

PN-ARF-104
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Project in Development and the Environment

**Conserving Egypt's
Cultural Heritage:
Priority Sites Needing
Restoration and Protection**

March 1993

Submitted to:
USAID/Egypt
Submitted by:
PRIDE
AID Contract Number:
ANE-0178-Q-00-1047-00
AID Project Number:
398-0365

Sponsored by:
USAID/NE/DR/ENR
Operated by:
Chemonics International
and its associates

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**Conserving Egypt's
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SECTION I INTRODUCTION

A. Background

This report offers proposals for cultural heritage preservation that were outlined in the Government of Egypt's Environmental Action Plan of March 1992. They are the result of meetings and discussions held by a multi-donor mission which met in Cairo in January 1993. The participants in those meetings unanimously recommended that only a limited number of highest-priority projects be chosen for final consideration, and that they be projects on which direct action could be taken immediately.

The 1992 Action Plan cited seven cultural sites that particularly needed conservation, protection, and management: Rashid, Abu Mena, Giza, Saqqara, Islamic Cairo, Luxor, and Siwa Oasis. This report recommends action at three of those sites (Siwa Oasis, Islamic Cairo, and Luxor), and equal emphasis for institutional development (archaeological resource management). The Government of Egypt (GOE) gave the three sites discussed here the highest priority. Two of them have World Heritage status. Sites on the original list not included in this report were excluded because various Egyptian or foreign agencies have recently established other programs to deal with them.

The GOE also stressed the urgent need for long-term programs to train site managers and the need to establish archaeological databases and monitoring systems at the national level. The GOE and the multi-donor mission gave such programs the highest priority rating.

Due to the limited time available for the January 1993 mission, this report could not fully address the technical and institutional dimensions of the priority cultural heritage preservation issues. Only cursory elements of each of the four cultural heritage preservation actions proposed in the report could be identified or estimated. To finalize the project TORs and ensure full integration of the projects in a national action plan for protection of Egypt's cultural heritage, the report proposes that an interdisciplinary project preparation team be fielded as the mission and the GOE concur on the identification of priority projects.

B. Action

B1. Siwa Oasis

A feasibility and design study is proposed to ensure the effective integration of plans to lower groundwater levels, protect Siwa's two most important historic monuments (the Oracle Temple and Old Town Aghurni), safeguard the area's unique flora and fauna, and improve the economic condition of the inhabitants while preserving their traditional culture. This study, which could begin immediately, would take six to nine months and cost \$300,000.

B2. North Gamaliya

Establishing a 3 sq km cultural zone in this section of Medieval Cairo would ensure the protection of one of the world's most important collections of Islamic monuments. A feasibility and design study for management of the many elements that affect this area and a proposal to establish a development agency to oversee its long-term operation could be undertaken immediately. It would take one year and cost \$750,000.

B3. West Bank at Luxor

The proposal calls for designating this area a World Heritage Park under a single management agency; establishing a sustainable database and monitoring system; developing plans to accommodate a predicted threefold increase in tourism; and undertaking urgent work in the Valley of the Kings. The feasibility and design studies, which could begin immediately, would take 12 to 18 months and cost \$500,000. Work on the database, which is essential to all future work, also could begin immediately, at a cost of \$450,000 for each of three years.

B4. Institutional Development

A program in archaeological resource management to train the on-site managers of Egypt's many cultural sites is critically important. So too is the establishment of a nationwide archaeological database and monitoring system. The training program, for which the American University in Cairo, the Getty Conservation Institute, and the U.S. National Park Service have already made plans, could begin immediately. If these activities began on a parallel track with the West Bank proposal, they would take 12 to 18 months and cost \$800,000 in the first year, and \$250,000 in subsequent years.

C. National Action Plan

C1. Strategy

Although the GOE has placed a high priority on proposals for institutional development and restoration of the Siwa Oasis, Luxor, and Islamic Cairo sites, a framework is needed to integrate these projects in a comprehensive, coordinated approach to cultural heritage protection and management. The strategy should concentrate on three key actions:

- Establishing a national database and monitoring system;
- Developing procedures to ensure that cultural heritage management proposals are compatible with both public and private sector policies and procedures; and
- Identifying, in each proposed restoration/preservation site, a triage-like ranking of monuments as follows: (1) seriously damaged, (2) moderately damaged, and (3) still stable, and making recommendations to stabilize and monitor them.

C2. National Action Plan Team

The report proposes that a three-person project design team be fielded to prepare the national cultural heritage action plan. The team should consist of an Egyptologist, a specialist in cultural heritage architecture and engineering, and a specialist in project design. The team's primary responsibilities will be to draft the national cultural heritage protection and management strategy and prepare detailed TORs for the four priority projects identified in this report.

SECTION II

SIWA OASIS: ARCHAEOLOGICAL AND ENVIRONMENTAL MASTER PLAN

A. Introduction

Siwa Oasis, which lies below sea level in a large depression in northwest Egypt, covers approximately 750 sq km of the Western Desert. At last count, Siwa supports 11,000 people, whose economy is based almost entirely on the cultivation of 250,000 date palms and olive trees.

Linguistically, culturally, and geographically, Siwa Oasis is set apart from Egypt. Its closest Egyptian neighbor, the Mediterranean coastal city of Marsa Matruh, lies 300 km to the northeast. In ancient times, this distance would mean an eight-day trek through barren desert:

It was a long and laborious journey and besides the fatigue there were two great dangers attending it. One was that the water might fail ... and the other, that they might be surprised by a violent south wind amidst the wastes of sand, as had happened long before to the army of Cambyses. The wind then had raised the sand and rolled in such waves that it devoured full fifty thousand men. --Plutarch

The distance to the Nile Valley is further still. Alexandria is 500 km to the east, and a march from ancient Memphis to Siwa would have taken at least two weeks.

Considering these distances and the inhospitable terrain that lay between, it is no surprise that Siwa Oasis developed its own cultural character. Its history, customs, dress, language, architecture, crafts, and social organization are highly individual, and ethnographically precious. The rising groundwater and increased soil salinity threatens all these elements of the oasis. It is essential that immediate action be taken; if not, Siwa's monuments will crumble, its crops will fail, and the oasis will drown.

B. History

Siwa Oasis does not appear in written records or archaeological remains until the 26th Egyptian Dynasty (663-525 BC). A fair amount of circumstantial evidence, however, indicates that the oasis inhabitants were originally of Libyan stock, which is hardly surprising since the border of modern Libya lies only 80 km away. Certainly, Sutekh-irdes, Siwa's ruler during the 26th Dynasty, came from Libyan stock; he is depicted iconographically on the Oracle Temple of Jupiter Amon as a typical Libyan chief. (That temple was known throughout the world as the "Oracle of Amon in Libya," although stylistically the monument is Egyptian.)

The Oracle Temple of Jupiter Amon was among the seven most respected oracles in classical times, drawing many visitors then as now. Two of the most illustrious visitors were Alexander the Great and Strabo, but messengers of nearly every powerful king in the ancient world regularly made the arduous round-trip journey. Although the oracle seems to have ceased functioning in the second or third century A.D., Siwa worshipped Amon until well into the seventh century. Indeed, St. Samuel of Qalamun records in his autobiography that around 633 A.D. he was sold as a slave to a tribe of Berbers who worshipped the sun. The home of these Berbers, a march of some 17 days from Wadi Mawaylih, can be confidently placed in Siwa.

There is very little evidence of Christianity in Siwa, although Laoust records that it arrived in the oasis in the fourth century. None of the modern day inhabitants admit to being Christians or having Christian ancestors, but there seems to have been a Christian population in the Aghurmi village during early times. The Siwan manuscript, an important document of local history, mentions Christianity only once: "Bilad al-Rum is a church at the foot of the hill from which some remains still exist and which was built with burnt brick; it is the abode of prostitutes." Islam had far greater success in Siwa.

Siwa contains two ancient towns. The remains of the oldest, Al Aghurmi, are mostly early Islamic in date, although, since the town surrounds the ancient oracle temple, it is very possible that earlier stages of the townsite lie beneath it. The inhabitants of Al Aghurmi suffered considerably from Bedouin raids between the ninth and tenth centuries, and by 1203 the population had dropped to 40 men in only seven families.

These survivors banded together to create a new fortress town, Shali, also constructed on a low hill. Originally, Shali had only one entrance; a century later another, secret gate was built, and a third was constructed a century after that (for the women of the town who desired to avoid the main gate, where the village leaders sat). Until 1826, no Siwans were allowed to build outside the village walls; as the population expanded, the buildings grew upwards, some to seven or eight stories. The architecture of this old city is fabulously convoluted.

Siwa's history is contained in a unique document, the Siwan Manuscript, which chronicles the seven founding families of Shali and their dynastic intrigues. From 1203 until 1820, the heads of these family groups, forming a council known as the agwad, ruled Siwa Oasis and kept its population safe from invaders. Only with their defeat by Muhammed Ali in 1820, did the Siwans lose their independence. Since then, they have been officially a part of Egypt, while managing to retain their cultural individuality.

