

Disaster Management



Information for parks, federal agencies,
Indian tribes, states, local governments,
and the private sector that promotes
and maintains high standards for pre-
serving and managing cultural
resources

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Design and Imaging
McCoy Publishing Services
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VOLUME 23 NO. 6 2000
ISSN 1068-4999

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Cover: This corner building was heavily damaged by the Northridge Earthquake in 1994, but has been retrofitted and restored. Photo courtesy David W. Look.

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The Cultural Heritage and the Nature of Disasters in Jordan and Palestine

The east Mediterranean region is the heart of many ancient and modern civilizations. The density and diversity of the historical and cultural resources in Jordan and Palestine are unprecedented and exceptional. Tens of thousands of sites date back not only to Neolithic and Chalcolithic periods, but also extends into Classical, Islamic, and even the 19th and 20th centuries. The cultural heritage incorporates religious, residential, and public buildings in addition to cultural landscapes encompassing historic cities and villages, streets, alleys, and neighborhoods. In addition, Jordan and Palestine are the homes for several World Heritage Sites designated by the

International Council of Monuments and Sites (ICOMOS) such as Petra, Amra Palace, Dome of the Rock, Church of the Nativity, and parts of the Old City of Jerusalem.

The east Mediterranean region in general and Jordan and Palestine in particular have been subjected to various disasters. Wars, political conflicts, and earthquakes are the primary disasters that have affected the area. They are major hazards with low probability but high adverse impacts. The Arab-Israeli wars of 1948 and of 1967 had an adverse impact on significant historical and cultural resources. The cultural heritage, especially religious buildings and significant monuments, is linked to national identity and pride and is usually targeted during wars and

political conflicts (e.g., the Aqsa Mosque in Jerusalem and the Ibrahimi Mosque in Hebron).

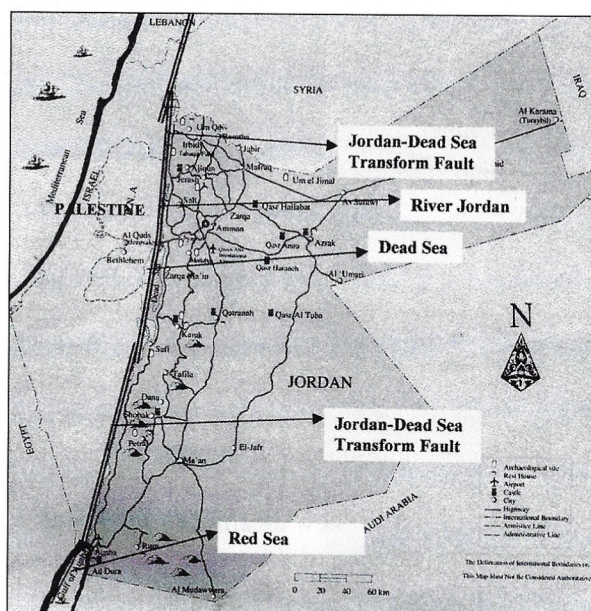
The Jordan-Dead Sea transform fault, the major tectonic feature, was formed as a result of the breakup of Arabia from the African Plate.¹ The Jordan-Dead Sea fault connects with the Red Sea and the African fault to the south and the North Syrian and East Anatolian faults to the north. Strong and devastating earthquakes have struck the region in 336, 362, 551, 746, 765, 808, 1043, 1262, 1759, 1834, 1837, 1903, and 1927. The earthquake of 1927 is still important in living folklore and oral history to the extent that other events are dated in relation to it. Its effect amounted to hundreds of deaths and dam-

aged houses and structures (e.g., the death toll in Salt alone, which is close to the earthquake epicenter, reached about 40 with almost 1,000 damaged houses).

Earthquakes tend to affect extensive regions making it possible to "chronologically articulate the depositional records of spatially discrete sites on the basis of comparative archeo-seismic evidence" (e.g., collapse orientation of columns

and pilasters which tend to collapse in the opposite direction of the quake's epicenter).² Such archeo-seismic evidence can be collected from the entire length of the Jordan Rift Valley. A historiography of earthquakes in the region should be based not only on archeo-seismic and contemporary seismic data, but should also incorporate data from ancient historical and textual remains.

Map of Jordan and Palestine showing the Jordan-Dead Sea Transform Fault. Courtesy the authors.



A Methodology for Disaster Preparedness and Mitigation Planning

In Jordan and Palestine, the heritage conservation movement is faced with several obstacles (e.g., lack of funding, absence of a clear methodology for heritage conservation and management, deterioration, exploitation, and misuse of many of the historical and cultural resources).³ In addition, the protection and conservation of the cultural heritage in a post-disaster situation constitutes the lowest priority. Therefore, a conscious methodology for disaster mitigation and planning for the historic and cultural resources is important.

