatment.[24] In other words, a museum should be a microclimate for safeguarding its collection.

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[23] Ibid. p. 1:1.
[24] Ibid. p. 4:2.

A microclimate can be defined as *"an enclosed space that is capable of providing an environment different from that of the surrounding space"*.[25] For a museum, this means a secured and controlled environment provided by a building and managed by trained and responsible personnel.

Museums exist in a variety of sites and climates. Therefore, they are exposed to uncontrolled environments with different conditions of natural light, humidity and temperature, that can be very harmful for the life of an object. In addition, interior conditions, such as relative humidity, ventilation, temperature, storage, security, when not controlled, can seriously affect its life. Thus, a museum building not only should work as a shell or barrier against uncontrolled conditions but also it should provide in its interior a suitable environment for the life of objects.

Finally, the relationship between a museum building and a collection is of primary importance when dealing with the protection of objects. Sometimes, the museum building has historic significance in itself and it may be possible that its conservation needs differ from the ones of its collection. Other times, the museum building cannot provide the special conditions required for a collection. In both cases, the museum building and the collection are not compatible. Thus, the harmony between a museum building and a collection assures both the protection of valuable objects and architecture.

[25] National Institute for the Conservation of Cultural Property, 1992, p. 27.

(2) Museum Conservation should be a Cooperative Relationship between the Curator and the Conservator

The cooperative work between the curator and the conservator is essential for the life of the museum collection. For this study, I will use the definitions of curator and conservator given by the National Park Service. Thus, a curator is defined as:

> *"the person responsible for the day to day management of the museum collection, including acquisition, record keeping, preventive conservation, interpretation and exhibits, research and publication. Often, the curator is a specialist in a discipline (e.g. archaeology, biology, history, fine arts) related to the collection".*[26]

Then, a conservator is defined as:

> *"a person trained and skilled in the theoretical and practical aspects of preventive conservation and a performing treatments necessary to preserve an object's historic, scientific, and aesthetic value. Most conservators specialize in the treatment of a specific class of objects (e.g. paintings, furniture, books, paper, textiles, metals, ceramics, glass, photographs, archaeological and ethnographic objects, natural history specimens)".*[27]

Today, appropriate management and treatment of museum objects have become very complex and require more of both curatorial and conservation engagements. Museum objects are now seen in a wider context, including consideration of historical and scientific factors as well as the aesthetic ones.[28] For this reason, a mutual collaboration, understanding and respect between curators and conservators is a very important key when safeguarding museum objects.

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[26] National Park Service, 1990, p. 3:4.
[27] Ibid. p. 3:4.

2.4 Condition of Museum Objects

An object is normally moved to a museum to extend its life so its condition mainly depends on factors related to the object itself, this is related to materials, design and craftsmanship, and the environment it has been exposed during its lifetime.

The report of a museum object's condition is perhaps one of the most important steps in its conservation. However, to determine and describe the condition of an object is very difficult because of the subjectivity of the term. According to Buck (1976) this problem is mainly related to the fact that condition is an imprecise term loosely used in the field of museum and art conservation in general. Oftentimes, it has been such a cause of confusion, that many objects were damaged because their condition was misunderstood. For example, the condition of an object covered by layers of soil and accretions may be considered poor; however, after cleaning the object the conservator may realize that it has suffered little and its defects can be corrected. Therefore, training and experience are of crucial importance for conservationists when assessing the condition of a museum object.

According to Buck (1976) there are at least three different aspects of condition when dealing with museum objects, which suggest different treatment proposals. These are: damage, insecurity and disfigurement.

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[28] Ibid. P. 8:4.

Damage

Damage is the *"permanent alteration of any material or construction composing an object".*[29] It can be either caused by catastrophes (fires, floods), use or inefficient care or mistreatment. According to the definition, damage is irreversible, this is once the object has been damaged it is impossible to apply a treatment that could invert its consequences. Even a replacement or an addition to the object will not give back its original appearance.

Insecurity

Insecurity is *"any inherent weakness or threat to the object's physical integrity".*[30] Some examples of insecurities are: weak adhesives, stresses caused by use or mistreatment, exposition or vulnerability of materials to physical, chemical or physical-chemical agents of deterioration. Though insecurity could be very dangerous for the object's physical integrity is still reversible. If not corrected, insecurity could develop into damage.

Disfigurement

Disfigurement is *"the alteration of any material or any aesthetic elements of the design".*[31] Unlike insecurity and damage, which are tangible aspects of the object's condition that can be determined through an examination, disfigurement is less clearly detected. Disfigurement may be part of an object since the time of its manufacture, such as poor quality or inappropriate materials, instability of the design. In this case, damage

[29] Buck, 1976, p. 412.
[30] Ibid. p. 412.

could be the most likely consequence. However, an object could be affected by stains, encrustation and accretions that produce some disfigurement without damaging the object itself; in this case disfigurement is temporary.

The relationship between disfigurement and damage is very confusing. It is improbable that an object can be damaged without producing some disfigurement. However, for some types of disfigurement there is a surprising tolerance of damage. For example, a green gray accretion covering Chinese bronze pieces, which is caused by a mineralization of the metal, undoubtedly a damage, is considered as an enhancement of their value.[32]

An object is also considered disfigured if there is a part/s missing or if the object is fragmented. Usually, this is known as a lacuna which is an *"interruption of the continuity of the object's artistic form and rhythm"*.[33] Usually, lacuna is not considered a problem for the condition because museum objects are not used in the same way they were originally created so their completeness is no longer a requirement. Oftentimes, a lacuna which provided a new fragmented condition to the object, may increase the value of it. Moreover, it can be part of its significance. Perhaps, the most famous example of this is the statue of the Venus of Milo. Sometimes; however, the lacuna may be a problem for the stability or interpretation of the object. In this case, the object's intervention should

[31] Philippot, 1976, p. 374.
[32] Buck, 1976, p. 413.
[33] Philippot, 1976, p. 375.

only be focused to decrease or eliminate the disturbance caused by it and conservationists should use methods that clearly identify the intervention as such.[34]

2.5 Causes of Deterioration that Affect the Condition of the Museum Object

Causes of Deterioration			
	Intrinsic	Direct	Design Materials Manufacture
		Indirect	Historic Use Exposure
	Extrinsic	Museum Environment-related	Forces (physical, chemical, biological)
		Nature-related	Disasters (floods, fires)
		Human-related	Vandalism/Theft Visitor's Use Improper handling (maintenance, conservation) Conflicts Disasters

Different causes of deterioration can affect a museum object. In general, they can be divided into: (1) intrinsic causes which can be either direct or indirectly related to the museum object and, (2) extrinsic causes which are related not only to the museum environment but also are associated with nature-related disasters and human forces.

(1) Intrinsic Causes of Deterioration

Material, design and manufacture are all intrinsic causes of deterioration directly related to

[34] National Institute for the Conservation of Cultural Property, 1992, p. 13.

a museum object. The National Park Service (1990) refers to them as the inherent vice of the object. Inherent vice refers to *"physical or chemical properties naturally found in the materials used in the manufacture of an object, either because of the compatibility of different materials, or because the use of poor quality or unstable materials".*[35]

Oftentimes, movable cultural property consists of materials that react differently when exposed tot he environment. For this reason, it is very important to have an understanding of the materials that constitute an object in order to take certain strategies to slow or halt its deterioration. Moreover, the conservator must know that most objects were not created with the purpose of lasting forever so the manufacture process or design did not incorporate a high regard for the object's permanence.

The prehistoric or historic use of an object and its exposure to the uncontrolled environment, both intrinsic causes of deterioration indirectly related to the museum object, should be important concerns for the conservators. Mistreatment and constant use of an object could be causes of deterioration at the moment of arrival to the museum and could be the cause of future damage. Unfortunately, little can be done to correct results of these intrinsic causes of deterioration; however, much can be done to extend the life of the object by controlling its environment.

(2) Extrinsic Causes of Deterioration

Extrinsic causes of deterioration that affect museum objects are very similar to the ones

[35] National Park Service, 1990, p. 4:7.

that affect immovable cultural property. However, due to the controlled conditions of the museum, their deterioration can be better handled and controlled. Some extrinsic causes of deterioration are directly related to the object's environment, this is the museum, and some others are related to the natural and human environments.

From its creation, an object begins to deteriorate due to its interaction with the environment. The processes of deterioration are caused by different natural and human-related causes. Due to its immovable condition, museum objects are often separated from their prehistoric and historic contexts to be safeguarded in a museum, thus deterioration is stopped or delayed. However, despite the more controlled conditions of the museum, objects are still exposed to adverse environmental conditions which cause detrimental chemical, physical and chemical-physical reactions. The deterioration of museum objects is commonly produced by forces of deterioration such as light, relative humidity, dust, temperature changes, air pollution, biological agents. Deterioration is hastened by unfavorable environmental conditions. Thus, this is the principal reason that museums spend a great amount of money and time to provide safe environmental conditions to protect their collections. The monitoring and control of environmental conditions of a museum are key factors in guaranteeing a long-term preservation of collections.

Despite being protected inside a controlled environment, museum objects are still vulnerable to the action of fires, floods, storms, earthquakes and other nature-related disasters. However, unlike archaeological remains and buildings, exposure to these disasters is usually controlled because the museum acts as a protecting shell and decrease the threat caused by disasters. It is extremely important that the museum provide a

safeguarded and controlled space, equipped with all the necessary elements (fire and water monitoring devices, extinguishers, alarms) in order to prevent disasters or slow their damaging consequences.

Finally; humans, either directly or indirectly, also cause different types of deterioration to museum objects. Deterioration of museum objects resulted from human-related causes can be caused either on purpose, this is when the museum object is the target. Such are the cases of vandalism, graffiti, theft. When the museum object is not the target, deterioration could also happen. Examples of it are visitor's use, human related disasters or conflicts, incorrect handling, lack of conservation treatments, improper care from people related to the object.

2.6 Case Study: The Conservation of a Mexican Mask. An Example of Museum Object Conservation.

This section presents an example of a conservation process and recording method of a wood painted, Mexican mask which is property of the ethnographic collection of the Arizona State Museum, University of Arizona, Tucson, Arizona. This process was carried out by Nancy Odegaard, the conservator at the museum. The entire conservation procedure was recorded using an informal interview accompanied by photographs. This information was compiled with a history of the artifact and a copy of the "Arizona State Museum Object Treatment Form" used in the conservation and recording of the mask (see end of this section).

History of the Object[36]

In 1979 Donald Codry, a noted mask collector, donated a portion of his collection to the Arizona State Museum. The donation consisted of over 500 masks representing dozens of rituals and traditions.

The mask, at the present in exhibit at the museum, is part of Codry's collection and belongs to the *Tlacololero Dance*. It comes from the state of Guerrero, southern Mexico, and represents a male character painted in bright colors (see figures at the end of this chapter).

In the 16th Century the Spanish mask-making custom was brought to Mexico and combined with the already existing Pre-Columbian traditions. For centuries, the masks have been produced for use in celebrations and as offerings or for entertainment. In Mexico, masks have been the essence of both, culture and tradition as well as a form of art.

The *Tlacololero Dance* is performed in the states of Guerrero and Puebla and forms part of a series of agricultural dances called *Danzas del Tigre*.[37] It is a representation of the work of peasants and their struggle with land and nature.

The dance itself involves the *Tlacololeros*[38], which is a term used for farmers, a *Rosterero* or tracker, a dog and a tiger. The *Tlacololeros* usually wear large wide-brimmed hats of straw which are adorned with flowers, herbs and palms. Their masks are

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[36] Most of this information has been extracted from: Cordry, 1988.
[37] From Spanish "tiger dances".
[38] The word *Tlacololero* comes from *tlacolol*, a nahua term that means *"the preparation of the fields on the mountain side"*. Directly translated it means *"those who slash and burn"*. From Brody, 1988, p. 226.

big and colorful, with the faces divided and painted in squares of different colors depicting fields. They carry with them whips which sometimes act as serpents and are used to hit one another on padded arms to simulate the sounds of crackling fire. Some even carry dried badgers or raccoons to represent fertility.

The dance is performed usually with a great deal of horse play and vulgar humor containing local scandals and dramas. When the tiger character is introduced it is usually followed by a comical hunt involving most of the characters. Near the end of the dance a long procession of people follows the dog in a hunt for the tiger. The dance ends with the capture and slaughter of the tiger. Oftentimes, there are a few "wounded" characters that are later fixed by a physician character.[39]

The Conservation and Treatment of the Mexican Mask

At the time of the masks' arrival to the museum, there was a lack of conservation intervention due to time. For this reason, they were only catalogued and stored at the museum.

In the early 1980's the mask collection was placed on exhibit but then quickly returned to storage where it remained for nearly then years.

Between 1985 and 1986 most of the masks underwent a condition survey and some conservation interventions, which according to their state of deterioration, involved some dust removal and repairs.

[39] Esser et al., 1988, p. 74.

In 1994, the Cordry collection was brought out to be placed on a long term exhibition at the Arizona State Museum.[40] Many of the masks were dusty despite their protective plastic covering; some had structural problems caused by use and climatic or environmental changes. For this reason, the Conservation Department at the museum decided to start a gradual general conservation intervention which included the update of records and some treatments. This process, which started in the beginning of 1994, has been carried out by conservator Nancy Odegaard with the approval of Diane Dittemore, curator of the museum.

Each conservation intervention was recorded in the "Object Treatment Form", designed by the museum to follow the standard conservation recording procedure for the objects that belong to the museum.

The conservation treatment reports of objects are kept by the museum as a part of their documentation and are an essential data for future interventions. Also, they provide very important information for the maintenance and monitoring of the objects.

(1) Examination and Condition of the Mexican Mask

This stage begins with the identification of the object, this is recording general and specific information of the object.

In the case of the examination and condition report of the Mexican mask, the conservator began taking the dimensions of the mask. Then, she took photographs of it

[40] The exhibit is called "Mexican Masks: Faces of the Fiesta".

(front, back and profiles) to record the condition of the mask before the conservation process. According to a visual inspection, the conservator determined that the mask was carved from pine wood[41], covered with a gesso layer or ground and then painted.

Then, the conservator made a visual inspection of the mask to detect any major problem areas and using her fingers she tried to feel any movement or loose parts. Some superficial damage was registered on the left side of the mask where an old addition was made, presumably after the mask had been broken.[42] The conservator used a magnet and determined that the mask parts were joined using three iron nails.

Similar damage was registered on top of the mask where another hole was opened for a strap so the mask could be hung for storage when not secured to the face of the dancer. Visual inspection also revealed that the white part on the left side of the mask was once red and the yellow part on the right side once blue. Probably removing paint flakes and analyzing them under the microscope could determine the different paint layers and also the composition of the pigments.

The Mexican mask needed some cosmetic treatment to stop the deterioration of its painted surface which had several cracks and blisters, some of them showing a powdery and unstable surface (specially in the chin area). This deterioration was probably caused by the low quality of the gesso used for the ground of the painted layer which caused

[41] According to the conservator, pine is widely used by Mexican craftsmen for mask carving mainly because of its light weight and ease for carving.
[42] According to the conservator, this damage was probably caused by stress applied to the mask after a hole for a strap was opened and also by the tension created while the mask was being worn.

absorption of moisture from the air. The cracks detected in the wood on the reverse side of the mask were radial, typical wood cracks that would not affect the mask.

