



## The Aga Khan Award for Architecture

## 1995 ARCHITECT'S RECORD

1403.SAU

## I. IDENTIFICATION

Project Title KASR AL HOKM PHASE II - AL JAMEA MOSQUE

Street Address NEW SHUMAI SY STREET

City AR-RIYADH Postal Code  Country K.S.A

## II. PERSONS RESPONSIBLE

## A. Architect/Planner

Name Sba ARCHITECT RASEM BADRAN , CONSULTANTS

Mailing Address P.O BOX 182571

City AMMAN Postal Code 11118 Country JORDAN

Telephone (9626)604200 Facsimile (9626)606606 Telex

## B. Client

Name AR-RIYADH DEVELOPMENT AUTHORITY ( ADA )

Mailing Address P.O BOX 495

City ARRIYADH Postal Code 11411 Country K.S.A

Telephone (01)4883331 Facsimile (01)4829331 Telex 401190

## C. Project Affiliates

Please list those involved in the project and indicate their rôles and areas of responsibility (e.g. engineers, contractors, economists, master craftsmen, other architects, clients, etc.).

Name	Rôle
<u>Sba ARCHITECT RASEM BADRAN, CONSULTANTS</u>	<u>ARCHITECT (CONSULTANT)</u>
<u>BURO HAPPOLD CONSULTANTS</u>	<u>ENGINEERS (CONSULTANT)</u>
<u>B.B.W WAGEN FELD &amp; W. BOEDEKER</u>	<u>LANDSCAPE&amp;INFRA STRUCTURE (CONSULTANT)</u>
<u>SAUDI CONSULTING SERVICES</u>	<u>SITE&amp;LANDSCAPING (CONSULTANT)</u>
<u>KEANG NAM</u>	<u>MAIN CONTRACTOR</u>
<u>MABCO</u>	<u>PRE-FAB CONC. CONTRACTOR</u>
<u>AR-RIYADH DEVELOPMENT AUTHORITY</u>	<u>CLIENT</u>

**III. ARCHITECT'S BRIEF**

Please describe the initial project programme.

Total area of the Grand Mosque is approximately 30,000ms.  
It contains the following functions:

- Grand prayer hall for 10,000 prayers.
- Women prayer hall for 2,000 prayers.
- External prayer hall for 5,000 prayers.

In addition to:

- Office of Al Riyadh Development Authority.
- Offices of the Committee of Religious Affairs.
- Madrasas.
- Library.
- Shops.
- Computer center.
- Imam's residence.

Approximate cost per ms = 5,000 Saudi Riyal.

For detailed project description, please refer to the attached report.

**IV. EVOLUTION OF DESIGN CONCEPTS**

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

Please see attached report.

## V. CONSTRUCTION DETAILS

### A. Description of Materials

(please also indicate if locally produced or imported and whether fabricated on-site or elsewhere)

#### 1. Foundations

PILE SYSTEM & RAFT

#### 2. Principal Structural Members

PRAYING HALL : BEARING WALLS , PRE-FAB. COLUMNHEADS,BEAMS,SPANDRALS,ARCH UNITS AND DOUBLE T-BEAMS.  
HOUSING&SURROUNDING BUILDING:CAST IN-SITU BEARING WALLS,COLUMNS&BEAMS PRE-CAST HOLLOW CORE SLABS.

#### 3. Infill

PRE-CAST EXPOSED AGGREGATE CONCRETE ELEMENTS,CONCRETE BLOCK WALLS WITH CEMENT PLASTER&PAINT,RIYADH STONE,IMPORTED MARBLE LOCAL CERAMIC TILES.  
THERMAL INSULATION FOR EXTERNAL WALL,FIXED BEHIND THE STONE.

#### 4. Rendering of Façades or Exterior Finishes

PRE-CAST EXPOSED AGGREGATE CONCRETE ELEMENTS  
POLISHED IMPORTED ROSA BITA GRANITE ( OPEN JOINT )  
BUSH HAMMERED RIYADH STONE ( OPEN JOINT )  
CEMENT PLASTER WITH TEXTURED PAINT

#### 5. Floors

IMPORTED POLISHED MARBLE&GRANITE,IMPORTED FLAMED GRANITE,LOCALLY FABRICATED CUSTOM-MADE&STANDARD CARPET,LOCAL TERRAZZO&CERAMIC TILES.

#### 6. Ceilings

LOCALLY PRODUCED GYPSUM BOARD,IMPORTED WOOD(BEAMS,RIBS&PANELS)LOCALLY FABRICATED,IMPORTED MINERAL FIBRE&METAL STRIPS,EXPOSED AGGREGATE PRE-CAST DOUBLE T-BEAMS.

