The architectural character of Islamic Institutions in the West

by

Hafiz-Ur-Rehman Sherali

Bachelor of Architecture

University of Notre Dame, Indiana, USA

May1988

Submitted to the Department of Architecture in partial fulfillment of the requirements for the degree of Master of Science in Architecture Studies at the Massachusetts Institute of Technology June, 1991

Signature of Author:
Hafiz-Ur-Rehman Sherali

Department of Architecture, May 10, 1991

Certified by:
Ronald Bentley Lewcock

Thesis Supervisor
Prof. of Architecture & Aga Khan Prof. of D.I.S.

Accepted by:
Julian Beinart

Chairman
Departmental Committee for Graduate Studies

The architectural character of Islamic Institutions in the West

by
Hafiz-Ur-Rehman Sherali

Submitted to the Department of Architecture at the Massachusetts Institute of Technology on May 10, 1991 in partial fulfillment of the requirements for the degree of Master of Science in Architecture Studies

Thesis Supervisor:
Ronald Bentley Lewcock

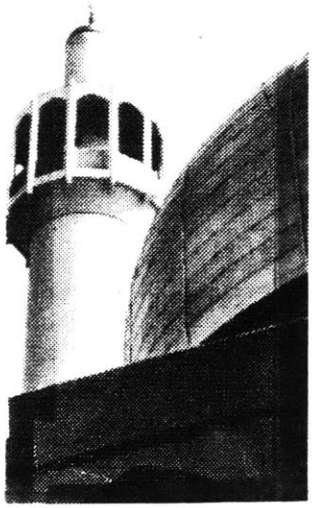
Title:
Professor of Architecture and Aga Khan Professor of Design for Islamic Societies

Abstract

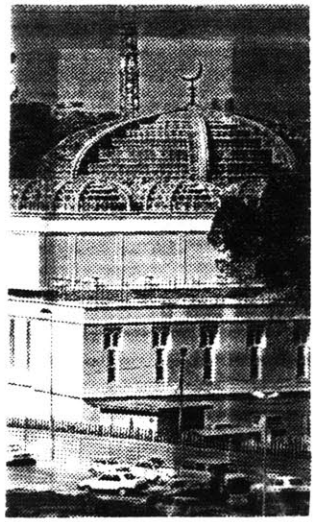
This thesis stems from an awareness, reinforced by personal design experience, of a dilemma which exists about character, in terms of appropriateness of and the representation of Islam, in the Institutions built for Muslim immigrants in the West. While architects building in Islamic nations are fighting their own battles against modernism in architecture in order to maintain continuity within the context of their traditional and contemporary cities, architects building for Muslim communities overseas are searching for appropriate images for their Institutions in cultures which historically have been unaware of the true nature of Islamic civilizations in the world. This study attempts to understand the complexities involved in designing for such building programs, which include mediating between the clients' insistence on the re-creation of the architectural traditions which have been left behind, and the immediate urbanistic, symbolic, social and political forces of the contexts which weave and knit the buildings in their surroundings. Within the limited scope of this endeavor, emphasis is placed on consideration of the architectural character of these religious institutions. However, one cannot completely ignore other aspects of the histories of these buildings, which illustrate the process of their making.

These buildings are often loaded with self-conscious and fully acknowledged historical references, taken from the so called generic tradition of 'Islamic Architecture', and are collaged to impress upon the believer or non-believer alike, with recognizable imagery and form, the religious and ideological associations of their functions. However, this method of orchestrating often leaves an unstable territory, within which a critical evaluation of them reveals the inherent contradictions. The theoretical discourse of the thesis will deal with, on one hand, a wide range of general issues, such as the image of Islam in the eyes of the West, the human need for continuity and the use of typology in architecture, and on other hand, the distillation of arguments on specific topics such as the iconography of Islamic architecture and the various interpretations put forward to explain its extensive use of geometry and ornament.

The case studies of the Friday Mosques in London and Rome and the Jamatkhanas in London and Burnaby extend and demonstrate the above dialogue with the past and will form the basis of formulation of design principles which might be utilized in future building programs.



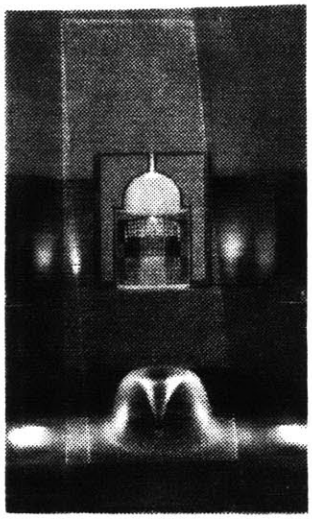
London Central Mosque

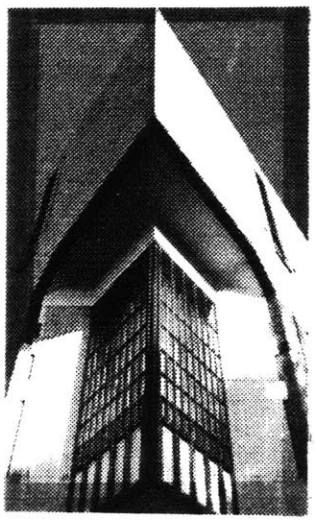


Rome Mosque

Ismaili Center, London

Ismaili Jamatkhana, Burnaby





"It must be a silent place facing towards Mecca. It needs to be spacious so that the heart may feel at ease, and high so that prayers may breathe there. There must be ample diffused light so as to have no shadows; the whole should be perfectly simple; and kind of immensity must be encompassed by the forms."
Le Corbusier

From: "The Mosques", Journey to the East, 1911

"Before the presence of the wall

Architecture could be though of as the material room approaching the spiritual room through the realm of human agreement.

