

Maya Hassan · Hui Xie

Climate Change and Conservation of Coastal Built Heritage

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Preface

The coasts of seas and river banks are the first environment for the emergence of human civilizations, due to the natural and climatic factors. At the same time, they are considered as the first threatened areas of climate changes, which rapidly happen since the end of the twentieth century and the beginning of the twenty-first century, represented by the global warming and the problem of rising water levels. These climate changes will result in catastrophic human consequences and will threaten archaeological sites and cultural inventory in many countries of the world if rapid action is not taken to address them. Conservation of coastal cultural heritage for the next generation and the sustainable and resilience concerning are required. This book aims to develop a protection strategy for coastal areas and built heritage by using both Top-Down and Bottom-Up Processing to face the problems and down to have whole image perception and find a solution.

The first part presented the conservation of coastal built heritage in the era of climate change. Chapter 1 started with the modern conservation principles in the world, China and Syria, then with the shifts of conservation paradigm of the twenty-first century due to climate change and the international crisis of energy. It highlighted the climate change and its direct and indirect impact on the built heritage, and the conservation action levels. The levels hierarchically concatenated from the global action and going down to the national, local, and urban measures, the individual building measures, down to the people power as an effective, fastest, and cheapest action in the preservation process. It emphasized the significance of the participatory among the action levels. Chapter 2 highlighted the monitoring and heritage management methods which started with the advanced leadership and enhancement approaches hand by hand with the documenting, diagnosis, and problems and value identification and assessment. The evaluation approaches and standards for individual heritage structures, the thermal comfort concepts, and requirements have been summarized.

In the field work, the second part of this book followed sequent steps for monitoring built heritage, historical building microclimate, and people satisfaction in two threatened coastal heritage sites from the effects of the climate change in Syria. Chapter 3 tried to develop a protection strategy of the coastal archaeological

areas by creating sustainable defensive lines are viable for growth and expansion according to multiple stages of time that commensurate with the increasing problem of rising sea levels. The strategy is based on the exploitation of natural and geographically elements of these areas, with a new idea for economic investment and heritage promotion to have the sustainability of investment defenses step by step whenever widened. Chapter 4 investigated the thermal environment of two typical defensive stone heritage buildings that have been reused as museums in Arwad Island through interviews and a series of field measurement of the summer hygrothermal parameters. Chapter 5 introduced a comprehensive survey of the historic buildings of the old city of Tartous using two methodologies of collecting data. A microclimate study using field measurements of two public buildings, three houses, one multifunction gallery, and one shop, additionally, an indoor thermal questionnaire for the local people and the selected buildings' occupants in conjunction with the field measurements were used. In the end of this book, the conservation strategies and intervention levels were introduced based on Zoom Out–Zoom In approach. Moreover, two conservation frameworks and processes in both macrolevel and microlevel for preserving the threatened coastal historic sites buildings were presented, considering the comprehensive documenting, and environmental condition and problem definition based on research assessments. The DMADV approach in monitoring historic buildings was also introduced to ensure preserving quality and process. The conservation strategies could be generalized in any coastal region in the world is threatened of climate change problem.

Strategic regional planning, field measurement, people thermal satisfaction questionnaire, and data finding based on scientific research and grounded theories are essential tools to have knowledge of the risk size. They form together with a step for assessing the cultural heritage risks and to put outline and guideline for maintenance, restoration and operation, determine problems, difficulties and define where we are now, then shed light on what we need to do in straightway very soon, or on works next years. This book can be used as a reference for researchers, developers, architects, and conservators in protecting the architectural heritage in the coastal areas. It can also be used as the guide for preserving and monitoring the process of the built heritage from both macro- and microlevels.