(2) Treatment Proposal

The main purpose of the conservation treatment of the Mexican mask was to prepare it for an exhibition at the Arizona State Museum. According to the fairly good condition of the mask and the short time available, the conservation proposal consisted of quick stabilization to stop the damage of some areas.

(3) Treatment Description

This final stage summarizes all the conservation treatment of the artifact as well as all the accompanying documentation. All treatment was carefully detailed to provide data for future interventions. For the treatment of the Mexican mask, the following steps were followed:

(A) Cleaning of the mask

Once the damaged and unstable parts were identified, the conservator vacuumed the surface of the mask using a "Deertail" vacuum and a soft bristle brush. Then, the residual dust attached to the surface was removed using cotton q-tips soaked in water and ethanol.

(B) Stabilization of Cracks and Blisters

This process was done using an acrylic resin, methyl metathilate, dissolved in acetone (2% solution). The mixture was applied on the damaged areas using a brush. Because the acetone dries very quickly it allows the acrylic resin to stay on the surface.

(C) Sealing of Blisters with Repainting of some Discolored Areas

The treatment of blisters was done using a synthetic wax called "microcrystalline "B^2 195" produced by Baraco. This type of wax has a low melting point of 195° Fahrenheit which makes it easy to melt and set on the surface. The use of wax has two advantages: (a) it acts as a seal on the surface and (b) it is easy to remove using heat or a solvent. The wax was applied in two layers, the first one clear and the second one with pigments to match the surface colors. The wax was melted using burner and applied on the surface of the mask using dental tools. For the second layer, the conservator mixed the wax with Crimson Red and Venetian Red pigments to match the red color of the area of the mask where one of the damages was detected. For the damage located in the black area of the mask, the conservator used Lamp Black and for the purple (in the chin area) she used a mixture of Mars Red and Prussian Blue. The conservator always worked first on the areas that were not visible and did not require much treatment and left to the end the parts located in the front that required a more refined technique.

After the treatment was completed, the conservator photographed the mask (front and profiles) as a documentation for future conservation treatments as well as for museum records.

Figure 1: Front of the Mexican mask

Figure 2: Profile of the Mexican mask

Figure 3: The Mexican mask before treatment

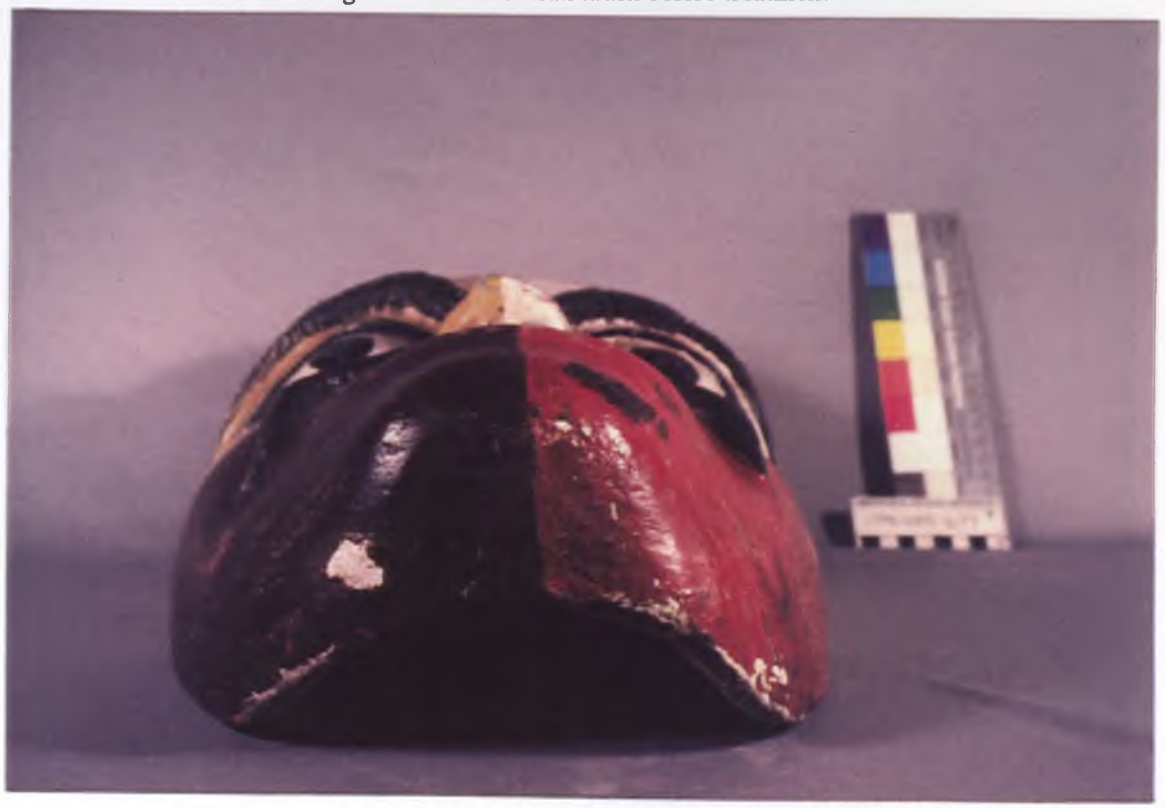

Figure 4: The Mexican mask after treatment

Figure 5: The Mexican mask in exhibit at the Arizona State Museum

Figure 6: The Mexican mask in exhibit at the Arizona State Museum

MUSEUM CONDITON REPORT FORM

ARIZONA STATE MUSEUM
THE UNIVERSITY OF ARIZONA
Tucson, Arizona

DATE:
PREPARED BY:

CONSERVATION TRETMENT REPORT

OBJECT:
CULTURE:
MATERIAL:

LENGTH:
WIDTH:
HEIGHT:
THICKNESS:
DIAMETER:

STORAGE LOCATION:
DESTINATION:
REQUEST:
REQUEST BY:

AUTHORIZATION:

CATALOG, PHOTO, OR PUB. INFORMATION:
PREVIOUS TREATMENT:

PROBABLE MATERIALS: (_ VISUAL, _MICROSCOPE, _ANALYTICAL)
FABRICATION TECHNOLOGY:

CONDITION: (_BIOLOGICAL, _PHYSICAL, _CHEMICAL, _LOSSES)

PROPOSED TREATMENT:

_TENACIOUS SOILING
_CHEMICAL CLEANING
_SURFACE DUST REMOVAL
_SURFACE COATING
_STABILIZATION/REPAIR
_TONING/AESTHETIC INTEG.
_INTEGRATION CONSOLIDATION
_MECHANICAL CLEANING
_ELECTROLYTIC SCALING
_WASHING/SALT REMOVAL
_PARTS ASSEMBLED/MEND
_NEW MATERIAL ADDED
_RESHAPING
_BIOCIDE TREATMENT
_SUPPORTS/MOUNTS/BACKING

ACCOMPANYING DOCUMENTATION

_PHOTOGRAPHS:
_COLOR SLIDES:
_BEFORE _DURING
_UV _IR
_DRAWINGS

FILM:
FILM:
_AFTER _DETAILS
_RADIOGRAPHY _OTHER
_ILLUSTRATIONS

DATE:

PREVIOUS TREATMENT:

ABSTRACT OF MATERIAL USED
SUPPORTS/ATTACHMENTS/FILLLS:
RAGENTS/SOLVENTS:
BIOCIDES:

ADHESIVE/CONSOLIDATION:
SURFACE COATING:
REFERENCES:

Chapter 3: Archaeological Conservation

Archaeology has been defined in many ways, both by the extended literature on the field itself and the historic preservation field. For this study, I have selected the definition given by the National Park Service:

> *"Archaeology is the scientific study, interpretation and reconstruction of past human cultures form an anthropological perspective based on the investigation of the surviving physical evidence of human activity and the reconstruction of related past environments".*[43]

According to this definition, archaeology is a discipline that deals with evidence from the human past that helps to portray earlier cultures, their lives, their stages of development. For this reason, archaeology is considered another essential discipline in the historic preservation field. Through an archaeological exploration it is possible to locate and identify the size and shape of buildings that previously existed on a site, to date and confirm the identity of remains, to analyze the stages of their use and development, and to confirm or suggest the occupations and social status of their occupants.[44]

An archaeologist is a *"specialist concerned with a broad range of material objects recovered from both above and under the ground"*[45] The broad variety of remains can be divided in two groups: archaeological remains and artifacts.

Archaeological remains, also called features[46], refer to all the evidence left in place that cannot be moved from its site, for example rests of buildings, landscape elements,

[43] Murtagh, 1988, p. 147.
[44] Bullock, 1966, p. 18
[45] Peterson, 1976, p. 5.

urban structures, cemeteries, rock art. Archaeological remains are considered immovable cultural property.

An artifact has been defined by William Murtagh as *"man-made object which is a form of archaeological data"*.[47] This group classifies all the objects or remains of objects related to the occupants of the building and their local activities, for example silverware, pottery, bottles, coins, tools. Artifacts are considered movable cultural property because once discovered they are usually removed from the site and taken to a museum.

In archaeology, historic preservation is more concerned with the management and protection of archaeological remains, this is the immovable cultural property of an archaeological site or excavation. This does not mean that the field neglects artifacts. On the contrary, important research has been done on them because they provide an invaluable source of data and physical evidence that help to describe the entire prehistoric or historic context.

Archaeology describes the generic field. Nowadays, the vocabulary of the discipline continues to expand in response to its involvement. Currently, there is a whole spectrum of terms used to define the different fields of specialization related not only to archaeological methodologies but also to the sort of evidence which each one seeks. Therefore, there is prehistoric archaeology, historic archaeology, industrial archaeology and many other different terms that describe different forms of archaeology. Among them is archaeological conservation.

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[46] Bullock, 1966, p. 19.
[47] Murtagh, 1988, p. 213.

According to William Murtagh, archaeological conservation is:

"the practice of minimal excavation to preserve the archaeological site for future investigation and/or interpretation by visitors".[48]

Archaeological conservation is a new discipline that has developed parallel to the new and more scientific approaches that have recently emerged in the entire preservation field. Thus, the archaeological conservation approach focuses on research and conservation with only limited emphasis on intervention.

3.1 Bases of Archaeology Conservation

There are three very important bases on which archaeological conservation support its philosophy. These are: (1) digging and removal of material from the context in which it was originally placed is destructive of evidence, (2) traditional excavation is costly and, (3) archaeological conservation is based on more scientific approach.

(1) Digging and Removal of Material from the Context in which it was originally placed is destructive evidence

The spectacular discovery of Troy by Heinrich Schliemann in 1871 contributed to the public interest in archaeology during the 19th Century. It provided new means of exploration and interpretation of the past which altered the entire conceptual representation of human history. Thus, archaeology, together with parallel activity in anthropology, gave totally new perceptions of cultural evolution. Unfortunately,

eagerness to expose and recover the buried remains of a period of time caused many negative consequences to the site and the remains themselves. Countless artifacts, and even pieces of archaeological remains were taken to museums while the site and the remains were destroyed and left unprotected, exposed to deterioration and human vandalism.[49]

Partially in reaction to these early endeavors, conservation archaeologists explore alternative methods of extracting information without destroying or harming the site, remains and context. They apply the "let it alone" philosophy first proposed by John Ruskin and William Sumner Appleton which has become very important in the current thought of the historic preservation field.[50]

(2)Traditional Excavation is Costly

Conservation archaeologists have realized that the systematic method of digging not only can destroy the site and its content but also that it cannot be easily financed due to high costs. Excavation itself requires a great amount of qualified labor which is often difficult to obtain and very expensive when available. In addition, digging leaves archaeological remains exposed to new and uncontrolled forces of deterioration, which demands costly maintenance in order to survive in place. Most often, there is not enough technology available to consolidate and/or take care of exposed archaeological remains; good management of the site is almost impossible.

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[48] Murtagh, 1988, p. 213.
[49] Fitch, 1982, p. 293.

Due to lack of funding and technology, several recent conservation archaeology projects have limited their interventions to recording, assessing and monitoring archaeological remains, their sites and their conditions. This approach has been used to record and assess the rock art at El Morro National Monument in New Mexico[51] and many other rock art and sites located in different parts of the world.

Other projects have used backfilling as an archaeological conservation strategy to slow down the deterioration of archaeological remains, one example of this is Chaco Culture National Park, located in northern New Mexico. Backfilling cannot halt deterioration but can slow it down significantly and greatly reduce the costs of maintenance of the site. However, the advantages and disadvantages of this technique as well as its possible consequences should be always considered before making a decision.

(3) Archaeological Conservation is Based on a More Scientific Approach

According to its philosophy, archaeological conservation has forced archaeologists and conservationists to explore new harmless methods of extracting information from the site. The advance of modern techniques has provided the discipline with an arsenal of productive new methods of exploration, some based on sound or light wave techniques or with the use of highly sensitive machinery, which are less destructive to the site and its context than traditional methods. The most frequently used of these techniques are:

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[50] Murtagh, 1988, p. 150.

[51] See case study at the end of this chapter.

remote sensing, special photography (ultraviolet, X-ray, infrared), magnetic sensing and infrared exploration.[52]

3.2 Historic Preservation and the Protection of Archaeological Remains

The protection of archaeological remains has particular characteristics, which sometimes are hard to understand. Since the end of the 19th Century, two lines of thought and action have been applied worldwide in the protection of this type of immovable cultural property.

The first is characterized by big-scale reconstruction of archaeological remains based on the interpretation of the archaeologist/s. Most often, this line of thought has been applied based on two wrong tendencies: (1) to make the meaning of archaeological remains more understandable to the general public and, (2) to attract massive quantities of tourists. This can be seen in different parts of the world such as Guatemala (Structure A-3 in Sibal), Greece (Stoa de Atalo II, Athens), and the United States (Colonial Williamsburg).[53]

The second line of thought which is more related to Morris and Ruskin philosophies[54], can be defined as a more respectful intervention, based on maintenance, consolidation and treatment of the archaeological remain according to its condition of ruin. This approach was taken for the city of Rome and other archaeological sites of Italy as well as Greece and Mexico, all countries with a rich cultural property. These interventions had shown that ruins as such, have a strong significance and enough

[52] Murtagh, 1988, p. 150.
[53] Diaz-Berrio, 1990, pp. 267-268

evocative power by themselves to suggest, and excite the imagination of the local population and foreign visitors alike. Based on respect and conservation, this is one of the latest international tendencies that has been applied in the protection of archaeological remains.

