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The Aga Khan Award for Architecture

ARCHITECT'S RECORD

CONFIDENTIAL

I. IDENTIFICATION

Project Title MOSQUES OF SAUDI ARABIA - A SERIES OF MOSQUES WHICH ARE PART
OF A PROGRAMME FOR THE RE-INSPIRATION OF ISLAMIC ARCHITECTURE
Street Address _____
City MEDINA AND JEDDAH Country SAUDI ARABIA
Telephone _____ Telex _____

II. PERSONS RESPONSIBLE

A. Architect ABDEL WAHED EL WAKIL
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Telephone [01] 837 7252 Telex 965869 WAKIL G

B. Client MINISTRY OF HAJ AND AWQAF
Mailing Address P O BOX 2583
City RIYADH 11461 Country SAUDI ARABIA
Telephone 401 2345 Telex 201603

C. Consultants (e.g. Economists, Sociologists, Demographers, Engineers)
Name Supervision - CONCENTER
Mailing Address P O BOX 7914
City JEDDAH Country SAUDI ARABIA
Telephone JEDDAH 665 8352 Telex 601876 MASJED

D. Contractor BINLADEN ORGANISATION
Mailing Address P O BOX 1470
City MEDINA Country SAUDI ARABIA
Telephone 822 3300 Telex 570080 sj

E. Master Craftsman SEE ATTACHED SHEET FOR LIST
Mailing Address _____
City _____ Country _____
Telephone _____ Telex _____

VI. CONSTRUCTION DETAILS

A. Site and Building Area (please indicate in square metres)

1. Total Site Area: _____ REFER TO ATTACHED DATA SHEET _____
2. Total Ground Floor Area: _____
3. Total Combined Floor Area (including basement(s), ground floor(s) and all upper floors): _____

B. Construction and Technology

1. Describe the structural system and the basic method of construction
2. Indicate which major building parts were fabricated on-site and which were fabricated elsewhere

C. Description of Materials

(please also indicate if locally produced or imported)

1. Foundations

REINFORCED CONCRETE

2. Principal structural members

LOAD BEARING BRICK

3. Infill

4. Rendering of Facades or Exterior Finishes

PLASTER RENDERED WITH CEMENT

5. Floors

MARBLE OR TERRACOTTA

6. Ceilings

ON SITE CARVED PLASTER FOR FLAT CEILING

7. Roofing

VAULT AND DOME IN BRICKWORK

8. Other elements (please specify)

D. Type of labour force (please indicate percentage)

_____ Skilled Workers _____ Unskilled Workers

E. Origin of labour force

_____ Domestic _____ Foreign

III. USE

A. Specify type(s) of Use: RELIGIOUS

B. User/Occupant WORSHIPPERS

1. Occupation/Profession: GENERAL PUBLIC

2. Income Level (check one) _____ High _____ Medium _____ Low _____ Mixed

C. Specify any change(s) between planned and actual use:

IV. PROJECT TIMETABLE

(Please specify year and month)

A. Design: Commencement FROM 1980 Completion AN ONGOING PROC

B. Construction: Commencement _____ Completion _____

C. Date of Project Occupancy _____

V. PROJECT ECONOMICS

(Please specify amount, currency and date of transaction)

	Amount	Currency	Date
A. Total Initial Budget	PLEASE REFER TO ATTACHED DATA SHEET		
B. Total Actual Costs	_____	_____	_____
C. Actual Cost per sq. m.	_____	_____	_____
D. Analysis of Costs	REFER TO ATTACHED DATA SHEET		
1. Land	_____	_____	_____
2. Infrastructure	_____	_____	_____
3. Labour	_____	_____	_____
4. Materials	_____	_____	_____
5. Professional Fees	_____	_____	_____
E. Cost Comparison	REFER TO ATTACHED DATA SHEET		
1. Please indicate how the costs of this project relate to typical building costs in the country (check one):			
_____ Average	_____ Above Average	_____ Below Average	

F. Sources of Funds

1. Please indicate the percentage of funds that came from:

_____ Private Sources _____ Public Sources

2. If funding was public, what percentage was from:

_____ local _____ national _____ international sources

VII. GENERAL GEOGRAPHY AND CLIMATE

A. Please describe the local geographic characteristics:

SAUDI ARABIA

MEDINA AND JEDDAH

B. Please describe the local climatic characteristics:

HOT DESERT CLIMATE

VIII. EVOLUTION OF DESIGN CONCEPTS

Please describe the history of the project, from its conception to its final construction and actual use.