C. The Problem of Water

The water upon which the people of Siwa depend for the cultivation of their date palms, olive trees, and other crops is abundant in the oasis. The area has virtually no rainfall, but groundwater sources provide far more water than the inhabitants need. More than 200 natural springs yield medium-quality saline water suitable for irrigation. Very few of the springs produce potable water for people and animals. Recently, wells have been

bored into the Nubian aquifer system which supplies a limited amount of an excellent quality water under artesian pressure.

The Siwans use an ancient system of flood irrigation to water their crops. Every few days, irrigation ditches are flooded and about 10 cms of water are allowed to stand in fields and groves. Excess water is drained into sabakhs and several saline lakes which are scattered throughout the oasis.

However, the traditional irrigation system has a serious problem: increased soil salinity. This eventually renders the soil sterile and makes crops impossible to grow. When water evaporates from the large surface area of the flooded fields, it leaves behind the salts which impregnate the soil and threaten to leech out all nutrients.

In addition, since the oasis is a massive depression that averages 18 meters below sea level, Siwa has a natural drainage problem. The result is that the oasis is swamped with water. Without an elaborate system of pumping, the agricultural wastewater and excess spring water collect in the salt lakes and sabakhas which form in the lowest areas of the depression. Recent agricultural expansion and uneconomical use of water for irrigation combine to form a major threat to Siwa's agricultural productivity.

This wastewater has led to a considerable increase in the water table and lake levels, and threatens to drown the whole oasis. The large volume of water that collects cannot be entirely evaporated. As a result, not only is the groundwater level rising, but the salt lakes are expanding and now cover huge areas of what could otherwise be productive agricultural land.

D. Threats to Siwa's Archaeological Heritage

The Temple of the Oracle of Jupiter Amon on Aghurmi Hill is one of antiquity's most famous monuments, and one of its most endangered. Because of its outstanding historical significance, it has been given priority on the Environmental Action Plan's list of Egyptian monuments needing conservation or restoration. Balanced precariously on the edge of an escarpment, it is in danger of collapsing because of the water problem described above. Water from a spring within the rock of the hill is seeping into the porous marl layers, causing swelling, shrinking, and cracking. The rising dampness also has led to the formation of salt crystals within cracks in the rock. The dangerous tectonic movements and severe erosion these processes create have caused the northern part of the hill—where the temple is located—to erode. So much of the bedrock already has broken away that the rear wall of the temple overhangs the edge of a cliff. This process of degradation will steadily continue unless emergency intervention can stabilize the bedrock and the temple itself.

The same processes that threaten the temple now endanger the remains of Siwa's most ancient town. Aghurmi Village, now a deserted oasis settlement, represents a superb example of traditional local architecture and urban development. It consists of a beehive of closely-clustered houses and narrow alleyways, all built around a large mosque and square at the highest point on the hill. The building material that was used, salt drenched mud (called

"karshif"), and the architecture of the buildings blend harmoniously with the surrounding environment. Nonetheless, kharshif is highly susceptible to water damage.

Aghurmi Hill, Aghurmi Village, and the Oracle Temple together constitute one of the major reasons that tourism thrives in Siwa. As this formerly isolated oasis comes into closer contact with the outside world, alien forms of architecture and nontraditional building materials are invading the environment. Aghurmi Village is one of the world's few surviving examples of a traditional oasis settlement. It should be preserved as a major part of Egypt's cultural heritage.

E. The Environment

Siwa, the surrounding desert, and the nearby Qattara Depression lie in the center of a biological zone rich in unique flora and fauna. Their conservation, perhaps even including the establishment of captive breeding programs to ensure the survival of the several endangered species in the area, must be an integral part of any protection plan.

F. Tourism

An on-site museum should document Siwa's cultural heritage, and a conservation/development plan should accompany a design and site management plan to provide sustainable programs for preservation and study. Such studies should take account of maintenance, tourist facilities, and the development of the oasis' infrastructure.

G. Proposal

Siwa Oasis has great developmental potential, especially for tourism and agriculture. A long-term plan is needed, however, to ensure proper development and to help eliminate the basic causes of Siwa's degradation. Irrigation and drainage problems are outside the scope of this proposal, but any hope of saving the oasis and its monuments must clearly rest on their solution. Without them, Siwa will either drown or lose its unique character.

G1. Measures for the Oracle Temple

- Secure the remaining substance of the building by protecting the northern edge of the hill from further erosion;
- Locate and block the sources of the rising water and water seepage within Aghurmi Hill;
- Dismantle the temple, secure its foundations by means of borings and injections, rebuild it on a self-supporting platform, and replace eroded masonry.

G2. Steps to Preserve the Settlement Area

- Conduct geological tests;
- Reduce water levels;
- Consolidate the southern aspect of the abandoned town of Aghurmi, including parts of the city wall, its gateway, minaret, and mosque.

H. Costs

During the first six months, a feasibility and design study should be undertaken to determine how best to deal with groundwater, preserve the natural environment, safeguard Aghurmi town and the Oracle Temple, and preserve the unique lifestyle of Siwa's inhabitants, all in a way that is economically sustainable and advantageous to the local population.

SECTION III
CAIRO: THE NORTH GAMALIYA WORLD HERITAGE DISTRICT

A. Historical Introduction

UNESCO has designated the Old City of Cairo a World Heritage site. This tiny area, barely 1 percent of Cairo proper, "contains the largest concentration of Islamic monuments [outstanding in quality as well as quantity] to be found anywhere in the world." In the thousand years of its existence, Medieval Cairo has been renowned for its impressive architecture, rich bazaars, and numerous other charms.

The histories of Muslim Egypt and Cairo are impossible to disentangle. Islam entered Egypt in 640 A.D. and less than a year later, Cairo was founded as the capital of Muslim Egypt. The major political periods in Egypt's Islamic history are the same periods that define Cairo's political and architectural history:

Early Islamic	641-750
Abassid Caliphs	750-868
Tulunids	868-905
Ikhshidids	905-969
Fatimids	969-1171
Ayyubids	1171-1250
Bahri Mamlukes	1250-1382
Burgi Mamlukes	1382-1517
Ottomans	1517-1805
Muhammed Ali's Dynasty	1805-1882

The area we refer to as Medieval Cairo comprises the 3.7 square kilometer zone bounded by Bab Al-Futuh to the north, Sharia Saleh Salem to the east, the Ibn Tuloun Mosque to the south, and Sharia Port Said to the west. Medieval Cairo is in fact the fourth of four separate cities, each established by different political leaders upon their accession to power in Egypt. These cities were Al Fostat, Al Askar, Al Qata'i, and Al Qahira. Al Qahira is the only one that survives today.

The earliest city, Al-Fostat (the Encampment), was founded by Amr Ibn Al-Aas, whose mosque and mausoleum still stand, although both have been heavily restored. Al Fostat, constructed as a camp city, was the provincial capital for the Umayyid caliphs in 641 A.D.; by 700, it had become a full-fledged city in its own right. Al Fostat is now the site of a huge garbage dump whose land is slowly being reclaimed for low-income housing.

The Umayyid Dynasty retained power in Egypt until 750 A.D., when it was overthrown by the Abassid caliphs. The Abassids established a new provincial capital northeast of Al Fostat, a city they called Al Askar (the Military Quarter). Al Askar served as the nucleus of political power in Egypt until the defection of the Abassid general, Ibn Tuloun, in 868. Nothing of this city remains.

Ibn Tuloun, originally sent to Egypt from Baghdad by the Abassids to quell a series of disturbances, eventually gained enough influence and power to assume total control of Egypt. As sole master of the country, one of his first acts was to build a new palace city, Al Qata'i (the Concessions), further still to the northeast of Al Fostat. Here, below the Moqattam Hills, he built the famous mosque that bears his name. This mosque is nearly all that remains of his city.

The last of the four cities is the only one surviving today. The Fatimid rulers of Egypt founded Medieval Cairo around 969 A.D. Called Al Qahira (the Victorious), it lay 4 kms northeast of Al Fostat. During the eleventh century, the Fatimid caliphs enclosed this palatial area with high walls; three of the imposing gates still exist. During the next six centuries, scores of Fatimid and Mamluke monuments were constructed within these walls; each is remarkable for its architectural beauty and historical importance.

B. Problems of Medieval Cairo

Since the founding of Al Qahira over 1,000 years ago, Medieval Cairo has been continually used as a residential neighborhood, a commercial and religious center, and, always, a tourist attraction. Within its environs—as nowhere else in the world—the full scope of Islamic art and architecture can be appreciated. Indeed, Medieval Cairo is home to many unique architectural monuments, such as the sabil-kuttab (a combination fountain and religious school), and many of its monuments are the foremost examples of Islamic architecture in the world: the mosques of Al-Azhar, Barquq, Al-Ghoury; houses such as Bayt As-Sehemi; the Bishtak Palace; the gates of Bab Al-Futuh, Az-Zuayla, Al-Nasr; and hundreds of others. No other Islamic capital, and few cities in the world of any culture, offers such a storehouse of architectural history and continuity.