However, most of the time protection of archaeological remains involve some reconstruction and the use of other informative techniques which are based on the absolute respect of the site. In 1952, Ignacio Bernal expressed *that "the first objective of reconstruction is to be entirely loyal and honest..."* and that *"the perfect reconstruction is the one that absolutely takes advantages of all the valid scientific data, including the one achieved by inference"*. Also, Bernal expressed that *"the site itself must clearly show the difference between the original (section found in situ) and the reconstruction"*.[55]

In the United States, the concern for the protection of archaeological sites has been accompanied by a concern for the conservation of the natural environment. In the late 19th Century Yellowstone was set aside for protection and in 1872 became the first national park of the country. In 1889 the prehistoric ruins of Casa Grande (Arizona) were set aside by the government to protect them from looters and vandalism. Thus, Casa Grande became the first prehistoric and cultural site to be established in the United States

[54] Ibid. p. 259.
[55] Ibid. p. 259.

when President Benjamin Franklin created Casa Grande Ruin Reservation on June 22, 1892.[56]

The Antiquities Act of 1906 was the legal response of the United States federal government to protect the destruction of prehistoric archaeological remains in the Southwest from theft and vandalism. The legislation prevented the unlicensed excavation, removal or injury of "... *any historic or prehistoric ruin or monument, or any object of antiquity, situated on lands owned or controlled by the Government of the United States*".[57] It further provided that the President might "... *declare by public proclamation historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interests to be national monuments.*"[58]

However, the concern for the protection of the archaeological cultural property has been fairly recent phenomenon in almost all part of the United States, with the exception of the Southwest, where archaeology has always been a traditional and very important discipline due to the abundance of prehistoric remains. Until 1960, archaeology was not considered part of historic preservation. With the National Historic Preservation Act of 1966,[59] which included archaeology as a fundamental subject of historic preservation, there is now an important concern for the protection of prehistoric and historic remains and sites in the entire United States.

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[56] Clemensen, 1992, p. 1.
[57] Murtagh, 1988, p. 53.
[58] Ibid.
[59] Ibid.

3.3 Issues of Archaeological Conservation

Archaeological remains are traces of previous cultures. Like buildings, they are site oriented cultural property, this is they are considered immovable cultural property with emotional, symbolic and cultural values. Although they have come to the end of their useful life, since they do not hold their original use anymore, they still have emotional, symbolic, cultural, technological values to be protected.

In addition to issues of context, immobility, size, scale and complexity[60], archaeological conservation deals with some other important issues when protecting archaeological remains. Among the most important are: (1) dealing with a ruin, (2) visitor's use and (3) presentation of archaeological remains.

(1) Dealing with a Ruin

The Oxford Encyclopedic English Dictionary defines ruin *as "a destroyed or wrecked state; the remains of a building etc. that has suffered ruin"*. About ruins, Bernard Fielden expressed *"just as a skeleton is a more acceptable presentation of a decaying corpse, a ruin is a more sanitary state for a [cultural property] when it is pronounced dead"*.[61]

Thompson (1991) gives an excellent definition of a ruin as a *"roofless shell"*[62] which could stand to roof height or exist only as an underground foundation. Therefore, a

[60] These issues are discussed in chapter 4.
[61] Fielden, 1982, p. 250.
[62] Thompson, 1991, p. 9.

ruin is clearly distinguished from a roofed structure which provides shelter and is in a sense useful.

These definitions only refer to a physical aspect of archaeological remains. For the purpose of this study, I also prefer to refer to a ruin as immovable cultural property that has lost its original roof and use and whose values demand protection in order to safeguard its integrity as well as the past of its associated culture. Thus, one must differentiate between: (a) a ruin as an aspect of the archaeological remain and/or its composite elements' condition and (b) a ruin as an archaeological remain that has lost its roof and original use.

Among immovable cultural property, archaeological remains and their sites as well are probably the most vulnerable due to their condition of a ruin. Since they exist more exposed to an uncontrolled environment than buildings do, archaeological remains are more vulnerable to the action of deterioration. Thus, climate, natural disasters, abandonment, vandalism, negligence, contribute to the degradation of remains. In addition, after an archaeological excavation, the site has frequently been left without a plan for the protection and care of the newly exposed remains.[63]

For this reason, when uncovering or discovering archaeological remains, archaeologists and conservationists should immediately select a conservation plan to protect them from further damage caused by deterioration. However, a plan is not complete if it is not based on maintenance. Thus, a good management strategy based on

[63] The Getty Conservation Institute, 1992, p. 47.

maintenance is always essential when dealing with the conservation of archaeological remains.

(2) Visitor's Use

Sites and monuments contribute not only to the appreciation and understanding of a society's past but also to its historical continuity.

The desire to visit historic places is as old as civilization. As early as 1500BC., the first Egyptian stone pyramid of Saqqara (at that time 1000 years old) was attracting a significant number of visitors. For this reason, the idea of maintaining and managing old sites was very important for civilizations like ancient Egypt which had great respect for the past.

Nowadays; however, more and more countries are promoting tourism with their cultural property as a way for producing money. Thus, uncontrolled access has destroyed many immovable cultural property of the world which were not prepared to receive large quantities of visitors. In spite of it, oftentimes visitors contribute to save cultural property from demolition or neglect.

Today, other than just restricting visitor's use, archaeological conservation as well as conservation of other movable cultural property must emphasize on the vulnerability of archaeological remains and their sites related to visitor's use. The great continuos advance of communications should be used to inform and educate on the different protection issues related to archaeological remains.

(3) Presentation of Archaeological Remains

This is one of the most controversial issues of the archaeological conservation discipline, since the importance of archaeological remains is that they are the physical representations of man's achievements. As William Murtagh (1988, p. 151) expresses: *"rather than relying on historical interpretation through written records or the unreliability of human memory, surviving [archaeological remains] speak from themselves".*

Thus, archaeological remains can be considered as true documents left above and/or underground. If we destroy them, we will loose an invaluable source of data that is almost irreplaceable. For this reason, it is extremely important to select a presentation technique for the archaeological remain and its site that not only contributes to an appreciation and understanding of the past but also safeguards its integrity.

Throughout the history of protection of immovable cultural property, different techniques have been used in the presentation of archaeological physical remains. Reconstruction and anastylosis are among the most frequently used.

Reconstruction is a process of reproducing by new construction the exact form and details of a vanished immovable cultural property in order to recreate the original as much as possible. Reconstruction can or cannot use original materials. It is a technique commonly used in cases when the cultural property has to be moved as the only way of safeguarding its physical integrity, for example the temples and monuments of Abu Simbel.

Anastylosis is the re-erection of fallen fragments of a ruin in order to recreate the original. Perhaps the most well-known example of anastylosis of the world is the erection of large parts of the colonnades of the Parthenon, destroyed by a bombardment.

Anastylosis can be considered as a form of reconstruction with the difference that this technique use original fallen fragments and place them in their original position with none or some new material added.

Both reconstruction and anastylosis can be highly destructive causing irreparable damage to archaeological remains. Recently, archaeologists and conservators have been selecting less destructive and reversible presentation techniques in order to leave archaeological remains similar to the way they were found.

3.4 Condition of Archaeological Remains and Sites

Alike museum objects, it is difficult to determine the condition of archaeological remains. Many questions related to it arise, for example: which is the condition of an archaeological remain? Are the ones existing before or after an excavation? Before or after exposure? In addition to this, one must take in account the fact that archaeological remains are also ruins so special consideration should be taken when determining the condition of the archaeological remain.

Archaeological remains are immovable cultural property so condition cannot only be limited to considering aspects related to materials, design, technology and lifetime exposure to forces of deterioration. There are several other aspects, such as social, economical, legal, historical, symbolical that should also be considered as part of condition. In addition, due to the immovable condition of archaeological remains, archaeologists and/or conservationists should considered the conditions of the site as well as the vulnerability of archaeological remains to causes of deterioration. For the purpose

of this study, I divided the different aspects of condition of the archaeological remain in: direct and indirect aspects.

(1) Direct Aspects

Direct aspects of condition refer more to the archaeological remain itself, this is to the physical condition and can be recognized through a visual and physical inspection. Though there is an apparent similarity with direct aspects of buildings' condition, archaeological remains are ruins so there is an entirely different criteria for them when assessing their condition.

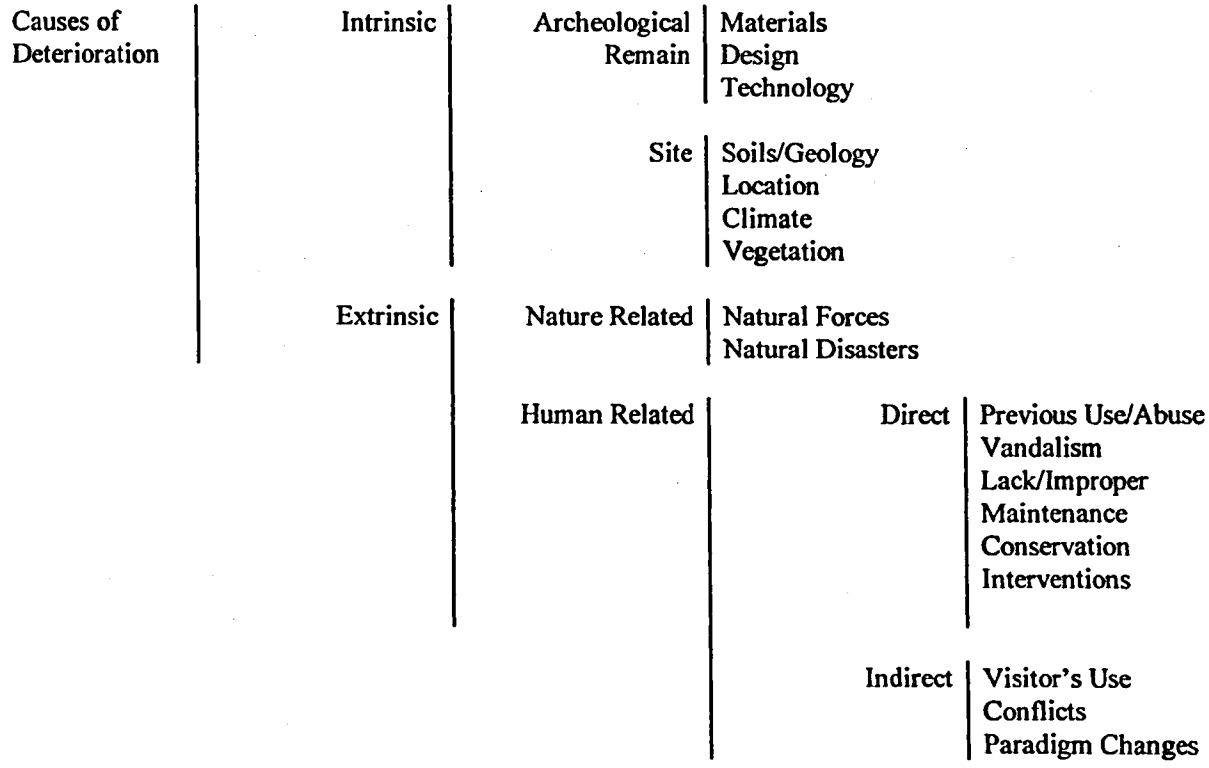
Damage, insecurity and disfigurement are direct aspects of the condition of archaeological remains and can represent both deterioration and aesthetic characteristics. For example, a broken wooden beam, a missing part of roof, plants and moss growing among segments of a wall, not only can be aesthetically valuable for the archaeological remain itself but also can be the visual representation of damage, insecurity and disfigurement, therefore, the results of deterioration.

Since archaeological remains are free from the requirements of practical functions, there is more tolerance of damage, insecurity, disfigurement, lacuna and/or fragmentation. For this reason, conservation of archaeological remains generally is focused on the delay of deterioration due to exposure to the uncontrolled environment. However, corrective methods such as stabilization, anastylosis, reconstruction could be applied to solve problems of instability, security, interpretation. These methods should be clearly identified as such.

(2) Indirect Aspects

Legal, social, economical, historical, symbolical as well as site conditions and vulnerability to deterioration are considered indirect aspects of the condition of the archaeological remain because they are more related to its site, context and the people or culture in association to it. Differently from direct aspects, indirect aspects of condition have a variable influence and impact in the archeological remain. However, they should be considered in any archaeological conservation plan.

3.5 Causes of Deterioration that Affect the Condition of the Archaeological Remain



Intrinsic Causes of Deterioration

Like buildings, archeological remains are immovable, this is they are site oriented. For this reason, I divided them into two subgroups: (1) related to the archaeological remain itself and (2) related to its site.

Materials, design, technology are all intrinsic causes of deterioration related to the archaeological remain itself. In spite of the similarity with architectural conservation, these causes of deterioration should be considered under the circumstances of the ruined condition of archaeological remains and their exposition to the uncontrolled environment. Depending on how "ruined" is the archeological remain, it may accelerate the process of deterioration, for example missing or broken elements could cause more exposure to the uncontrolled environment, therefore, resulting in more deterioration.

All the characteristics of the site, this is climate, vegetation, soil, geology, location are grouped as intrinsic causes of deterioration related to the site of the archeological remain. In spite of being almost unchangeable, their influence can vary. For example, an archeological remain which has been buried for years faces totally different site-related deterioration when suddenly uncovered and exposed. For this reason, an evolution of the exposure consequences and protective measures should be taken when excavating and exposing an archaeological remain.

Extrinsic Causes of Deterioration

Archaeological remains are affected by similar extrinsic causes of deterioration as buildings do. However, their influence and interaction may cause much more damage due

to the vulnerability of the archaeological remain and the change of environment due to excavation and exposition of the remain.

Extrinsic causes of deterioration can be caused by nature and man as well; both are considered the mayor agents of deterioration. Thus, extrinsic causes of deterioration can be classified as nature related and human related.

The natural environment is a combination of physical, chemical, biological and micro biological forces of deterioration that can alter, age and/or destroy an archaeological remain. These agents' influences are very complex since they ca act independently or in connection to each other. According to Glenn Greathouse and Carl Wessel (1954) physical and chemical agents are collaborative, interdependent and in some cases interchangeable, and also they can influence the action of biological agents. For this reason, these causes of deterioration should be analyzed by conservationists in order to understand their actions and complex relationships so eventually their influences can be controlled.

Beside the natural forces of deterioration, natural disasters are also extrinsic, nature-related causes of deterioration of archaeological remains. Earthquakes, floods, hurricanes, volcanic eruptions and fires are generally considered to be the most destructive of this classification.

Humans can directly or indirectly affect archaeological remains. Thus, their deterioration could either be targeted on the archaeological remain or it could be produced by indirect causes. Among the most common direct human related causes of deterioration

are: abuse, graffiti and any other type of vandalism; excavations and any other intervention; improper or lack of maintenance.

Indirect human related causes of deterioration are those that are not directly targeted to the archaeological remain. Their deteriorating influences, which could have important implications, are extremely complicated to assess. Among the most common indirect human-related causes of deterioration of archeological remains are: wars, riots, invasions and any other type of human conflicts; social, cultural, economic condition of the people or institution in charge of protection and management of the archaeological remain; changes of ideas, different conservation philosophies and regulations regarding the protection of the archaeological remain.

3.6 Case Study: Rock Art Recording and Assessment at El Morro National Monument, New Mexico. An Example of Rock Art Conservation

The section presents an example of an archaeological conservation strategy. Specifically, this case study refers to rock art conservation, which has recently became a specialized field of archaeology conservation.