In the act of prayer, the material room is not there, not even the floor is there, really, not even the carpet, which is the ordained surface of the paradise garden, is quite there. Only the act in its attitude is wholly there."
Jaan Holt

From: "Architecture and the Wall facing Mecca", Via 5, 1982

Acknowledgements

The are many individuals who have helped me during the course of this thesis and are too numerous to mention. However, I would like to thank a few here:
My academic and thesis advisor Ronald Lewcock for his encouragement and guidance. My readers Mohammed Al-Asad, Akhtar Badshah and Larry Vale for their constructive criticism. The Aga Khan Program, under the auspicious of which my graduate study was realized. Finally, my family and my wife, Shehzana for their immense support and faith. **Dedicated to my parents.**

Table of Contents

Preface

"Thus we may say that the most lasting contribution to the growth of knowledge that theory can make are the new problems which the growth of knowledge as always starting from, and always ending with, problems of an ever-increasing depth, and an ever increasing fertility in suggesting new problems....". (Sir Karl Popper)

Muslims today, across the world, exhibit a range of responses in their understanding of what constitutes the fundamentals of Islam and what are the essential requirements of passing life in accordance with the way laid down by the faith. Muslims living in the Western world are faced with a unique situation of raising these interpretive questions within the context of their alien environments. Architects designing their Institutions are also attempting to establish an interpretative dialogue of their own - with the multi-faceted architectural traditions of Islam. This study attempts to understand the 'problems' which this dialogue creates and the inherent dilemma faced by the designers as they try to seek out the pastness of the past. The following four statements by architects or the design briefs given to them by their clients of four such institutions, which are the case studies for this thesis, will illustrate this interest in the past.

"The promoters were obviously worried lest the winning design be a 'modern' conception, unrecognizable as a mosque. They said they 'wished the Muslim community of London to be inspired by the visual effect of the mosque as being reflected of traditional mosques in which they have worshipped in their own countries'."[1] **Sir Frederick Gibberd**, architect of the London Central Mosque.

"Inspiration from the Islamic tradition has determined a large number of decisions. ....For the single volumes the square was chosen as generating form, together with the Islamic principle of 'interiority'. Islamic architecture was from the very beginning related to the desert, and the enclosure defined by a perimetral wall its basic form."[2] **Paolo Portoghesi**, chief architect of the Rome Mosque and Islamic Cultural Center.

"The architects, the Casson Conder Partnership, were presented with an unusual design brief. They were requested to design an institutional building in an area of London which has substantial diversity of architecture. The Center was thus located in a part of the capital which had a very great architectural diversity but which clearly had a Western inspiration. The Center sought to be compatible with that inspiration but at the same time to meet the specific requirements of the Ismaili Community and reflect the mood of Islamic architectural tradition."[3] An extract from the **design brief** given to the architects by the community for the design of the London Ismaili Center.

"A relentless pursuit of geometry, enclosure, symmetry, mass and the layering of symbolic decoration have generated the architectural concept. These Islamic architectural principles, together with the walls of sand stone, have structured and informed the building."[4] **Bruno Freschi**, architect of the Burnaby Jamatkhana.

The historical study of the development of knowledge shows that every human activity evolves according to an internal dynamic and is also influenced by external forces. Similarly, theory in architecture is developed by looking at buildings themselves and by the identification of these

externalities.

In the Introductory chapter, I shall attempt to deal with general issues which impinge upon the users of these buildings, which include assimilation with the dominant culture, the image of Islam in the eyes of the West, the gradual emergence of their permanent Institutions and the sources of conflict which significantly affect their existence as a community. The frame work attempts endeavors to illustrate my intentions and methodology in performing this study.

In the theoretical discourse of this thesis, I will explore two constructs based on architecture which directly affect or influence the making of these buildings. First, there is a discourse on architecture of the Islamic world, which often is the most significant visual influence on these buildings. This is further confirmed by the statements made by the architects or the client's design briefs. The significant aspects of the architecture and the environment (the city) which unifies them under the label 'Islamic'. The relative underdevelopment of the field of study of the building traditions of Islam, leaves the designers with a difficult task of viewing the existing architecture, archaeological constructs of perished monuments and the cities as primarily products rather than the as processes which have accumulated over the course of fourteen hundred years of Islamic history. The two distinct interpretations, namely the mystical and art historical, of geometry and ornament are also discussed within the body of this chapter.

The second construct focuses on the field of architecture today, which sits between the poles of criticism, theoretical models of interpretation and structured positions, and the actual act of production. Architects in the Western world

are aware of the various theoretical positions through scholarship, or by the phenomenal development of the architectural press in this century. Though the designers of these Institutions are working on unique building programs, their efforts cannot be seen in isolation from the predominant concerns and theories facing modern architecture today in the industrialized states and therefore, this brief discussion will introduce the reader with pertaining to human need for continuity and transformation and abstraction of inspiration from the past into the built work of today. Problems related to the concepts of language, type and bricolage will be addressed.

The four case studies, will attempt to introduce the specific issues the architects of such building programs face, and their attempts at resolving them within the built form. The thesis concludes with the "ever-increasing problems" and dilemmas the design of such building poses, in an endeavor which has to rely so abstrusely on its referential qualities. Finally, the task facing architecture today is very similar to the challenge facing the designers of these Institutions; that is, within the ideological content of Modern architecture, as Tafuri puts it, "not a rejection of history but finding its right place in planning."[5]

Notes

[1] Karl Popper, *Conjectures and Refutations*, NY: Harper Torch Books, 1963, p

[2] Sir Frederick Gibberd and Partners, "London Central Mosque"; *RIBA Journal* Vol 83, No. 6 , p 232

[3] Paolo Portoghesi, "Post-modern Mosque: Islamic Cultural Center of Italy and Roman Mosque"; *Architectural Design* Vol 50, No. 1/2, 1980, p 28

[4] *The Ismaili Center, London* (Photographic Brochure), UK: Islamic Publications Limited, 1985

[5] Bruno Freschi, "Burnaby Jamatkhana"; *A+U* Vol 90, July 1986 pp 51-52

[6] Manferdo Tafuri, *Theories and History of Architecture*, NY: Granada, 1980, p 63

1. Introduction

A stranger, by definition, is not only an outsider but also someone who is different and unknown. The stranger brings along with him/ her a package of treasured values which can be described as personal preferences or shared conceptions of a group of people in determining what is good or bad, proper or improper and desirable or unacceptable. Those values and attitudes become evident through the life style of the immigrant, as he/ her settles into the new land. The arrival of a stranger in the unknown lands can evoke several emotional responses by the natives. As the host society observes or comes directly into interaction with them, their response can range from a warm welcome to bitter hostility. Socially, we try to interact with others of similar attitudes, values, beliefs, economic or social status, and this common thread forms the basis for a community at a local level and a society at a regional level.