The monuments of Medieval Cairo are in crisis, however. Of 622 registered historic buildings, 100 have disappeared in the last three decades. The earthquake of October 1992, destroyed or seriously threatened over 100 more. Today's high-powered traffic, thick pollution, urban crowding, and decaying infrastructure present problems which Medieval Cairo, notwithstanding its thousand-year history, cannot handle. The problems are manifold; they must be addressed if Medieval Cairo, the City Victorious, is to triumph and survive. They can be addressed with a strong likelihood of success in the following proposal.

C. Problems of the North Gamaliya Area

The area that we concentrate upon constitutes the northern part of the Medieval City. Known as North Gamaliya, it is defined by the Northern Wall, Sharia al Gamaliya to the east, Sharia Al-Muez al Din Allah to the west (with variable depth), and Sharia Al-Azhar to the south. The upgrading of this area, which we propose here, will have the maximum impact on all of Medieval Cairo. It is the area most frequently visited by tourists and most highly regarded by students of Islamic architecture.

Today, North Gamaliya consists of commercial and residential districts. Its unique value, however, lies in its great number of historical buildings, representing the finest

examples of Fatimid, Mamluke, and Ottoman architecture. North Gamaliya also is rich in traditional handicrafts, and its bazaar, the Khan el Khalily, is world-renowned. Despite its significance and beauty, North Gamaliya has not been systematically surveyed, and very little of it has been documented. The limited attempts to restore an occasional individual structure have ignored the environmental context of the monuments. Yet, for any attempt at preservation to succeed, it must be comprehensive, treating not only the readily apparent problems of individual structures but also their underlying causes. Our proposals call for rehabilitation of the area and its decaying infrastructure, and a comprehensive plan to protect its monuments. In light of the recent earthquake, such an area-wide survey and sustainable rehabilitation project are critical.

The project proposed would be based upon a thorough study of the North Gamaliya area and its people. It will preserve and rehabilitate the best part of Medieval Cairo, revive its traditional arts and crafts, and provide a long-term, sustainable management plan. Its goal is not to make the area a museum of isolated Islamic monuments, each surrounded by inappropriate and unkempt neighborhoods, but rather to create a vibrant center of arts, crafts, historic buildings, offices, and homes that combine to ensure long-term economic gain. The rehabilitation of the area includes sensitive tourism development which will in turn provide sustainability and profitability for both the local and national economies.

During the past 10 years, UNESCO has done several studies and proposals to protect and rehabilitate Medieval Cairo. The Egyptian Ministry of Tourism (1990), the World Bank (1991), the French Government (1992), and several other agencies each has recommended the kind of area approach that is proposed here, because the experts believe no piecemeal approach to individual monuments can succeed. None of these proposals has been implemented, either because it was too expensive, or because it required institutional and bureaucratic changes that seemed impossible to achieve. What is proposed here, however, can be a self-supporting program; and there are signs today in Egypt of greater willingness to make needed institutional changes.

D. Economic and Environmental Decline of North Gamaliya

North Gamaliya was one of the major commercial centers of Cairo until the 1860s. With the construction of the Suez Canal and the resulting increase in European interest in Egypt, the center of commercial activity moved from the traditional bazaar to the new and Europeanized downtown. Old districts like North Gamaliya lost their traditional economic base, and with it, their upper middle class. Vacated residential buildings became slums, factories, or artificially subdivided office spaces. The once-impressive architecture, like the infrastructure generally, was allowed to decay and collapse.

It was not long before cheap rents lured to North Gamaliya the factories that have been the principal contributors to destruction of the environment. Typically, these factories recycle waste paper, remold scrap metal, or perform other tasks best conducted outside city limits. The pollutants they produce are hazardous to both human beings and the buildings they inhabit. Worse, these businesses bring over 100,000 employees into the area each morning. The daily rush hours create chaos in the narrow, winding streets, further

congesting and polluting the area. It would be difficult to imagine an environment more hostile to the protection of fragile buildings, or more stressful to an already tenuous urban infrastructure.

Waves of new development show no signs of slowing or being strictly regulated by law. The area is thus rapidly losing its Islamic architecture, its character, and its traditional crafts and small industries. The principal reasons for this decline are economic and environmental.

E. Major Problems in North Gamaliya

Many historical buildings in Cairo are in such perilous condition that immediate action is necessary to prevent their collapse. A complete architectural survey of each monument must be undertaken, documenting in detail the condition of its site and its particular needs. This database must be regularly updated. Some monuments will have to be considered emergency cases: they cannot await a final area-wide study but must have immediate attention. The German Archaeological Institute and the Egyptian Antiquities Organization recently examined the North Gamaliya area and identified several monuments that require urgent action. Of the 10 buildings that head the list, the following have yet to see any restoration effort. Those marked with an asterisk are said to be in imminent danger of collapse; those not so marked have suffered very serious structural damage.

- ***Maqad Mamay (1496 A.D.). Monument #51.**
Importance: Site of one of Cairo's most important medieval palaces.
Condition: Entire building now tilts to the southeast, creating a continuous crack in the floor and displacement of marble columns adjacent to it. This in turn has produced serious vertical cracks in several load-bearing walls. The structure needs an extensive engineering study to determine the proper method for consolidation. (The building adjacent to this already has been evacuated because of its critical condition. It would be structurally and aesthetically beneficial to monument #51 if this building were removed.)
- ***Madrasa-Khankah of Sultan Barquq (1384-86 A.D.). Monument #187.**
Importance: Superb example of the characteristic Mamluke style.
Condition: The earthquake caused the minaret to tilt and parts of several walls to crack or separate at the corners. The vaulting has suffered some cracking. Most of the marble lining of the mausoleum has collapsed.
- ***Sabil-Kuttab Muhammed 'Ali (1828 A.D.). Monument #402.**
Importance: Its style, derived from imperial Istanbul, is an excellent example of the baroque architecture in this period.
Condition: The wooden balcony of the sabil, which had recently been shored up following its collapse several years ago, again needs restoration. The kuttab has been terribly damaged by the earthquake and now has completely detached walls, and fallen ceilings and stairs. A major engineering study is needed to restore this important building. (It is worth noting that much of the damage here, as with

many monuments on this list, results from many years of neglect. For example, the Ministry of Education used this monument as a primary school and a storeroom. The suggestion has been made that once restored, the building be used as a school for an architectural restoration program.)

- ***Mosque of Mahmoud Muharram (1792 A.D.). Monument #30.**
Importance: Fine example of a Late Ottoman mosque.
Condition: Minaret is on verge of collapse; its supporting vault has partially collapsed. The stairs of the minaret have fallen, the mosque's supporting columns have split, and the entire building is tilting northward.
- ***Madrasa-Mausoleum of An-Nassir Muhammed (1295-1304 A.D.). Monument #44.**
Importance: Good example of the work of a sultan who encouraged elegant design, with elements from Acre, others from North Africa.
Condition: In unstable condition for several years, parts of several walls collapsed during the recent earthquake. The dangerous state of remaining walls has forced the evacuation of people from this area. Fortunately, the stucco decoration in the iwan was removed three months ago and is preserved in a storeroom.
- **Bayt as-Sihaymi (1648-1796 A.D.). Monument #339.**
Importance: Perhaps the finest example of an Old Cairo house extant.
Condition: Most walls are cracked and separated at the corners. Wooden and ceramic decoration has moved, indicating serious structural damage, and the building is leaning to the south. (When repaired, this structure and its two Ottoman neighbors will make a spectacular and architecturally significant combination.)
- **Qasr Bashtak (1334-39 A.D.). Monument #34.**
Importance: One of the most impressive survivals of medieval secular architecture.
Condition: More cracks have recently appeared in this already deteriorating structure. Restoration is needed soon.

Other monuments must be attentively monitored, and plans devised for specific measures of protection. In addition, a regular program of maintenance must be instituted and followed.

There are currently no plans to integrate new construction into the character of an area that has been growing for over a millennium. Until about 50 years ago, the practice in the Medieval city was to replace fallen or demolished buildings with structures stylistically similar to their predecessors. These buildings included only minor changes in design to suit their specific needs. Even such details as the prevailing winds, upon which houses and shops depended for comfort, were carefully considered. More recently, modern building has thrown these concerns aside, creating incongruous and aesthetically unpleasant structures which are not integrated into the environment, either physically or philosophically. Such

intrusive construction must be avoided wherever possible; efforts must be made to integrate the new with the old.