The term rock art used in this section refers to petroglyphs, slash marks, rock painting and inscriptions that had been left on stone. Rock art can be incised, chiseled or made using various elements, such as pigments, pencil, bullet lead.[64]

[64] Blackburn and Atkins, 1993, p.41.

Rock art is considered as a part of a very fragile heritage, vulnerable to natural weathering and threatened by vandalism[65] which most of the time is worsen by difficult conditions of access. Recording has always been fundamental in rock art studies, specifically in rock art conservation.

The selected rock art conservation technique has been use for El Morro National Monument Inscription Assessment Project, in which the author took part as a volunteer during the summer of 1994.

El Morro National Monument and Its History[66]

The Zuni call it *A'ts'ina*, "a place of writings on the rock". The Spaniards called it *El Morro*, "the headland" and the Anglo-Americans called it Inscription Rock.

Located in a valley in the highlands of western New Mexico, 125 miles west of Albuquerque, El Morro is a long formation with a gentle slope that drops off abruptly at one end.

The area is composed of sandstone layers which were deposited by wind, desert streams, and an ancient sea. Pressed between the upward movement from underground forces and the weight of newer rock above, the sandstone developed cracks that gradually weathered into long vertical joints. Dispersed pine trees grow around its base. Beneath on overhanging rock mass there is a natural basin that contains water collected from

[65] Wainwright, 1990.
[66] The information of this section has been extracted and condensed from Slater, 1961.

melted snow and rain. This water used to be one of the few reliable water sources of this semiarid region during Prehispanic, Hispanic and early American periods.

The Anasazis lived in the site perhaps because of its defense characteristics and water resource. The ruins of two of their pueblos remain on top of the mesa and archaeological evidence has dated them from the late 1200s AD. Also, hundred of their petroglyphs as well as from the later Zunis were left on the rock as testimony of their occupation.

During the 16th Century Spanish *conquistadores* first arrived in these northern New Spain territories pursuing the Medieval myth about seven golden cities (*las siete ciudades*) to be found at a place called *Cibola*. In addition, later discoveries of silver deposits and religious eagerness of missionization by the Franciscan friars resulted in the northern expansion of the New Spain's frontier.

The first historical record of El Morro dated from the Spanish period, on March 11, 1583. However, the first known historical inscription on the rock was done by the Spanish *conquistador* Don Juan de Oñate, who inscribed his name at El Morro on April 16, 1605. Later, other Spanish *conquistadores*, soldiers, and priests who took the El Morro route to Zuni and other western Pueblos also left testimony of their passage on the rock. These inscriptions, which display beautiful and varied handwritings, are formed by brief notes and symbols with a name and a date attached to the characteristic "*paso por aquí*" (passed by here). They account discoveries, battles, revenges, martyrdom and other events that characterized New Mexico history during the Spanish colonial times.

After the Mexican-American War (1846-1848) the New Mexico territories became part of United States and many other travelers ventured through El Morro region.

The first written description of El Morro was done on September 17, 1849, by Lieutenant James Harvey Simpson. Latter, during the period of the Anglo-American west expansion, several military campaigns against the hostile native groups, exploration of new territories, and emigration parties to California left hundreds of inscriptions on the rock at El Morro.

In 1865, after the Civil War ended, the Pacific railroad projects started with great enthusiasm, and in 1868 a rail route was projected through Campbell's Pass, 25 miles north of El Morro. This new route was later followed by the Modern US highway 66. Despite the railroad, traditional traffic between Acoma and Zuni persisted and Navajo Indians and Mormon settlers continued to pass by the rock. Eventually, both the rail road and the new highway shifted the mainline transportation toward north of the Zuni Mountains ending the historic function of El Morro as a watering place and campsite on the long trail between the Rio Grande and the western deserts.

On December 8, 1906 President Theodore Roosevelt proclaimed the land containing the great *peñol* as El Morro National Monument. Thus, El Morro became on the first archaeological and historical sites designated by the Federal Government as part of the American heritage.

3.6.1 The Conservation Technique Used at El Morro National Monument

The forces of deterioration on the soft Zuni sandstone are still active. The rock shows many results of nature related deterioration. However, probably the greatest single act of damage to the rock and its rock art took place in 1924. Ironically, it was caused by human hands in an attempt to clean the rock using different rubbing elements to erase off numerous worthless signatures and graffiti. Many valuable inscriptions and marks were lost and the beautiful stone surface disfigured.

Since 1992, the National Park Service Southwest region has been carrying out a complete recording and assessment project of the rock art at El Morro that will provide a data base for future monitoring and/or treatment work of the rock art in the future. The project has been directed by Michael Taylor and Kaisa Barthuli, both from the National Park Service Southwest Region, and Antoinette Padgett, a rock art conservator expert, who was contracted by the National Park Service to carry out the survey.

The project included two phases: recording and assessment of the rock art and its condition and, a periodic monitoring according to the conditions and major threats affecting the rock art.

<u>Recording and Assessment Technique of the Rock Art and its Condition</u>

The project started with research work to collect all the existing information of El Morro and its rock art, such as history, previous documentation, photographs, maps, reports. Useful data was found during this stage, mainly related to previous survey work done at the site which was used as the basis of the project.

Then, a system was designed to divide the site into regions in order to create a method for determining the location of all the rock art. Natural features or historical names, such as Porcupine Cove, Nine Pines Cove, Cool Cave, Box Canyon, Pool, were used as names to identify the different locations. Each location was divided into sections distinguished by a code formed by numbers and letters of the alphabet (A1, B3, I4, G2). All the information was entered onto maps as supplementary material to the project. In order to avoid confusion, this system used information obtained through previous recording interventions used at El Morro.

It was then necessary to select a strategy for collecting the data in the site itself as well as to develop a system of recording and assessing the rock art according to its reference number, condition of accessibility, and location. The project team determined that photographs and standards forms were the most appropriate methods of recording.

The photographic documentation was carried out in assignments according to the locations, sections, amount of rock art to photograph, weather conditions, and time of the day with best sunlight exposure. This documentation was done using a 35mm single lens reflex camera (SRL) with a50mm lens. The film used was black and white (Kodak Tri X 125 ASA) for prints to be used in the recording and assessment section and color slide film (Kodakchrome 100 ASA) as well. All the photographs were taken trying to get the least distortion possible. Ladder, tripods, reflecting panels, scaffoldings, and other

elements were used during the photography assignment. When possible, the photographs included a metric scale as reference.[67]

After processing all the photographs, the team selected the best prints (black and white, 8 ½" by 11"), placed them in transparent folders and returned to the site to record the condition of the rock art. A key of colors and other features were pre established in correspondence to different terms used on the form to represent the conditions affecting the rock art and keyed directly onto the photograph. In this manner the recording and assessment work was carried out graphically and verbally as well. The verbal records were done with field notes and forms which were graphically complemented by the photographs and drawings on transparent overlays. The recording and assessment work was also programmed setting a daily schedule for working in each site according to the time of the day with the best sunlight exposure and weather conditions.

After the sections were recorded at the site, the records and field notes collected in the files were loaded in a database computer program. All the information of each rock art was placed in a folder identified by its identification name or keyword. Several folders were grouped together in files according to their location in the site. The photographs were placed in proper archival transparent folders and the graphics and field notes on the overlays were re-drawn on velum using the same format as the photographs. In this manner, its rock art or inscription had its corresponding photograph, transparent overlay drawing and a print out of the form. These three pieces of information were kept together

[67] All photography was done by Kaisa Barthuli.

and placed in file cabinets at the Monument. Rather than organized by site location, the forms were grouped according to their priority rating. Thus, each file will contain rock art with similar condition, which should be monitored at the Monument on the same frequency basis.

Periodic Monitoring of the Rock Art

In the future, the second phase of the project will consist of a regular monitoring of the rock art according to their priority ratings. The monitoring will be carried out by a person, either a staff of the National Monument or contracted by the National Park Service with proper knowledge of the area and its rock art and with training in conservation recording techniques and conditions.

Basically, the assignment will consist of taking the collected information (photographs, forms and overlays) to the site of the rock art and register their present condition, this is further deterioration, new threats, etc. A new form, based on the original recording form, will be specifically designed for the monitoring work.

In general, the monitoring work will only consist of recording information obtained during the new site assessment. For this reason, it is extremely important to have the previous recording data in order to compare both the previous and present conditions of the rock art. Whenever possible, especially in cases of highly deteriorated rock art or those in great danger of destruction, the monitoring work will be completed with photographs an more detailed field notes.

The monitoring work will be done according to the frequency determined during the first assessment. In cases of extremely bad weather or other natural and human related threats, the periodicity of the monitoring assessments will be changed or increased. It is very important to record the same/different priority ratings of the rock art during each monitoring assessment. In this way, it will be possible to adjust the monitoring frequency whenever a change occurs.

The information compiled during regular monitoring work will provide unique data related to the evolution of the rock according to the different threats to which it is exposed. Perhaps in the future, this information will provide the basis of a conservation technique which could control and delay the rate of deterioration of the rock art.

The Form[68]

The form used for recording and assessment of the rock art at El Morro was specifically designed for the purpose of the project and for the site as well. In general, it can be divided in two sections: (1) identification of the rock art and (2) condition assessment.

(1) Identification of the Rock Art

The first section of the form provides general information, such as name of photographer, date of assessment, name of assessor, and data concerning the rock art itself, this is location, section, panel number situation, compass azimuth reading and a graphic

[68] The form was designed by Antoinette Padgett, the rock art specialist with the approval of the project directors.

representations with dimensions. This section also included two other important aspects of rock art which summarize the examination of its condition, this is main agents of deterioration, and priority rating. The priority rating is represented by value obtained from condition and vulnerability (threats) of the rock art and its immediate area; priority rating summarizes condition. It is represented by a scale of seven degrees, zero for good and six for not stable, extreme deterioration and severe threats. The priority rating represents a convenient monitoring frequency of the rock art according to the condition and vulnerability of the rock art.

(2) Condition Assessment

The condition assessment is limited only to record the physical condition of the rock art, this is the nature and human related agents of deterioration which are considered the most threatening to the rock art. Thus, this section of the form is used to collect data about the rock art condition according to the main agents of deterioration, this is nature or human related. The whole assessment, which was carried out tactile and visually, was done with extreme care in order to avoid more damage to the rock art. Sometimes, the inaccessibility of the rock art and other conditions prevented a complete assessment.

The recording and assessment project of the rock art of El Morro will provide very useful information for preventive treatment and/or maintenance of the rock art. May the future will bring an alternative method of conservation, one with a treatment, that will retard the actions of erosion without disturbing the integrity of the rock art and the natural beauty of the stone. Meanwhile, the care and maintenance of the rock art at El Morro

should relay on printed records and monitoring work as a form of conservation and permanent account of the rock art deterioration.

Figure 7: View of El Morro (Woodpecker Rock)

Figure 8: The Inscription of Jurado, 1709

Figure 9: Don Juan de Oñate's inscription, 1605

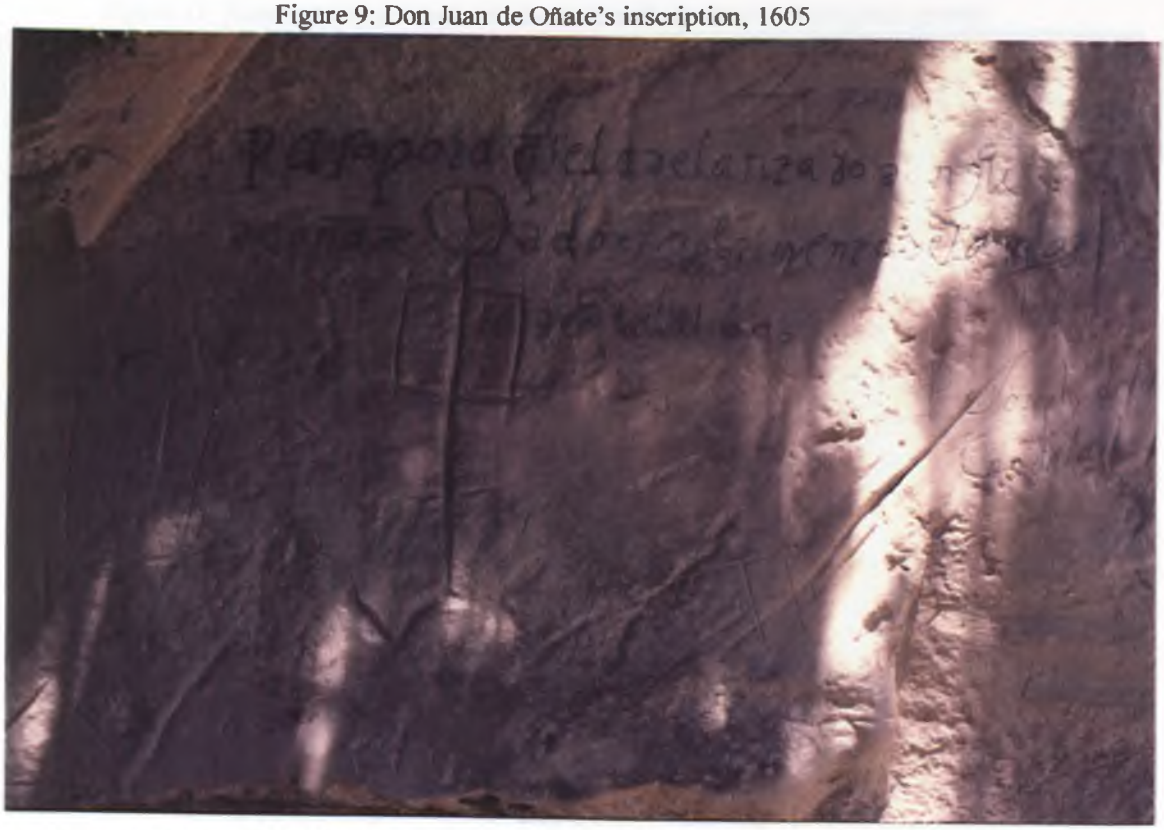


Figure 10: Stone rubbed to erase graffiti near an inscription. Example of an old treatment

Figure 11: Numerous inscriptions on the east wall attacked by biological growth

Figure 12: Petroglyphs on the south wall

INSCRIPTION ASSESSMENT FORM
EL MORRO NATIONAL MONUMENT

SECTION AND PANEL #:
PRIORITY RATING:
LOCATION:
PHOTOGRAPHERS:
PANEL SITUATION:

DATE:
ASSESSORS:
MAIN AGENT OF DETERIORATION:
COMPASS AZIMUTH:

MAJOR INSCRIPTION/ROCK ART AND DIMENSIONS (LxH in cm.)

NATURAL CONDITONS AFFECTING PANEL:
water/clay wash:
insect/bird activity:
microflora:
spalling or erosion since 1955 survey:
stable/unstable rock surface:
vegetation, soil:
other factors: efflorescence, dampness:

HUMAN RALATED CONDITIONS AFFECTING PANEL:
abrasion:
penciling:
graffiti:

NOTES:

INSCRIPTON/ROCK ART KEYWORDS:

PREVIOUS PHOTOGRAPHIC DOCUMENTATION:

CONDITION: PHYSICAL CONDITION OF THE INCRIPTION BASED ON ASSESSMENT
3. not stable/extreme deterioration
2. poor condition, major deterioration apparent, immediate action needed
1. fair condition, minor deterioration apparent
0. good condition, intact.