Today, immigration usually follows a chain migration pattern, of settlement in an area already containing family, friends or compatriots who had located earlier and established themselves socially and financially. An ethnic community then evolves, providing an emotional support system to these strangers in a strange land striving to forge a better life for themselves and their families. Ideas, inventions and practices spread from the dominant or mass culture to the minority group, although the rate of diffusion or convergence varies considerably with each ethnic or national community. A striking paradox is that, although many members of the host culture wish to keep

their society untainted by the influence of foreign elements, yet they are inevitably influenced by the new customs and traditions of these minorities. Ideas as they traverse from one community to another, are often modified or reinterpreted before being accepted. Although many ethnic groups may be recognizable because of residential clustering and proximity to each other, adherence to the language, dress, and cultural norms of their native land, they nonetheless can be seen to assimilate. As the years pass by and particularly after several generations, the distinctions between the dominant culture and the convergent minority groups might gradually lessen and eventually greater integration usually takes place. However, the impetus to change is accompanied with desire to modify or preserve traditions which are relevant today. As Kevin Lynch observes of the notion of change and writes; "Change and recurrence are the sense of being alive-things gone by, death to come, and present awareness. The world around us, so much of it our own creation, shifts continually and often bewilders us. We reach out to that world to preserve or to change it and so make visible our desire."[1]

Due to the gradual change of this subculture, its members may experience a sense of stress and frustration, caused by living under two dominant forces simultaneously. Nevertheless, there are some immigrant groups which were a minority in their countries of origin and have already encountered the social problems associated with living under a dominant culture. The older generation, the first generation of immigrants, may seek to preserve its traditions and heritage, while the younger generations may be impatient and may give up their values in order to be fully accepted by the dominant society. Although, some anthropologist may argue in many instances, the grandfather and the father may forget their traditions but the son goes back

to the land of his forefathers to search for his roots and identity. As Al- Faruqi attempts to sum up the conflicting nature of immigration;

"The 'immigrant' mentality stands on two necessary assumptions: a home country and culture perceived as bankrupt, despised, hated, forsaken, left behind; and a new country and culture seen as alien awesome, superior, admired, and desired but not yet appropriated or mastered."[2]

However, many immigrant individuals might argue other wise and have kept their cultural traditions alive in their alien contexts, while also attempting to assimilate with the dominant culture.

Not all ethnic communities assimilate and some do not even desire to do so. They steadfastly adhere as much as possible to their own way of life, resisting any absorption into the dominant society. Part of this process of cultural insulation, is the recreation of the world they left behind. First generation immigrants usually identify themselves with their regional orientation rather than their national or racial identity, although the host society tries to categorize them into on large group. For instance, there is a gross generalization in grouping all Middle Eastern immigrants into a single category such as Arab-Americans. They speak different dialects and subscribe to different traditions. However, their common experiences in the alien land, similar language backgrounds and their isolation into a type by the local people, cause them to coalesce into a larger national ethnic group and form distinct communities.

Only the future holds the answer to the question of how the social structure of this world will take shape with such

rapid immigration patterns and mobility. Believers in the new democratic exchange among nations, and in the notion of a international melting pot, might hope for a new society which does not slavishly depend upon old traditions or customs and tries to blend their differences. In doing so, individuals will acquire new behavioral pattern but at the cost of losing their identity. On the other hand, pluralism within these societies will maintain racial and ethnic diversity. Each group might speak the national language and subscribe to similar ethical and judicial principles, but retain identification with, and pride in their heritage. Conflicts would be resolved through mutual respect for each others values and needs. The distributions of economic and political resources are instrumental in determining the relationship and a spirit of co-operation between the dominant group and the minorities.

Ethnic and minority relations have recently become major issues on the political and social agendas of the North American and European societies. Countries on both continents have attempted to address the question of accommodation and of harmonious solutions to the resolution of the tensions created by the settlement of diverse racial, ethnic and religious groups within the local communities. Understandably, due to the distinct historical backgrounds of European and North American civilizations, immigration has been more acceptable in the social order of the latter. European societies prior to he World War II were exporters of people to extend their colonial powers, while the North American regions, over the course of history have primarily attracted many settlements to their lands.

Muslims Communities in the West

Much research has to be conducted on not only on the historical formation of immigrant Islamic Communities in the continents of Europe and North America but also on the sociological and anthropological condition of these communities as they confront a different way of life and the resulting tensions emanating from either accepting, adapting or totally rejecting it. Moreover, the question of rethinking Islamic traditions in their totality and their applicability in modern times and the resulting theological and social implications are not only specific to these communities but are universal issues confronting the whole Muslim *Umma*.[3] Until today, there are only few published studies on Muslim immigrants in the West. Several studies conducted by social scientist are unpublished, in a paper format submitted to various conferences and workshops and therefore are unaccessible through library research. Moreover, some published studies by social scientists focus more on the ethnic differences within different Muslim communities, than the common threads which bind them under the umbrella of the term 'Islamic'. In this regard, the study by Yvonne Haddad and Adaoir Lummis on Islamic values in the United States and John Eade's illustration of the sociological problems confronted by Muslim communities in the United Kingdom are valuable and have considerably informed me on such issues. This brief introduction is meant to serve as background to my architectural analysis of the Islamic Institutions in the West and further to inform the reader about the broad sociological issues which impinge upon the users of these buildings. Due to the scarcity of substantial research material on these communities, I have resorted to the use of several small parcels of information from many sources and I am fully aware of that this could lead to superficiality and generalizations. But, after all this part of the thesis remains only to be means

for illustration of general concerns and issues.