SEE ATTACHED DATA SHEET

Quba Mosque

Site

The site of the Quba Mosque is the sacred and historical spot where the Prophet Mohammed (Peace be upon him) built, on the very first day of his emmigration to Madinah the first mosque in the Islamic faith.

The original mosque has been rebuilt and renovated on several occasions throughout the ages to the present time.

Design

The development of the design for the new extension of the Quba mosque was a complex process.

In the first place there was the existing structure, which went back over 150 years, and to which minor alterations and extensions were made as recently as 1388 H/1967. This was a factor to be cautiously considered. A complete survey and an evaluation of the existing building was undertaken and a study of the possibility of its restoration and renovation was put under consideration.

In the second place, there were the requirements for the new building. A number of technical problems were raised by the needs of contemporary usage. Third, there was a major problem imposed by the restrictions to which the new extension could be made. A burial ground overruled further extension to the east, whilst roads and properties limited spreading in other directions.

A series of proposals were presented so as to allow proper consideration of the existing building, of land allocation, traffic and circulation amenities, and technical functions.

The old structure was showing major cracks in the domes and arches. Apart from those, the minaret seemed to be the only architecturally worthwhile element to preserve.

These matters considered, with the problems of adjusting the building to the existing site and the requirement of having a mechanical sub-basement for the new building have favoured the decision to reconstruct the whole edifice anew.

The main scheme considered for the new design was that of preserving the character of the old building by re-creating a similarity of architectural forms for the new. Moreover, a comprehensive survey of the traditional mosques existing in Madinah was developed in order to establish the characteristics peculiar to the region. This study became a major influence on the architectural shape of the present design.

The new Quba Mosque is designed to take ten thousand people for prayer and is more than five times the size of the previous mosque.

The mosque is expected to be used in its full capacity only during the Pilgrimage season where, every year, over two million Muslims from all over the world will visit it for prayers. During normal periods, the front prayer hall, with the major six domes, will provide ample space for every day prayer and for Friday prayers the sides and rear

iwans. The spaces within the prayer hall have been articulated accordingly to meet with the varying size of the congregation.

The courtyard will give proper ventilation to the mosque and is to be provided with a retractable, lightweight, shading membrane controlled by electric motors. The technical design has been carried out in Germany by Dr. Mahmoud Rasch in collaboration with Prof. Frei Otto. The tent membrane will function during the extremely hot periods and mainly at mid-day prayer sessions. The alternative of roofing the courtyard with a fixed structure was strongly rejected. The concept of bringing the spaciousness of the sky into the volume of the mosque was of major importance to the design.

The amenities of the mosque have been placed on the remaining north eastern terrain. Six row houses with back gardens are separated by a narrow accessed lane from the shops and ablutions area. The library and offices have been placed above the shops and are reached by a staircase levelled with landscaped terraces. The whole complex is connected to the mosque by an elevated walkway. Behind this walkway is a ramp for the use of the aged and winds to the women's prayer mezzanine. A great concern to the design of these areas was essential in order not to overwhelm the overall effect of the mosque complex.

Construction

The foundations and sub-basement of the mosque were built of re-inforced concrete while all walls, domes and vaults were of load-bearing brick masonry. Brick as a construction material was crucial to the design and has provided an incredible coolness within the interior through its thermal mass insulation characteristics.

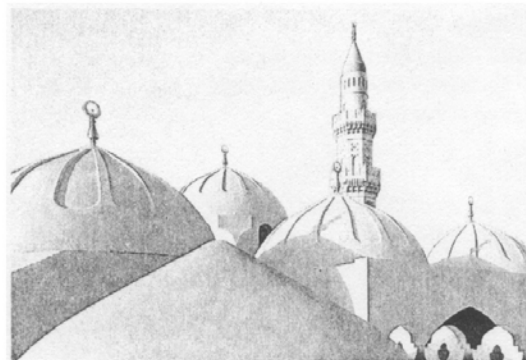
Client: Ministry of Hajj and Awqaf

Architect/Design: Abdel Wahed El Wakil

Contractor: Binladin Organisation

Completion: 1407 H/1986

• Arabic text pages 76 – 85



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30th March 1988

Aga Khan Awards Office
32 Chemindes Crets-de-Pregny
1218 Grand Saconnex
GENEVA, SWITZERLAND

Dear Sirs,

REPORT ON THE NOMINATION OF THE MOSQUES OF SAUDI ARABIA

This report is intended as a brief explanation on the purpose of the nominating of the series of mosques presented for the Aga Khan Award as a unified integrated project rather than a statement of individual unrelated projects.