Medieval Cairo, with its compact layout and narrow thoroughfares, was designed for pedestrians and small, slow-moving vehicles. The introduction of motor vehicles into the area has been disastrous. The large delivery vans that now ply the area cannot pass each other in the narrow streets without creating excessive congestion, confusion, pollution, and significant damage to the historic monuments. The increasing problems of traffic control, especially on such major streets as Sharia Al-Azhar and Sharia Muezz Al-Din, should be carefully studied. Any master plan for managing North Gamaliya should greatly limit accessibility to vehicles.

Undesirable mixtures of land uses and activities in North Gamaliya result from the conflicting interests and attitudes of the administrations that oversee its parts. Many factories engage in activities ill-suited to a crowded, historic urban area. Their pollution is contributing to the destruction of the traditional handicrafts for which the area is best known.

The infrastructure of North Gamaliya has badly deteriorated. The sewage system is ancient and hopelessly overburdened. Seepage from this system, and Cairo's rising water table, are primary causes of the weakened foundations of many historic buildings. Infiltration of moisture into stone walls (in some buildings reaching heights of over 6 meters) is destroying decoration and inscriptions, and leading to salt crystallization which further threatens the stability of the monuments.

A major concern is that there is no single agency responsible for the North Gamaliya's repair, maintenance, and management. So many government agencies, often with conflicting interests, compete for authority in the area that it is impossible to sustain any comprehensive plan. A suggestion has been made recently to make North Gamaliya a geographically-defined World Heritage Area under the administration of a World Heritage Area Development Corporation. This could be accomplished by passing a single piece of Egyptian legislation that would provide not only an effective and efficient means of dealing with North Gamaliya's problems, but also the basis for a management program of economic and cultural benefit to all interested parties.

The proposal to make the North Gamaliya a World Heritage Area seeks to address the problems we have outlined by following a work plan based on four principles:

- Conserving the historical fabric of North Gamaliya;
- Reviving the area's traditional arts and handicrafts;
- Enhancing the tourist experience in the area;
- Recovering development and management costs through revenues from touristic activities.

The North Gamaliya project, as outlined by the Egyptian Tourist Development Authority, will begin its work in the twelve-acre section known as the Khan El Khalily. This has been identified as a "priority action zone" because it is:

- The responsibility of the Ministry of Tourism under Ministerial Decree Number 156 of 1977;
- A well-defined area, both physically and economically;
- The major center of traditional handicrafts, with many interesting monuments, historical buildings, and urban features.

Together, these three features make the Khan El Khalily an area relatively easy bureaucratic access, particularly valuable to tourism, and with strong economic potential.

F. Proposed Work Plan

F1. Stage 1a. General Database Feasibility Studies: It is essential to establish a basic database which should include:

- Information on the types of real estate in the area;
- Studies of existing physical conditions, including the area's infrastructure;
- Descriptions of listed buildings and elements of historical and architectural value;
- Records of urban and architectural change;
- Quantitative and qualitative surveys of handicraft activities;
- Surveys of land and real estate values;
- Studies of the movement of pedestrians, vehicular and service traffic, and the need for emergency access;
- A photographic survey of inscriptions in historic buildings.

F2. Stage 1b. Special Feasibility Studies:

- Demographic surveys;
- Economic and financial studies showing estimated project implementation costs, cost-sharing systems, investment flow, expected revenue, and marketing policies;
- Urban and architectural studies, including proposals for infrastructure improvement, clearance, and rehabilitation;
- Engineering studies, including soil mechanics and architectural studies;
- Environmental impact reports.

Stage 2. Project Implementation

Operational procedures:

- Negotiations with real estate owners or renters, local merchants, and residents;

- Selection of vacant sites or buildings for the development of touristic activities or handicrafts;
- Financial organization and investment flow;
- Interministerial and interagency coordination;
- Establishment of replacement programs for residents and merchants who may be affected by the proposed changes.

Fieldwork:

- Project execution management;
- Long-term management of the area after the rehabilitation and development programs have been implemented.

F3. Costs

The initial studies outlined above could be accomplished in 12 months at an estimated cost of \$750,000.

SECTION IV
LUXOR: WEST BANK WORLD HERITAGE PARK

A. Introduction

The West Bank of the Nile at Luxor has been continuously inhabited for over 500,000 years. Homo erectus and Homo sapiens, ancient inhabitants of this land, left behind stone tools, material possessions, temples, tombs, shrines, and villages. No area of the world contains as many important and varied archaeological monuments as the West Bank of the Nile at Luxor, the area called the Theban Necropolis. However, even though the area has been declared a World Heritage Site, little has been done to protect these sites and monuments. Only a scattered few have received careful attention from archaeologists and conservators (the tomb of Nefertari, for example, and shortly, the tomb of Tutankhamun); most have not.

The Theban Necropolis is one of the world's most heavily visited and most frequently studied ancient sites. Yet except for inaccurate and incomplete studies, most made over half a century ago, there is still no survey of its contents, no map of its surface, no plans of its tombs, and no system for its management. Archaeologists familiar with the area and the Egyptian government officials responsible for its safekeeping predict that without intervention hundreds of Theban monuments will disappear within the next two decades, victims of pollution, water and wind erosion, environmental damage, mismanagement, the pressures of tourism, theft, and vandalism. If this World Heritage Site is to survive, a broad, area-wide approach to its protection is needed, which takes into account the cultural, social, and economic fabric of the West Bank, the natural environment, and the area's economic potential.

B. History

The West Bank of Luxor was inhabited in Palaeolithic and Neolithic times. Indeed, large numbers of hand axes and chipping sites still lie scattered across the Theban hills. In the Old Kingdom, when Thebes (ancient Waset) was still a small and relatively unimportant village, the local populace began to use the West Bank as a burial site. It retained this function throughout the rest of dynastic history and for centuries thereafter.

Near the end of the Eleventh Dynasty, after a fierce civil war had been quelled, Thebes became the capital of Egypt. Although the rulers of the Twelfth Dynasty (the Middle Kingdom) moved their administrative capital several hundred kilometers north of Thebes (for geographical convenience), they retained Amon, then a minor local Theban deity, as their state god. Because of its new significance as a political and religious capital, Thebes continued to flourish and grow. The rulers of the Middle Kingdom built mortuary temples and tombs on the West Bank for themselves and for members of their family and court.

The Middle Kingdom collapsed about 1780 B.C. due to foreign pressure and civil unrest. Two centuries later, a local Theban dynasty arose that was able to reunite Egypt.

For the next 500 years, Thebes remained its capital. During that time (the New Kingdom), Egypt became the most powerful nation in the ancient world. Its empire stretched from Iraq into Libya, from the Aegean into the Sudan.

Pharaohs and priests used much of the vast wealth that Egypt accumulated in the New Kingdom to build on the West Bank. The monuments they built are even today among humankind's most impressive: the temple of Queen Hatshepsut at Deir el-Bahri; the mortuary temples of Ramesses II (the Ramesseum) and Ramesses III (Medinet Habu); over 100 tombs in the Valleys of the Kings and Queens; hundreds of tombs of noblemen and priests; the workmen's village at Deir el-Medineh; the palace of Amenhotep III at Malkata; the Colossi of Memnon; and many more.

As we have noted, not a single one of these monuments is adequately protected. All require cleaning, conservation, and stabilization—some of them urgently—if they are to survive. The causes of their decay are intensifying and their condition is growing more desperate.

C. Problems and Proposals

C1. Antiquities Theft and Vandalism

The security of many Theban monuments is, at best, tenuous. The guards are poorly paid and receive little, if any, training. Antiquities dealing, although illegal, is still big business. Many houses in Qurna are located directly above known tombs, providing a convenient source of antiquities for local inhabitants. It is well-known that unethical collectors are eager to buy objects from Thebes, that unethical dealers are happy to sell to them, and that the local inhabitants are willing to supplement their annual income (currently less than \$500 per family) by stealing the objects for them.

Three steps to discourage theft and vandalism. First, a feasibility study should be conducted to determine how to restructure the Antiquities Department Security Office to better patrol the monuments under its control.

Second, within the context of an Archaeological Resource Management program (see Section 5: Institutional Development), a training program should be established that concentrates on problems and procedures directly relevant to those working in on-site security. Then, hiring policies should be re-examined so that, within a semi-autonomous West Bank World Heritage Authority, better-qualified individuals are hired, preferably at market rates.

Third, an education program should be undertaken in Luxor's public schools, on television, and in the new visitor center to educate the public as to why the monuments are worth protecting, why theft and vandalism are serious economic crimes, and why efforts to protect archaeological monuments must be encouraged. (Suggestions for such educational activities are noted in Section 5: Institutional Development).

C1a. The Cost of an Education Program

First Year: Feasibility study (meetings, hiring of outside consultants, interministerial discussions, final plan, travel). Principal source for such a program: AUC as coordinator, with EAO, GOE, and various international agencies.

