Through two of the recent designs of our firm Shubeilat Badran Associates of Amman, Jordan—the State Mosque of Baghdad and the Grand Mosque of Riyadh—I will attempt to address the question of how contemporary design practice can make use of the cultural heritage of a society and still meet the requirements of contemporary life.
Turning first to the State Mosque of Baghdad, the client was the Municipality of Baghdad represented by the Iraqi architect Rifat Chadirji, whose administrative and organizational abilities proved to be outstanding. The program presented by the client reflected an intent that was more clearly political than it was religious or even social. The municipality had in mind a mosque that would at the same time be a landmark and an expression of technological achievement. It invited architects from a range of cultures to submit their designs so that the client would have a variety of proposed schemes.

Figure 2: Baghdad State Mosque. Spatial articulation within the suburban setting.

Figure 3: Baghdad State Mosque. Model showing housing rotating from the mosque precinct to emphasize its axiality to Mecca.
When we began our work we had little knowledge of the architectural heritage of Iraq. Our familiarity with it was more or less limited to structures such as Mesopotamian ziggurats and Abbasid monuments like the great mosque at Samarra. The client was extremely helpful in introducing us to examples of the Iraqi Islamic heritage including the madrasa al-Mustansiriyya, the Khan Murjan, and other buildings that represented the monumentality they were seeking.

The topography of Iraq is flat, with rivers and palm trees, very different from the hilly terrain I was accustomed to in Jordan. The countryside had both a distinct building material and a typical composition and color that gave Iraqi architecture its character and which I had to understand and absorb if I was to design appropriately for that country.

The designated site was suburban, presumably to allow sufficient space for the monumental statement the client sought, though at the same time it was certainly in direct contrast to the tradition of the mosque as a social and urban institution. The spatial requirements were vast. The specifications called for an indoor prayer space to accommodate 30,000 worshipers and an outdoor space for 15,000 to 20,000 worshipers. The two spaces combined would have been sufficient for an airfield.

To counteract the colossal impression these requirements would make we decided to provide an urban texture and character to the project. Such an approach would also help to make up for the building’s isolation. We used the buildings required for the mosque’s ancillary functions to provide a composition that approximated that of a city. The complex was conceived as an urban cluster with the symbolic elements of dome and minaret suggesting the skyline of a traditional town. The housing required we made as a separate cluster juxtaposed to the mosque but rotated in a way that emphasized its axiality to Mecca. Landscaping that included palm trees, water, and patterned pavements was also used in a way that would help generate an impression of an Iraqi environment, while at the same
time appealing to all worshipers, regardless of their racial, social, or cultural backgrounds.

To define the space we studied examples of traditional mosques to discover the various ways they were devised to accommodate a large number of worshipers. Their basic organizational elements—courtyard, prayer hall, and so forth—were employed in our solution, but deployed in a somewhat different way. To overcome the problems posed by the colossal scale of the mosque a gridded geometric network was used to order the mosque's space. The volumes of the mosque and its ancillary functions were deconstructed into repetitive spatial modules grouped within this network and separated by strips that housed services such as ventilation and lighting and which contributed as well to the landscaping and the floor pattern.

We designed a sloping earth mound reminiscent of the base of a Mesopotamian ziggurat both to frame the mosque and to conceal about a third of its height. It also serves as a transition between the outside parking area and the prayer hall. A space similar to the ziyada of the Ibn Tulun mosque houses the ablution facilities, the kitchen, and other utilities.

Inside we used the traditional system of arcades of the hypostyle mosque to organize the rows of worshipers and define the direction toward Mecca. It gave a richness to the hall and simultaneously defined two kinds of space, the first personal in scale for small groups (e.g., teacher and students) between the columns of a single module, and the other the collective monumental space that spans the whole mosque. The double arches of the frames formed an intermediate space rather like that in the Khan Murjan, which was used for ventilation and natural
lighting. Tie beams, primarily structural members, but used also to hang acoustic and lighting fixtures, helped reduce the vertical scale of the mosque so as not to overwhelm the worshiper.

On the outside as well, we found techniques to scale down the monumental dimensions of the mosque by splitting it up into relatively small modular units. On and between them we utilized slit-Abbasid arches, Samarra-like towers, and side entrances to break up the surface and enhance the character of the complex as an urban cluster. By seeking to make the impression of a human settlement we thought to counteract the monumentality called for by the program.

Though traditional forms were often used, they were modified to meet contemporary requirements and to convey fresh meanings. The dome represents a dialogue between the architect and the form’s functional, historical, and symbolic meanings. Muqarnas also was used in the traditional functional and structural way but upgraded using modern building technology to support the huge dome. The treatment of the minaret was borrowed from Samarra. The arches were derived from the Abbasid style, but again were incorporated within a modern structural system. The clusters of four columns each that housed the ventilation and lighting system were inspired by the piers found in the mosque of Ibn Tulun. The gates of Ukhaidir inspired the mosque’s portal. Finally the fired brick which is a local material was adopted in both the structural work and the cladding. Because it dictated regional formal characteristics by its very nature, it too formed an element of continuity between contemporary architecture and regional building traditions.

Figure 6: Baghdad State Mosque. Interior of the prayer hall showing double arches formed to provide natural lighting and ventilation.
Figure 7: Baghdad State Mosque. Muqarnas on which the huge dome rests.

Figure 8: Baghdad State Mosque. Sketch showing the scale and location of the dome in the center of the prayer hall.
When the design was completed we subjected it to severe scrutiny and criticism. We decided that our way of linking the residential cluster with the surrounding fabric was rather weak, and that the mosque's location and boundaries needed revision. We also realized that the palm trees we had used would not provide sufficient shade for parked cars in this intensely hot climate.