1. The Mosques project, upon a demand from King Fahd, was initiated by the Ministry of Hajj and Awkaf as the source of a national programme for the development of a contemporary traditional mosque architecture in Saudi Arabia. The task of organising the programme was undertaken by Deputy Minister Hossam Khashoggi.
2. In collaboration with the Municipality of Jeddah and through the dynamic personality of its Mayor - Architect Mohamed Said Farsi - a selection of imposing sites were consecrated for the development of the very first experiments in introducing the models of traditional mosque architecture. Apart from serving for worship, these models were intended to demonstrate within a limited budget the means of traditional construction and the various modes of architectural expression within the design of small mosques [the Zawia].
3. The very first mosque was the design of the Island Mosque funded by the Ministry of Hajj and Awkaf. The design was conceived within the confines of traditional sacred space cosmology - the squaring of the circle. Where the 'heavenly' dome above the mihrab is supported by a transitional octagonal drum to the cubed volume of the prayer hall. This tripartite symbolism has been carried into the design of the minaret. The design was expressed in pure crystalline geometry without any attempt of personal or regional stylisation. In that sense it could be said that this mosque contains a universal aspect which extends beyond the confinements of specific and individualistic form. The Island Mosque contains a 'pictographic' essence in its shape and can be considered as having a 'heiroglyphic' aspect of mosque architecture i.e. the characteristics of classic form.

4. The Corniche and Ruwais Mosques are conceived with a more personal and individual expression and differ mainly in that aspect to the design of the Island Mosque. Although still maintaining the traditional aspect of space cosmology, they express a vivid contemporaneity to the vernacular architecture of North Africa and the Mediterranean basin. The strong expression of the catenary vaults in both mosques have subdued the stylised effect of pointed arches and emphasise a typical modern expression. [The catenary and parabolic arch has been widely introduced in modern architecture through the advent of twentieth century engineering science and the predominance of shell structures. It served well as a symbolic expression of functional form.]

We might as well mention here the extensive use of the catenary vaults in the vernacular architecture of Upper Egypt which has filtered through from Pharaonic times. In a sense the Corniche and Ruwais Mosques express a contemporary vernacular free-style of rural architecture.

5. The fourth small mosque, the Binladen Mosque, was again conceived as a classic expression of traditional architecture with the urban context in mind. However, this mosque differs from the Island Mosque in that it reflects a strong stylisation of form. Here, the dome is all encompassing and dominates the overall space together with its hemispherical baldachins, which carry on a hexagonal base. The particular style has been introduced by Sinan the Great and marks the termination of the continuous cycle of Islamic architecture in its various styles of assimilation, adaptation and integration within the tradition. This mosque could be considered as classic in style but mostly of an eclectic nature.
6. The four experiments mentioned above were intended mainly as a demonstration and an education process for students of architecture to show the means of construction and the various expression in handling of space for small mosques. Mimar magazine has also collaborated with the Ministry of Hajj and the Municipality of Jeddah in encouraging students to produce their own designs through an open competition announced in a Mimar publication.
7. It is interesting to mention here that the Island Mosque has been a decisive influence on the Ministry of Hajj Engineering Department and on Binladen Organisation, the main contractors of Saudi Arabia. The Island Mosque has brought about an appreciation and acceptance of this approach to architecture with the full confidence of adapting it to the three grand reconstructions of the historical mosques of Quba and Qiblatain in Medina al Munawwarrah and King Saud Mosque in Jeddah:

8. The site of the Quba Mosque in Medina is where the Prophet Mohammed erected the first Mosque of Islam following his Hijrah from Makkah and, therefore, is considered third in importance to the sites of the Haramain in Makkah and Medina and is mandatory to all pilgrims. The need of the increased number of pilgrims to use this Mosque has compelled the demolition of the 150 year old building and the requirement for a new building with five-fold capacity was commissioned and sponsored by King Fahd.

As a result of the unfortunate eradication of the old building it was imperative that the new building be in total compliance with the spirit of the old architecture. Thus, a development of the pre-existing architecture was central to the main theme of design, and a strict adherence to the traditional local style of the Medina mosques was reflected in many aspects of the building.

During the Friday prayers and pilgrimage season, the central courtyard assimilates the increased number of worshippers. A temporary canopy to protect the congregation from direct sunlight was sought for in the design. The solution was made possible by the use of an electrically-operated, retractable tent that adapted the most up-dated technology of lightweight structures, developed in Germany by Professor Frei Otto. This integration of a hi-tech system to a traditionally designed building proved useful and appropriate in addition to demonstrating the approach to problem-solving and decision-making in architecture without the biased dictums of 'modernism' and 'traditionism'.