#### 7. Roofing

BUILT-UP ROOFING SYSTEM OF LOCALLY PRODUCED WATER PROOFING MEMBRANE & EXTRUDED POLYSTYRENE BOARDS WITH LOCAL CONCRETE TILES.

#### 8. Other elements (please specify)

DOORS:IMPORTED SOLID WOOD LOCALLY FABRICATED SOLID&HOLLOW CORE DOORS,STEEL DOORS,  
WINDOWS:LOCALLY FABRICATED EXTRUDED ALUMINUM DOUBLE GLAZED WINDOWS  
SCREENS:IMPORTED SOLID WOOD LOCALLY FABRICATED SCREENS (MASHRABEYIAH)

### B. Construction Technology

DECORATIVE LOCALLY PRODUCED G.R.G STRIPS&CORNICHE

Indicate the basic construction technology, methods, details or systems.

LOCALLY PRE FABRICATED EXPOSED AGGREGATE CONCRETE COLUMNS,COLUMN HEADS, ARCH UNITS,SPANDRALS,LIGHT BOXES AND DOUBLE T-BEAMS WERE ALL COMINED ON SITE TOGETHER TO REFERE TO ATTACHED ILLUSTRATIONS.  
THE REST WAS CONSTRUCTED USING THE STANDARD CASTIN-SITUE CONC. BEARING WALLS&COLUMN AND BEAM INCLUDING THE PRAYING HALL MAIN WALLS AND ARCHADE.

C. Type of Labour Force (please indicate percentage) 80% Skilled Workers 20% Unskilled Workers

D. Origin of Labour Force                      Domestic 100% Foreign

**VI. TIMETABLE**

(please specify year and month)

- A. Commission 1984
- B. Design: Commencement 1984 Completion 1986
- C. Construction: Commencement 1987 Completion 1991
- D. Date of Project Occupancy 1991

**VII. AREAS AND SURFACES**

Site and Building Area (please indicate in square metres)

1. Total Site Area 17,000 m<sup>2</sup>
2. Total Ground Floor Area 12000 m<sup>2</sup>
3. Total Combined Floor Area 31,000 m<sup>2</sup>  
(including basement(s), ground floor(s) and all upper floors)

**VIII. ECONOMICS**

Please specify the amounts in local currency. Provide the equivalent in US dollars. Specify the date and the rate of exchange for US dollars at that time.

	Amount in Local Currency	Amount in US dollars	Exchange Rate	Date
A. Total Initial Budget	<u>200,000,000</u>	<u>53,333,333</u>		
B. Cost of Land	<u>100,000,000</u>			
C. Analysis of Actual Costs				
1. Infrastructure	<u>42,000,000</u>	<u>11,200,000</u>	<u>3.75</u>	
2. Labour	<u>49,000,000</u>	<u>13,066,666</u>	<u>3.75</u>	
3. Materials	<u>77,000,000</u>	<u>20,533,333</u>	<u>3.75</u>	
4. Landscaping	<u>18,000,000</u>	<u>4,800,000</u>	<u>3.75</u>	
5. Professional Fees	<u>14,000,000</u>	<u>3,733,333</u>	<u>3.75</u>	
6. Other				
D. Total Actual Costs (without land)	<u>200,000,000</u>	<u>53,333,333</u>	<u>3.75</u>	
E. Actual Cost per sq.m.	<u>6500</u>	<u>1733</u>	<u>3.75</u>	
F. Cost Comparison				

Please indicate how the costs of this project relate to typical building costs in the country:

                     Average                      Above Average 40% Below Average

**G. Sources of Funds**

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

                     Private Sources 100% Public Sources

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

100% Local Sources                      National Sources                      International Sources

**IX. PROJECT SIGNIFICANCE AND IMPACT**

In what way is this project important ?

At the local scene , the project has been taken as case studies by university students. Beyond the academic circles , the project has been influencing professional trends in the Najd region and has influenced several competitions.

Moreover, the project's impact has reached a level of significance beyond the immediate regional context, and has become a subject of cultural discourse through theses, publications, and seminars worldwide. This can be seen in the following list of selected publications.

Khan, Hassan - Uddin and Frishman, Martin, The Mosque, London, 1994, Thames and Hudson.

Khan, Hasan - Uddin, Contemporary Asian Architects, (Under publication).