THREATS: THEATENING OR DETECTABLE NEGATIVE EFFECTS ON THE INSCRIPTION
3. severe: resource may be significantly damaged or lost if action is not taken within 2 years
2. moderate: damage or loss may occur if action is not taken within 5 years
1. Low: continuing effect of impact unknown
0. none

Chapter 4: Architectural Conservation

Architectural conservation is a discipline within the historic preservation field and many different definitions are applicable to identify it. However, I consider the definition given by the National Advisory Council(1977) as the most complete and accurate. Thus, architectural conservation is defined as:

> *"a process that may participate in varying degrees in the whole spectrum of preservation activities from planning to craftsmanship, but is one which requires a more scientific and research oriented approach to many aspects of these activities, especially those which are focused on maintaining the integrity of the resource. It requires a great emphasis on non-destructive investigative techniques, and a more scientific study of many subjects ranging from early building technologies to the causes and preservative treatments of historic buildings and materials deterioration".*[69]

From this definition, I consider two important elements to be the key for architectural conservation. These are: (1) greater emphasis on non-destructive techniques and reversible intervention and, (2) close relationship with the maintenance of the building.

(1) Greater Emphasis on Non-destructive Investigative Techniques and Reversible Intervention

One motto of museum conservation is nothing should be done that cannot, if necessary, be undone easily in the future. When applied to building conservation, this motto means that any proposed building intervention should be reversible, if technically possible. However,

[69] National Conservation Advisory Council, 1977, p. 47.

this cannot always happens in architectural conservation, mainly because the building often is still in use. Any conservation technology should constantly interact with the original materials and craftsmanship of the building in order to fight irreversibility. The impact of the conservation intervention should always be considered in order to help save the entire integrity of the building. Less impact to the building's fabric is generally less impact to the integrity of the building, which means less impact to the entire environment since buildings are part of it.

(2) Close Relationship with the Maintenance of the Building

Buildings are affected by the influence of the environment which is a continuous and inevitable phenomenon. Since it's effects cannot be halted, it is possible to control environmental consequences through a continual care and maintenance. James Marston Fitch describes architectural conservation as an "on-going process".[70] Thus, it should not end when the desired physical state of the building has been achieved since no material is able to last forever.

The conservation and maintenance process of a building should be part of the same integral safeguarding plan. Only continuos inspection and monitoring will minimize emergency repairs, thus avoiding drastic physical interventions in the building's fabric.

According to its definition, architectural conservation emphasizes on maintaining the physical integrity of the resource, this is, the fabric of the building which is the physical

[70] Marston Fitch, 1976, p. 322.

aspect of it. However, a building is much more than what our eyes can perceive. Bernard Fielden (1982) has defined an historical building as:

> *"one that gives us a sense of wonder and makes us want to know more about the people and culture that produced it. It has architectural, aesthetic, historic, documentary, archaeological, economic, social and even political and spiritual or symbolic values..."*[71]

In consider that the definition given by Fielden limits a building to just a man-made object which is a physical record of accumulative stylistic, technological, historical, political, spiritual, symbolic and/or socioeconomic evidence. Though, a building is much more than what the eyes can perceive. Buildings were created to have a specific function and often are still in use, thus they are directly related to a group of people. In addition, a building is site and context specific, meaning that its design, materials and craftsmanship respond (or responded) to specific characteristics of its site and context.

The building's fabric has been always the primary concern of architectural conservationists. Serious studies in historical performance of materials and traditional craftsmanship based on modern science and technology have provided the discipline with many new diagnostic techniques and rehabilitative measures.

However, since a building cannot be easily moved away from its site and context, architectural conservation cannot limit its action to prevent decay or emphasize on physical interventions. On the contrary, architectural conservation should have a comprehensive approach toward the conservation of the holistic nature of the building, this is the conservation of the building along its site and its context.

4.1 Historic Preservation and the Protection of Buildings

Historic Preservation was one a sudden and complete cultural revolution. It happened everywhere at once without controversy or charismatic leadership, but unlike its sibling, the environmental movement, it never got the same popularity.[72]

Historic preservation responds to the modern desire to maintain living contact with cultural works of the past. Toward the end of the 18th Century the Industrial Revolution ended the traditional link with the past. The past continued to live through romantic nostalgia which, through a combination of historicism and nationalism, brought not only a various revivals of past styles of art and architecture but also confusion of preservation and reconstruction.[73]

Thus, the link with the past trough tradition was broken and replaced by a new scientific approach in the form of historical knowledge. This can be represented in the scientific archaeological approach to the past and nationalistic revival of Eugene Viollet-le-Duc's theory[74] and in most 19th Century restoration work in France and England. The Cathedral of Notre Dame is among the most typical example that show this theory in practice.

In England, two groups of romantics came into open antagonism with Viollet-le-Duc ideas during the 19th Century. One group was represented by Gothic Revival enthusiasts (supported by Victorian wealth) who were inspired by ideas of restoration.

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[71] Fielden, 1982, p. 1.
[72] Brand, 1994, p. 88.
[73] Philippot, 1976, p. 368
[74] Viollet-le-Duc, 1967, s.v. "Retauration".

The other group was represented by John Ruskin and William Morris who supported the idea of leaving the building with everything along the alter-added elements to keep the building working.[75]

When Victorian Gothic Revival enthusiasts decided to restore many stone buildings to an Early Gothic (13th Century) appearance regardless of age and tradition, John Ruskin rebelled. In his book "The Seven Lamps of Architecture" (1848) he emphasizes his opposition to restoration by expressing that restoration means:

> *"the most total destruction which a building can suffer: a destruction out of which no remnants can be gathered: a destruction accompanied with false description of the thing destroyed".*[76]

Ruskin ideas inspired the artist and activist William Morris, who in 1877, founded the Society for the Protection of Ancient Buildings (SPAB), which fought restoration and founded the preservation movement in England.[77]

Unlike Europe, the American preservation movement began based on patriotism rather than romanticism. In 1853, Ann Pamela Cunningham organized the Mount Vernon Ladies Association with female fund-raisers in every state. With donations, they purchased and saved George Washington's Mount Vernon in 1858.

Thus, in matters of preservation, organizations of volunteers were the ones that took the leadership. Preservation of several patriotic places followed Mount Vernon;

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[75] Brand, 1994, p. 94.
[76] Ruskin, 1989, p. 194.
[77] Brand, 1994, p. 94.

some examples are: President Andrew Jackson's home, Paul Revere's house, Colonial Williamsburg.

Modeled on William Morris's Society for the Protection of Ancient Buildings, a Society for the Preservation of New England Antiquities was set up in 1910. In 1931 Charlestown (South Carolina) declared most of its downtown as "Old and Historic District" with special protections for all its beloved old buildings in order to fight their demolition and replacement by gas stations.[78]

With the proliferation of preservation groups, the National Trust for Historic Preservation was established in 1949 with an official charter from Congress. However, it was not until 1960's that the Federal Government joined the volunteers with its National Trust for Historic Preservation Act of 1966. The National Park Service and the National Trust for Historic Preservation went into partnership and the National Register of Historic Buildings was created. Then, a system of state preservation organizations was entitled, federal money for preservation started flowing and tax benefits aided rehabilitation.[79]

At present, most of the support for the National Trust still comes from private contributions and much of American preservation leadership comes from the wealthy. However, as James Marston Fitch could assure in 1990, that:

> *"preservation is now seen as being in the forefront of urban regeneration, often accomplishing what the urban renewal programs of twenty and thirty years ago so dismally failed to do. It has grown from the activity of a few upper class antiquarians... to a broad mass movement engaged in battles to preserve main streets, urban districts, and indeed whole towns".*[80]

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[78] Ibid. p. 95.
[79] Ibid. p. 96.
[80] Ibid. p. 89.

4.2 Issues of Architectural Conservation

If conservators emphasize on safeguarding the structure (fabric) of the building, they will only protect its physical significance and integrity disregarding the significance and integrity of its site and context.

The entire conservation process should be accomplished with total respect to the building itself and also with respect and protection of its site and context. For this reason, when conservation is applied to architecture it should consider numerous particular issues. Form the whole spectrum of issues involved in architectural conservation, the most important are: (1) dealing with an immovable cultural property (building and context), (2) dealing with an internal (more controlled) and external (uncontrolled) environments, (3) dealing with large scale and complex cultural property, (4) dealing with the use of the building and, (5) dealing with the building as a cultural property with accumulative evidence.

(1) Dealing with an Immovable Cultural Property (Building and Context)

Like archaeological ruins and sites, a building is another immovable cultural property, this is a building should be considered within its context. Paul Philippot has defined context of a building as "*the immediate surrounding essential to its scale and significance and social circumstances in which the [building] is used or was used...*"[81]

The building and its context are in total relationship and mutually influence each

[81] Philippot, 1976, pp. 370-71.

other. In one way or in another, both are exposed to the forces of deterioration. Thus, when dealing with the conservation of a building the conservationist deals with its entire context. James Marston Fitch perfectly remarked on this relationship when he described the conservation of buildings as:

> *"an integral part of the larger problem of the protection of the environment as a whole. The pathologies of the first are causally related to the pathogens of the latter: therapy requires the control of both".*[82]

There needs to be a strong correspondence between the building and its context when deciding a conservation methodology. For example, if the context and building have maintained most of their original physical, historical, socioeconomic and political characteristics it may be assumed that site influences are still almost the same as when the building was constructed. In this case, less drastic interventions are usually the most advisable conservation techniques, if possible, using the same materials or traditional craftsmanship used in the construction of the original building. On the contrary, if the context and/or the building have drastically changed over time, it is probably wise to suspect that their original causes of deterioration have gone through similar changes. This is often the case when both the building and its context maintained most of their original characteristics over a long period of time, when suddenly both were transformed by outside factors. Some very common products of our modern and industrial societies, such as drastic increments in population, increase of the built environment, pollution, lack of maintenance, abandonment, inappropriate protection techniques, are examples of

[82] Marston Fitch, 1982, p. 323.

deteriorating agents which the building and its context originally were not prepared to face. Additional research and more advance methods of conservation technology are recommended for these cases in order to confront the new causes of deterioration. However, the conservation technique should always be compatible with the original materials and craftsmanship of the architectural artifact and with its context as well.

In addition, since the building cannot be separated from its context, architectural conservation has to deal with other even more complex issues related to the life and ideas of its occupants and/or people associated with the building. The following, is a list of some of the most important ones:

- availability of technology, craftsmanship and materials at the time of the conservation intervention,
- construction codes and present planning/building regulations;
- ideas, fashions and political situation;
- financial situation of the owner/s;
- the bias and disposition of the owner/s (sometimes the client can be less familiar with the need and justification of the cost for technical studies and conservation/maintenance costs).

Finally, socioeconomic, cultural, legal, religious, ideological, political and technological issues may have a very strong influence in architectural conservation which can directly or indirectly affect the whole conservation process and its results.

(2) Dealing with an Internal (More Controlled) and External (Uncontrolled) Environments

One of the main functions of a building is to modify the external uncontrolled environment to fit its occupants, thus creating an internal more controlled environment which allow them to better carry on their activities.

Both internal and external environments are in a permanent relationship. The internal environment is a complicated interactive system which modifies the external conditions to create special internal ones.[83] In this way, the building can be considered as a shell that not only holds an internal environment but also allows a balance between it and the external uncontrolled conditions. If the shell is well maintained, the interaction between interior and exterior is secured and the whole system will be in equilibrium.

Thus conservation of buildings faces two different situations: (a) the interior of the building which is a more controlled environment where not only the maintenance and conservation of the building's fabric and other complementary elements, such as decoration, paintings, sculptures, furniture, are important but also the care of the safety and comfort of its occupants and, (b) the exterior of the building whose fabric is usually totally exposed to the elements of the uncontrolled environment.

Since the internal and external environments of a building are in such a delicate balance of influences, before planning any conservation intervention it is advisable to investigate how the exterior and exterior of the building, and even more its whole context, will respond to the proposed techniques.

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[83] Numerous microclimates exist within the internal environment of the building, for example: in dark corners, damp basements, cold attics, behind furniture or sculptures.

(3) Dealing with Large Scale and Complex Cultural Property

Unlike the museum conservation discipline, architectural conservation deals with immovable, complex and large scale cultural property. Usually the building itself is a display of great variety of materials and craftsmanship, all totally exposed to the influences of the uncontrolled environment. Since each material decays differently under the action of deteriorating causes, architectural conservation approaches are usually much more difficult to accomplish than museum treatments, which are carried on in the protection of a laboratory.

For this reason, the architectural conservationists usually discovers the problems and causes of deterioration during on-site inspection of the building and/or its context rather than inside the laboratory. However, the new technology and conservation research methods used by museum conservationists in the laboratories are also valuable tools for architectural conservation.

Moreover, architectural conservation usually involves numerous persons due to the size and complexity of building and context. For this reason, the goals and priorities of the conservation program should be established by an interdisciplinary group of conservators, architects, engineers and specialists genuinely interested in all the values of the cultural property.

(4) Dealing with the Use of the Building

All buildings and archeological remains were originally created for a specific use, which sometimes was so important so as to influence designs, materials and craftsmanship. However, the difference between the two is the fact that buildings still have a use, which may or may not be the original one.

Many times the use of a building has been the cause of its protection. On the contrary, several architectural conservation programs which did not consider this issue, caused even more deterioration. In the view of this, the use of a building should always be regarded as a very important issue when dealing with conservation, especially when adapting the building to a new use, generally know as "adaptive use".[84]

Architectural conservation should be an environment protective discipline so conservationists should always protect the integrity and significance of the building and its context when considering an adaptive use.

In addition, like archaeological remains and sites, historical buildings sometimes have to deal with the visitor's use issue, which has been already discussed in chapter 3.

(5) Dealing with the Building as a Cultural Property with Accumulative Evidence

The fabric of a building visually represents everything that has happened to it through its life, such as superposition of elements, periods of time, looses, additions, mutilations, which portray the concept of reuse, common to any culture. Some examples of this are:

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[84] Defined as *"the process of converting a building to a use other than that of which wit was designed"*. Murtagh, 1982, p. 213.

Inca buildings used as base for Spanish colonial buildings in Peru, buildings adapted to new functions like a mosque converted into a church.

Accordingly, Marston Fitch describes this phenomenon as *"the present physiognomy of a building"*.[85] For this reason, architectural conservation must preserve and if possible enhance these messages or values of the building. According to Bernard Fielden, the responsibility of finding the most important values, for example emotional, cultural and use of a building will eventually reflect its context.[86]

4.3 Condition of the Building

The first step of any architectural conservation process is *"to assess accurately the substance of the object to be safeguarded"*[87], this is to investigate the existing circumstances or condition of the building along its site and context.

The success of architectural conservation should be based on a comprehensive evaluation of direct and indirect aspects of condition according to the building's ability to continue to function and meet the needs of the building itself, the persons related to it and their activities.