Historically, Europe and North America have been dominated by the Judeo-Christian traditions. But in the present century, Islamic traditions among various others have been introduced to the West by Muslim immigrants. In the recent past, driven by political, social and economic constraints at home, or lured by superior educational and professional opportunities, an increasing number of Muslims have made, and continue to make the West their permanent home. Some historians date the origins of Muslim settlement in North America to as early as the eighteenth century. On the other hand, the close interaction between the Byzantium, the Christian Europe, and the Middle Eastern Islamic nations began with the Arab invasion of Spain in the eighth century. The geographical proximity between them has maintained that contact, often violent, till today. But a significant increase in the Muslim communities both in Europe and North America came after World War II.[4] While many Islamic nations were trying to recover from the powerful legacy of the colonial era, their economic strength was weakened with increasing dependency on the West for the acquisition of the modern technology, deemed as necessary for existence. The economic weakness of the East coupled with many other cultural factors, were key forces in the creation of immigration patterns to the West. Also at the same time, the Western societies had experienced a change in their attitudes towards their eastern neighbors; diversity in the racial background became more readily acceptable. This change resulted not only from a revision in social and moral attitudes, but also because of their need of additional labour for their expanding economies. Today, Muslim immigrants in the West represent over sixty nations and by no means are they homogeneous in nature, and they reflect

the political, ideological, and national differences of the countries from which they emigrated. On the other hand, there are also indigenous Muslims mainly comprised of people of African and Arab origins, who had migrated to the West before the turn of the century or were converted to Islam by Muslim preachers.

The Muslim population in Europe, before of the advent of the eighties had expanded to more than five million.[5] They have continued to expand over the previous decade also and today Islam is considered as the second largest religion in Europe. While American Muslims scattered across many urban and suburban areas of the country number in the tune of two to three million today.[6] However, the high rate of birth, the growing number of converts and the regular flow of immigrants each year will make Islam, within a few decades, the second most populous religion after Christianity in the United States.[7]

Early Islamic centers in Europe and America were established by individuals and various ethnic groups to meet the social and religious needs of the communities. They were local in focus and interest. Generally, residential or small commercial structures were rented, leased or bought to accommodate prayer ritual and the teaching of the Quran for younger generation and social gatherings. Some communities with financially well off members undertook major renovations to these facility in order to accommo-

Fig. 1.1 One of the earliest known structures used as a mosque in North America, built in 1929 in Ross, North Dakota.

date the functions while other communities resorted to minor changes, such as just tilting the angle of the rugs in the orthogonal geometry of the prayer hall in the direction of Mecca and providing basic ablution facilities. In some instances, the community bought even old and abandoned churches which were converted to mosques, while others started erecting small permanent structures.

No matter where each neighborhood mosque has been established, or which ethnic community or Islamic sect sponsored them, there is invariably a revealing and interesting story behind its formation. Each institution's history includes a resolution of conflicting views and forces within the leadership of the community, the rigorous procedures of approvals for development and zoning permits through the municipality and often the strive against the resistance of the local residents of the area who are skeptical of these foreign interventions within their neighborhoods Most of these mosques do not have a resident Imam and the services provided are usually rotates among the community elders or intellectuals and is voluntary. Though modest in size, these local, store front mosques are vital symbols of the Muslim identity in an alien environment. These continue to grow in number and serve as models for places of prayer in many university campuses with Muslim student populations and in cities, urban localities and towns with a moderate size of Muslim community across Europe and North America.

The issues of architectural expression or image are similar for these structures. A simple intervention by sanctifying the prayer hall, where a believer performs prayers by the ritual of movement and prostration, with richly colored and ornate prayer rugs at an angle signifying the direction of the "axis mundi of Islamic cosmology",[8] is not usually

Fig. 1.2 Quranic School in progress at a European Mosque.

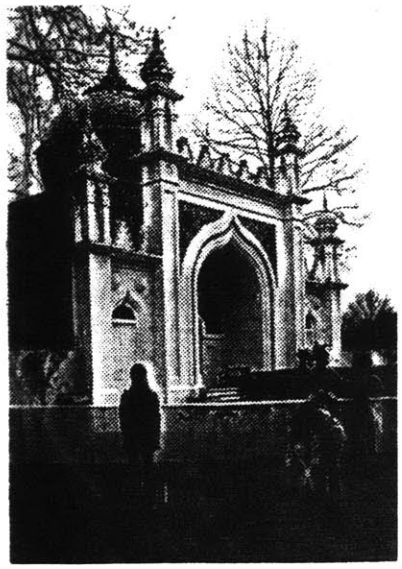


Fig. 1.3 An old mosque in Britain; every effort made to Islamicize its architectural expression.

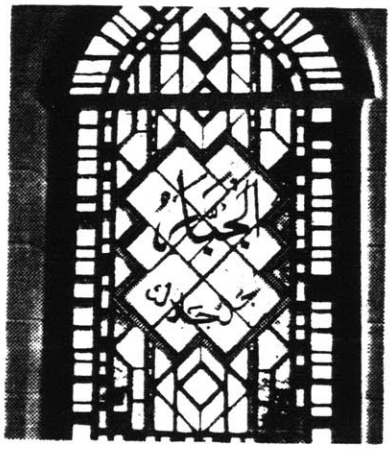


Fig. 1.4 A stained glass window decorating the Islamic Center of Toledo, Ohio. The Arabic calligraphy inscription reads as al-Jabbar (the Mighty), one of the ninety-nine names of God.

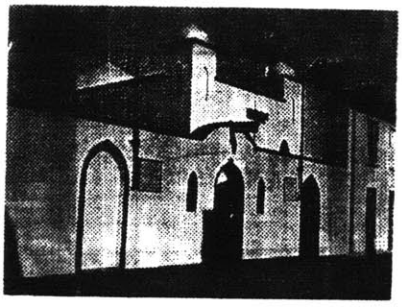


Fig. 1.5 Noor Islam Mosque in Tiger Bay, Cardiff in England. An Institutional focus for Muslims of South Wales.

enough to symbolize the presence of a mosque but all efforts are made whether through initial conception of design or through successive additions and renovations to drape the building in a "Islamic wallpaper".[9] As Gulzar Haider, a designer of many Islamic Institutions in the West, observes on his experience with his clients, the Muslim leadership, for the development of mosques in the West; "Nothing is more telling of the communal fragmentation of ideas and images than the kinds of mosques people carry in their minds. Its is not easy to untangle the complex knotted mosques of individual and collective memories of the first generation immigrants."[10]

Attempts at Islamicizing these structures range from the addition of fake onion domes and pointed arches on the facade, or erection of non functional minarets or the laying of Quranic inscriptions.