Keywords Climate Change • Coastal heritage • Conservation Strategies • Microclimate • Thermal Comfort • Occupant satisfaction • Sea-level rise (SLR)

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Acronyms

3ENCULT	“Efficient Energy for EU Cultural Heritage” project of the European Commission
AC	Air conditioner
AHC	Australian Heritage Commission
ASHRAE	The American Society of Heating, Refrigerating, and Air-Conditioning Engineers
Av	Average
BIPV	Building Integrated Photovoltaic systems
BIST	Building Integrated Solar Thermal
BREEAM	Building Research Establishment’s Environmental Assessment Method
C	The coastal area
CVI	Coastal Vulnerability Index
DGAM	The Directorate General of Antiquities and Museums, Damascus, Syria
DMADV	Management steps: Define, Measure, Analyze, Design, and Verify
DMAIC	Management steps: Define, Measure, Analyze, Improve, and Control
DPV	The indoor draft perception vote
ECO-Land	Ecological land
EnerPHit	The Energy Retrofit with Passive House Components introduced by (PHI)
EnEV	German energy regulations
EPBD	Energy Performance of Buildings Directive
GCI	Getty conservation institute
HPV	The Indoor Humidity Perception Vote
HVAC	Heating, ventilation, and air conditioning
IPCC	Intergovernmental Panel on Climate Change
LEED	Leadership in Energy and Environmental Design
MAM project	Municipal Administration Modernization project in Syria

Max	Maximum
Min	Minimum
NBA	National Board of Antiquities
NOAA	National Oceanic and Atmospheric Administration
OP	The operative temperature
OUV	Outstanding Universal Value
PDCA	Management steps: Plan, Do, Check, and Act
PHI	The German Passive House Institute
PMV	The Predicted Mean Vote
POE	Post-occupancy evaluation
PPD	The Predicted Percentage of Dissatisfaction
REAP	Rotterdam Energy Approach and Planning
RfF	UK national Retrofit for the Future Program
RH	Indoor relative humidity
SACH	States administration of cultural heritage in China
SLR	Sea-level rise
Temp	Indoor air temperature
T_m	The outdoor mean temperature for T_{min} and T_{max}
T_{max}	The maximum outdoor temperature for the warmest month
T_{min}	The minimum outdoor temperature for the coldest month
T_n	Thermal neutrality
TSB	The UK Government's Technology Strategy Board
TSV	Thermal sensation votes
UKCIP	UK Climate Impacts Programme
USGBC	Green Building Council in the USA
WHS	Registered World Heritage Site in the UNESCO List
WHL	World Heritage List of UNESCO

Part I
Conservation of Coastal Built
Heritage in the Era of Climate Change

Chapter 1

Climatic Challenges and Conservation Action Levels



This chapter presents the international modern conservation principles and approaches. The principles were shipped to the eastern world in the end of the nineteenth century by the western colonic influence. The differences between the Asian and the western approaches in conservation are presented by the identification of the authenticity issues and determining the heritage values. Paradigm shifts in conservation methods of the twenty-first century appeared and prevailed worldwide due to climate change and the international crisis of energy. This chapter also highlights the climate change and its direct and indirect impact on the built heritage and the conservation action levels. The action levels in terms of the climate change, rising water level, and the calls of energy efficiency are hierarchically concatenated from the global action and going down to the national, local, and municipal levels, then urban and site measures, the individual building and building components measures, down to the people action. The increasing threat of our cultural heritage sites urges to find preserving strategies and to invent a methodology to have a resilient and sustainable heritage. The participatory and cooperation among the action levels is very helpful and effective; additionally, the people power and positive passive behavior could be the significant, fastest, and cheapest action in the preservation process.