We found a conflict between our design of the courtyard as a space for circulation connecting the ancillary functions (library, school, lecture rooms) and its proper function as a quiet and intimate space. In addition, both the volumetric composition of the other functions and even the gridded floor gave what should have been an introverted and autonomous space an inappropriate theatrical quality.

The exaggerated and repeated use of the tie beams inside the mosque, although intended to humanize the scale, in practice served only to disrupt the collective identity of the prayer hall and eliminate the sense of the orientation toward Mecca. A more controlled deployment of the tie beams in a single direction would perhaps overcome that drawback.

The idea of using the sloping earth mound, the ziggurat base, to reduce the scale of the building introduced an image and symbolic meaning that was out of keeping with the religious meaning of a mosque because of the ziggurat's connection with temples and idols. The situation can be remedied either by transforming the earth mound into a freer form or by replacing it with a transitional wall along the lines of the ziyada at Ibn Tulun. The scale of the dome and its location in the middle of the prayer hall, though a natural outcome of the geometric system we used, disturbed the directionality of the prayer hall, since one of the reasons for using a dome in a traditional mosque is to define the mihrab space. Using multiple domes to fragment the mosque into repetitive modular units also detracted from the overall symbolic identity, which could have been more successfully achieved with a continuous planar façade. The many domes made unclear the functions they were symbolizing.

Figure 9: Baghdad State Mosque: Sketch showing the various domes used in the overall scheme.
The second project I should like to present today is the Jami' Masjid, or Great Mosque, which our firm designed for the Justice Palace District in Riyadh. Again our client was a municipal body, this time the Riyadh Development Authority. They too compiled documentation for the architects that was admirably presented. This time it also showed an awareness of the historical function of the mosque as an urban center. The clients insisted that the architect be a believer in the Islamic faith and a practitioner of Islamic culture. This common bond of faith and culture ensured extraordinary dedication and involvement on both sides, overcame the constraints of time and bureaucracy, and enhanced the quality of the design.

Generally speaking the Gulf states commonly suffer from an overemphasis on consumerism and an infatuation with contemporary Western styles and practices in architecture, as in other things. These attitudes have spilled over into Saudi mosque architecture which often displays alien architectural styles devoid of authentic religious, historical, or regional substance. Fortunately, however, Riyadh is in the Najd, a region whose traditional environment is still intact. Its architecture is mainly mudbrick, used either as a structural material or as facing for masonry structures, appropriate for the dry and very hot climate. Islamic customs, habits, and values are also still very much a part of local life.

The site is in the very heart of the old city. The new mosque is to replace the existing Qasr al-Hakim mosque, which was itself built on the ruins of the King Abdulaziz mosque. In addition to the mosque itself, the project includes the Justice Palace (Qasr al-Hakim), and a cultural center. Its purpose is to provide a focus for the city that will at the same time be integrated into the surrounding urban and social fabric, with the help of structures such as shops, public services, and educational institutions.

The program required a mosque much larger than the existing one, but because the site was already surrounded by overwhelmingly high buildings this requirement posed no problems of scale. The existing mosque services 9,000 worshipers; the new one was to accommodate 14,000 in the indoor prayer hall and another 6,000 in the outdoor courtyard. The program also called for commercial

Figure 10: Jami' Masjid, Riyadh. Conceptual sketch showing mosque plan and urban setting.
buildings, schools, residences for the imams, and facilities to house some semi-governmental religious institutions.

In our design we relied heavily on our experience with the Baghdad project. We formed a geometric network using a series of repeated post-and-lintel arcades that ran parallel to the direction of the qibla. The system is reminiscent of that used in many of the local traditional mosques, including the al-Diriya mosque. Using an arcade system for the mosque also had the advantage of being appropriate for a large mosque because it adds human scale and breaks the space into smaller spaces convenient for human gatherings, a lesson we had learned in Baghdad. Because of its size and the density of the surrounding urban fabric the hall was equipped with
several entryways, distributed to achieve a strong axial and visual relationship with the main gates of the Justice Palace and the cultural center to unite the three into a single unit.

We allowed light in through the roof using a construction similar both to local buildings and to our design for the state mosque of Baghdad.

The riwaq, a common element in the region, provided a roofless screen which articulates the various components of the complex and provides a smooth

---

**Figure 13**: Jami' Masjid, Riyadh. Study of various alternatives for connecting mosque with urban fabric.

**Figure 14**: Jami' Masjid, Riyadh. Sketch showing the final design.
transition between the large volume of the mosque and the pedestrian scale. Locating the residential and ancillary facilities on the periphery also helped achieve a successful transition.

Because in this region domes are associated solely with tombs and mausolea, we did not use a dome in our mosque design, but replaced it with light effects over the mihrab. We designed two minarets to act as landmarks identifying the city center and marking the direction of Mecca. The outside of the buildings are plain, with high small openings, as are all traditional buildings in that part of the country, in order to retain privacy and protect the people from the harsh climate.

Time did not allow us to do all the research we would have liked for this building, though fortunately we were able to make up for some of this when we turned to the Justice Palace. This we designed in terms of the historical relationship between the mosque and the ruler’s palace, which were always placed together to show that the mosque was the source of legislation and the ruler’s inspiration, just as the madrasa was associated with the mosque to show that its purpose was to educate society in ethical and spiritual values.

I hope that the design for this project will represent an improvement over the Baghdad mosque in the direction of reestablishing harmony between today’s Islamic society and its architecture. In addition to local structure and materials we also made use of the handicrafts, decoration, and building elements such as wooden roofs, doors, windows, columns, walls and colors in the buildings. We hope the final outcome will demonstrate the advantages of the local architectural heritage over foreign imports that have made the Arab Muslim isolated from his own surroundings. The design respects the environment and seeks a solution derived from our sense of the timeless human qualities of Islamic civilization.