Alike the conservation of archaeological remains, social, economical, legal, historical, technological aspects along aspects of materials, craftsmanship, design and life exposure to the environmental forces should be considered when assessing the condition

[85] Marston Fitch, 1982, p. 83.
[86] Fielden, 1982, p. 6.
[87] Philippot, 1976, p. 370.

of a building. Thus, I also divided the different aspects of condition in direct and indirect.[88]

Direct and indirect aspects of the building's condition should be taken into account considering the use of the building. Thus, damage, insecurity, disfigurement, all direct aspects of the building's condition, do not have as much tolerance as they do for archaeological remains. Buildings are still in use so they should be safe. For this reason, unlike archaeological conservation most architectural conservation plans include corrective methods or treatments along protective ones. In addition, legal, economical, social, cultural, symbolical, all indirect aspects of condition, have a strong influence when assessing the condition of a building.

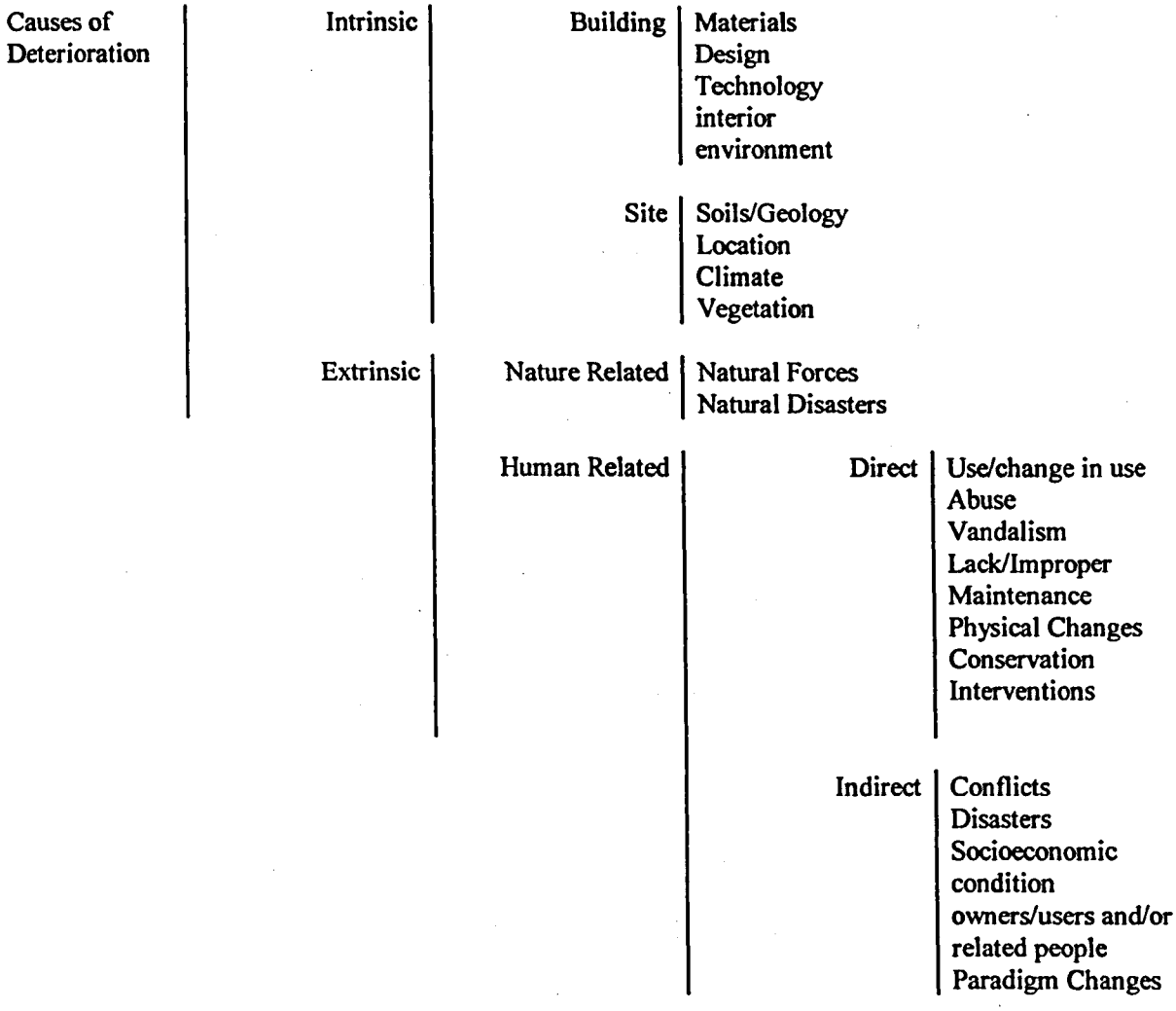
The main objective of architecture conservation should be to preserve the cosmetic and structural integrity of the building from deterioration in order to provide a safe environment for the people and activities and also give the public a link to their past.

Buildings should be considered as a physical representation of the historic development of a culture or group of cultures. The author agrees with Bernard Fielden when he defined time a the fourth dimension required when analyzing the condition of the building. Thus, in addition to length, width and height, conservationists should analyze and compare a present building, how it appeared and adapted to the culture, and how it will react the forces of decay[89] However, I think that a fifth dimension should be added to this list of condition analysis, and this is the use of the building, this is how the present

[88] Indirect and direct aspects of condition have been discussed in chapter 3.
[89] Fielden, 1982, p. 185.

building fits the needs of its occupants in terms of security, comfort, protection of their identity and the identity of its occupants/people related to it, and how it will respond to any change.

4.4. Causes of Deterioration that Affect the Condition of the Building



Generally, buildings are diagnosed according to certain symptoms forgetting other causes of deterioration. Too often unnecessary interventions are undertaken in the name of conservation without understanding the building as part of a site and context. Too often repairs proved not to be effective because symptoms of the problem were treated rather than the real cause or because treatment consequences were considered on the building disregarding its site and context.

For this reason, understanding the forces of deterioration is essential to determine the real cause of the problem. Numerous deteriorating factors affect the condition of a building.

Like in museum and archaeological conservation, the causes of decay that affect the condition of a building can be either intrinsic or extrinsic. However, there are particular issues involved in architectural conservation, such as scale, complexity, immobility, use, which due to their complexity can highly influence the building.

Intrinsic Causes of Deterioration

Intrinsic causes of deterioration are associated with the inherent and essential nature of the building. However, due to immovable and site oriented characteristics of the building, there are other causes of deterioration that should also be considered as intrinsic causes. They can be divided into tow subgroups: (1) related to the building itself and (2) related to its site.

In addition to materials, design, technology and craftsmanship, all intrinsic causes of deterioration also related to archeological remains, the internal environment of a

building could be an intrinsic cause of deterioration related to the building. The already described delicate balance between the exterior and interior environment of the building can be interrupted by many changes. These changes could affect the building, for example changes in the ventilation can transform its humidity level. Then, these changes could conduct to the deterioration of the building's fabric.

Alike archeological remains, the condition an influences of climate, geology, soil, vegetation, location and other characteristics of the site should be considered as intrinsic causes of deterioration related to the site of the building. In theory, design, materials, technology and craftsmanship of the building are usually selected to adapt themselves to special characteristics of the local situation; the stability of the structure and the quality of materials used are prepared to resist the adverse natural condition of the site's environment.

Intrinsic causes of deterioration result from the site's condition and the inherent characteristics of the building. Indeed, most of the times buildings are constructed considering these specific conditions, along with function and use. Intrinsic deterioration cannot easily be halted but its consequences could be minimized through continuous maintenance and care.

Extrinsic Causes of Deterioration

Extrinsic causes of deterioration occur through the action of exterior agents associated to the building through its context. In general, they are temporary influences that may act under certain conditions. Sometimes, they are temporary influences that may act under

certain conditions. Sometimes, these influences, may never appear during the life of the building. As such, extrinsic causes of deterioration are a blend of deterioration agents from the context which are either related to nature or man.

Alike archaeological remains, natural causes of deterioration and natural disasters are the most common nature-related extrinsic causes of deterioration.

Extrinsic human-related causes of deterioration of a building are extremely complicated to assess since they are the result of socioeconomic, cultural, financial, political factors. Like in archaeological remains, they can directly or indirectly affect a building.

The most common direct human-related causes of deterioration are:

- causes of deterioration produced either by the use or change of use of the building. Increasingly, the only way to guarantee the existence of a historic building is to find new uses for it. However, such adaptive uses oftentimes result in not only aesthetic and structural changes but my also create many problems from non-compatible or non frequent use.
- Abuse/vandalism of the building and any other action with the purpose of harming the integrity of the building, such as graffiti, improper use, damage.
- Improper or lack of maintenance of the building.
- Physical changes and previous conservation actions, which usually have the purpose of improving the condition of the building.

In addition, the most common indirect human-related causes of deterioration of a building are:

- Conflicts and disasters such as wars, riots and any other disharmony which became part of the human context of the building.
- Causes related to the socioeconomic conditions of the occupants/owners and/or people related to the building. Some examples of these are: needs, availability of funds, technology.
- Effects of deterioration caused by changes in paradigms (patterns of ideas) of the occupants/owners or/and people related to the building. Most often, the conservation or maintenance of a building is very dependent on change of ideas, priorities, cultural level.

4.5 Case Study: Colegio de La Paz Vizcainas, Mexico City. An Example of Architectural Conservation.

The final section of this chapter presents an example of architectural conservation. This case study refers to the conservation of an 18th Century building of Mexico City.

Colegio de La Paz Vizcainas is a large stone structure which was built in the Baroque style by the Basque brotherhood in Mexico City in the middle of the 18th Century. The building, which served as school and asylum for orphan girls and widows of Basque origin, was the first education institution totally independent from the Catholic Church in the American continent during the Spanish colonization.

Located on the *Centro Histórico* of Mexico City, Las Vizcainas still functions as a school, though currently it is a secular school for female and male students as well.

The building has been declared *monumento histórico nacional* (national historic monument) by the government and forms part of the cultural heritage of Mexico City.

The muddy characteristics of the site where the building was constructed, the nearby channels and *acequias* (irrigation channels), the earthquakes, the floods and the change of ideas during the 19th and 20th Centuries, were factors that caused several destruction, reconstruction and modifications at Las Vizcainas. Nevertheless, the building has maintained most of its original integrity.

The building and Its History[90]

Among the Spanish groups that came to the New World and settled in Mexico, the Basque community was especially important and powerful during the colonial period. In 1861, they founded a brotherhood or *cofradía* under the name of Cofradía de Nuestra Señora de Aranzazu.[91] This new entity decided to found a school to educate girls of Basque origin and to give shelter to Basque orphan girls and widows as well.

The school was founded with the name of *Real Colegio de San Ignacio de Loyola*[92] but it was also known as *Colegio de La Paz*, or simply Colegio de Las Vizcainas.

At the time when the school was founded, its site was located on the edge of the city, surrounded and crossed by *acequias*.

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[90] Most of the information of this section has been condensed from Instituto de Investigaciones Estéticas-Universidad Autónoma de Mexico, 1987.

[91] Brotherhood of the Virgen of Aranzazu. The Virgen of Aranzazu was the patron of the Spanish Basques.

[92] San Ignacio of Loyola was a Spanish Basque Saint, very popular among this Spanish community.

The building, whose construction started in 1733 and ended in 1752, was designed by the Basque architect Pedro Bueno Basori. It is a two story Baroque structure built organized around patios. In plan, the building reflects a rigorous symmetry in the distribution of its spaces. The building's architecture is robust and virile with vigorous volumes among large open patios. The decoration is austere and discreet and its Tuscany character is shown not only in the innumerable capitels that ornament the construction but also in the moldings that cover and enliven all the structural elements. The material used for the construction was *tezontle* a native volcanic stone of dark red color.

The building was divided into different sectors according to its educational and asylum functions, this is around the main patio were located the residences for the girls and the widows, the church and the sacristies. Toward the interior and around the secondary patios were located the working spaces, the area for the servants, a chapel for spiritual retreats, an orchard and other complementary apartments.

The church of Las Vizcainas was a private oratory, however, it was an important symbol for the Basques of Mexico. Formed by a single long nave that holds three cupolas, the church was placed toward the east side of the principal entrance along the main facade. It had only one entrance from the main patio and five windows all placed on the north wall forming part of the main facade. The interior was originally adorned with seven altar screens, in the Baroque style with gold leaf application and abundance of decoration. In 1771, the private character of the church was suppressed and is was transformed in a public church. A bell tower was added and a beautiful door was added on the main facade along with same interior changes required to adapt the structure to its new public function.

Two sectors of the building were not directly integrated to its educational character, though they were related and formed part of the structure. One of these was called *Casa de los Capellanes*, which was the residence for the priests in charge of the religious education of the students and all the ceremonies related to the Catholic religion. The priests quarters, located in the northwest corner of the building attached to the church and the sacristies, had a private entrance from the outside and no direct connection with the school area.

The other sector of the building that was completely separated from the interior's life was called *accesorias de taza y plato.*[93] The *accesorias* were formed by a series of houses for rent, sixty in total, that surrounded the structure. Each house was a two story dwelling with an exterior entrance located on the ground level.

Las Vizcainas, which today occupies four city blocks, emerges like a solid stone fortress with austere and symmetrical facades from the outside. The scarce decoration is exclusively concentrated around the two doors and few windows on the main facade. In contrast, the interior of the building opens to patios with fountains and vegetation, crating spaces of diverse character. During the Spanish Colonial times, the fortified image of the building was even more emphasized by the line of *accesorias* which acted like a barrier to isolate the school from the life of the city.

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[93] This Spanish term was used to name a sector of a building formed by residences for rent, usually located around or toward the exterior. During the colonial times, they frequently appeared in important buildings (mansions and churches) as a way to help the owner to pay the rent or costs of maintenance of the building. Usually, they were rented by artisans, who established their workshop on the first floor and their residence on the second floor.

Repairs and Modifications at Las Vizcainas

Earthquakes, floods and other natural disasters have been continually affecting Mexico City. However, since the Spanish founded the city on top of the existing *Tenochtitlan* (the capital of the Aztecs) in the 16th Century, the problems have increased due to the instability of the soil. Originally, the Aztec capital was built on a lake (*Texcoco*) whose water went underground when the city was transformed by the Spanish urbanism.

Built on unstable soil, Las Vizcainas has undergone various repairs and modifications. Actually, the first report of general repair and maintenance work of the building dates from 1783. A major conservation project as done during the 19th Century, when the *Patronato* of the school resolved to raise the level of the floors in the entire building due to problems with continuous floods and the city's drainage system.[94]

In addition to the influence of the natural environment, during the 19th Century several political events happened in Mexico which affected the school, especially during the Liberal Period. The building deteriorated during the occupation of Mexico City by both American troops in 1847 and French troops in 1863. Also, the Reform Laws of the 19th Century, which transformed the education in Mexico, produced several alterations and changes in the building to adapt it to new needs and modern ideas in female education.

