

## **Nubian Museum**

Aswan, Egypt

### **I. Introduction**

The Nubian Museum celebrates the culture and civilization of the Nubian region of Egypt from prehistoric times to the present. It is located in the city of Aswan, on the eastern bank of the Nile, 899 kilometres south of Cairo. The museum is a three-storey building with an outdoor exhibition area. It houses the main finds of the UNESCO salvage campaign carried out at the time of the building of the High Dam, which eventually flooded that whole region. Another major exhibit is a diorama which shows the daily life of Nubian villagers. It is a community museum with an education section that organizes trips, lectures and workshops for schoolchildren, and cultural events for the public at large. In April 2000 the museum was approved by UNESCO as a centre for museology and the preservation and conservation of archaeological remains for Africa and the Middle East.

### **II. Contextual Information**

#### *a. Historical background*

Egypt consists of five well-defined regions: the Delta, the Valley, the Eastern desert, the Western desert and Nubia. The region called Nubia today stretches along the Nile from Aswan south to Dabba in Sudan. The name Nubia is said to come from the ancient Egyptian 'nbu', which means gold, in reference to the famous gold mines of the area.

Historically, Nubia's position as Egypt's gateway to the rest of Africa made it an important trade centre. The Nubian people were settlers, who lived by agriculture, trade and pastoral activities. During the Old Kingdom, Nubia maintained its independence from Egypt but from the Middle Kingdom until the Thirteenth Dynasty it came under the domination of Egyptian kings. The Egyptians ruled Nubia again in the Eighteenth Dynasty, but through local governors and when the Twenty-Fifth Dynasty was established, Nubian rulers enjoyed a time of independence, political stability and economic prosperity. Even the Roman emperors, who showed great interest in Nubia, allowed it to retain independence under their sovereignty.

By the end of the sixth century AD Nubia had converted to Christianity. In the eighth and ninth centuries, political and economic stability again brought prosperity to the region. Nubia's conversion to Islam occurred gradually through intermarriage with Arab traders. Muslim leaders from Egypt sent expeditions to Nubia but it wasn't until the sixteenth century that its conversion was complete. Today, there is no political entity called Nubia. Its lands now lie partly in Egypt and partly in Sudan, with most of the northern region completely submerged under Lake Nasser following the building of the High Dam.

#### *b. Local architectural character*

Traditional Nubian architecture is either the vernacular architecture of the villages, built in mud brick, or the architecture of the great temples. These were simple buildings of granite or

stone consisting of one or more gateways leading to a colonnaded courtyard, which led in turn to a hypostyle hall, followed by a vestibule and then the sanctuary, usually at the highest level.

Nubian villages spread along the Nile in clustered terraces, and throughout Nubia the principal entrances to houses face the river. The main entrance opens onto a courtyard with *mastabas* – raised seating areas. The rooms of the house are arranged along the courtyard's far wall, the most important being the *mandara*, or guest room, which has a separate entrance and a catenary vault roof. Some living rooms – called tents or *khayma* – are simply open with a flat roof of palm branches. The houses are of mud, mud brick or stone, plastered inside and out by the women and children, who decorate the walls, especially the entrances, with bright and colourful designs. The roofs of the houses are of palm trunks or timber beams covered with palm thatch. Small openings at high level help to circulate the air brought into the house via the courtyard, which acts as a ventilating space and a 'private piece of sky' for the benefit of the household.

c. *Climatic conditions*

Aswan is in a dry, temperate zone which enjoys a very mild climate in winter, making it a favoured winter resort since the beginning of the nineteenth century. It rarely rains, although torrential downpours occur every four or five years. The prevailing winds are from the north-east. Sandstorms come from the west during spring but last only a couple of days. In winter the temperature ranges from a maximum of 26°C to a minimum of 10°C, with a humidity maximum of 56 per cent. In the summer months the temperature can reach 42°C, becoming mild at night at a minimum of 26°C. The humidity in May goes down to 7 per cent.