1.1 The Evolution of the Conservation Principles

1.1.1 *The International Conservation Principles and Approaches*

The global heritage conservation definitions started in the western world, in Europe, and later in the Americas. The authenticity, original state, and materials were the main issues in the conservation debates. Since the mid-nineteenth century, the fundamental intervention theories of historic conservation of the built heritage were framed in the dualism of the restoration that inspires a new form that did not appear in the past-

time, as exemplified in the work of G. G. Scott in UK, E. Viollet-le-Duc in France, and K. F. Schinkel in Germany. Against this trend, the retention of the status of the modern conservation movement rose which was headed by John Ruskin and William Morris and then sustained by C. Boito and G. Giovannoni in Italy and A. Regiel in Austria in the late nineteenth century and early twentieth centuries. Because of the authenticity's devastation of the historic buildings, the anti-restoration movement criticized this action and worked on preservation and maintenance. Ruskin identified the importance and the value of historical buildings and hence provided a foundation for modern conservation trend. Ruskin absolutely defended the material truth of historic. Sacrifice, truth, power, beauty, life, memory, and obedience were his seven moral lamps of the architecture (Ruskin 1885). He drew attention to the false pride in the new development in urban areas and was worried about the identity losing of the old town. He mentioned the value of the old districts and cities resulted by the ensemble of buildings, space, and different types of details and values and did not depend on only single monuments. In 1904, Madrid Conference set the initial principles of international conservation and emphasized the need for conservation efforts in each country to reach joint work in this field. The conference classified the monuments into two groups: the dead monuments of the previous civilizations and the living monuments which are still in use and recommended the minimal intervention, unity, and stylistic restoration (Locke 1904). The principles of conservative instead of stylistic restoration gained international support. These were introduced into the declaration of the first international meeting on architectural heritage in Athens in 1931. As well, one of the key points of the Venice Charter 1964 determined that the conservation should be based on the authenticity and integrity, and the restoration process should be based on the original material and documents (Charter 1931, 1964).

During the twentieth century, and mainly since the World War II, the cultural heritage conservation has grown as a global goal, covering organizations such as the United Nations Educational, Scientific and Cultural Organization (UNESCO), the International Centre for the Study of the Preservation and Restoration of Cultural Property (ICCROM), the International Council of Museums (ICOM), the International Council on Monuments and Sites (ICOMOS), and the International Union for Conservation of Nature (IUCN). The establishment of guidelines, charts, recommendations, and agreements encouraged awareness campaigns and specialized training activities. The doctrines of Athens Charter 1931 and Venice Charter 1964 and the organizations such as ICOMOS gave the global recognition to the traditional method of the managing and conserving heritage. UNESCO enacted the Convention for Protection of the World Cultural and Natural Heritage in 1972 and created the World Heritage List (WHL) to guarantee the effective preservation of the heritage worldwide. Managing and conserving heritage evolved in different parts of the world in Canada and the USA.

Burra Charter 1979 of the Australia ICOMOS promoted the assessment of the significance of the property based on the values-led approach (ICOMOS 1999). The values-led approach supported not only the advantage of focusing on fabric, but also the focus on a set of other values that are essential to the heritage experts and the stakeholders, where the heritage values are not static, and they change over time

depending on the social variable factor itself and the aligning with the shifts in other environmental, cultural, and usage values. The values-led approach to heritage conservation of UNESCO is a participatory process for all interest actors of the property. *It also considers the identification and protection of the outstanding universal value (OUV) which is the significance that makes a place essential to all humanity. Therefore, the purpose of managing World Heritage properties is to secure the protection or the long-term maintenance of the outstanding universal place* (Rappoport 2015).

The Venice Charter established the guidelines of the intervention levels in both conservation operations and restoration works. This charter is still being implemented in evaluating the UNESCO conservation projects of the World Heritage listed monuments and historic buildings. On the other hand, UNESCO refers to Burra Charter for the management of heritage sites. The principles of the Venice and Burra charters laid down the general basics and procedures can be applied to any heritage site, regardless of the location, culture, or community. These two principles have confirmed the globalization of heritage that has been and continues to be advocated by UNESCO. Since the mid-1980s, several documents for specific types of heritage have been established, such as archaeological heritage, historic towns, historic gardens, museum collections. Later in the mid-1990s, a global trend opposed to heritage conservation globalization began, with the emergence of the Nara Document in 1994 based on regional and local aspects and a different vision of authenticity based on each society characters, culture, and identity (ICOMOS 1994). Several conservation charters have later versions modification in line with modern theories, technologies, and societies. Figure 1.1 shows the basic international charters and documents for the evaluation of conservation and restoration projects.