The Quba Mosque provides an interesting example of revitalisation and reconstitution of architecture in vital historical areas of perpetual usage.

9. The site of Qiblatain Mosque is of another historical importance and relates to the time that the Archangel Gabriel revealed unto the Prophet Mohammed God's request for all Muslims to divert their prayer direction from the Jerusalem Qibla to that of Makkah. It is said that on receiving this announcement, the worshippers praying at Qiblatain site, re-directed themselves from a northerly direction, facing Jerusalem, to a southerly direction, facing towards Makkah.

In order to purport this action in the architecture, the symbolic gesture of designing two domes; the north one - being a blind dome - superimposes the old Qibla and the south one - being an elevated dome on an open drum - superimposes the Chosen Qibla of Makkah. The two domes are linked by a small cross vault symbolising the transition from one Qibla to the other and the 'heavenly' light coming from the open drum of the latter one emphasises its predominance. A further indication to the Jerusalem Qibla was the placement of a raised flat Mihrab below the blind dome depicting the design of the oldest Mihrab found in Islam in the sub-terranean chamber of the Dome of the Rock in Jerusalem. This treatment in design has reflected the peculiar and characteristic aspect of the Qiblatain Mosque.

Since the existing structure consisted of an awkward and dilapidated building, erected some twenty-five years ago, the design theme had to be re-interpreted by inspiration. The characteristic architectural features were thus inspired by the vernacular architecture of the Southern Arabian Peninsula prior to the northern influence of the Ottoman period. It is within that aspect that the Qiblatain Mosque could be referred to as an authentic vernacular to the region [we preclude here the primitive desert settlements of Najd and similar Nomadic architecture].

10. The King Saud Mosque in Jeddah was erected some thirty years ago in the new district of the Medina Road in Jeddah. The structure was poorly built and badly designed insinuating a concocted style of Mamaluk and Moorish architecture smeared upon third rate commercial design and planning criteria of the modern inheritance of architectural faculties in Egypt. The building was condemned for seven years before it was pulled down and the demand for a new King Saud Mosque to replace it was commissioned by King Fahd.

The King Saud Mosque has meant a lot to Jeddah as it was the first 'monumental' edifice the city has identified with in its quantum leap to the Twentieth Century and the burgeoning economic growth that followed. To the Saudis, the King Saud Mosque architecture reflected a mixture of romantic 'ideal forms' of the Grand Era of Cairo and the exuberant style of the Moors.

The new design was thus conceived to provide this monumental aspect and a huge brick dome of 20 meters span, soaring to a 40 meter height from ground level, was constructed on the air without centering; similarly a 65 meter minaret, in brick masonry, towered aside the main road. This daring feat in construction has been accomplished within a period of 18 months and has managed to prove and extend the feasibility of traditional brick construction within the capacity of modern production and construction means.

The design elements of the mosque had recourse to the most elaborate and elegant designs that has been produced in periods where Islamic architecture has been at its peak. The minaret and portal of King Saud Mosque has depicted the most ingenious designs of stalactites previously existing in the Sultan Hassan Mosque in Cairo. The research and study involved in re-designing, producing and constructing the stalactites has re-instated an art lost to the majority of practising architects in the Muslim world today. The *mugarnas* [stalactites] is a unique invention of Muslim architecture and encompasses the most disciplined exercise in three dimensional manipulation of volumetric space.

Similarly, an intensive vocabulary of traditional design elements were applied to domes, pendentives, squinches and fan vaulting showing the variety and flexibility by which traditional forms could be used to manipulate and enhance the overall quality of internal space. Everything was specifically designed for the mosque from ornamental door handles, bolts and hinges to floor patterns and carpet design, chandeliers with their lighting fixtures and chains, ornamental plaster-work, wooden awnings and balustrades, brass grilles and fountain taps, crescents for the dome and minaret finials and mimbar and mihrab.

The King Saud Mosque could be said to demonstrate a contemporary expression and revitalisation of the vast knowledge that the Muslim heritage has bestowed upon us. A true understanding of the knowledge and art of the past and of its true re-interpretation is vital for perpetuating such universal knowledge and applying it to serve the demands of today; furthermore, adapting it to cope with the imperatives of the new.

The King Saud Mosque design has sought to revitalise and perpetuate the grandeur of a tradition by rightful imitation and creative interpretation expressed by skillful craftsmanship and construction techniques. It is with mentioning here that this attitude towards design is common to the development of a living tradition and sets it apart from the ill-concieved approach of counterfeited revivalism that has swept the Western world, based on a fraudulent conversion of the architectural forms of a pagan Hellenic culture into the Christian milieu of European culture and, more recently, to the meretricious jugglery of post modernism.