Disaster management is a cycle including actions before and after an event. While attention is often focussed on the immediate response to a disaster, preparedness and mitigation can prove to be more effective and far more important in mitigating the negative impacts of a disaster.⁴ Therefore, the methodology will incorporate pre- and post-disaster mitigation strategies and be based on proactive rather than reactive mitigation measures. The methodology is composed of several stages.

Development of a knowledge base on cultural heritage and nature of disasters. Accurate information and data about the nature of the different historical and cultural resources should be secured through identification, evaluation, and significance assessment of resources in an area. The definition of the cultural heritage is a continuous process during which new meaning and values are always being discovered. Consequently, different types of cultural resources are therefore incorporated into the realm of cultural heritage.⁵ Significance assessment is the essence of heritage identification and evaluation because it affects the conservation strategies incorporated within a reconstruction or a disaster management plan.

Through a cultural resources management (CRM) project in the early 1990s, funded by the United States Agency for International Development (USAID), Jordan has established an inventory, the Jordan Antiquities Database

and Information System (JADIS), of Jordan's archeological sites in an electronic format.⁶ Even though the project provided a very valuable database on archeological sites, the project did not include heritage sites during the last 300 years. In addition, the project was not able to create, within the existing Jordanian economic planning structures, permanent mechanisms to coordinate public and private sector development that would protect and conserve antiquities sites and resources.⁷

After the peace treaty with Israel, the Palestinian Authority has started to address the



Remains of the Shamiah Residential Quarter in Ma'an, southern Jordan, after the 1927 earthquake.

issue of heritage conservation. The Ministry of Planning and International Cooperation (MOPIC) has launched an Emergency Natural Resources Protection Plan through which endangered cultural heritage sites in the West Bank are being inventoried. The objective is to protect and conserve such sites during future massive development in the West Bank and Ghazeh (Gaza).⁸

In a post-disaster situation, many historical and cultural resources are considered unsafe based on a very preliminary evaluation and are deemed for demolition regardless whether or not the resource is worth saving from a heritage conservation point of view.⁹ In other circumstances, demolition of damaged buildings can be attributed to victims seeking retribution "to vent anger and to seek vengeance."¹⁰ The public acknowledgement of the significance of such resources (e.g., even the ordinary cultural heritage beyond public monuments and religious buildings) can facilitate further evaluation of such resources. Such an evaluation can trigger other options

besides demolition such as structural stabilization, re-consolidation, and reconstruction. Understanding of earlier forms of construction and knowledge about historic building performances during earthquakes is very important (e.g., for predicting the post-disaster behavior of a certain structure, carrying out reconstruction work).¹¹

Risk assessment and defining levels of acceptable risk. Defining levels of acceptable risk can be achieved through vulnerability analysis, census and demographic data, hazards mapping, and a proper understanding of the cycles of disasters. The aim of this diagnostic process is to balance known risks against available resources.¹² First, risk assessment involves the production of hazard maps illustrating areas of potential seismic, volcanic, and flood activities. Local scientific analysis, historic archives, and archeo-seismic evidences can help in providing valuable information for the production of such maps using a Geographic Information System application. Second is the assessment of the vulnerability of persons and resources to the mapped hazards.

All information gathered from the previous stages should be passed on to decision makers to determine a course of action where different levels of acceptable risks are identified. The easy way out is to assume that no risk is acceptable and to demolish all affected heritage buildings. Acceptable risk needs to be carefully assessed.¹³ Conservation of damaged historic structures needs to comply with building codes and regulations for historic buildings rather than building codes for new constructions. Different courses of action could be adopted such as risk reduction, upgrading infrastructure, and several other solutions based on the above collected and researched information.

Preparedness and mitigation planning and management. The main objective is to reduce the level of vulnerability of cultural resources and the impacts of disaster. This can be achieved through hazards reduction measures: protective infrastructure, preparedness measures emphasizing short-term activities (e.g., formation of disaster-management plans, development of warning systems, training of personnel, assessment of damage, and emergency repair), and longer-term mitigation measures (e.g., proactive building codes and regulations.)

Planners and policy makers can introduce the necessary measures to create a safer urban environment. Such mitigation measures include:

- Inclusion of safety elements in the curriculum of key professionals such as architects, planners, engineers, and housing officials;
- Establishment of a system of building codes and land-use planning controls to insure that future buildings and settlements contribute to resisting earthquakes;
- Incorporation of hazard impact analysis (HIA) in areas subject to seismic movement, landslides, and flooding;
- Incorporation of environmental impact assessment (EIA) prior to embarking on reconstruction projects where the stakeholders are identified, consulted, and engaged in the process of reconstruction.