A movement from the conservation of individual structure toward the historic urban area has gradually happened, in the meanwhile with the rising concern of the intangible heritage and its significance to the built and tangible heritage. A transfer of principles to the eastern world has occurred through the western colonial and then has changed later, after several decades, to adapt to their culture and concepts. After the international crisis of energy and the lack of resources, the evidences of the impact of changing in the climate conditions on the cultural heritage, and with the emergence of the green and sustainability principles and the rating systems, the conservation principles and approaches started to change and to use the available technologies to adapt to this era needs and to reduce the current and future pressure on the cultural and natural heritage. Paradigm shifts in conservation methods of the twenty-first century have happened based on the value and the sizes of the expenses and risk with a maximum intervention and in many cases to give up the heritage assets under the reasons of saving other life resources and the high costs of conservation which exceed the value of the heritage asset itself.

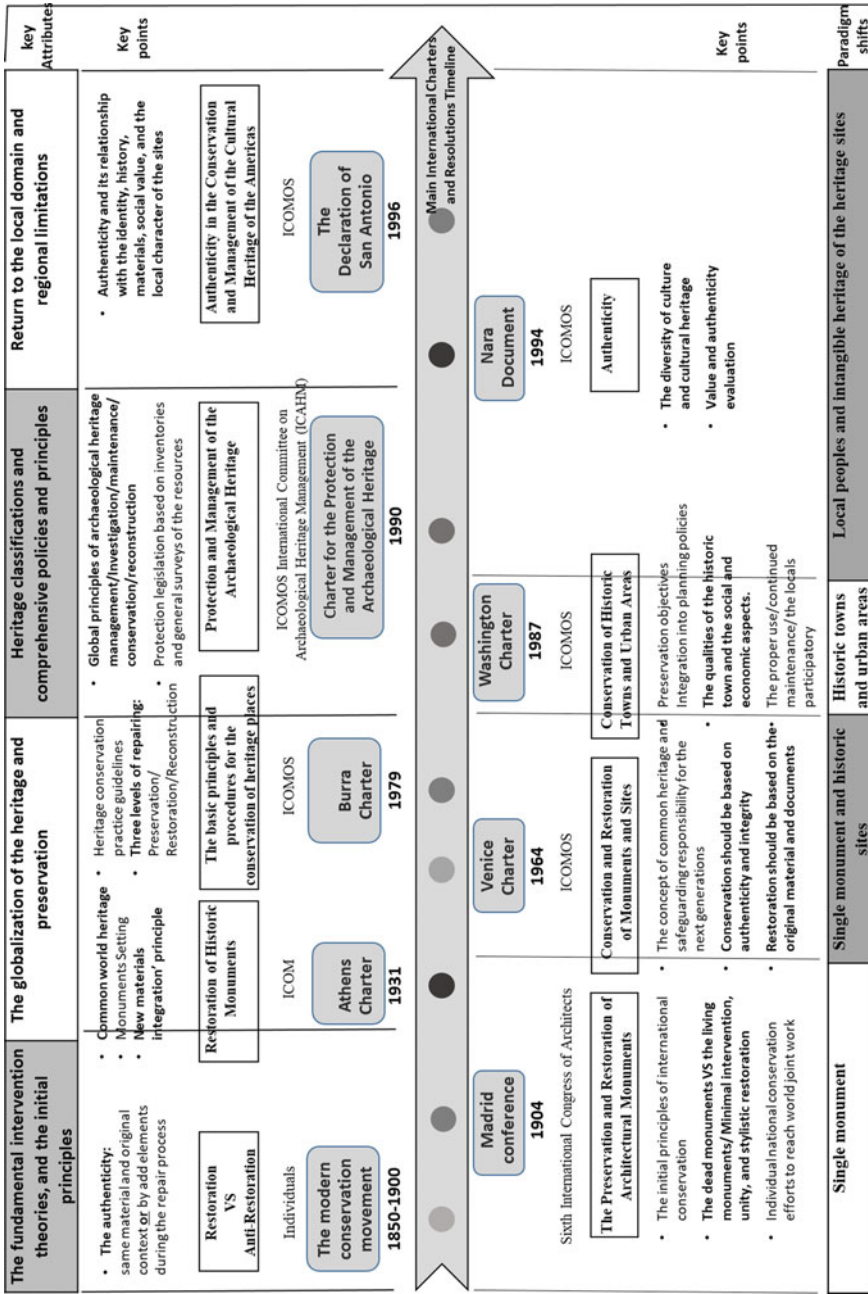


Fig. 1.1 Main international conservation charters and documents

1.1.2 The Evolution of the Modern Conservation in China

Modern conservation concepts were shipped to China and the eastern world in the end of the nineteenth century along with the transmission of archaeological knowledge from the west by the western colonic influence. The first law for the protection of ancient objects was promulgated in 1930. During the wartime, from the 1930s till 1940s, as the members of the society for the study of Chinese architecture and the most eminent Chinese intellectuals in the twentieth century, Liang Sicheng, Lin Huiyin, and their colleagues organized the first large-scale investigation of Chinese architecture and initially put forward the modern architectural conservation thoughts according to Chinese context. Liang Sicheng put forward the famous saying: “Don’t alter the historic condition” (不改变文物原状), Do not change the original relics, as the modern conservation