d. *Immediate surroundings*

The museum is in the hotel district of Aswan. To the east is the main road to the airport, which divides the site from two of Aswan's key attractions, the Fatimid Cemetery and the Unfinished Obelisk. To the west is a local road which provides access to the site. A number of major hotel developments along this road have obscured the view to the Nile. The land along the northern boundary of the site is marked on the plans as public garden. Only a water tank at the top of the hill is visible from the museum site. The southern edge has an observatory structure but is mainly undeveloped. The architecture of the immediate surroundings is mainly of modern concrete construction in the 'International Style'.

e. *Topography*

The museum sits on a ridge running south-west of Aswan between the Nile Valley and the road to the airport. The site is an ancient Pharaonic granite quarry for obelisks and statues. The slope to the east is rather steep and the building platform sits 15 metres higher than the main road, a gradient of approximately 30 per cent. The west slope is gentler with the western road following up towards the museum.

### III. Programme

#### a. *What conditions gave rise to the formulation of the programme?*

The foundation stone of the High Dam was laid on 9 January 1960 and the dam was opened on 15 January 1971. As a consequence a section of the Nile Valley was flooded to form Lake Nasser. This necessitated resettlement of 40,000 Nubians, movement of temples that would otherwise be submerged and excavation of the land before it disappeared under water.

The International Campaign to Save the Monuments of Nubia was launched by UNESCO in 1960. It ran forty archaeological missions from five continents and managed to move twenty-two monuments in twenty years. With the Egyptian government, UNESCO decided to establish the Nubian Museum at Aswan and the Egyptian Civilization Museum in Cairo to exhibit the finds of the excavations. To this end, a UNESCO executive committee was formed, consisting of fourteen members from different countries (one of which was Egypt), with observers from ICOM (International Council of Museums), IFLA (International Federation of Landscape Architects) and ICOMOS (International Council on Monuments and Sites).

#### b. *Objectives*

The Nubian Museum is part of a wider policy of the Supreme Council of Antiquities (formerly the Egyptian Antiquities Organization) to showcase Egypt's many civilizations over the centuries. The museum contains not only three thousand objects found in the UNESCO expeditions, representing the history of the area from the prehistoric, Pharaonic, Roman, Coptic and Islamic ages, but also a diorama of the daily life of the Nubian people, who sacrificed their homes for the continued progress of the Egyptian nation.

The museum is also a celebration of the amazing combined effort of the people of the world in response to the international appeal launched by UNESCO in 1960. It aims to play the role of 'community museum' through its education section, which organizes school trips around the museum itself and also to neighbouring temples, and hosts cultural events by Nubian artists in the outdoor amphitheatre (organized by the Ministry of Culture and recently brought under the management of the Egyptian Opera House). The museum is now also a centre for the preservation and conservation of archaeological remains from Africa and the Middle East under the supervision of ICOM.

#### c. *Functional requirements*

According to the architect's report submitted in March 1983, the list of accommodation was as follows: main exhibition hall; temporary exhibition hall; lobby with shops; ticket and information office; lecture room; VIP lounge; cafeteria; public toilets including facilities for the disabled; administration areas including a trustees' meeting room; a library; an education department with schoolroom, workshop, patio, etc.; storage for exhibits; various workshops; restoration facilities and laboratories; security and workers' quarters; a service entrance for

exhibits and staff with one control point; service lifts; and a service yard with all building utilities.

#### **IV. Description**

##### *a. Building data*

The total area of the museum is 10,110 square metres, with a ground-floor area of 7,000 square metres on a 50,000-square-metre site. The project is in two sections: the museum building, which is in one volume, and the landscaped outdoor exhibition. The building comprises three storeys.

On the ground floor are the main entrance hall; shops; the temporary exhibition hall; VIP lounge and associated service areas; a 150-seat lecture theatre with three translation booths; public toilets; security and administration offices; staff living quarters and facilities area; and lifts for visitors, staff and services.

On the first floor are the cafeteria (with a kitchen service); the library; administration offices and meeting room.

At basement level are the main exhibition space of the museum, measuring 3,500 square metres, and the diorama; the education section with its own entrance from the garden and reception area, workshop, classroom, servery and dining area, children's toilets and outside theatre; the restoration studios, comprising five laboratories – papyrus and fabric, organic, metal, inorganic, and a fumigation lab – as well as other facilities; the main storage areas; exhibition workshops; and the service yard with generator room, air-conditioning units, electrical room, boiler and loading platform.

The outdoor exhibition area includes a cave housing prehistoric drawings of animals; a Nubian house; an outdoor theatre for five hundred people; various exhibition pieces; two shrines – the *maqgam* of Saida Zeinab and the *maqgam* of the 77 *Walis*; one *musalla* (place of prayer) – Qubat Al-Mukhasal; and several graves, said to be Fatimid, Roman and Coptic in origin. A water canal represents the River Nile, surrounded by local flora and fauna.

##### *c. Evolution of design concepts*

The positioning of the building was planned jointly by the architect, Dr El-Hakim, and Dr Werkmeister, the first landscape architect to work on the project. The museum was placed on the ridge of the site to preserve rock formations and provide an open view of the Fatimid Cemetery and the Unfinished Obelisk to the east. An overpass across the main airport road was even proposed to link these three sites, making the museum part of a tourist circuit.

The entrance is located on the west side of the building, oriented towards the Nile in the same way as traditional Nubian houses. The building is organized so that the main exhibition hall is placed centrally between the educational facilities to the north and the laboratories and service areas to the south. The massing of the building follows the contours of the site and

blends well with the rock formation. The taller central zone was intended by Dr El-Hakim to reflect the architecture of the Pharaonic temples.

Dr El-Hakim's concept for the internal planning of the museum was a series of ramps leading along the walls to a platform where the entire exhibition area would have been open to view, with the statue of Rameses II in the centre, lit from above by a skylight. The flow of the exhibits would end at the lowest point of the museum, at the eastern portico, leading to the outdoor exhibition areas. Due to the client's misunderstanding that the ramps were for disabled visitors and therefore superfluous since there are two lifts, the ramps and walls were dropped from the scheme, and visitors now descend directly into the exhibition area via steps. Due to security considerations, the garden access was eliminated and the exhibition flow now ends at the foot of the stairs leading back to the main entrance.

The façades are all clad in hand-textured local sandstone built in alternating courses 30 and 60 centimetres wide. The windows are long, narrow, lozenge-shaped openings, grouped in pairs. An open triangle motif, used on the west façade, is taken from traditional Nubian vernacular architecture.

The concept behind the landscaping was the preservation and celebration of the granite rock formation. Dr Werkmeister even designed a rock formation that would climb the building from the east and link a roof garden to the rest of the scheme below. A stream of water would emanate from this formation for the irrigation of the plants, ending in a small pond at the Nubian 'village'.

In 1988, Dr Leila Masri of Sites International became involved in landscaping the project. Her concept was that the landscape should represent the Nile Valley and she organized the outdoor exhibition area chronologically, starting with the prehistoric caves, then the Nubian village and the amphitheatre, and so on, ending at the front entrance of the museum.

Both designers envisaged entry to the garden to be from the lowest point of the internal exhibition as a continuation of the experience, and both linked the roof garden to the main garden with a rock formation. They also specified similar indigenous plants, requiring little soil and water, because the granite terrain makes plant propagation very difficult – it has been necessary to drill in order to create drainage channels and add soil for the planting. Sites International introduced waterfalls into the stream to reflect the cataracts that were historically so important to the Nubian environment. The 'source of the Nile' was to start from the rock formation that abutted the building. Abundant planting was intended to reflect crops. All paving and hard landscaping is of granite and sandstone. This was the first landscape project in Egypt carried out by an Egyptian firm.

The *maqgama* are run by Sufi sheikhs who hold *dhikr* (a remembrance ritual dedicated to Sufi saints) on Saturdays and Sundays. Independent access has been provided and the Supreme Council of Antiquities has upgraded the sites, adding services such as drinking fountains, toilets and seating areas at a cost of EGP 300,000.

c. *Structure, materials, technology*

The structural system of the museum is a reinforced-concrete frame with concrete block infill panels. The walls are cavity walls of 25 blocks, then 10 voids, then 25 more blocks, clad with 15 centimetre-thick sandstone dry-fixed on the outside and pink granite on the inside, except in one exhibition area where the internal wall finish is plaster. The floors are also of pink granite.

The roof-slab is of reinforced concrete with waterproofing and 7-centimetre extruded styropore for insulation, covered with granite tiling because the roof was originally intended to be a roof terrace. The ceilings in the exhibition areas are open-timber grids set out to reflect the wall layout of the museum and provide maximum flexibility for the moving of lights and services.

The building is completely air-conditioned and artificially lit, even during the day, in all parts. The air-conditioning system runs twenty-four hours a day at various capacities appropriate to the exhibits. The air-conditioning load is 300 tonnes per hour, designed for an ambient temperature of 42°C and a required temperature of 24°C. The system runs on two chillers, each with two sections, and fourteen air-handling units, which give some flexibility to the system. However, at the engineer's office an analysis by the reviewer of the loads found that the exhibition areas (including the temporary exhibits and the diorama) require only 112.5 tonnes, i.e., one-third of the total load. The electrical load is 900 KVA and the building is provided with two generators. The water feature in the garden is a completely closed-circuit system and the water pumped around it is changed once every four months. Irrigation is through a combination of sprinkler and drip systems.

d. *Origin of technology, materials, labour force and professionals*

The project employs the international technology of reinforced-concrete frame with infill blocks. The labour force are all local but the architects, consultants and contractors are from Cairo, with the exception of the original landscape consultant, who was German, and the designer of the display system, who is Mexican.

**V. Construction Schedule and Costs**

a. *Project history*

The project was awarded to Dr Mahmoud El-Hakim in December 1979. Between then and April 1983 Dr Al-Hakim created five different schemes to accommodate changes requested by the client. The fifth scheme, dated 5 April 1983, was approved by the client, the Supreme Council of Antiquities. On the basis of this design the landscape architect, Dr Werkmeister, drew up his proposal and the architect provided 80 per cent of his working drawings. These were submitted to the client on 15 September 1983. A meeting to review the project by UNESCO was held at the end of September in Paris, to which the architect was not invited. The scheme was misunderstood and the architect was asked to review his work in light of the

comments made. Because these comments, which would have changed the design considerably, were based on a misreading of the drawings, the architect responded to UNESCO's report explaining himself in writing. The architect received a cancellation of his contract on 25 August 1984 on the grounds that he had missed the original deadline of 15 February 1980 for the submission of working drawings. After the architect's dismissal, the project was taken over by the Arab Bureau for Design, the engineering consultants brought in by the architect. His inheritors sued the client successfully for the wrongful cancellation of the contract and were paid all the fees for his work.

From September 1984 until October 1985 the Arab Bureau altered the drawings to fit the client's requirements. The museum as built is basically to the design of Dr El-Hakim. Changes were made in the internal circulation of the exhibition area, the shape of the skylight there, and the windows. Construction started on site in 1986 and was halted in 1991 with the building constructed but not fitted out. The project stopped for five years until 1996, when the building was fitted out and the landscaping finished. Sites International became involved at the end of 1988, and finished working drawings in 1991. They started work on site in 1996. The building was inaugurated on 23 November 1997 by President and Mrs Mubarak, with two hundred dignitaries from all over the world. The opening of the museum made the front page of the daily newspaper, *Al-Ahram*. The building was opened to the public in December 1997.

*b. Total costs and main sources of financing*

The total cost of the building without the land or the interior fit-out is EGP 57 million (approximately USD 15 million). The project was completely funded by the Egyptian government, except for the cost of the display consultant, who was paid by UNESCO.

Breakdown of costs:

Infrastructure :	EGP 4,200,000 (USD 1,105,000).
Labour:	EGP 14,280,000 (USD 3,758,000).
Materials:	EGP 23,520,000 (USD 6,200,000).
Landscaping:	EGP 15,000,000 (USD 3,900,000).
Professional Fees:	
	Structure and engineering: design 3%, supervision 3%.
	Landscape: design 4%, supervision 3.5 %.
	Interior: design 5%, supervision 5%.
	Exhibit fees: EGP 875,000 (USD 250,000).

*c. Comparative costs*

It is very difficult to compare the cost of this museum to others as it took a total of eleven years to build, with a hiatus of five years.

d. *Qualitative analysis of costs*

Building cost:	EGP 2,065 (USD 590) per square metre
Landscape:	EGP 420 (USD 120) per square metre
Furniture and equipment:	EGP 1,340 (USD 383) per square metre

e. *Maintenance costs*

The maintenance cost is EGP 1,250,000 per year, not including the salaries of the ten maintenance staff required to run the building, who are paid by the Egyptian government.

**VI. Technical Assessment**

a. *Functional assessment*

The interior display functions well in terms of flow. Disabled access is provided to all parts of the building. However, the break in continuity between the indoor and outdoor exhibits is regrettable, as visitors miss out on one of the designer's key features – the view across to the Fatimid Cemetery. This change of access also makes the chronological order of the outdoor displays hard to follow.

The lighting for some of the display cabinets and statues is very low, making it difficult to see them and weakening their hold on the viewer's interest. The truncation of the first view of the statue of Rameses II, now partially hidden by a difference in levels, is also unfortunate. The client seems happy with the building as a centre of restoration and it has the largest facilities in Egypt but it currently seems under utilized.

b. *Climatic performance*

The main orientation of the museum responds to the topography of the site and not the climate. The building is totally air-conditioned and artificially lit, even in the education section, cafeteria, offices and so on. The only concession to climate is the double-wall construction and the western portico, which shades the entrance from the sun. The ticket office, however, has no shading to protect waiting visitors. There are no treatment systems for either water or rainfall due to the dry climate and the function of the building.

Although the rock formations of the site have been preserved, the 'River Nile' is a closed circuit of water that requires constant pumping. Moreover, the existing garden has several features that are not according to the design of Sites International. The rock formation, which was planned to rise to the roof of the building, has not been built and now the 'source of the River Nile' is a mound that stands alone approximately 3 metres from the building. Three water jets have been added to the 'River Nile' and patches of lawn have appeared in several places. There are no shaded areas at all for sitting and enjoying the gardens, although 'London park'-type benches are now being manufactured at the museum as seating for the garden.

c. *Choice of materials, level of technology*

Local material is used to clad both the inside and outside of the museum. The project employs the modern technology of building in reinforced concrete with block infill. It is a well-finished building.

Seismic regulations were introduced into Egyptian building law in 1994, after design of this building was complete. The Aswan Fire Department controlled the fire aspects of the design. Four years ago, after torrential rain, the building did leak but was then, apparently, properly waterproofed. The local climate is seeing some changes due to the creation of Lake Nasser.

d. *Ageing and maintenance*

The building is ageing well considering that it was completed in 1991. The only ageing problems it may suffer will be due to the mechanical aspects of the project: the air-conditioning system, lighting and pumping of water around the site will require constant maintenance.

The building itself will not need extensive maintenance as its finishes are all hardy and well detailed, from the external sandstone finish to the granite on the inside walls and floors. Four years after completion the building is undergoing maintenance/upgrading work, at an estimated cost of EGP 200,000 (USD 57,000), mainly in the basement areas, where finishes are being improved.

e. *Design features*

The project is well integrated into the site. The massing of the exterior works very well with the topography. The use of natural stone also helps in blending the building with the landscape.

The project has very little impact on its site. It is accessible on foot by tourists. School parties are carefully organized so that there is no overcrowding. As it is situated in a tourist district, there are no residences that would be disturbed by any increase in traffic.

The project is very successful with both tourists and local Nubians. At times, organizers have to divide parties between the garden and the building to accommodate everyone. The visitor numbers for last year are: 70,000 foreigners; 61,000 Egyptians; 8,300 foreign students; 36,300 Egyptian students; and 22,500 schoolchildren. The museum earned just over EGP 1,400,000 (USD 400,000) last year.

The main feature of the interior display is the statue of Rameses II (1304–1237 BC), the builder of the great temple at Abu Simbel. This statue is unique because it retains some of its colour. Due to an unfortunate interior arrangement, when visitors first enter the museum they see the statue from just below his shoulders to his knees. They must then descend twenty-eight steps to the lower level of the museum before they can see the statue in its entirety.

The policy of the museum organizers is to use artificial lighting throughout and they have even closed off the skylight in the main hall, originally designed to illuminate the statue of Rameses. The objects are lit by fibre-optic light sources, which are completely safe. The level of light, however, is very low – whether due to design or bad maintenance is not clear. The use of pink granite everywhere, on walls and floors, adds to the dimness of the interiors and in some cases interferes with the visibility of the statues on display. Environmental control is monitored daily and controlled manually. Humidity is controlled through silicon gel placed in special drawers in the display cabinets. There is no seating in the museum exhibition areas; even the guards have nowhere to sit.

## **VII. Users**

### *a. Description of those who use or benefit from the project*

The Nubian Museum is open in two shifts: in the morning, from 9.00am until 1.00pm, and in the evening, from 5.00pm until 9.00pm, seven days a week, all year long. This allows tourists to visit other sites during the day and enjoy the museum and Aswan's evening climate at night. The users of the museum are: foreign tourists, who pay EGP 20 (USD 5), and Egyptian tourists, who pay EGP 2 (USD 0.5); Egyptian visitors to the Nubian performances (admission free); and school parties (admission free).

This museum is the first in Egypt to have an educational section. Students are offered lectures and workshops as well as guided tours. Plans are also underway to utilize this section in the evenings for teaching young women, aged from eighteen to thirty-five, traditional crafts and literacy.

The museum is also used by restorers and museologists from throughout the region. It hosted four workshops in the year 2000, including one for ICOM's Programme for the Development of Museums in the Arab States, attended by fifteen countries.

A total of 120 staff members is required to cover the double shift (twenty administrative, forty security, ten educational, ten conservators, ten building technicians, thirty building maintenance). In the year 2000, the number of visitors to the museum reached a total of 198,215. Approximately half were Egyptian, not counting the schoolchildren, who numbered 22,489.

### *b. Response to project*

Architectural professionals like the project and are impressed with the level of finishing, taking into account the Egyptian context. They find that the building sits well in the environment but that the garden is artificial. The use of sandstone as a cladding material for a Nubian museum has been questioned in light of the tradition of mud brick architecture in this region, particularly in Nubia.

The local people are very proud of their museum. They bring their visitors to see it and feel it reflects their way of life. Their favourite section is the diorama, which has provoked interest

and strong memories. Local users complain about the low level of illumination of the objects, the lack of seating areas both inside and outside the building and the absence of guides, as some visitors are illiterate. The museum plays a very important role in informing the rest of Egypt about the rich Nubian culture, combating prejudice against what some consider to be a backward part of Egypt.

Some of Aswan's main hotels are in the vicinity of the museum. Hence its neighbours are tourists, who like the project but have complained about the low levels of illumination and the lack of labels on plants in the gardens.

## **VIII. Persons involved**

### *a. Identification*

The Supreme Council of Antiquities: client.

Ossama A W Abdel Meguid: museum director.

Dr Mahmoud El-Hakim: architect.

Consultants:

Arab Bureau for Design: design and technical consultation.

Mohamad Yusri Abdel Khalik: project architect.

Samir Halawa: mechanical engineer.

Shahrazad Abdel Fattah: electrical engineer.

Mohamad Hafez: structural engineer.

Dr Werkmeister, Dr Werkmeister & M Heimer Landscape Architects: original landscape architect.

Dr Leila Masri, Sites International: final landscape architect.

Pedro Ramirez Vazquez: museum art display designer.

Contractors:

Hassan Allam, Al-Nasr General Contracting Company.

Silver Knight Exhibitions Ltd., interior contractors.

**Hana Alamuddin**

**May 2001**