HIAs and EIAs can play a significant role in assessing the impacts of various hazards on development projects.

Post-disaster mitigation measures involve the rehabilitation of the community and its cultural resources through several intervention tactics and techniques. This rehabilitation period is



The Hussieni Mosque in central Amman. The mosque has been renovated several times since the 1927 earthquake damaged it.

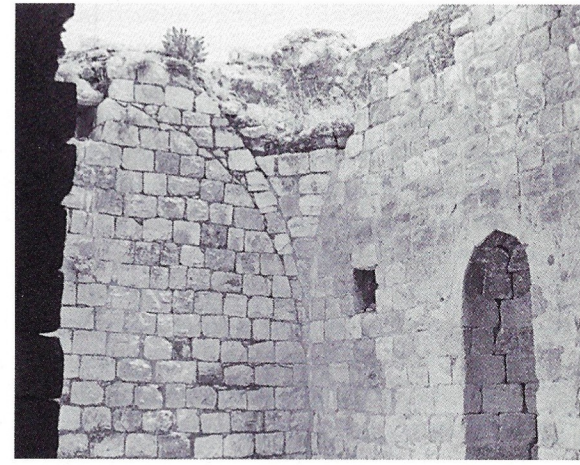
Exterior and interior views of the Zaidani Mosque of Tibneh in northern Jordan. The roof of the mosque has been severely damaged after the 1927 earthquake. The mosque, stands deserted, still waiting funding for its rehabilitation.



the most difficult for the victims physically and emotionally. Based on several reconstruction-after-disasters projects undertaken in Bosnia-Herzegovina, Iraq, Lebanon, and Afghanistan, the most productive type of aid during this period is cash and credit, job-producing activities, and projects where the local community is genuinely involved in the overall process of reconstruction.¹⁴ A professional and knowledgeable team of heritage conservationists, civil defense officials, structural engineers, and other specialists must conduct a serious and thorough inspection of the impacts of the disaster on the cultural heritage. The recommendations of such a task force should inform decision making in terms of demolition, structural stabilization, and other significant decisions.¹⁵

Testing the methodology. Although simulation exercises or public drills can attempt to test the methodology, an actual disaster situation is the best test. The aftermath of a disaster is a busy time for disaster specialists to accurately assess the event in terms of deaths, injuries, damage to property, the needs of the affected populations and the character, scale, and nature of the assistance needed.

Incorporation of feedback from previous lessons. Feedback from previous disasters should be considered in the revision of disaster management and mitigation plans. In addition to incorporating feedback from previous disaster experiences, governmental bodies and universities are responsible for initiating special graduate courses in disaster mitigation and management. Such courses should target planners, enforcement officials, engineers, urban designers, and other segments of professionals. In addition, regular training courses (smaller modules) in disaster preparedness should target decision makers working



in government agencies and non-governmental organizations.

Conclusion

UNESCO, and through ICOMOS and other international organizations, has initiated conventions, charters, and recommendations concerning the protection and conservation of cultural heritage. These include the Convention for the Protection of Cultural Property in the Event of Armed Conflict: the Hague Convention in 1954, and the International Charter for the Conservation and Restoration of Monuments and Sites: The Venice Charter of 1964.¹⁶ Even though such international agreements aim at the protection of the cultural heritage, the widening gap between their glittering rhetoric and the dark reality of actual practices during war and political conflicts is increasing. One has only to take notice of what had happened in Bosnia-Herzegovina during the late ethnic cleansing which had an adverse effect not only on human beings, but on significant cultural resources as well. Such realities emphasize the ultimate necessity to seriously consider a disaster management and mitigation plan, especially in countries like Jordan and Palestine with high probabilities of wars, political conflicts, and earthquakes.

In Jordan and Palestine, specialists in disaster management call for the establishment of a governmental structure (a central coordinating body such as a National Disaster Co-ordination Council) to coordinate and implement disaster preparedness and mitigation strategies.¹⁷ In Jordan, for example, the Jordanian Supreme Council for Civil Defense can be developed and upgraded through intensive human resources development and capacity building.

The recent earthquakes in the western part of Turkey in 1999, measuring 7.4 magnitude on

the Richter scale, shocked Golcuk and environs, causing about 15,000 deaths and damage to several monuments in Izmit, Iznik, Bursa, Istanbul, and many other cities.¹⁸ This incident had adverse effects not only on human beings and buildings but on the economic and industrial infrastructures as well. It represents a clear indication that disasters can no longer be regarded as isolated events that have little or no relationship to the political or economic development of a country. As stated by disaster management specialists, "Disasters are major contributors to underdevelopment, in the same way as underdevelopment is one of the major contributors to disasters."¹⁹

Notes

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Photos courtesy Rami F. Daher.