\$50,000

Subsequent Years: Implementation of plans. Costs to be borne by West Bank World Heritage Park Administrative Agency, whose revenues will come from ticket sales for the West Bank monuments. A single ticket, good for a full day of sightseeing in all the West Bank's monuments, would be a more cost-effective and profitable way to generate funds than the current monument-by-monument ticketing policy, which is cumbersome and annoying to tourists and tour guides alike. It requires purchase of tickets for each site at a central ticket office. Many tickets are good for only a specific number of tombs; tourists finding they want to view more than three tombs in the Valley of the Kings, for example, must buy additional tickets, not always available on site. Also, tour guides who have purchased tickets to visit specific sites often find them filled to capacity upon their arrival. They and their groups are forced to wait, often 30 minutes or more, until the crowd subsides. It would be simple, effective, and immensely profitable to replace the existing system. A single ticket system, costing \$20 (\$10 for students), would generate three to four times more than the current system. The additional revenues could cover the costs of all long-term programs outlined below.

C2. Increasing Population

The population of the West Bank area we are concerned with has risen from about 7,000 to 10,000 in the last five years. Care must be taken to ensure that future growth does not adversely affect the archaeological sites.

The thousand or so people who occupy the village of Qurna, a 200-year-old collection of houses that lie directly atop many of the tombs dug into the Theban hillside, pose a special problem. The government has more often used the stick than the carrot in efforts to drive them out. But even denied permission to supply their homes with running water or sewer lines, the Qurnawis nevertheless continue to defy government orders to move from the archaeological zone, partly because Qurna has been their home for over eight generations and partly because, they have made a good living robbing the tombs and providing services to tourists.

The West Bank has no industrial base. Its people depend entirely on agriculture or tourist-related activities for their livelihood. These agricultural activities must be monitored, changes in the irrigation system carefully studied, and enlargement of the tourist base planned with the local economy, as well as broader economic concerns, in mind.

C2a. The Cost of Relevant Programs

First Year: Sociological study of West Bank inhabitants; the purpose would be to design more effective plans to increase tourism in ways that would enhance the local economy and retain the area's environmental character.

\$40,000

Subsequent Years:

Implementation of proposals	\$250,000
Moving of Qurnawis	\$750,000

C3. Groundwater

Since construction of the Aswan High Dam, agriculture has changed significantly in Egypt. In the past, yearly floods brought fresh silts to the fields and water to irrigate and cleanse the soil. Today, without these floods, the land is becoming more saline and less productive. Thus, there are pressures to expand the size of the agricultural zone. This, of course, will cause the already unacceptable groundwater levels of the West Bank to rise. High water tables threaten the foundations of Medinet Habu Temple and have destroyed several low-lying private tombs. A further rise, even just a few centimeters, would threaten or damage hundreds of other significant archaeological monuments.

C3a. Proposal

A study of groundwater levels on the West Bank and proposals for their reduction must be forthcoming if further damage is to be avoided.

C3b. Costs

First Year: The cost of such a study conducted by hydrologists, and agricultural and development experts, in consultation with the EAO.

\$50,000

Subsequent Years: Implementation (such as lining irrigation canals to prevent seepage).

\$500,000

C4. Rainfall and Flash Flooding

Thebes is widely noted for its dry climate. Perhaps surprisingly, then, flash flooding due to sudden cloudbursts has caused more damage in the Valley of the Kings than any other destructive force. These floods cascade down hillsides and wadis, carrying tons of silt and debris that are deposited in low-lying tombs. Howard Carter described such a flood: "No rain fell in the Valley, but from all the washes that ran down from the Theban hills, including the Valley of the Kings, there was a torrent which cut furrows four feet deep and rolled

stones as big as two feet across." Open tombs are especially vulnerable. The floods destroy delicately carved and painted walls, they damage perishable artifacts lying within the tomb, and weaken the tomb's structure, causing its walls and ceiling to expand and contract and eventually collapse.

When the tomb of Seti I was first opened early in the Nineteenth Century, it was hit almost immediately by a flash flood "bringing down sections of the roof and splitting some of the finely decorated columns into conveniently sized portions that were eagerly carried off by the Egyptological expeditions of those times." Even today, the Valley of the Kings is vulnerable to such floods which occur about once every 100-150 years.

A computer-generated model of the valley, using a program designed to simulate the effects of heavy rains, could be used to determine how to prevent further flood damage by constructing inexpensive and inconspicuous ditches, dams, and walls on the valley's hillside and near the entrances of threatened tombs.

C4a. Proposals and Costs

Development of computer-generated models of water run-off in various rainfall situations. AUC and other agencies could undertake this work immediately. Estimated time: two months.

\$40,000

Construction of unobtrusive channels and dams on hillsides and in the valley to divert water. This work could be undertaken by AUC's Theban Mapping Project immediately upon completion of the computer studies. Estimated time: four months.

\$750,000

C6. Tourism

The increasing number of tourists who visit the West Bank pose an equally serious threat to the Theban monuments. In recent years, an estimated 2,000 to 3,000 visitors have daily toured the Valley of the Kings. By the end of this decade, that number will triple. Tourists are attracted by the remarkable decoration in the royal tombs. Locked in a stable environment, it has been unaffected by variations in temperature, humidity, and vandalism, or the brushing of tourists' heavy camera bags against friable painted walls. The Tombs of the Nobles—small, fragile, and often heavily plastered—are especially vulnerable. Attempts to protect their decorated walls with glass barriers, rails, or screens have proved unsatisfactory and other techniques must be sought.

The transport of tourists from the riverside landing into the archaeological zones has also created problems. The vibrations and spewing exhaust of heavy tourist buses, often several hundred each day, have already destroyed numerous tombs and temples. The number of buses will only increase unless alternative means of transportation are found.

Ten years ago, a World Bank study of the East Bank (the modern city of Luxor and the temples at Luxor and Karnak) made two suggestions concerning the West Bank. One was to move the Valley of the Kings rest house to a spot one kilometer away from the valley to control pollution, vibration, and visitor traffic; the other was to join the valley and the new rest house by electric trolleys to reduce the damage caused by tour buses. Both suggestions were implemented in 1992-1993 and have already reduced adverse visitor impact. Obviously, there is much more to do. Unlike other major archaeological zones in Egypt, such as the Giza Plateau or Islamic Cairo, the Theban Necropolis has never been the subject of a major development or management plan.

If the West Bank were declared by law or decree a World Heritage Cultural Park, its borders clearly delineated, and its administrative structure made an autonomous unit within the Egyptian government, much more could be achieved. An area-wide approach would allow attention to be paid to each interlocking piece of the West Bank: the monuments, the local inhabitants, the natural environment, tourists, and agriculture. None of these is an entity that can be dealt with in isolation. A central authority could help coordinate the various organizations responsible for seeking solutions. Properly trained managers could protect one of the world's most important sites in ways amenable to the needs of the local population and to the natural and cultural environment of the West Bank.

Of all areas in the West Bank that need careful planning, conservation, and administration, the Valley of the Kings requires the most urgent attention. Virtually every tourist who visits the West Bank comes to the Valley (compared to perhaps 80 percent at Deir el-Bahri, 20 percent at Medinet Habu, and 5 percent at Deir el Medineh), and the pressures on the nine tombs that are open there have already posed serious problems. Engineering studies should be done immediately in many tombs; several require conservation; all require cleaning, lighting, labeling, and the installation of more effective rails and protective devices. A master plan for the Valley is essential to adequately protect it and still adequately serve the tourists.

Additionally, a development plan for underutilized sites, such as the workmen's village at Deir el-Medineh, should be given high priority. Relatively inexpensive consolidation and labeling could make them primary destinations, reducing the inordinately high visitor impact on the Valley of the Kings.

C7. Proposals and Costs

First Year: Development of West Bank master plan (designed in association with the EAO, Local Government, Tourism, Cabinet, TDA) to establish a West Bank World Heritage Park administration and to set plans and future priorities.

\$100,000

First Year: Development and partial implementation of a conservation and tourism program for the Valley of the Kings.

\$200,000

First Year: Development and Implementation of a tourist plan for Deir el-Medineh (the workmen's village).

\$400,000

First Year: Feasibility studies (outlined above) for security enhancement, sociological studies, irrigation, and flood protection.

\$125,000

Establishment of an archaeological database and reference source for the West Bank Master Plan (budgeted for three-year project duration). (See also Section V:C1 for additional details.)

a. Prepare aerial photographs of West Bank	\$20,000
b. Generate 1:1000 and 1:500 topographic maps	200,000
c. Prepare detailed architectural plans of tombs in Valleys of Kings and Queens and the Tombs of the Nobles	300,000
d. Establish descriptive records on individual monuments on West Bank	300,000
e. Establish photographic documentation procedure	300,000
f. Offices and facilities on West Bank	250,000
	\$1,370,000

Urgent work on endangered monuments: Priority sites are tombs in the Valley of the Kings, the Deir el-Bahri cirque, and Tombs of the Nobles.