- Badran, Rasseem. "Historical References and Contemporary Design" Theories and Principles of design in the Architecture of Islamic Societies. The Aga Khan Program for Islamic Architecture.
- Steele, James. "Recent Work by Rasem Badran". Mimar 41.1991
- Abu Hamdan, Akram. "Rasem Badran". Mimar 25.1987
- Ashawaf, Anas. "Justice Palace". Albena'a 63 Vol. 11, 1992.
- Future design of Grand Mosque & Justice Palace", Albena'a 42 Vol. 7, 1988
- Badran Rasem, "Analytical Study of Contemporary Architecture (case study) The grand mosque". Albena'a 36 vol. 6, 1987
- Badran, Rasem, "The design of the contemporary Mosque (The grand Mosque)". Space for freedom. The Aga Khan Award for Architecture.
- Badran, Rasem, "Interaction of space, Tradition, Symbols, and Society in Mosque Architecture (Grand Mosque and Justice Palace), Expressions of Islam in Buildings. The Aga Khan Program for Islamic Architecture.

Please note: The submission of this Record is a prerequisite to candidacy for the Award. All information contained in and submitted with the Record will be kept strictly confidential until announcement of the Award is made. Subsequently, such material may be made available by the Aga Khan Award for Architecture and you hereby grant the Aga Khan Award for Architecture a non-exclusive licence for the duration of the legal term of copyright (and all rights in the nature of copyright) in the Material submitted to reproduce the Material or licence the reproduction of the same throughout the world.

Name (please print) RASEM JAMAL BADRAN

Signature RP Date 1/1/95

10 JAN. 1995

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# The Urban Arcade "The Living Wall"

**N.B.**

**DUE TO THE IMPORTANCE OF THIS ARCADE IN DEFINING THE URBAN SPACES AROUND THE GRAND MOSQUE, WE SUGGEST ITS INCLUSION IN THE NOMINATION FOR THE GRAND MOSQUE.**

**R. BADRAN**

The proposal for the grand mosque and Justice Palace initially included a third building which is the cultural center. This building was conceived as an integral part of the whole scheme within the comprehensive framework of the city center, including the spiritual place (The Jami) , the place of knowledge (The Cultural Center) and the place of physical and material concerns (the Justice Palace). This comprehensive framework was disturbed when the cultural center was later cancelled by the client, creating a gap between the mosque and the palace on one hand, and the rest of the city on the other hand. This vacuum was treated through the inclusion of an urban envelope which re-introduces the desired hierarchy of transitional zones in the form of public plazas, courtyards and gateways which tie this project in its outer limits into the urban fabric of the city.

This envelope defines the external plazas and establishes the transitional zone between the Justice Plaza and the historic part of the city (Al-Masmak), and emphasizes the relationship between the project and Al-Masmak. It stresses the dialogue between past and present while creating spaces for certain functions such as parking , and events such as festivals, friday market , and even amusement parks.

This envelope also contains on ground level seating areas surrounded by palm groves and pleasant water features. The upper level offers interesting vistas of the surrounding areas of the city, and may be used in future for public functions such as open cafes and galleries.

As a model for a human, domestic and educational architecture, this wall may be seen as is interactive with the social and cultural need of every day life, and may truly be described as a living wall.

# **THE GRAND MOSQUE , RIYADH , SAUDI ARABIA**

The recently completed complex of the Grand Mosque in the old center of Riyadh in Saudi-Arabia, is an attempt to awaken the values and memories of an important place with rich cultural, social and political history. The objective of the proposed scheme was to respond to the socio-cultural givens by proposing the appropriate physical environment and architectural expression, a continuity of the past through reading its behavioural values and morals. It intends to stimulate the present and future users to be compatible with the cultural and moral contents of this project.

A work of such moral and social commitment was my dream from the beginning. I regenerated the special character of this place, which was found in an old photograph representing the site 60 years ago, bringing it back to life without copying it. The work attempts to translate the vague image of the 1930 photograph, with all its values into an architectural ensemble with a distinguished presence not only upon the surrounding context, but also upon the city as a whole. In order to deal with design and planning issues, the following aspects had to be taken into consideration:

## **1 - The cultural aspect:**

Renovation of the city's cultural and traditional center was based on studies of the inter-related elements which created the nuclei of new Islamic cities in the past and which were characterized by the close relation between the Jami' mosque and the ruler's residence surrounded by cultural and educational activities, in addition to public and commercial buildings such as the suq, the bath, and the khan.