During the dictatorship of Porfirio Diaz, these changes were more intense. Between 1903 and 1905, the residential apartments for the girls, located around the patio, where totally transformed in large single communal spaces for other collective uses. Also,

during this period the pantheon and the chapel for spiritual retreats were demolished to build a dispensary and a second level, whose design contrasts with the original building.

The most important conservation work started in 1959 under the direction and supervision of architect Ricardo Robina, who was member of the Patronato. The most interesting part of the whole conservation project was to lower the floors to their original levels. The work was performed in the west corridor, the second vestibule and in the north of the main patio. The object was to show the original proportion of the building in those sectors. In addition, some modifications were also carried out to adapt the building to pedagogical changes of the 20th Century. Fortunately, these were done without modification to the building's original layout.

Finally, in 1989 a conservation master plan was made for Las Vizcainas. The plan, which started in 1990 and still continues to the present, has been directed by architect Jose M. Mijares. The main objectives of the plan were: (1) to do some conservation work and start maintenance work and (2) to find new uses for the vacant sectors of the building according to the school and *Patronato* needs, with an absolute respect for the building's integrity.

The Conservation Master Plan of Las Vizcainas, 1989

High costs of maintenance and repair have always been one of the main problems that plagued Las Vizcainas since its inauguration in the 18th Century. Traditionally, the only

[94] The solution of raising the level of the floors was made for all the major colonial buildings of Mexico City, as the only way to solve the problems caused by frequent floods. However, this decision was

sources of money were coming from donations (through the Basque Brotherhood), some school tuition and rent of the *accesorias*.

However, at present the only source of money are from students' tuition and some donations, which are not sufficient to support the high expenses of the school and the maintenance of the building. Due to lack of resources, maintenance and conservation work have been limited causing the deterioration and closure of several areas of the building. The priests house, the *accesorias*, the east wing of the building around one of the patios (*patio de los azulejos*) are examples of sectors which have been vacant and in disrepair for years.

In 1989, worried by the critical situation of the building the *Patronato* and the board of directors of the school entrusted architect Jose M. Mijares for a master conservation plan for Las Vizcainas. After a study and evaluation of all the different aspects of the building's condition, direct and indirect aspects, as well as the building's context, architect Mijares designed an integral conservation master plan. The master plan was not only based on a treatment for the deteriorated building's fabric but also on an integral maintenance plan according to the physical, historical, financial and functional needs of the building.

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partially carried out in Las Vizcainas.

Physical Condition of Las Vizcainas

Due to the action of agents of deterioration related to the structure, site, and physical and human related causes, Las Vizcainas resulted in a building with a high percentage of building space without a use and in great advance of deterioration and disrepair.

The water logged sub-soil of Mexico City has been settling since the colonial times. During the second half of the 20th Century, the problem increased due to the extraction of the underground water to supply the city.[95] Due to their enormous weight and scale, Spanish colonial buildings are most affected by the unstable soil condition.

Las Vizcainas is a relatively heavy structure, weighing about 2 tons per square meter. This load was increased by the material added to raise the level of the floors for flood prevention, and by the large weight of the roofs, especially during the rainy season since the roofs were originally constructed without water insulation.

Since the settlement problem cannot be stopped, a study of the structural condition of the building determined that this problem could be handled with structural joints, replacement of the heavy roofs for lighter ones and recuperation of the original level of the floor in most of the areas affected by the floods. In addition, several complementary conservation works in different portions of the building were suggested by the architect. Among the most important are: partial replacement of the damaged stone of the building; repair and treatment of original plaster and wall painting, along stabilization and cleaning of mural paintings inside the priest house; cleaning and/or partial replacement of original tile decoration (inside chapel, sacristy, priest house); repair/cleaning of altar screens (gold

leaf, statuary, wood carving) inside the chapel; repair and cleaning of the *accesorias* and; repairs and cleaning of other vacant areas of the building, such as the section around the *patio de los azulejos.*

Financial, Historical, Social and Functional Condition of Las Vizcainas

Beside the repair and conservation of the building's fabric, architect Mijares realized that Las Vizcainas needed two special requirements in order to survive: (1) to find a new use/uses for the areas that were vacant and in disrepair and, (2) to find a permanent financial source for the building conservation and maintenance. To provide these, his plan followed the same idea originally used in the *accesorias* of the building during the 18th Century, this is create renting spaces.

According to the high percentage of vacant spaces, some well connected to the area of the building used by the school (such as the area around the *patio de los azulejos*) and some other ones not connected with the school (priest house, *accesorias*) architect Mijares decided to incorporate new uses. The new uses were thought to be: (a) compatible and complementary to the school activities for the areas physical and spatially connected to the school and, (b) less compatible for the areas disconnected and separated from the school area. All uses were thought to create new income for the financial needs of future conservation and maintenance of the building. Consequently according to the exiting and new uses, the building was divided into the following sectors:

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[95] In 1993, 70% of the drinking water supply for Mexico City comes from its underground.

- the school: which was going to still use the same area mostly around the main and second patio (central sector of the building);
- the *accesorias*: which will be repaired and their interiors adapted to be used for workshops, exhibits, art, architecture and/or artisan studios/shops;
- the priest house (*casa de los capellanes*): which will be repaired and be used both, as a museum that will house all the important art collection of Las Vizcainas and also for interpretation purposes;
- the chapel and the sacristy[96]: which will be used not only as a multiple function space for the school but also to be rented to social events unrelated to the school's activities, such as weddings, banquets, concerts, receptions, to be held mainly during weekends and holidays and;
- area around the *patio de los azulejos*: which will be completely repaired and cleaned to be used as the place for a department or extended activities from the university or a community college.

The Coordination of the Conservation Plan

For the author's point of view, the master plan of Las Vizcainas represents not only a good example of architecture conservation but also it is an interesting example of coordination of people, works and uses of the building during the conservation process. Probably, the strict rules of the *Patronato* were the basis of organization of the work and

[96] The original use of both of these sectors, this is related to the Catholic rituals, does not exist anymore. The chapel is used for some school related and unrelated events.

relationship among the architect, engineer, conservators, the school board of directors and the *Patronato* itself. All and each of these persons played a very important role during the entire conservation process, from the decision making stage until the conservation works itself. Obviously, I consider the presence of the permanent resident architect, or architect on site, played a key role in this project. The architect on site was not only in charge of his work, this is supervising the conservation work, but also acted as a link among the three main parties involved in the conservation process, this is the *Patronato*, the project coordinators and the school board of directors. However, the whole process turned to be too bureaucratic due to inner rules and configuration of the *Patronato*. In several occasions, the conservation and repairs work experienced numerous delays and problems due to these special circumstances.

Though Las Vizcainas is a good example of architecture conservation in itself, there was not enough organization in recording the whole process. Technical studies, reports, plans, photographs, notes from meetings, and other types of graphic and verbal documentation were kept without selecting a methodology of data organization and recording. However, there were two elements that were properly recorded and presented. These were: (1) the conservation master plan, recorded and explained through plans, models and verbal descriptions (on display in the choir of the chapel) and, (2) the sequence of costs of the conservation works which were methodically recorded by the resident architect on weekly basis.

Figure 13: Original floor plan of Las Vizcainas

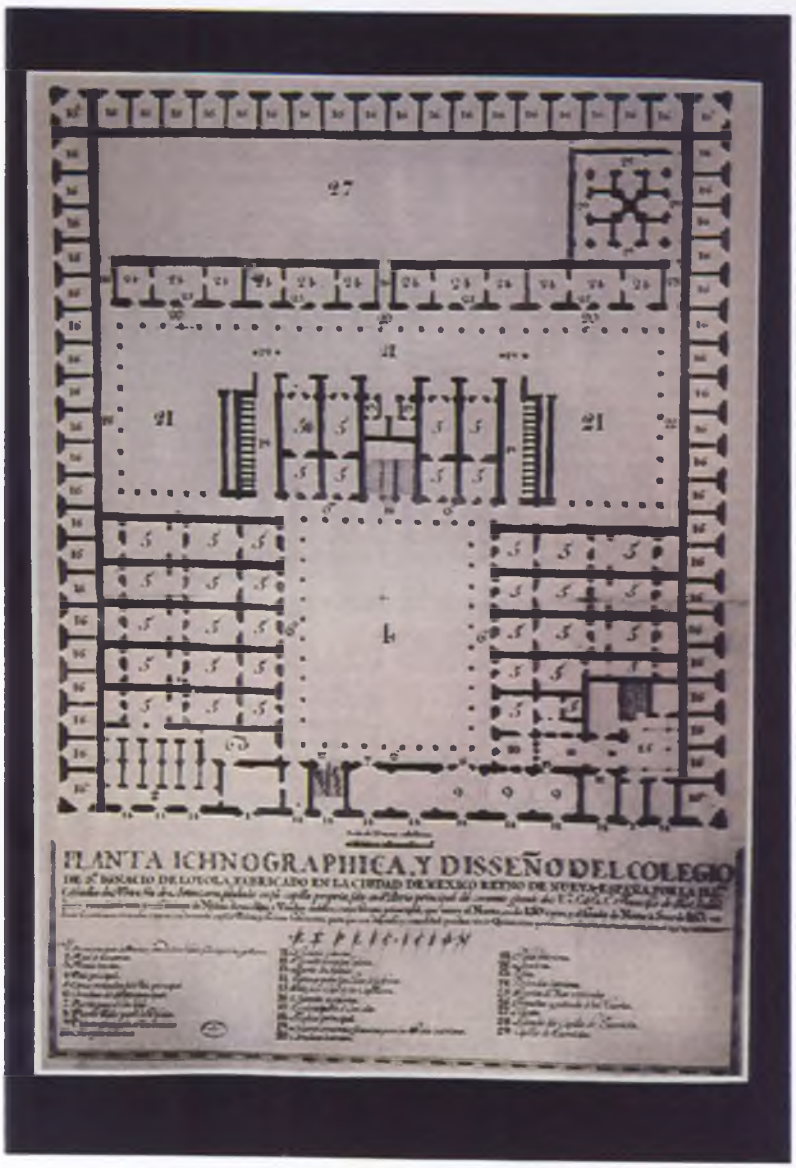

Figure 14: Main facade of Las Vizcainas

Figure 15: Main patio with fountain

Figure 16: Replacement of original roofs and floors

Figure 17: Replacement of original floors and roofs

Chapter 5: Proposal

Buildings are designed according to specific site characteristics, materials and technology to fulfill the needs of people using them. Therefore we should not limit the idea of a building to just its fabric, which is the only physical representation of a building.

Buildings are site oriented cultural property that still keep a useful life and as such its site and context are two other important elements in the definition of a building.

By its nature, architectural conservation is a field that has traditionally focused on the conservation of the building itself, disregarding its site and context. It is also reflected in the architectural conservation records, which, if they exist at all, emphasize on recording data from treatments applied to the fabric of the building. Thus, the field ignores an entire source of useful data very important for the conservation history of a building.

On the contrary, museum and archaeological conservation are fields strongly based on keeping accurate records. Since museum, archaeological and architectural conservation fields share many similarities, there is a great potential for the application of museum and archaeological conservation recording techniques in architectural conservation.

This proposal is an architectural conservation recording system which is based on my short experience in working with museum and archeological conservation records. This system has been specially designed to record data from the building as well as from its site and context, thereby maintaining a holistic record of the nature of a building.

5.1 Importance of Recording in Architectural Conservation

The medical field provides an interesting analogy in highlighting the importance of keeping accurate records. Medicine is a field that has developed through centuries of gathering and recording information about patient history. When a doctor treats a patient, all information about treatment and the patient's response to it is kept as base for future monitoring and in implementing better treatments for the patient himself/herself or for other patients. In this way, it is possible to predict that with the passage of time the patient's condition can be restored to a healthy state.

However, patients and buildings react differently to treatments because buildings do not have the internal capability of rejuvenation as patients do. For this reason, the understanding of a building is generally more of an art than a science.[97]

Building records hardly exist and when they do, they tend to emphasize more on historical, aesthetic and technological aspects of the building disregarding its site and context. It is unusual to find records on a building's site, it's context and it's performance according to use and needs.

Inn addition, unlike the medical field, the information on a building's deterioration and its response to specific treatments is usually not kept as part of the building's history. Such a type of knowledge base could be invaluable to diagnosis and treatment development in architectural conservation. Unfortunately, in architectural conservation,

[97] Miller, 1987, p. 387.

there is no concern for keeping records of different conservation interventions as part of the entire history of the building, which in medicine is called patient's history, to be used for future research on building response to deterioration processes and maintenance improvement. This is probably resulted from the way building professionals and buildings owners think about them. Materials and systems are considered as problems rather than time-line deterioration that can be mitigated and buildings are considered isolated from their sites and not regarded as part of an entire social, cultural, and economical situation, this is the building's context.

In architectural conservation, the problem of recording perhaps lies in the data collection process, which mostly emphasizes on the building's physical condition. This is reflected on the nature of architectural conservation, which according to Frank Matero (1993) is a field that:

> *"has emerged today as a scientific discipline focused on the physical context of the present structure or site and its particular conditions of aging and survival. The concepts favors a through methodological approach: studying, documenting, and diagnosing the quantitative and qualitative processes of deterioration".*[98]

The "methodological approach" referred by Matero seems to focus on the deterioration of the building itself. Thus, diagnosis, pathology and treatment of a building are performed and recorded only according to the building itself excluding its site and context.

Professionals working in the protection of buildings face a wider range of problems than museum and archaeological conservators. They have a more limited base of available

[98] Matero, 1993, pp. 15-21.

technical information in terms of record keeping which creates a major obstacle for initiating research on these problems. Moreover, architects and architectural conservators are not familiar with keeping accurate records of buildings for the future. Their clients too may be less familiar with the need and justification of the cost of recording historical and technical information.

5.2 Proposal: A Comprehensive Architectural Conservation Database. A Recording System Based on Context, Site and Building

As an architect interested in historic buildings, I've been always surprised by the amount of historical records and information collected during different stages in the life of a building, this is data on the site and archival data, technical aspects about the design, materials and construction, description of every day aspects in the life of the people related to the building, change in uses and fashions that affected the building, social, economical, cultural, and historical characteristics of the context, maintenance, repairs. The practice of keeping track of all the details related to the life of a building as well as of the people related to it was very popular until the end of the 19th Century. These records can be compared to a diary on the entire history of the building along the site, context and people related to the life of the building.

Unfortunately, nowadays professionals involved in the construction and life of a building tend to avoid this type of record keeping and the data collected is only limited to technical aspects required by the client and the construction permits.

During my summer internship at Las Vizcainas in Mexico City, I became aware of the amount of information that was produced during the project. A huge number of plans, photographs, several studies and condition reports were kept haphazardly, exposed to mistreatment and loss. There was practically no intention on the part of the architect or the *Patronato* to organize and keep all the information recorded during the conservation process of the building.

The success of architectural conservation should be based on a comprehensive evaluation of the building's entire condition and its ability to continue to function or to meet the needs of a new program. Based on museum and archaeological conservation records, the recording technique proposed in this study relies on collecting data from the building, along with the characteristics of its site and context in a systematic data structure.

According to the proposal, there are three broad divisions of data for an architectural conservation recording system. These are: the building itself, its site and, its context.