11. In between the huge scale of the three grand mosques referred to above and the four small, water-side mosques in Jeddah referred to previously, four examples of community-type mosques have been designed and been built in Jeddah. The Sulaiman Mosque, the Harithy Mosque, the Juffali Mosque and the Azizeyah Mosque in Jeddah have been respectfully commissioned by well established individuals under the auspices of the Ministry of Hajj and the co-operation of the Municipality of Jeddah. Each design has sought to provide various expressions and interpretations to Islamic architecture.

The Juffali Mosque, which is located at the entrance to the old town, reflects the typical architecture of the three vernacular old Jeddah-type mosques of Al Hanafi, Al Mimar and Al Shafie.

The Azizeyah Mosque was conceived within a very limited budget and demonstrates the capacity of achieving an agreeable edifice within financial limitations.

The Harithy Mosque is the smallest of the community mosques but nevertheless the most elaborate. The minaret and mihrab stalactites have been carved out of marble; and its ceramic tiles have been designed and specially manufactured in the old town of Kutaya in Turkey. The general architecture represents a contemporary variation on a traditional theme of design.

The Sulaiman Mosque was the very first mosque to be designed and built in Jeddah and, together with the Island Mosque, has helped in contributing to the introduction of load-bearing brick construction. The resumption of a dominant central dome to the Sulaiman Mosque entailed a precursive endeavour owing to the official antipathy, prevailing at that time, for its application. The Sulaiman Mosque, although somewhat externally austere, has re-introduced the internal courtyard, the women's prayer mezzanine, the vertical bellowing of internal space into a juxtaposition of arches and domes, and the consistency of materials and surface treatment, with an elementary white colour.

As a forerunner, the Sulaiman Mosque has had to endure in all aspects the discomforts of teething pains. However, it has managed to introduce a traditional type of mosque without historical affectations and mannerisms.

CONCLUSION

Having attempted to give a brief history and explanation into the process of the design and construction of the above-mentioned mosques in Saudi Arabia I strongly recommend that they be considered in their totality expressing three different categories of:-

- | | |
|------------------------|---|
| SMALL MOSQUES | - Island, Corniche, Ruwais and Binladen |
| COMMUNITY MOSQUES | - Sulaiman, Harithy, Azizeyah and Juffali |
| CONGREGATIONAL MOSQUES | - Quba, Qiblatain and King Saud |

Together they share in common the dedication of a Government Authority [represented in the person of H.E. Deputy Minister Sheik Hosam Khashoggi of Hajj and Awkaf]; to control and impose the supra-functional aspect of the Mosque as the spearhead of a spiritually oriented nation by following up and collaborating with Municipalities, contractors and individual sponsors to achieve a material manifestation reflected through the architecture of the Mosque.

Such an endeavour has encompassed occasional difficulties and frustrations especially with the sudden economic set-backs that have assailed recently. It was also unfortunate that Mayor Mohamed Said Farsi has, due to health conditions, resigned from his post and, consequently, has affected the site developments of the water-side mosques in Jeddah. The confined budgets of the Ministry have bestowed the personal financing of King Fahd for the Quba, Qiblatain and King Saud Mosques.

In each project ideas and various elements were applied in order to introduce a variety of architectural expression and construction techniques, achieving a comprehensive vocabulary within the scope of traditional architecture.

Further to that, a training workshop to accompany each mosque has provided experience and know-how to all levels of professionals, technicians and craftsmen. Over two hundred masons ranging from Turkey, Pakistan, Syria, India and Egypt have emerged from the on-site training provided to them; over eighty gypsum plasterers were introduced from Morocco to practise their craft and integrate new geometric designs to their well preserved knowledge of Moroccan patterns. Carpenters have also trained and evolved from the extensive use of wooden elements in the architectural design and also in the making of molds and formworks for intricate structural shapes.

Respectively, the marbleworks involved has also provided ample opportunity for their craftsmen. Brass chandeliers, grills and ironmongery has equally benefitted and renewed a currently neglected trade. And last, but not least, was the opportunity offered to engineers, architects and builders to experience the techniques and methods of traditional Islamic crafts.

It is this unified and integrated vision which has been dispersed by its sheer magnitude into several projects and stages that requires their recollection into one comprehensive presentation in order to accomplish the overall development concept into a unified totality.

Abdel Wahed El Wakil