As each community grows in population, efforts are made to build large permanent centers containing mosques. The community members continue to demand leadership and the instruction in the religion of Islam and trained persons to act as imams of their congregations. Efforts have been made by Islamic communities both in Europe and North America to provide large mosques which could function not only as religious structure but also as centers for Islamic learning, political activity and social gathering places which would provide an escape from the burdens of daily life and a setting suitable for repose and contemplation. In addition, these large structures are meant to pronounce the presence of Islam in an alien contexts. These centers are intended for all Muslims of a given community with their variety of National and ethnic backgrounds.

Apart from building religious structures, Muslims in the West have also developed a unique organizational structures for the protection of the cultural life of their communities. In past two decades, the Organization of Islamic Conference (OIC), whose forty three member nation have attempted to work closely with these International Islamic organizations. These diplomatic efforts have immensely helped these organizations in achieving political recognition from their host countries. The Islamic Council of Europe, the umbrella of organization of Muslim Communities of America, Islamic Society of North America and Muslim Student Association are all working towards formalizing their local organizations in an effort to pool various resources for greater efficiency and productivity. However, there are fragmented groups in the local communities vying for control of the mosque organizations. This gives rise to vigorous growth of smaller mosques and weaker associations. Umbrella organizations such as the Federation of Islamic Associations give some sort structural identity to these loose associations.

Coupled with the ethnic, national, sect and above all political related fragmentation within the community, the Muslims also face resistance and opposition from local governments, politicians, neighborhoods groups. John Eade in his unpublished paper "Islam, Religious Buildings and Space in London" has illustrated how the development of the East London Mosque, a local mosque, resulted in a conflict between such groups and the community leadership. The mosque committee from the start wanted a building to remind people of its religious functions and used one of their many minarets for broadcasting the *adhan*.[11] The leadership intended to raise its frequency from two times to five times a day, including the one in the early hours of the morning This obviously raised a public

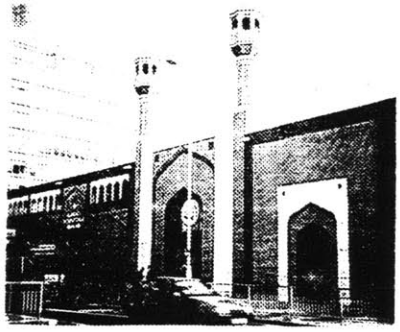


Fig. 1.6 East London Mosque; completed over the previous decade. The minaret used not only as a symbol but for broadcasting the call to prayer.

debate about noise pollution and generated a lot of publicity through the media. However, the borough council had given the permission to the Mosque for broadcasting two calls per day and could not withdraw its permission, without a political backlash. The Muslim leadership on the one hand, wanted to assert physically and audibly their presence in the alien environment, while the local community obviously disturbed by someone "screaming out words [they] cannot understand"[12] wanted to keep this intervention away from their neighborhood. Unfortunately, there was no attempt to resolve the conflict through mediation by any neutral body between the two parties involved.

In the ongoing encounter with adopting the Western style of living, the Muslims are faced with issues ranging from rudimentary problems, such as the difficulty of praying regularly five times a day, to sensitive issues of giving women equal rights within their Institutional structures. Each group within the community has a strong and articulate voice on these issues. However, opinions have slowly changed over the years and in some mosques, women are playing an active role in organizing social activities. Though their separation from men during the act of prayer and the observance of a specific dress code, still remain as a given in almost every mosque across the Western world.

Islamic Institutions in the West

Within the context of Islamic cities, mosques are often classified in relation to their size and the community they are intended to serve. The Friday Mosque or the Congregational mosque is usually the focus the city, while the tribal or quarter mosques serve the local neighborhoods. In addition, the *Mussallah* or *Id-gah* which are open public grounds with only a qibla wall, serve as places for prayer

for special and festive occasions. There are also mosques with special functions, which include those reserved for different sects, memorial mosques, devotional mosques, tomb mosques, burial mosques and so forth. However, in the case of Islamic Institutions in the West, four general categories seem to be predominant within a wide range of buildings.

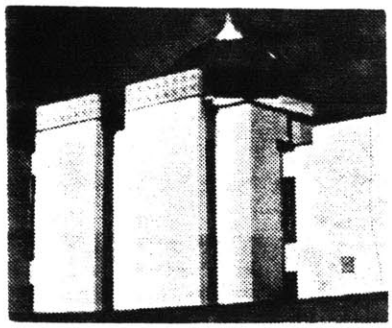


Fig. 1.7 First Type - The Islamic Center of New England in Quincy, Massachusettes. Although the center is an Institutional focus for Muslims in the region, its size and influence categorizes it into the first type.

First, there are mosques which are local in focus and serve a limited number of people. Some of these facilities are rented, leased or bought and converted to mosques, while in other instances new structures are built. They are usually low budget projects and are built with donations collected from within the community. Their establishment is often a result of a group effort by a collection of individuals or families from a similar cultural or ethnic background.

The second type can be classified as Friday Mosques which are meant to serve large congregations and usually become the center for Muslims in a city. The building of these structures are highly politicized events, and may include a diplomatic dialogue between ambassadors of Islamic and Western nations. They are often financed, at least in part, by rich Islamic countries and are high budget projects. These large scale building programs face lot of resistance from the local populations, as the Westerners view these interventions as future 'Islamic ghettos'. The London Central Mosque, the Rome Mosque, the Paris Mosque, the Amsterdam Mosque, the Islamic Center Toledo, the Islamic Center Washington DC, the Munich Mosque and the New York City Mosque are some well published examples of this type.

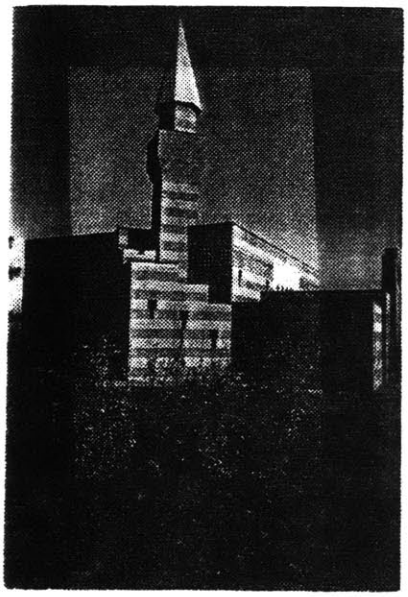


Fig 1.8 First Type - Islamic Center in Jonesboro, Arkansas designed by Gulzar Haider.