\$2,000,000

SECTION V
INSTITUTIONAL DEVELOPMENT:
SITE MANAGEMENT, ARCHAEOLOGICAL DATABASES AND MONITORING

A. Introduction

This section describes a training program intended to serve the needs of on-site inspectors of antiquities employed by the Egyptian Antiquities Organization, employees of the EAO's specialized offices, and employees of the Ministry of Tourism who have direct contact with archaeological monuments. This program is based upon extensive discussions with the EAO, the Ministry of Tourism, Getty Conservation Institute, and the U.S. National Park Service held under the auspices of the American University in Cairo in May 1992. Section C also briefly describes the kind of archaeological database and monitoring systems these agencies believe should be established in Egypt, starting with the West Bank World Heritage site at Luxor (see Section III). For further information on these proposals, contact the American University in Cairo.

B. Archaeological Resource Management

In recent years, many GOE agencies have developed archaeological resource management (ARM) programs at both national and international levels. These agencies agree on what ARM is and what it should accomplish. The U.S. Office of the International Council on Monuments and Sites (US/ICOMOS) states the consensus well in its description of ARM as a system to "actively promote the preservation, conservation, and management of the world's archaeological sites and monuments, both excavated and unexcavated, through international cooperation, the sharing of information and technical expertise, and education."

More detailed descriptions—that of the Getty Conservation Institute (GCI), for example—regularly emphasize the role of the ARM manager who supervises archaeological resources. The on-site manager's tasks include the following:

- Collecting all available information on a site's physical and cultural history;
- Determining the significance and value of a site;
- Assessing a site's physical condition and context;
- Acknowledging and documenting the physical conditions of a site as well as their implication for its conservation and preservation;
- Considering the legal, social, and physical factors that will affect management possibilities.

The U.S. National Park Service has a similar list of critical managerial goals:

- Planning and setting priorities;
- Organizing guidance and technical information;
- Directing programs to enhance public awareness of the importance of the world's archaeological heritage.

US/ICOMOS, GCI, NPS, and many other European and international agencies, acknowledge a host of factors including public policy, bureaucratic structure, and public education—in determining the effectiveness of ARM programs. But no factor is more frequently mentioned or more critical to the success of an ARM program than the on-site archaeological managers and their support staffs.

Following is a proposal to establish in Cairo a training center for ARM on-site managers and ARM support service managers working in Egypt and other Arabic-speaking countries of Africa and the Middle East.

No ARM program can hope to make major changes overnight in government policies or procedures. We believe, however, that this proposal, because of its emphasis on long-term management training and supportive continuing education will have a broad and significant effect on site protection for generations to come. Additionally, our program should function efficiently and smoothly since it does not interfere with existing bureaucratic systems or compete with the conservation works of other agencies. To realize our goal of maximizing site protection, we propose several complementary programs of site management:

- Managerial-level ARM training programs for promising young employees in various government agencies, especially ministries of culture, antiquities, and tourism;
- Specific short courses and workshops for those working in such units as the Egyptian Antiquities Organization's Departments of Architecture and Design, Conservation, Engineering, or Interministerial Relations;
- Follow-up programs of continuing education, including seminars, colloquia, and newsletters, and a series of support activities that will include community information packages, technological updates, and program assistance;
- Cooperative programs with other agencies, such as the Cairo University Center for Archaeological Engineering and the American Research Center in Egypt's proposed archaeological field school;
- A formal M.A.-level ARM degree program, modeled on those offered in the United States, but more relevant to the region. Each program is discussed in more detail below.

C. Need for ARM training in Egypt

An ARM program should be established in Egypt for a number of compelling reasons.

Egypt's archaeological sites are so important to humankind's cultural heritage that we would be remiss not to help preserve them.

Yet these sites continue to deteriorate at increasingly unacceptable rates. The causes include environmental pollution, population growth, a deteriorating infrastructure, theft, and vandalism. Many of these can be dealt with much more effectively; some can even be prevented if ARM managers are properly trained.

Archaeological tourism in the region must continue; indeed, it will have to increase in the region's poorer countries for compelling economic reasons. We will never succeed in closing all archaeological sites to the public, nor would we want to do so. But if tourism is to increase without damaging archaeological sites or frustrating the tourists, then proper ARM training programs must be implemented as soon as possible. That is why Egypt's Minister of Tourism and the President of the Antiquities Organization are asking AUC to establish this training program. They have stated that their staff members—inspectors, tour guides, and topical specialists—will be required to participate in AUC's diploma programs and workshops.

The inability of the Egyptian Government to more effectively protect the sites is not due simply to a lack of funds. Rather, the missing element is on-site managers who can allocate the money wisely and supervise its use. Such site managers would be trained to:

- Identify ARM problems;
- Supervise implementation of appropriate solutions to small problems of protection, development, and administration, and work knowledgeably with specialists to treat the larger ones;
- Help the local public realize that it is in their economic interest to protect local archaeological sites;
- Work with tourists and tour guides to protect the sites and ensure visitor satisfaction;
- Maintain a database to ensure regular monitoring of a site's changing condition;
- Understand their country's laws and regulations so that they can help prevent potential problems at a site by working with local groups, administrative agencies, and ministerial representatives.

In short, on-site managers are needed who are trained to work within the region's bureaucracies to monitor, preserve, and manage its fragile, irreplaceable, and increasingly

threatened archaeological heritage.

Conservation projects at specific sites will continue to be urgently needed. But the survival of the region's archaeological heritage is a much broader concern, geographically and chronologically, than specific sites. We believe that the survival of even a small part of the region's vast archaeological heritage will be ensured only by the training of a new generation of site managers, and by educating the next generation of Egyptians to the importance of supporting such a task.

Why should this program deal with all the archaeological and historical monuments of the region, instead of those of one period (e.g., Pharaonic, Islamic, prehistoric), one kind of site (e.g., temple, tomb, village), one kind of material (e.g., mud brick, wood, limestone), or one type of environment (e.g., urban, intense agricultural, desert)?

In addition to the benefits noted above, there are other reasons to deal with ARM in a broad cultural context:

- Archaeological managers, like other government employees, are likely to find themselves being shifted from one kind of site to another. They must be prepared to handle a variety of different materials and types of sites;
- Few sites contain only one kind of material from only one period in only one kind of micro-environment;
- Introducing managers to many problems of ARM encourages a synergistic approach to preservation.

However, we do not intend to exclude site-specific or materials-specific workshops from our ARM program. They have great value. We believe, however, that they should be offered within the framework of a broader ARM perspective.

Why should this program concentrate on training the younger generation of on-site managers, instead of dealing with today's top administrators, undertaking site conservation work itself, or attempting to influence public policy directly? By establishing a cadre of young managers who can, in turn, train their successors, we help ensure that these ARM programs are self-sustaining. If the program is viewed as an integral part of the country, rather than a foreign imposition, its activities gain more complete and long-term acceptance by the participating administrative agencies and the general public.

D. Specifics of the ARM Program

D1. Reasons to headquarter ARM program at AUC

- Excellent relations with the Egyptian government;
- Demonstrated ability to structure interdisciplinary programs;

- Existing faculty who have much of the expertise that an ARM program requires;
- Facilities and geographical location well suited to a regional ARM program;
- Experience with specialized programs and workshops, in both existing degree programs and the Center for Adult and Continuing Education. This means minimal start-up time and costs;
- Experience in dealing with bilingual training programs, including simultaneous translation and the preparation of Arabic-English texts;
- Accredited degree programs in Egyptology, Islamic art and architecture, the social sciences, engineering, management, tourism, and mass communications, and preparations for an inter-disciplinary program in environmental studies. All of these relate directly to ARM.
- Accountability.

D2. Proposed ARM teachers

- AUC faculty;
- Cairo University faculty. For example, those involved in the soon-to-be-established Faculty of Archaeological Engineering;
- Local and foreign specialists;
- Employees of the Egyptian Antiquities Organization. It would be useful to have EAO officials deliver lectures on the structure of their department and the functions of specialized units within it, and take part in discussions on future EAO plans and directions. At present, such discussions seldom occur within EAO, yet they are essential to effective functioning of on-site managers;
- Instructors in other training programs operating in Egypt, such as the archaeological fieldwork training program proposed by the American Research Center in Egypt.
- Representatives of the U.S. National Park Service. In a series of meetings with NPS staff members held at AUC last May, it was agreed that NPS training staff would participate in future Cairo ARM programs, and teach in a diploma program and workshops. NPS staff would take unpaid leave from their jobs and would require travel, expenses, and a replacement salary. NPS already has appropriate training programs in place.
- Representatives of the Getty Conservation Institute. It makes far more sense for the ARM program to use the excellent training courses and workshops already in place

at GCI than to create new ones. These programs, already tested in various international venues, would substantially contribute at all levels of our program, and we hope for extensive GCI personnel participation in the ARM program.

(We count heavily on NPS and GCI participation. Both organizations have established highly respected ARM training programs conducted by an experienced staff of professional instructors. The quality of staff and content of NPS and GCI courses set standards AUC should strive to emulate and to which its programs will be compared.)