The Building

The building is the primary source of data for architectural conservation. Through these data conservationists can predict the performance of the building itself, this is the envelope, structure, its interior environment, its infrastructure.

Unlike museum objects, buildings are very complex and large scale cultural property. Thus, the collection and organization of data for an architectural conservation record is very elaborate and tedious process.

The required data can be collected (a) at the building itself through field survey, photographs, measurements, condition reports, samples, observations, on-site tests; and (2) away from the building through laboratory tests, special studies, archival research, interviews.

For the purpose of this proposal, I divide a building in parts according to different hierarchies in order to aid in the collection of the data and also in its condensation and organization. Thus, for the data collection, the building should be divided in five parts, these are: (1) segments, (2) sectors, (3) spaces, (4) units, and (5) features.

These different parts are related to each other in a sequential way, this is the building is divided first in segments which are divided in sectors, then in spaces, units and features. The number of each section of the building and the amount of information that it will provide will vary according to the size and complexity of the building's design. Figure 17 shows the different parts of the building according to the proposed architectural conservation record.

(1) Segment

According to this proposal, a segment is the largest portion in which a building should be divided. The number of segments would be directly related to the degree of complexity of the building's design. The conservator or surveyor can obtain segments by dividing the

building according to its floor plan and vertically, this is if the building has more than one story. In this manner, one con use the spatial axes system, this is: x, y (plane) and z (vertical) axes to obtain different segments of a building according to its three dimensional layout.

In a floor plan, a building can be divided in segments according to its main coordinates or axis, for example: north, south, east and west. Thus, a variable number of segments from two to four could be obtained. An example of a building divided in two segments could be: segment north and segment south; and an example of a building divided in four segments could be: northeast segment, northwest segment, southeast segment, southwest segment. Vertically, the building can be further divided in more segments, this is if the building is composed by more than one story. Thus both systems combined will give the total number of segments that form a building. Following the example given before where four segments have been obtained in plan and if the building is composed by two stories throughout its plan, the total number of segments would be eight, these are: northwest, first story, northwest second story, northeast first story, northeast second story, southwest first story, southwest second story.

(2) Sector

A sector is a part of a segment. Thus, each segment of a building can be divided into sectors, whose layout system and number will depend on the complexity of the building's design. In some buildings with a simple and regular layout, sectors could be not necessary.

Sectors in a building could for example help differentiate roofed, partially roofed or non roofed areas of a segment (such as patios, series of arcades, a group of rooms), or private and semiprivate areas, or areas with a certain use. For example in the case of Las Vizcainas, the chapel, the priest house, the *accesorias*, the school itself could each one refer to a sector of a segment or segments.

The conservator or surveyor could use either numbers or letters as a nomenclature to identify a sector.

(3) Space

A space is the part in which a sector could be divided. In case sectors are not part of the system, a space could also by the part in which a segment could be divided.

In general, a space refers to all various types of rooms that form a building. Alike with segments and sectors, the number of spaces in a building would be related to its design.

Spaces are defined by elements such as walls, roofs, floors. Thus, a space could be a patio, a room, an arcade. Spaces could be identified by numbers: room 1, porch 3, balcony 10, arcade 5; or/and according to the location in the segment or sector, for example: south room, northwest porch, central patio. Thus, the conservator or surveyor can decide upon the identification system of spaces according to the characteristics of the building.

(4) Units

Units refer to the elements that serve as limits of a space, for example: walls, floor and ceiling of a room; arcades around a patio. Units can also be identified by numbers, for example: wall 1, arcade 4; or, by location: south wall, north arcade.

(5) Features

Features refer to either: (a) the elements that are part of a unit: a column/s of an arcade, door/s or chimney of a wall, a fountain of a patio or, (b) the elements or parts that form the unit itself, for example, in the case of a wall one feature could be its masonry, another its finish, another its decoration, and so on. If a unit has many alike features, for example a wall with three doors, they could be identified either by numbers or letters (1, 2, 3; a, b, c), or by location (north, central south).

The system of segments, sectors, spaces, units and features would collect the data related to the intrinsic aspects of condition related to the building or structure itself.

The Site

The site of the building is another important source of data which could contribute to the wholeness of the building. These data can predict the performance of the building in relation to its site characteristics, this is: soil, geology, location, climate, vegetation.

Site data could be collected both, (a) on site, through observations and descriptions of the general characteristics of the site and (2) away from the site, through

specific studies carried out by professionals/specialists, archival research, interviews with organizations.

Thus, the site data represents all the information of the intrinsic aspects of condition which are related to the site.

The Context

The third source of data is the context of a building, which serve as a frame of reference for the building and its site. In the case of the building, it is mostly related to the human context, this is the extrinsic human-related aspects of condition.

Through the data from the context, the conservator could obtain information of both, the performance (past and future) of the building according to the needs and the use/s of the owner/user and, its performance in relation to social, financial, historical, cultural circumstances, which could be directly or indirectly related to the building.

Alike for the building and the site, the data from the context could be obtained by surveys and observations of the context (directly), or/and through the evolution of the human context (indirectly).

The architectural conservation data recording system collects, organizes and summarizes all the required information of an architectural conservation project. If the same system is used in every conservation and/or maintenance of the building, it is possible to keep data and history of the different conservation and/or maintenance processes through the existence of the building.

Figure 18: Different parts of the building according to proposed conservation record system

BUILDING/SITE/CONTEXT DATA															
BUILDING/SITE DATA															
BUILDING DATA															
SEGMENT (NAME)								SEGMENT (NAME)							
SECTOR #				SECTOR #				SECTOR #				SECTOR #			
Space (A)		Space (B)		Space (C)		Space (D)		Space (E)		Space (F)		Space (G)		Space (H)	
U N I T #	U N I T #	U N I T #	U N I T #	U N I T #	U N I T #	U N I T #	U N I T #	U N I T #	U N I T #	U N I T #	U N I T #	U N I T #	U N I T #	U N I T #	U N I T #
F#	F#	F#	F#	F#	F#	F#	F#	F#	F#	F#	F#	F#	F#	F#	F#
F#	F#	F#	F#	F#	F#	F#	F#	F#	F#	F#	F#	F#	F#	F#	F#
F#	F#	F#	F#	F#	F#	F#	F#	F#	F#	F#	F#	F#	F#	F#	F#
F#	F#	F#	F#	F#	F#	F#	F#	F#	F#	F#	F#	F#	F#	F#	F#
F#	F#	F#	F#	F#	F#	F#	F#	F#	F#	F#	F#	F#	F#	F#	F#

The system has been designed based on architectural conservation data recording forms which represent specific information of the different parts comprising the building as well as data from its site and context. Using a system of folders and files, the conservator could organize and group the data collected in the different forms. Thus, the system of organizations of folders and files could be well represented by a tree with branches that divide in other smaller branches until reaching the leaves. Thus, a folder identified as "building" would contain many other folders identifying its segments. Each segment would contain folders identifying sectors; then, each sector will contain folders identifying spaces; each space would contain folders identifying units and finally, each unit folder would contain files corresponding to each of its features. Additional folders will identify the site and the context of the building.

This proposed recording system is only a conceptual base for data collection and organization of an architectural conservation system. Thus, it should be adapted to the special characteristics of each building.

The forms have been divided in sets, one for each part of the building, for its site and context. The strategy of data collection follows a hierarchical model beginning with the collection of data through a highly detailed description of individual features moving toward the rest of the building, to the site and finally, to the overall context. Thus, the majority of the detailed information is collected by each feature of the building. The rest sets of forms (units, spaces, sectors and segments) only collect and condense general information related to each part of the building.

The feature form has been divided in two main parts. The first is represented by the general information on the feature: location, dimensions, materials, fabrication technology, etc. The second part is represented by more specific information on the condition, use, needs, deterioration, treatment of the feature, complemented by graphic information and additional studies/reports.

The form that corresponds to the site collects and condenses information concerning the general characteristics of it, this is soil, geology, natural disasters and environment with the related deteriorating actions that can affect the building. This form is also completed by graphic and additional studies/reports.

The form corresponding to the context collects and condense general information on changes in use, social, cultural, historical, economic/financial and any other

characteristics of the building's context that may be necessary for the architectural conservation record.

Each conservators should develop his/her own style in report writing. Whether in a narrative or cultural outlined format, the conservation record must always present the information in a straight forward, informative manner so that it transmit the necessary information for future recommendations and conservation/maintenance projects.

Finally, conservators must know that the success of an architectural conservation record, or any conservation record, relies on the conservator's ability to present a large body of information in a form that describes a plan of action.

Chapter 6: Conclusion

Keeping conservation records is fundamental for the building itself as well as for the development of the architectural conservation field. However, architectural conservation is a relatively new discipline with short experience in recording techniques.

This study has proven that there are several similarities among architectural, archaeological and museum conservation fields and, there are several possibilities for adapting museum an archaeological conservation techniques into architectural conservation. However, architectural conservation should approach the building according to its holistic nature, this is the building itself, its site and context and stop focusing on just the fabric of the building.

The proposal of this study is a model of an architectural conservation record system which has been adapted from museum and archaeological recording experience. The objective of this new recording methodology is not only to document the conservation and/or maintenance of the building itself but also to record all the changes that may occur through the life of the building according to its site and context characteristics and influences. However, this is an hypothetical model of a conservation recording methodology which should be tested in the field. Hence, this model should be adapted to an specific building in order to make the necessary adjustment and changes.

Since architectural conservation records are related to communication standards, perhaps the next challenge is to insert the architectural recording conservation model

proposed in this study into a computerized system. Such an idea can lead to further advances in data collecting standards for conservation records.

People may ask if architectural conservation records are practical or economically possible, yet these questions are not valid. Conservation recording systems have been used for many years in the museum and archaeology fields. Moreover, conservation records are an important part of the conservation process itself as they contribute invaluable information for the future of the resource and the development of the conservation field as well.

John Ruskin said "take of your monuments, and you will need not to restore them"[99] Following this idea, today one can also recommend to record all intervention actions (conservation, maintenance) in monuments as part of their protection and so to leave an invaluable document for future generations. This, should be the goal of every architectural conservation record.

[99] Brand, 1994, p. 88.

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Appendix

A-1. Architectural Conservation Recording Form. Feature/Unit/Space/Sector/Segment Data Form

A-2. Architectural Conservation Recording Form. Building Data Form

A-3. Architectural Conservation Recording Form. Building Site Data Form

A-4. Architectural Conservation Recording Form. Building Context Data Form

ARCHITECTURAL CONSERVATION RECORDING FORM
FEATURE/UNIT/SPACE/SECTOR/SEGMENT DATA FORM

Date: Recorded by:

GENERAL INFORMATION ON THE FEATURE/UNIT/SPACE/SECTOR/SEGMENT
Location (segment, sector, space, unit):
Dimensions (length, width, height, diameter):

PHYSICAL CHARACTERISTICS
Materials:
Design:
Fabrication Technology:
Stabilization: Date:
Previous Conservation/Maintenance: Date:

SPECIFIC INFORMATION
Condition
Direct Aspects: Indirect Aspects (if applicable):
Damage/s, insecurity/ies, disfigurement/s:

Deterioration
Type of deterioration/s:
General Location of Deterioration/s:
Causes of Deterioration/s:
Agent/s of Deterioration/s:

Samples:
Location: Date

Treatment/Maintenance
Proposed treatment/maintenance description:
Abstract of materials used:

Costs
Estimate costs of conservation/treatment/maintenance:

GRAPHIC INFORMATION ON THE FEATURE/UNIT/SPACE/SECTOR/SEGMENT
Historical Photographs:
Photographs/slides: Film: Date:
Before intervention: During intervention: After intervention:
Special photography (UV, IR, Xray, other):

Graphic/ plans/illustrations:
Condition surveys:
Additional accompanying information Location
/special reports/studies:

Conservator/surveyor's Name: Date:

ARCHITECTURAL CONSERVATION RECORDING FORM
BUILDING DATA FORM

Date: Recorded by:

GENERAL INFORMATOIN ON THE BUILDING
Location of the building (general/specific):
Dimensions (length, width, height, diameter, thickness of walls, etc.):

PHYSICAL CHARACTERISTICS
Materials:
Design:
Fabrication Technology:
Stabilization: Date:
Previous Conservation/Maintenance: Date:

SPECIFIC INFORMATION
Condition
Direct Aspects: Indirect Aspects (if applicable):
Damage/s, insecurity/ies, disfigurement/s: Uses (historical, present, future):
Needs (related to activities, people, other):

Deterioration
Type of deterioration/s:
General Location of Deterioration/s:
Causes of Deterioration/s:
Agent/s of Deterioration/s:

Treatment/Maintenance
Proposed treatment/maintenance description:
Abstract of materials used:

Costs
Source/s of financial support:
Other financial information:
Estimate costs of conservation/treatment/maintenance:

GRAPHIC INFORMATION ON THE BUILDING
Historical Photographs:
Photographs/slides: Film: Date:
Before intervention: During intervention: After intervention:

Graphic/ plans/illustrations:
Condition surveys:
Additional accompanying information Location
/special reports/studies/archival:

Conservator/surveyor's Name: Date:

ARCHITECTURAL CONSERVATION RECORDING FORM
BUILDING SITE DATA FORM

Date: Recorded:

GENERAL INFORMATION ON THE SITE

Climate: general climatic characteristics of the site, immediate/mediate (temperature, humidity, rainfall, winds, other):
Geology/soil (composition, slope, subsoil characteristics, other):
Hydrology (water table depth, nearby sources of water, other):
Vegetation (general characteristics of the site/nearby vegetation, other):
Geographic location (urban/rural, adjacent/remote construction, other):
Other (pollution, industries, traffic, etc.):
Special studies/reports:

Natural Disasters
General Information on Natural Disasters of the Site

Site-related Deterioration
Cause/s of deterioration:
Agent/s of deterioration:
Natural disaster-related deterioration:
Special studies/reports:

GRAPHIC INFORMATION

Historical photographs:
Photographs/slides: Film:
Graphics/maps/plans/illustrations: Location:

Conservator/Surveyor's Name: Date:

ARCHITECTURAL CONSERVATION RECORDING FORM
BUILDING CONTEXT DATA FORM

Recorded by: Date:

GENERAL INFORMATION ON THE CONTEXT

Social
General description of the social characteristics of the building's context:
Characteristics of the Users/owners/people related to the building:
Changes (social, other):
Characteristics of the needs of the users/owners/people related to the building:
Characteristics of the uses of the building (historical, present, future) according to users/owners/people related to the building:
Other:
Special studies/reports: Location:

Cultural
General description of the cultural characteristics of the building's context:
Special studies/reports: Location:

Historical
General description of the historical characteristics of the building's context:
Special studies/reports: Location:

Economic/financial
General description of the economical/financial characteristics of the building's context:
Financial information/sources of money (private, grants, donations, other):
Historical source/s of money:
Present source/s of money:
Future source/s of money:
Special studies/reports: Location:

GRAPHIC INFORMATION ON THE BUILDING SITE

Historical photographs:
Photographs/slides: Film:
Other illustration/reports:

Conservator/surveyor's Name: Date: