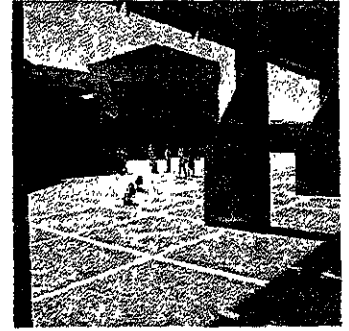


# The National Museum of Bahrain

## Manama, Bahrain

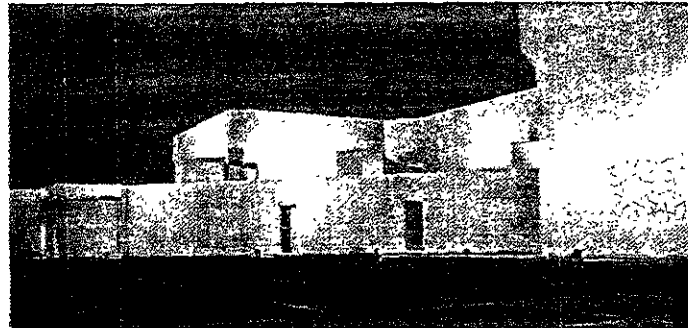
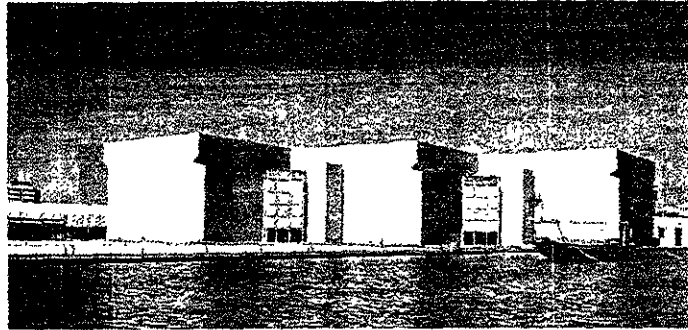
Architect: **KHRAS Arkitekter**  
**Knud Holscher**  
**Sven Axelsson**  
**Jen Clemensten**



### Introduction

The National Museum of Bahrain was intended to be the first phase of the Civic Centre complex at the intersection of two major highways which connect the centre to the old city of Muharraq and the modern town centre. Due to economics, other buildings of the Civic Centre have not been built. The idea to build a national museum in a better location within a civic centre came from the government of Bahrain through the Ministry of Information. The former museum in Muharraq could no longer hold and properly exhibit the collection, due to new findings of rich archaeological sites in Bahrain.

With the assistance of the International Council of Museums, the programme was formulated, and the KHRAS architectural firm was appointed to design the new Civic Centre complex. The museum complex consists of an exhibition block, a curatorial block and an open arcade. The exhibition block includes four half cube boxes joined by a large foyer, which connects the curatorial sector at its eastern end. The museum lagoon defines its border with the sea. It occupies a 12.05 hectare plot of land and a total of 22,400 square metres of floor area with large outdoor exhibition spaces. This building sets a new standard in museum climatic and security control systems in the Gulf area. Its strategic position near the water has amplified its sculptural effect, making it a landmark in Bahrain.



The architects, Holscher and Axelsson of KHRAS of Denmark, have attempted to translate distinctive local and regional architectural features into the museum design. They consider the introspective tradition a distinctive feature and translate it into simple facades on the museum. They also found that Euclidean geometry, the courtyard, and interior illumination could be included as the essential elements of the expression. In this way there are no conflicts between the western architectural tradition and that of Arabic culture. A direct translation of architectural features would be dangerous, resulting in a shallow interpretation of local culture.

This building has set a high standard for museum typology in the Gulf area. It has provided sound conditions for the activities of exhibition, cultural communication, research, recreation and education. It raises Bahrain's image as a culturally conscious country, that attempts to have the best building to preserve its heritage. Yet its success at redefining the architectural tradition of this region cannot be judged at present.

**Historical background**  
 Bahrain means the place where the waters of the land meet the sea. The main island of Bahrain is about the size of Singapore. The site of the National Museum is at the crossing of Muharraq Causeway which connects with

Muharraq old town, and the al Fateh Highway. The museum stands near the coast. In this way the sea and the land, and the building of a lagoon and pools of fresh water, can indirectly express the meaning of Bahrain both as the juncture of two waters and the intersection of the old and new. From the sea, the museum becomes a showcase with many tall buildings behind it as background.

Bahrainis are good sailors and fishermen, still using traditional dhows. Between Manama and Muharraq there is a dhow village.

Bahrain's economy as well as its recent architectural expression are affected by those of the West.

### Local architecture

Development marks the townscape of Manama, the present capital of Bahrain, with many tall buildings visible. Most of them consist of simple glass boxes. Some of them appear to have an association with the past architectural expression of Bahraini houses. In Muharraq old town one can find some old Bahraini houses. They consist of a series of courtyards with several rooms organised around them. Each courtyard defines one major group such as servants, guests, women, or children. The house plans are rectangular. There are winter quarters and summer quarters. The summer quarters usually have a tower which directs the wind, flowing down to the room beneath it. The exterior of these houses is usually plain with some windows which have screens or shutters

called mashrabiyyah. The walls are thick and are of limestone with local mortar.

As climatic conditions can now be overcome by affordable mechanical means, fewer people build houses according to the old system. This is why new houses are seldom equipped with wind towers. The use of summer and winter quarters appear to be less relevant today. The attempt to redefine Bahraini architecture prevails in some buildings, such as a local restaurant which has revived the wind tower as its symbol.

#### Climate

The Island of Bahrain has high humidity throughout the year. The average monthly temperature from May to October is 28 degrees centigrade, while from December to March it is 21 degrees centigrade.

Desert conditions bring bright sunlight and form a sharp contrast to the blue sea and sky. Although rainfall averages only three inches per year, it occurs only in the winter.

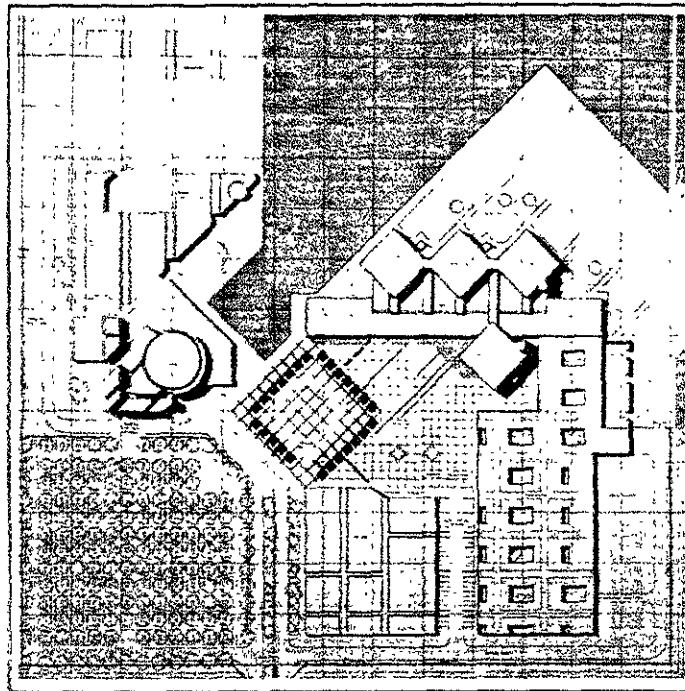
Bahrain is filled with fertile oases where dates and grain can grow properly.

#### Site

The museum stands on flat land with its back toward the sea. Its entry faces Manama. The location is covered with sand which reflects the bright sun. Two buildings have recently been completed near the museum: an art gallery and the Aswani Restaurant. They are one storey buildings. The restaurant resembles the traditional Bahraini wind tower house, with three towers at its corners.

#### Topography

The location of the museum is on reclaimed land, which

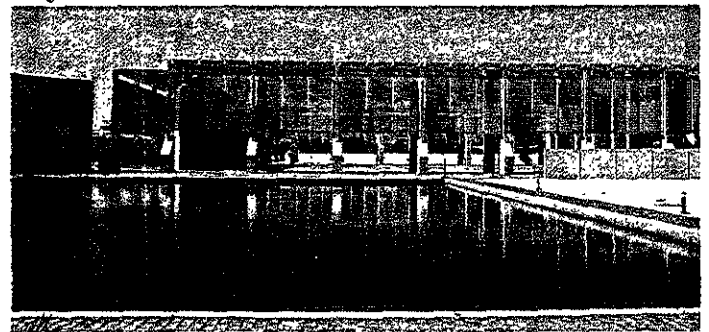


General Layout

gradually ascends from sea level up toward the interior part of Manama. The boundary of the site with the sea has been safeguarded by slope protection. The existing seabed has been deepened to resist shallow tidal zones around the site.

#### Programme

Rich archaeological artifacts recently excavated in Bahrain, could no longer be properly kept in the old museum at Muharraq. This situation gave rise to the idea of having a proper museum for exhibitions, and for exploring the Bahraini cultural heritage in a more strategic place, and to leave the old museum as part of this heritage. This idea was integrated into the plan to establish a civic centre by the government of Bahrain represented by the Ministry of Information, on a strategic seafront site at the



intersection of Muharraq Causeway and Highway 37. This civic centre would embrace a national museum, a congress complex, a library, a planetarium and an aquarium. After the government appointed KHRAS as the architectural firm to carry out the design, the architects formulated the programme through intensive contact with His Excellency

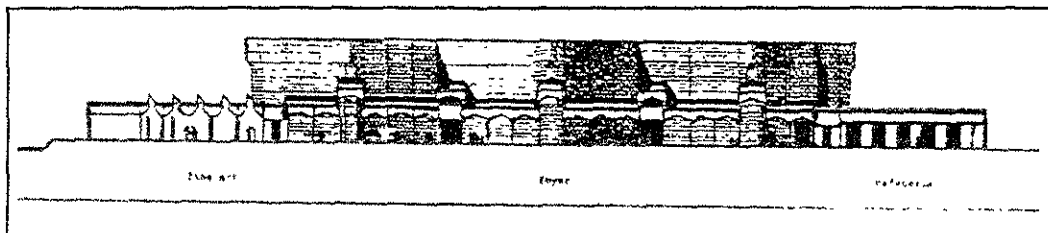
the Minister of Information, Tariq al Moayed, Shaikha Haya al-Khalifa, and other governmental agencies.

Advisers from the International Council of Museums (ICOM) evaluated and discussed the layout during the early stages of the programming. The team of architects presented the master plan for the Civic Centre and the feasibility study of the National Museum in May of 1982. They had developed the design in stages and presented the preliminary design in October 1982. They had submitted the draft of a detailed design including two models in June 1983, and had completed the tender documents in November 1983. The National Museum comprises a museum complex and the Directorate of Antiquities. The museum com-

plex organizes exhibitions and education and curatorial activities. The Directorate manages the administrative programme. The museum complex contains four exhibition buildings joined by a foyer with a shop, a cafeteria, a class room, and a gallery. The Directorate wing includes offices, curatorial space, collection storage, and laboratories.

#### General objectives

The main objectives are, to create a new place for the public to appreciate culture, art and reading, which acts as a landmark of Manama, to house and exhibit the rich cultural heritage of Bahrain, to educate Bahrainis to appreciate their own culture, and



Logitudinal section facing West

## ALAM AL BENA' A

to popularise museums as centres of social communication.

### Functional requirements

The museum complex contains exhibition halls for archaeology, ethnology, historical documents, natural history, and fine arts. It has facilities such as a foyer, lecture room, workshop, audiovisual room, shops, cafeteria, and outdoor exhibition space. It provides ample storage space and curatorial facilities which include work spaces, collection storage, laboratories, and a plantroom. It sets strict requirements in climatic control and has the most recent alarm systems and security measures.

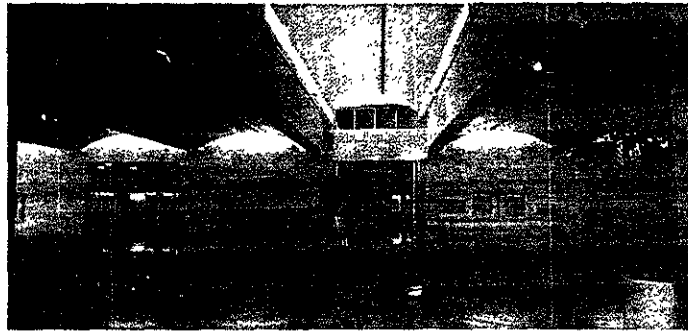
### Design concepts

The architects were aware of the difficulty in adapting to a culture whose attitude toward space, form and ornamentation was distinctive. Yet they have based their design upon local tradition. In this regard, the architects attempted to avoid a superficial adaptation of Islamic architectural attributes layered over a western style of building. They found that the problem was confining the areas in which both traditions, eastern and western, meet and that introspection is the most essential principle of Islam, exemplified in many monumental works marked by self-effacing exteriors. As they say "One must look inward behind the surface, where Islamic architecture unfolds in a wealth of varied and often surprising spatial sequences, a sophisticated control of strong daylight and ornamentation that is always subordinate to the primary spatial expression." They also found that geometry plays a significant role in the Arabic spatial pattern. They believe that geometric spatial form is rooted in Islam and it should be employed in museum design. Architecture in the Islamic world should avoid flamboyant expression, it is the unpretentious functional framework that determines the ap-

pearance. Colours are seldom used to express character in Islamic architecture. The architects used these principles, which they considered consistent with their own western architectural tradition.

### Materials and technology

A rigid frame was chosen as the main structural system rather than a traditional bearing wall



structure due to the rapid construction schedule and the scale of parts of the building. The architects avoided external concrete work because of the saltladen air, quality control and the possibility of spalling problems. The standard for keeping vapour barriers intact to prevent condensation between hot humid external climate and cool dry interior condition, determined the selection of materials and technology. The materials and technology employed in each building part are as follows:

#### Foundations:

In-situ reinforced concrete pylons through sand to bedrock level. Reinforced concrete ground beams spanning between pile caps.

#### Principal structural members:

Steel frame with sprayed fire protective material. Corrugated steel plate decking as formwork to in-situ concrete flooring.

#### Infill:

Travertine marble on anchor support system. Cavity concrete block walling restrained by structural frame. Continuous high performance membrane/vapour barrier. Inert insulation

cavity. Internal block walling and applied finish. Rendering of facade or exterior finishes: travertine facades on a 1,200 × 600 millimetre modular grid on anchor support system. Internal courtyards finished in glass fibre reinforced render.

#### Floors:

Italian marble finish for foyer. Treated beech timber floor for exhibition galleries.

#### Ceilings:

Exhibition galleries use open grid aluminium profile system with anodized finish. Foyer employs a curved perforated aluminium plate system with powder coat paint finish. General ceiling uses perforated steel tile with powder coat finish.

#### Roofing:

Inverted roof employs stone finish with continuous filter layer. General roof has three layer membrane / vapour barrier system. 150mm nira, inert insulation.

#### Other elements:

Aluminium sunscreens engravings in various materials, art work incorporating Islamic design by local craftsmen.

#### Functional assessment

The building has achieved the designers' original objective in that it acts as a landmark for Bahrain as one enters Manama from the causeway. Its ample exhibition space provides many opportunities for museum personnel to organise exhibitions. The foyer becomes a strong spine to accommodate crowds. It has served a more flexible function and has offered many possibilities for temporary exhibitions. Spacious main stor-

age areas, sufficient collection storage, adequate repair facilities, and effective work stations for the museum staff have enhanced the quality of the working environment. The outdoor exhibition space has accommodated some festivals. By circulating the water and evaporating it through fountains, a comfortable outdoor environment has been created.

#### Climatic Performance

A museum must maintain a constant temperature and humidity level through climatic control. The air conditioning device works well in this regard. The massive insulation of the wall surface helps reduce the load on the mechanical system. Outdoor water channels and fountains have also reduced the heat load.

#### Design features

The reflecting pool around the museum is a dramatic enhancement. The Arcade has not achieved the architects' intention, as very few people gather there. Perhaps this feature will work well if the whole Civic Center complex is completed. Window screens on the office sector recall the "mashrabiyyah" and work well as a filtre for strong daylight and as a privacy control device. ❁