The third type is a sub-type of the second. These Institutions also incorporate a unique function of educating stu-

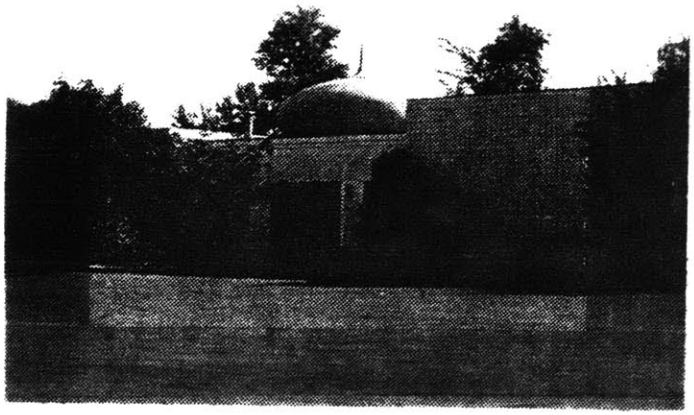


Fig. 1.9 Second type - The Islamic Center and Mosque in Cedar Rapids, Iowa. One of the first permenant Islamic Institutional buildings in North America. The center was completed in 1934 and still plays an active role in providing leadership for North American Muslims.

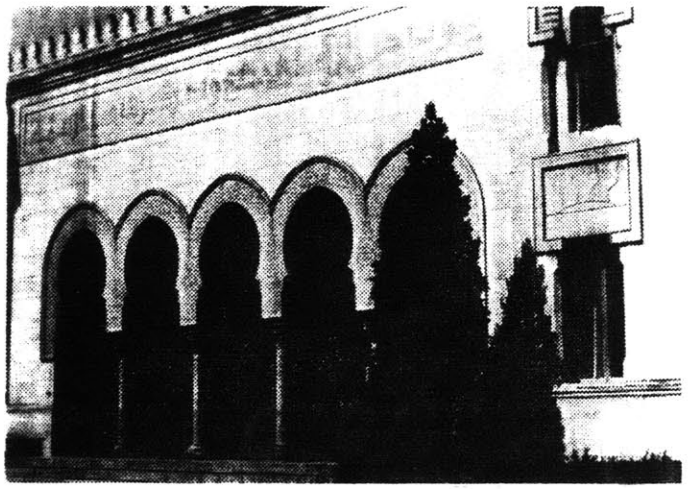


Fig. 1.10 Second Type - The Islamic Center in Washington DC. It was completed in 1957 through donations collected from fourteen Islamic countries. The political battles for the establishment of the mosque were primarily fought by Egyptian diplomats.

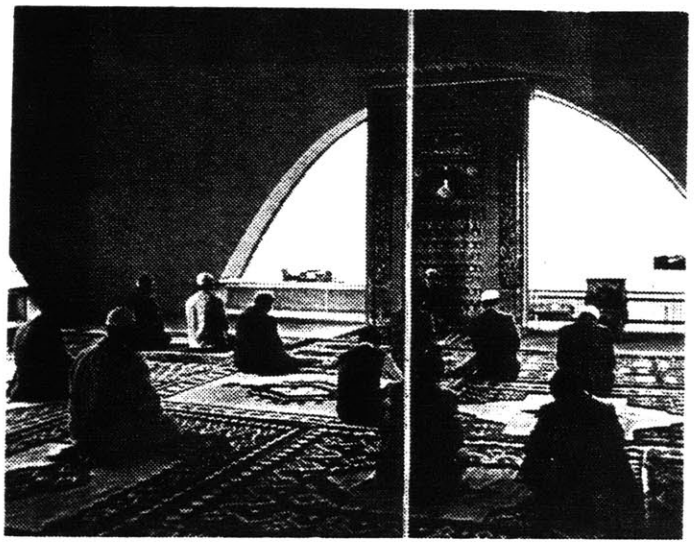


Fig. 1.11 Second Type - Munich Mosque and Cultural Center, Germany completed in the previous two decades. The modernistic structure accommodates the prayer area on the first floor, while the ground floor houses the cultural activities. View of the prayer hall with a detached mihrab niche which is adorned with Turkish tiles and Quranic inscriptions.

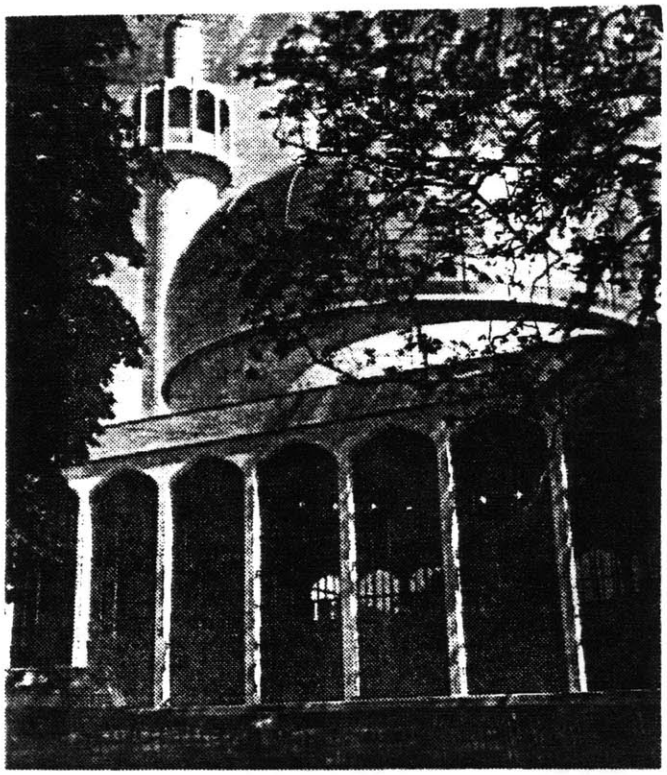


Fig. 1.12 Second Type - London Central Mosque completed in 1977. It was designed by Sir Frederick Gibberd and Partners. The four centered Persian arch was used for the facade and the profile of the dome. View of the center from the Hanover Gate side.