philosophy of China and later included in Chinese conservation regulations. Between 1930s and 1950s, the initiation of conservation for historic city Beijing and unfortunately the proposal of Liang Chen were not adopted. Since the 1950s, the urban renewal has been gradually employed in the historic center of Beijing, and the city has been expanding dozens of times till urban problems are getting more and more intensive. The city wall and city gate of Beijing were demolished in 1969. In 1980s–1990s, one of the significant progresses in China’s conservation is the definition of built heritage was broadened from single monuments or buildings to historic cities on the national-level legislation thirty years after Liang Sicheng’s conservation proposal of Beijing. Authenticity is testified to be valid in China as “not altering the historic condition” is the Chinese interpretation of the doctrine of historic authenticity, Table 1.1. Between 1997 and 2000, China made an international collaboration for heritage preservation such as the State Administration of Cultural Heritage (SACH) in China, the Getty Conservation Institute (GCI), and Australian Heritage Commission (AHC). The promulgation of the first list of national historically and culturally famous cities and the important national landscape and famous scenic zones was in 1982. Since 1985, China imported the international conservation documents and foreign theoretical contributions and documents and started submitting her heritage to the UNESCO World Heritage List. Consequently, till 2010, 40 sites have been inscribed on WHL.

① The Challenges of the Chinese Heritage Last Two Decades

- (1) The Chinese heritage suffers from increasing threat from a set of factors related to population growth, environmental degradation, local migration, urban redevelopment, industry agglomeration, and globalization of both traditional socio-cultural fabric and the regional economies.
- (2) Economic construction and development have destroyed several invaluable heritage sites (Wai-Yin and Shu-Yun 2004).
- (3) The environment cannot support enough the human usage that it aims at, causing the deterioration of the structure and destruction of the urban fabric and the loss of the place sense.