Planning systems implemented in this scheme reflect the importance of those relations to form the dynamic city center which maintains a balance between the rational, the physical and the spiritual aspects. The project assures the strong relationship between the mosque and all active functions which organize everyday life. This continuous interaction between the mosque and its surroundings gives this sacred place a domestic and noble image and a familiarity to Muslims praying in it five times a day, while exploring other interactions with cultural, educational and economical values along with their worship. All this led to the mosque having a more human character, thus avoiding the monumentality which marks recent state mosques.

Direct links are made between the mosque and the ruler's residence through bridges which echo a similar link between the former mosque and palace and symbolize the desired relation between people and their ruler within an informal and socio-political domain.

## **2 - The historical aspect:**

This project has a great historical value, being constructed on the remains of the former old mosque.

### **3 - The image:**

Traditional elements which mark most mosques, such as minarets and domes, did not have a significant role in formulating the image of this mosque. It came out with a modest architectural elegance in harmony with the urban fabric of Riyadh .

### **4 - The architectural components system:**

The system guiding the mosque's articulation came as a result of an analytical study of some local models built in this region after the model of the mosque of the Prophet, with all its standard spaces; Sahn (courtyard), Riwaq (arcade) and Mussalla (prayer hall). Two simple and modest minarets were used to indicate Qibla direction on the city level. Domes were not used in the mosque composition as they are linked in Saudi Arabia with mausoleums and tombs which are not acceptable to Wahabis.

To maintain the memory of the place as conceived in the minds of local people, we adopted the traditional system and developed it to serve contemporary needs. This system consists of the columns hall (hypostyle) which resembles an agricultural setting with tall palms used formerly as columns. This column system plays a major role in indicating Qibla direction guiding prayers rows and other varying functions inside the hall. The mosque is enhanced by the residential clusters which are of a scale close to surrounding buildings. This articulation produced a composition of roads, paths, plazas and courts similar to the urban places of old Riyadh.

## **5 -Environmental and Climatic Aspects**

The climatic impact in the desert Najd region had a significant role in formulating the expressive architectural features of this building. This impact has appeared in the vernacular architecture of this region at three levels:

### **Level 1: Walls**

The outer wall was usually built out of mud which is a material of high thermal insulation. Stone was usually used as a support material. In this project, we chose the local mud stone material in building the outer wall. This wall became the protective layer of the mosque walls, and as a climatic filter, through which air could penetrate, while keeping the inner wall layer out of the heating sun rays.

### **Level 2: Openings**

Limited numbers and small sizes of windows were used in traditional buildings due to the harsh desert conditions of high temperature and sand storms, in addition to maintaining privacy. The resulting expression of this project is closer to the traditional system. This treatment creates a dialogue between memory of the past and the present moment.

### **Level 3: Lighting and Ventilation:**

The natural lighting and ventilation systems are combined in a way resembling the same arrangement in the lighting and ventilation towers of in all building types of traditional



architecture. These towers combine the traditional functions with modern ventilation and lighting requirements, using vertical airconditioning ducts in walls and dealing with artificial lighting in the halls. The towers are located over the Jami' columns, so as to act directly, with no need for horizontal airconditioning means, and avoiding suspended ceilings which are usually implemented in such mechanical airconditioning systems. This non-central air conditioning system is distinguished by its low-cost requirements and easy to operate nature regarding the variable zone size occupied by prayers. It has also emphasized the projects building components which resemble traditional building systems.

## **6 - Building Systems:**

The building systems used in the mosque resemble the framework of knowledge which old mosques were built upon in Najd. This framework can be read to a certain extent as pre-cast systems, taking into consideration the available technology in their times. The pre-cast system used in the prayer hall resembles this informative concept, without repeating its expression. This has offered the building the spirit of its age, avoiding historical confusion and deformation.

## **7 - Crafts (local ornaments and furniture):**

The crafts of a nation represent accumulated levels of culture , and form part of the nation's heritage which distinguishes one nation from another. These crafts, whether they are sewing, furniture making, ornaments, frescoes or ceiling wood works have participated in enriching the interior space of the Jami' Mosque. Their aesthetic values came out of their simplicity which characterizes these expressive means, which were mostly abstract in their own ways. The eye admires them and memory is evoked by them, distinguishing them from the crafts of other cultures because of their expressions which are sensitive to their local and regional environments .

## **8 - Landscaping:**

The Justice Palace and the Jami' Mosque projects contain a number of public courtyards which have become an important part of the urban fabric of Riyadh city center. In addition, courtyards were oriented towards Qibla, to be used as praying places on Eids and Fridays. Plants were suggested in some of these courtyards to modify the harsh climate and to complete the poetic aesthetic values of the space, in the same manner as it used to be in the past, when mud buildings were combined with palm oases in this region.