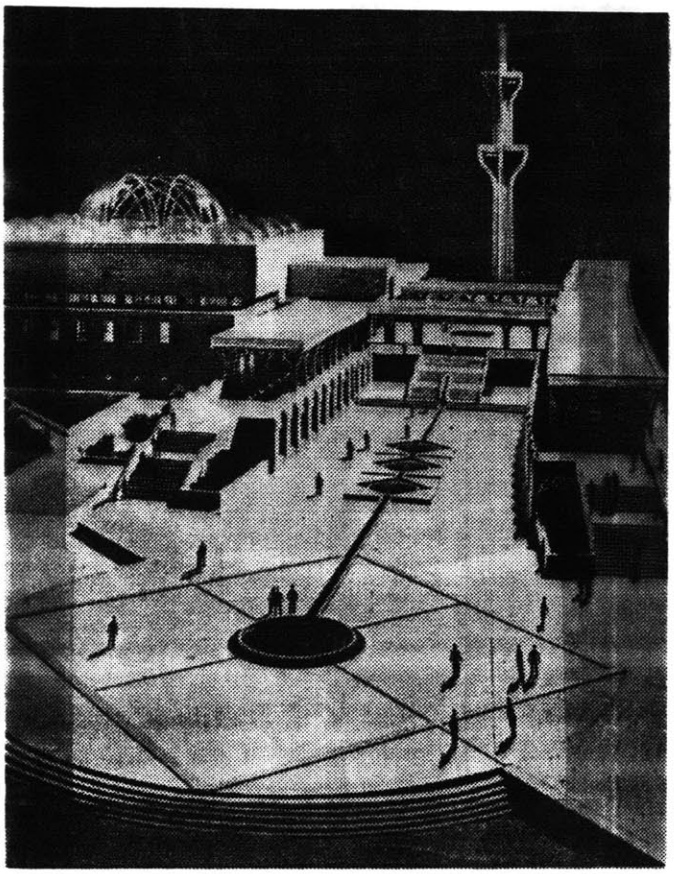


Fig. 1.13 Second Type - Mosque and Islamic Cultural Center in Rome, Italy. Designed by Paolo Portoghesi with Vittorio Gigliotti from Italy, and Sami Mousawi, from Iraq (practicing in UK). Scheduled for completion in 1991-92. View of the model.

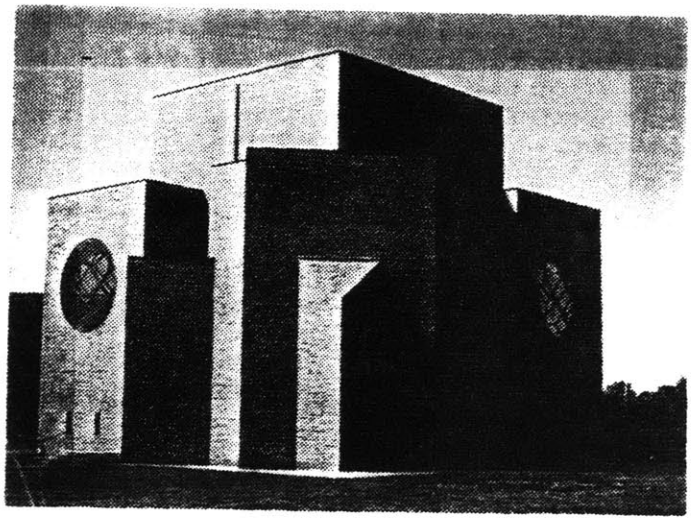
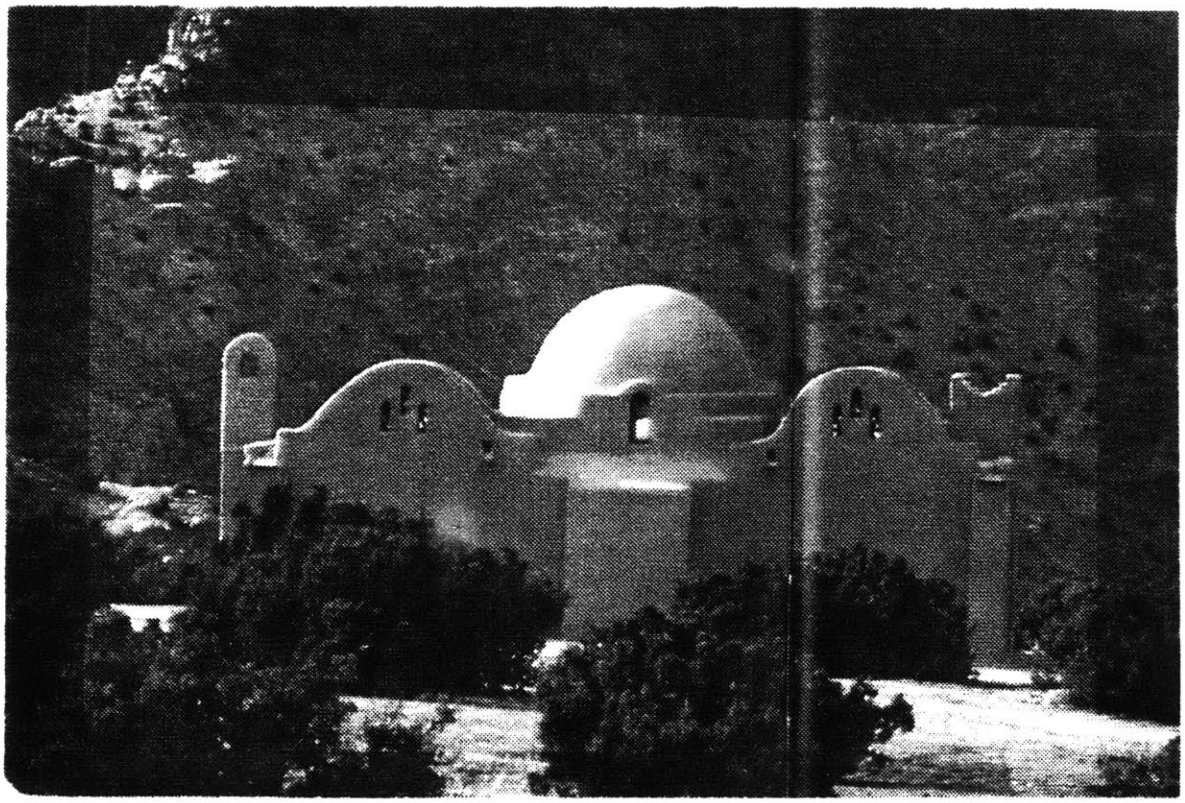


Fig. 1.14 Third Type - Islamic Society of North America, Plainsfield, Indiana. Designed by Gulzar Haider and partially completed over the last decade. An 84 acre site with a master plan which includes research library, dormitories and mosque complex. View of the mosque building.