Table 1.1 Authenticity in Chinese legislation and scholar

Period	Legislation or scholars	The policy of not altering the historic condition
1930s	Liang Sicheng	Preserve the existing condition or reinstate to its historic condition
1950	The prescription of conservation of monuments and sites was promulgated	Preserve cultural relics in its ancient appearance
1961	Liang Sicheng	“Keep the old as old”
1961	The provisional regulations on protection and administration of cultural relics	Article 11. The principles of restoration to historic condition or preservation of existing condition must be observed Article 12. The principles of not altering the historic condition must be observed
1982	The law of the People’s Republic of China on the protection of cultural relics	Article 14. The principles of not altering the historic condition must be observed
2000	The China Principles	Article 2. All conservation measures must observe the principles of not altering the historic condition
2015	Principles for the Conservation of Heritage Sites in China	Article 10 (Authenticity) and Article 14 (Appropriate technology): preserving the historic condition as primary principles using technology with minimum intervention for preventive conservation in the frame of authenticity

Source Guo (2015)

- (4) Rapid loss of traditional techniques and knowledge, as well as decreasing of qualified artisans, brings more and more difficulties in maintenance and restoration of monuments and sites. International collaboration introduced modern technology and gained many achievements for the preservation of wall paintings, stone carving, cave temples, etc., but the most widely used repair and restoration for historic timber structures still depend in a large extent on the traditional techniques and artisans.
- (5) The excessive tourism and the process of the restoration and presentation for tourism purposes and promotions resulted in new and botched threats to authenticity in China.

② International Debates on Authenticity of Heritage Conservation in Chinese and Eastern Asian Context

There is an ongoing debate about the appropriateness of European approaches to conservation cultural heritage in other areas of the world. The Cultural Charter for Africa (1976), the Burra Charter (1979), and the Nara Document on Authenticity (1994) are notable manifestations of such concerns (Winter 2014). Since eastern Asian architectural heritage mostly is made of timber, bamboo, and other unendurable materials, questions were put forward in the authenticity test of the World Heritage inscription:

How to judge the authenticity after the original materials are replaced? Is material always prior to the test authenticity? The Nara Document is a tacit acknowledgment of the relativities of values and the plurality of approaches to the issue of authenticity of the western notions of intact fabric in respect for the values and the diversity of specific cultural context (ICOMOS 1994). However, it sometimes is misunderstood as tacit of slacking on the conservation of heritage material, even misused by some nationalist, which is possible due to the general nature of this document. Based on the above two situations, two questions were put forward: What China is preserving? And for whom?

- (1) The discussion in Nara Conference indicated that the cultural information embedded in cultural heritage should be preserved, and the physical materialized fabric is significant carrier (it is one dimension of the authenticity of that information, but not the unique one). As for architecture built by permanent materials, on the one hand, the original architectural material should be preserved and reused as much as possible in periodical repair. On the other hand, since the replacement of deteriorated material is indispensable, the strict practice of traditional techniques and processes in repair and restoration can assure that the authentic cultural information is transmitted.
- (2) The reconstruction of Japanese Ise Shrine, as a specific case related to the living religious tradition, should not be generalized to advocate for reconstruction in heritage conservation. The learned lesson from the case of Ise is that built heritage gains its cultural significance only when it is valued in the associated cultural context; in this condition, tangible and intangible aspects of cultural heritage may not be isolated from each other.

The Nara Declaration of 1994 provided legitimacy to the view that the process of the conservation of heritage is far from universal and depends on the context. Since this strongly influential argument, this view has gained momentum in academic space as well as in the conservation profession, motivating several declarations/subsequent charters; some have implicitly or explicitly asserted the existence of “Asian approach” in preserving the cultural heritage (Winter 2014).

③ Principles for the Conservation of Heritage Sites in China

Between 2000 and 2015, China started to create the self-paradigm in its heritage conservation. In 2000, the China Principles were published based on theoretical and practical Chinese heritage conservation. After fifteen years of continuous conservation works and practice with the increase in the registered sites as provincial, national, and world sites, China showed a high technical level of practice, conservation practice, and a good deal with the different interest actors and stakeholders to use the heritage and achieve the balance between the heritage preserving needs as a non-renewable resource and the other national goals and dimensions. By the end of 2014, China had forty-seven registered World Heritage Sites and extended the concern to the linear World Heritage Sites of the Silk Roads and the Grand Canal and started changing the view to the heritage as power for China development. The Notice on Strengthening the Conservation of Cultural Heritage of the State Council