- Representatives of agencies in other governments (e.g., those involved in programs of Britain's National Trust, the several Italian institutes of conservation, and ARM programs, or those in various international agencies).

D3. Proposed ARM students

- (Young) employees of the EAO;
- Inspectors;
- Members of specialized EAO agencies;
- Egyptian tour guides as a part of the Ministry of Tourism's licensing procedure;
- Staff of Egyptian environmental agencies and other governmental units
- AUC Egyptology and Islamic art students;
- AUC students in engineering, business, and tourism;
- Cairo University students in Egyptology, and conservation;
- Students in similar fields and employees of antiquities departments from other North African and Near Eastern countries;
- European and American students of archaeology or ARM.

D4. Proposed ARM programs

We anticipate the establishment of three different kinds of programs during the next five years. There are several reasons to stagger their inauguration. One of the most important is that we shall be able to ensure that the development of more complex, comprehensive programs can take advantage of lessons learned in planning shorter-term, more specific courses. Problems of teaching techniques, training materials, and even subject-matter can be refined as we proceed from our proposed diploma program through short-term workshops to a full-fledged M.A. degree.

D4a. Diploma program

We propose first to establish a diploma program in ARM that generally introduces the subject, with an emphasis on ARM planning. Subjects will include:

- Policies, legislation governing archaeological resources
- Resource identification
- Description and assessment of condition and needs

- Management policy
- Maintenance
- Tourism
- Inter-ministerial cooperation
- Conservation

This would be the basic two- or three-month program for inspectors awaiting assignment to archaeological sites, and for the staff of such specialized EAO agencies as the Departments of Conservation, Architecture, and Engineering.

D4b. Diploma workshops

Short-term diploma workshops on specialized aspects of ARM for current EAO (and similar agency) staff members will include the following:

- Site-specific application of ARM policies (e.g., tourist facilities planning for Saqqara; conservation plans for Deir el-Medinah; protection of relief carving in Old Kingdom private tombs; and protection of petroglyphs).
- Material-specific ARM (e.g., conservation of mud brick, treatment of limestone; visitor impact on painted plaster tomb walls; erosion of sandstone structures).
- Environmentally-specific site management (e.g., protection of Islamic architecture in an urban environment; touristic development of archaeological sites in Kharga Oasis; groundwater as a factor in the stability of stone architecture).

D4c. Longer range degree program

A longer range plan (to begin in 1996) introduces an M.A. degree in ARM for students with a B.A. in Egyptology, Islamic archaeology, engineering, or business. Courses for this M.A., which were proposed at the AUC/NPS/EAO Conference in May 1992, will also be a significant part of diploma programs and workshops):

- Introduction to Cultural Heritage Management. Theory and practice of ARM; principles and standards of ARM conservation ethic; comparative ARM systems; national legislation, regulations and procedures in U.S., Europe, Egypt, countries of North Africa and the Near East.
- Park Site Planning. Long- and short-term planning strategies for site protection, use, and development. An overview of theory, methods and techniques of planning. Site design strategies. Case studies will be used throughout the course.
- Park Site Management. Survey of all components of site management, including research, facility design, visitor use, education, maintenance, resource protection, public relations, and administration (personnel, budget, publications, etc.). Training staff members to deal with ARM concerns.

- **Archaeological Method and Technique.** Fundamentals of archaeological surveying, excavation, on-site conservation and documentation of artifacts; conservation and stabilization. Site museum conservation. Field interpretation of ongoing activities.
- **Park Site Interpretation and Education.** The philosophy, principles, and techniques of site interpretation, including formal and informal visitor information techniques, publication design, interpretive media, identifying and understanding the visitor; channels of communication, interpretive planning, educational techniques, and school curricula.
- **Tourism and Economics.** Understanding the role of tourism in cultural site preservation; principles, techniques and terminology of the tourist industry; tourism economics. The use and techniques of survey research in visitor demographics, satisfaction, expenditures (economic analysis techniques). Understanding the interface between tourism and site impact, preservation, and use.
- **Cultural Site Law Enforcement.** Theory and practice of law enforcement at cultural sites, including study of laws and regulations, the interface of different law enforcement agencies on a site, enforcement techniques and handling of visitors and looters, criminal investigation techniques, relations with the public, visitors, guides and other agencies.
- **Facilities Design and Management.** Principles and applications of facility design, construction, operation and maintenance of visitor centers, rest rooms, trails, roads, restaurants, stores, signs, picnic areas; and infrastructure, including water, sewer, electricity, and lighting. Case studies of successful and unsuccessful projects will be presented.
- **Public Relations and Heritage Education.** Strategies and techniques for dealing with the print and electronic media. Development of special media programs, media interview techniques, and ways to cope with hostile media. (See AUC course 317: Public Opinion and Communications; and 201: Mass Media Writing).
- **Methods and Techniques of Site Documentation.** An overview of standards, methods, and techniques for documenting sites, structures and objects; including maps, photographs, measured drawings, and written records. Record organization, storage and retrieval systems, and site monitoring systems.
- **Conservation and Stabilization.** Survey of current principles, methods, and techniques of conservation of earthen, mud brick, masonry, stone, plaster, metal, wood, and other sites, materials, and objects. There will be separate and required laboratory and field projects.
- **Exhibit Design.** Techniques for planning and designing effective site and museum interpretive exhibits through the use of various media (signs, publications, labels, film, and video) with a variety of materials and construction techniques.

- **Collection Management.** The philosophy, methods, and techniques of artifact control, conservation, preservation, documentation, storage, access, and retrieval. Includes computerized data storage and photographic methods.

Examples of courses currently offered at AUC relevant to ARM. (This list gives an idea of AUC's programs and faculty interests.)

Anthropology 204: Archaeology and Prehistory
 Anthropology 472: Third World Development
 Arabic Studies 206: Art and Architecture of the City of Cairo
 Arabic Studies 270-271: Introduction to Islamic Art and Architecture
 Arabic Studies 465-466: Islamic Architecture in Turkey, Persia, and Central Asia
 Arabic Studies 467: Islamic Architecture in Spain and North Africa
 Arabic Studies 468: Painting in Islam
 Arabic Studies 469: Islamic Pottery
 Arabic Studies 477-478: Islamic Minor Arts
 Arabic Studies 572: Fieldwork in Islamic Architecture
 Biology 202: Environmental Biology
 Chemistry 312, 410: Archaeological Chemistry
 Various courses in computer science
 Engineering 115-116: Descriptive Geometry and Engineering Drawing
 Engineering 280: Construction Surveying
 Engineering 331: Engineering Geology
 Egyptology 261-262: Art and Architecture of Ancient Egypt
 Journalism/Mass Communications 201: Mass Media Writing
 Journalism/Mass Communications 230: Introduction to Photography
 Journalism/Mass Communications 317: Public Opinion and Communication
 Management 505: Administrative Environment and Public Policy in Egypt
 Management 517: Administration of Developmental Planning
 Management 528: Project Management
 Political Science 556: Public Policy
 Science 250: Introductory Geology

D4d. Hands-on experience and practical site projects

- As outlined above, we might include: on-site planning exercises at various types of sites (e.g., an undeveloped pharaonic site like Abu Sir; an urban Islamic or Coptic structure; a heavily-visited site in need of major and regular maintenance, like the Valley of the Kings; an unprotected site heavily used by four-wheel-drive enthusiasts, like Dimai).
- One archeological site slated by EAO for further tourist development could be used as a model for a practicum on site preparation and development. A logical choice for such work would be the West Bank at Luxor, where one could explore ways of dealing with urban expansion and deteriorating infrastructure, structural instability, pollution, conservation, and the development of appropriate plans to exploit an

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area's touristic potential (including parking, houses, interpretive centers, signing, and other needs).

E. Translation

All course materials not specifically intended for AUC M.A. students (who must be fluent in English to be accepted at AUC) will be available in both English and Arabic. Similarly, the simultaneous translation of lectures for diploma and workshop participants is essential. Few of our students will know English well enough to deal effectively with discussions or readings. Time is too short (and, with some justification, charges of cultural arrogance too likely to surface) to make fluency in English a prerequisite for admission to our courses. Our intention is to train on-site managers, few of whom are likely to be bilingual. Ministry employees who are fully bilingual are likely to be fast-tracked out of on-site managerial jobs into administrative posts in central offices. Obviously, we will not exclude bilingual students from our courses, but they will be designed for those who are comfortable only in Arabic.

One of the first tasks of the ARM staff will therefore be to prepare bilingual text materials. These will include English translations of appropriate regional government publications and Arabic translations of GCI and NPS documents.

F. Research

The ARM program should have a research component. The research projects should be selected to provide further training opportunities for students in the three types of programs we propose, but also to be used in their own right. We propose starting out with two such projects, both of which have demonstrable scholarly value and already have been used as part of student training programs at AUC.