2005 contributed in organizing annual conferences and forums for sustainable development and usage of the heritage sites and enriching the conservation research. A review of the China Principles was started in 2010, and the contemporary version was established in 2015 with the title “Principles for the Conservation of Heritage Sites in China” (Agnew and Demas 2015). It is a comprehensive system that understands the properties values and practice standards. The new version mentioned the social values and preserving new categories of Chinese cultural heritage such as cultural landscapes, canals, and routes, as well as the last century industrial heritage. It emphasized the conservation of the historic condition as primary principles using technology with minimum intervention for preventive preservation and in the frame of authenticity. Additionally, it formalized the reconstruction of a destroyed historic building for the presentation purpose and the importance of integrated monitoring as a safeguard for the heritage properties and for preventive conservation, where the usage of the properties should be appropriate and adaptive in line with the sites’ capacity.

1.1.3 The Evolution of the Archaeology and Heritage Conservation in Syria

① The Development of Archaeology in Syria

The political issues helped in making the archaeological research a priority in Syria and the countries of the Middle East (Gillot 2010). French Mandate provided colonial assistance framework for the evolution of the archaeological research and constitution in Syria based on the historic, political, and aesthetic values. French authorities created the following bodies:

- (1) The Islamic Institute of Art and Archaeology in 1918 (Institut d’Art et d’Archéologie islamique).
- (2) The Department of Antiquities (Service des Antiquités) and the Standing Archaeological Commission (Mission archéologique permanente) and Damascus Museum (it starts in four rooms in Department of National Knowledge) were also set up in 1919.
- (3) The French Institute of Arabic Studies of Damascus established in 1930 (Institut français des Études Arabes de Damas).

Hence, consequently, France benefited from the sharing of antiquities and facilitated the restart of excavations that begun before the World War I, based on new archaeological methods, such as the survey of the Syrian Hills of the Middle Euphrates. From 1919 to 1936, the Syrian antiquities were presented in three museums: the Museum of Aleppo in the north, the National Museum of Damascus, and a central Swaida Museum in the south. The French High Commissioner has issued the old Laws of Antiquities in Syria and Lebanon through Resolution No. /207/26 March 1926. The registration on the National Heritage List started in 1929

when they registered Palmyra site as a national heritage. The excavations at Palmyra, Mari, and Ugarit were opened in the interest in Classical Antiquity and Phoenicia under the command/supervision of French officials. Due to the political instability and strategic reasons, the excavation enterprises were risky. In the 1930s, several scientifically programs were developed under notable individuals like Claude Schaeffer (1898–1982), André Parrot (1901–1981), and Maurice Dunand (1898–1987). However, Syrian archaeology continued to be a secondary field of study compared to other countries in the Middle East. In 1938, the first Syrian Law of Antiquities was issued and followed by the issuance of a list of certain milestones, and this list is still yet a reference for historical buildings in Syria. The concept and operations of the restoration and rehabilitation of historic buildings and the public awareness of their importance started strongly to appear.

After the independence in 1946, the consecutive Syrian governments sought to protect/identify a national heritage (*athâr*) as known by its historic and national or aesthetic value. The modernization/reorganization of the bureaucratic structures that established during the French Mandate was part of a whole process seeking at developing independent national archaeology. The Directorate-General of Antiquities and Museums (DGAM), Damascus, Syria, was founded in 1946. Both of establishment of the Syrian Archaeological Annals in 1950 as a bilingual journal (*Les Annales archéologiques syriennes*) and the development of the national museums of Aleppo and Damascus had encouraged the development of national archaeology. Several notable national archaeologists participated in the development of the archaeological field in Syria such as Salim Abd al-Haqq, Jaafar Al-Hossni, and Adnan Bounni. The Syrian Antiquities Law and the version governing the work of the staff of the General Directorate of Antiquities and Museums have been issued in 1963. This law was considered by UNESCO as a model law and has been translated into French, and it is still a law in force passed by its provisions to this day and a tool legal for the protection the antiquities in Syria. Later, some amendments had been made in the Syrian Antiquities Law of 1963 in 1969, 1974, and most recently in 1999.

The national archaeology became stronger after Hafez al-Assad in 1970–71, and the protection of antiquities was registered in the Syrian Constitution in 1972. The recognition and hard efforts of the Syrian-related institutions to inscribe the sites on the UNESCO World Heritage List had contributed in enhancing the vital role of international experts in the definition/management of the heritage properties and also in recognizing the universal value of the Syrian national heritage. On August 13, 1975, Syria had signed on the UNESCO's Convention for Protection of the World Cultural and Natural Heritage, while a massive plundering of sites and illegal excavations raised due to a prospering trade in antiquities in Europe and America, which put additional responsibilities on Syrian government authorities to enhance international archaeological collaborations. Between 1980s and 1990s, the archaeological research was characterized by the intensification/diversification, in a political situation that became more appropriate to the polarization of foreign archaeological missions, whose numbers raised to 86 in 1996, while in 2010, there were 120 active archaeological teams in Syria. Some trends seeking the participation of local com-

munities have emerged. The DGAM was aiming to improve archaeology research at the national level within the framework of joint archaeological projects/teams and European training programs alike. This development stage came along with rising Syrian and local concern in heritage protection for tourism development. On the other hand, the monopoly applied by institutions and scientists on archaeological research in parallel with the minimal participation of Syrian civil society and private tourist and cultural groups until the 1990s.

② **Monitoring and Managing the Syrian Heritage Sites and Buildings**

Since the late nineteenth century, the definition of “heritage” over the world gradually changed from monuments to historic cities in the 1960s, to cultural landscapes recently, thus emphasizing the relationship between territory and man presence. Urban heritage protection dealing initially with the physical conservation of historic cities was extended in the 1980s into functional conservation, with the aim to counteract gentrification, and since 1990s, it is principally focusing on the protection of “place identity” of historic cities, often endangered by mass tourism and the transformation of heritage sites. In Syria, the Syrian Antiquities Law has long concerned the statutory protection of the historic site, the underground archaeology, the heritage assets, and collections and movable objects. Just two decades before the Syrian war, the urban heritage and cultural built heritage started to have its rightful place in the Syrian government concerns and conservation research with attention to their local environment and communities. In 2010, the related authorities proposed a Heritage Law draft and the issuance is stopped since 2011 because of the Syrian war.

Tourism, mainly cultural tourism, has become the third major industry worldwide for a number of employees and contribution to GNP. In fact, it creates benefits in many other sectors. In this context, the UNESCO brand of (the World Heritage) WHS has demonstrated to bring a great added value to the sites assigned and great development of tourism by improving its image and inclusion within networks and plans and the capacity to attract resources. Syria presented the first preliminary list for 16 cultural heritage sites in 1999. In 2011, Syria presented the second preliminary list for 10 cultural sites. Nowadays, six of Syria’s archaeological sites were listed on the UNESCO World Heritage List, and other twelve archaeological sites were submitted to UNESCO’s tentative list. In 2002, the Budapest Declaration switched the emphasis from the protection of the historic sites to management, and UNESCO invited the listed WHS to prepare management plans. Since 2006, emphasis is placed on monitoring and on the impacts created by the UNESCO World Heritage status, passing from management to monitoring. Therefore, the efforts of conservation changed from Protection to Management then to Monitoring.

Syrian codes outlined the guidelines of the conservation and rehabilitation works without damaging the archaeological structures and resources as follows:

- (1) The historic character shall be retained, preserving as much of the original fabric as possible; minimal changes to a historic structure’s defining characteristics should be made.