F1. The Theban Mapping Project

This project provides practical experience in surveying, cataloging, and evaluating the condition and conservation/restoration/protection needs of a variety of kinds of archaeological sites. The project goals are as follows:

- Preparation of a complete set of aerial photographs of the West Bank, taken at approximately five-year intervals, to track the site's condition and the effects of new development;
- Preparation of 1:1000 topographic maps of the West Bank (1:500 in such critical areas as the Valley of the Kings);
- Preparation of detailed architectural maps, plans, and isometric drawings of each tomb in the Valleys of the Kings and Queens, and in the Tombs of the Nobles, to ensure more effective protection and less destructive additions to facilitate tourism;

- Photographing of tomb interiors at three-year intervals and the regular recording of tomb conditions to ensure that there is a proper database and monitoring system in these critical archaeological areas.

F2. Cultural Resources Inventory

Cultural Management Resources Guidelines of the National Park Service describe the need for an on-line inventory of archaeological sites in Egypt: "For all parks, a Cultural Sites Inventory (CSI) should be compiled and maintained to document the location, description, significance, threats, and management requirements for park archaeological resources. The inventory provides necessary information for planning, interpretation, protection, and management." The Getty Conservation Institute has further stated that "Good management is the most effective way of preserving the values of cultural sites, and ensuring the protection of their physical condition. It is a dynamic and complex process that includes three kinds of activity: planning, implementation, and monitoring."

Examples of the kinds of information that an Egyptian Antiquities Database and Information System would gather about each site include:

- Site number
- Site name
- Agency responsible for site
- Location (governorate, nearest town, latitude and longitude, map grid coordinates)
- Date and general cultural affiliation (period, dates)
- Physical description of site (site type, historic function, material, site features; size, configuration, boundaries; degree of destruction; physiographic subdivision, water associations; subsurface investigations, if any; soil; meteorological data)
- Present site condition
- Site disturbances and threats
- Present use
- Touristic activity and/or potential
- Historical documentation (photo archive, map file, artifact control and catalogue file, project report, archaeological reports, references)
- Summaries of previous archaeological work

- Facilities planning (proposed work at site)
- Ranking of urgency of conservation, protective work

G. Proposal and Cost

First Year: Design database, begin work at priority site (e.g., West Bank at Luxor)
\$250,000

Estimated annual cost of maintaining database and monitoring system: \$250,000, plus a one-time cost of \$800,000 for necessary equipment.

SECTION VI
DEVELOPMENT OF A NATIONAL ACTION PLAN TO
PROTECT EGYPT'S CULTURAL HERITAGE

A. Background

This proposal derives from the Environmental Action Plan developed by the GOE in May 1992 and a World Bank multi-donor mission to Egypt in January 1993. Based on a GOE's cultural heritage priorities, both dealt with several critical areas of cultural heritage protection. The four proposals that were given top priority in these studies were as follows:

- A1. **Developing an archeological and environmental master plan for Siwa Oasis.** A feasibility study should be undertaken to define steps to reduce rising groundwater in the oasis; determine effective methods to protect two major ancient sites, Aghurmi village and the Oracle Temple; and establish an economically sustainable plan to protect the unique lifestyle of the indigenous population.
- A2. **Establishing a North Gamaliya World Heritage District in Medieval Cairo.** The feasibility study proposed would define the geographical and operational boundaries of such a district and develop procedures to create the necessary legislative programs and corporate structure for its implementation.
- A3. **Establishing a World Heritage Park on the West Bank of Luxor at Thebes.** To protect ancient Thebes, an autonomous administrative structure could be established in the West Bank archaeological zone and adjacent areas; an archaeological database and monitoring system established; and solutions sought to deal with such environmental problems as groundwater, flash flooding, and pressures of tourism.
- A4. **Establishing a national training program in cultural heritage protection and management and a national archaeological database and monitoring system.** These programs would begin by establishing a training program in archaeological site management and an archaeological database for Thebes.

As this summary shows, much of the proposal for one area is similar in structure and purpose to proposals for others. In fact, common to all are the need for database and monitoring systems to inventory and track a site's archaeological and historical content and condition, and the need for autonomous or semi-autonomous administrative structures to develop and efficiently implement plans to protect sites.

B. A National Action Plan Team

Based on the above project identification effort, a detailed study is proposed to develop specific recommendations for a national action plan of cultural heritage protection and management. The three-person team that for this study should consist of an Egyptologist, a specialist in cultural heritage preservation architecture, and a project design specialist.

Specifically, this plan will develop procedures for implementing the proposals for the Siwa Oasis, Luxor, and Islamic Cairo sites within the framework of the proposals for institutional development of cultural heritage protection and management. The plan will be prepared as part of a broader, national scheme that could later be expanded to encompass other areas and problems. The plan should concentrate on the three most basic and critical aspects of the above proposals:

- Establishing a national database and monitoring system;
- Developing strategies to ensure that the cultural heritage and management proposals are compatible with and will be implemented within the scope of both public and private sector policies and procedures; and
- Identifying in each of the three sites a triage-like ranking of monuments as follows: (1) seriously damaged, (2) moderately damaged, and (3) still stable, and recommendations for their stabilization and monitoring.

B1. Team Objectives

The three specialists should together develop a plan to establish a nationwide database of archaeological materials in Egypt, beginning with the three geographical areas listed above. This database should document the contents, environmental setting, and current condition of sites. A system of regular monitoring would track any changes in conditions in order to identify, in a timely fashion, problems of deterioration, vandalism, or theft. The database and monitoring systems must be sustainable for the foreseeable future, and should include a program of ongoing staff training. The monitoring systems should rely on cost-effective and easily maintained equipment. The specialists should confer with representatives of various foreign cultural and archaeological agencies in Egypt, appropriate GOE offices, and counterparts in countries where such database and monitoring systems have already been established. The action plan should outline staff and equipment needs, anticipated costs, database format and content, and a schedule for data acquisition and site monitoring for the next 10 years.

B2. Cultural Heritage Preservation Architectural Tasks

The cultural heritage preservation architect should work closely with the two other specialists to develop a sustainable system for monitoring the structural condition of archaeological and historical structures and other types of cultural heritage sites. The expert should design a system to evaluate current conditions and then evaluate the conditions of each of the three areas listed and their monuments. The expert should make proposals for future preservation work, including identification of monuments that: (1) urgently need conservation, restoration, or basic engineering support; (2) can wait until action is taken on monuments in category 1; and (3) are in stable condition, with largely cosmetic conservation needs that can be met after action is taken on those in category 2. The evaluation system should be designed to be easily replicated at other sites in Egypt, as part of a national monitoring system that local agencies can realistically sustain using trained personnel, technology, and supplies. For structures in category 1, the expert should recommend actions to fill further needs (tests, specialists, other work).

B3. Egyptology Tasks

The Egyptologist should further develop the basic structure of the database, including policies for data selection, data formatting, survey techniques, catalogue systems, and recording systems and procedures. The Egyptologist and the preservation architect should together design a process to evaluate and record site conditions and implement conservation procedures or protective measures on site. A major component of this process should be techniques of photographic data collection, storage, and retrieval.

B4. Project Design Tasks

The project design specialist, working with the GOE, should develop plans to establish autonomous or semiautonomous administrative agencies which would be responsible for administering each of the three regions listed above. In addition, the specialist should identify possible legislative or ministerial actions needed to establish such agencies and ensure their efficient, sustained operation. The viability of the proposals should be discussed with GOE officials and others, and the private sector's possible role in agencies should be thoroughly examined. The advantages and disadvantages of inter-ministerial contacts should be studied, and the economic bases for such agency structures, together with their possible impact on sustainability, the local society, and broader national goals, should be explored in detail.

C. Personnel

C1. Cultural Heritage Preservation Architect

The cultural heritage preservation architect ideally will be an engineer or architect with at least five years of experience in cultural heritage preservation, preferably in North

Africa or the Middle East, and preferably with experience in preserving stone and brick structures.

C2. Egyptologist

The Egyptologist should have a PhD in Egyptian archaeology and extensive field experience in at least one of the three areas listed above. The specialist should have experience in conservation and database and monitoring systems, and the professional rapport to move comfortably among agencies and ministries from which the required data must be obtained.

C3. Project Design Specialist

The project design specialist should have at least five years of experience in preparing projects and implementation plans for international development agencies. The specialist should have experience in preparing project budgets, implementation plans, personnel plans, and monitoring and evaluation plans. The specialist should be familiar with general international development agency project document format and style requirements. It is preferable that the specialist have academic training and field experience in institutional analysis and organization development techniques.

D. Schedule

The work proposed here covers three of the richest archaeological zones in the world, and significant detail is required to ensure that all technical and institutional issues are identified and incorporated into successful project implementation plans. It is therefore likely that the three specialists will devote a minimum of three months to the field study and two additional months to the preparation of the national action plan.