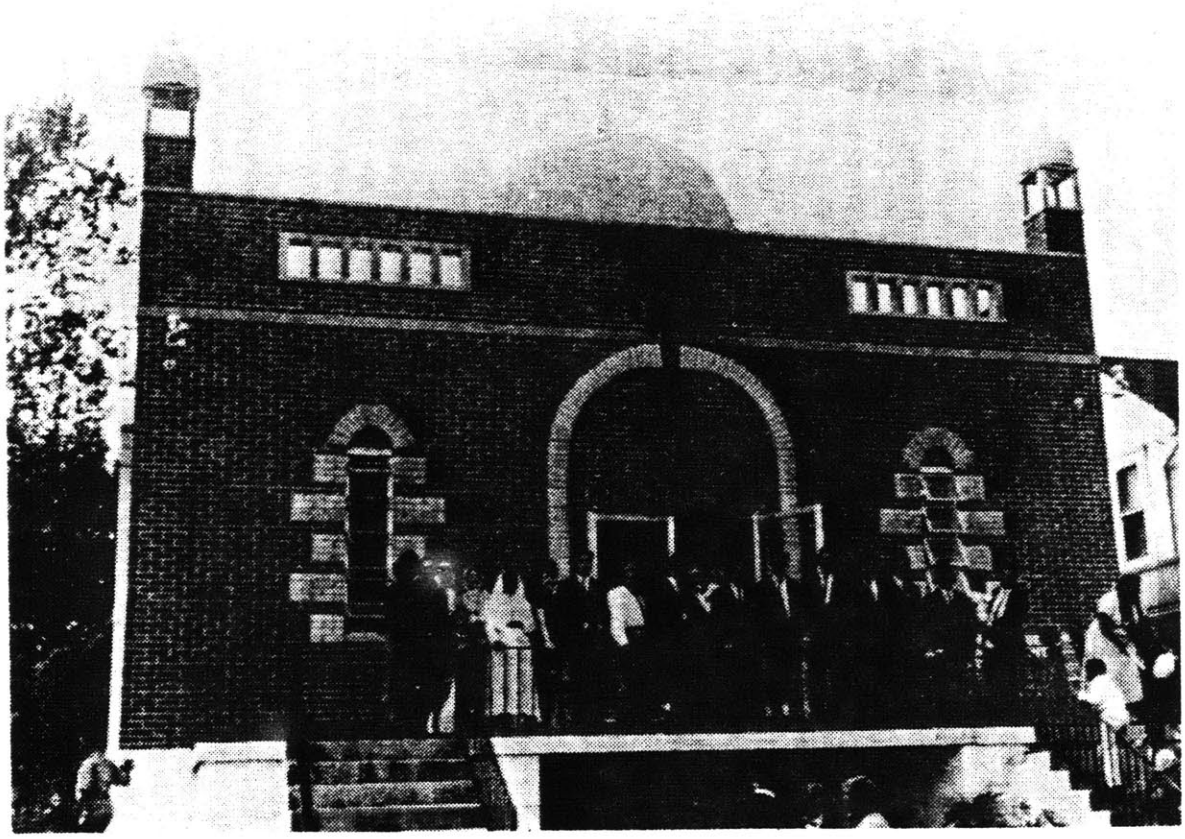
Fig. 1.15 Third Type - Dar al Islam Albiquiu, New Mexico. Partially completed by 1981. Master Plan included mosque, madrasa and student housing. View of the mosque building.



dents which are to be trained to spread the word of Islam. Of the two well known Institutions in this type are Dar al-Islam in New Mexico designed by Hassan Fathy, and the Islamic Society of North America in Plainsfield, Indiana designed by Gulzar Haider.

The fourth type includes religious and cultural institutions which are meant for the minority sects of Islam. Their use is often restricted to the members which subscribe to the sect only. The Nizari Ismailis, the Bohras and the Ahmadiyya sects are among the well known communities which have established such permanent centers in the Western world. These institutions are similar to the mosque building, however with some unique differences in the way they work, which is a result of the various traditions which have been adopted by these sects over the course of their histories.

Fig. 1.16 Fourth Type - Dayton Ahmadiyya Mosque. Completed in 1965. One of the communities first permenant structures in North America.



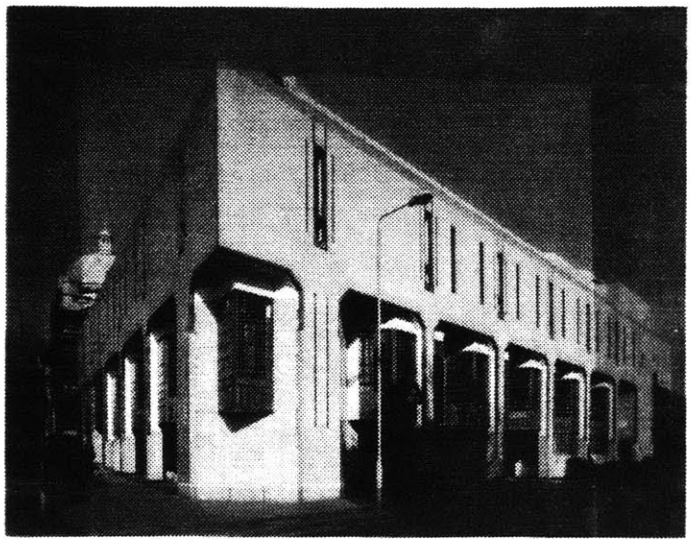


Fig. 1.17 Fourth Type - Ismaili Center, London. The first permenant Jamatkhana for the Ismaili community in the Western world. Completed in 1983. Casson Conder Partnership were the architects for the building, while the interiors were designed by Karl Schlamminger.

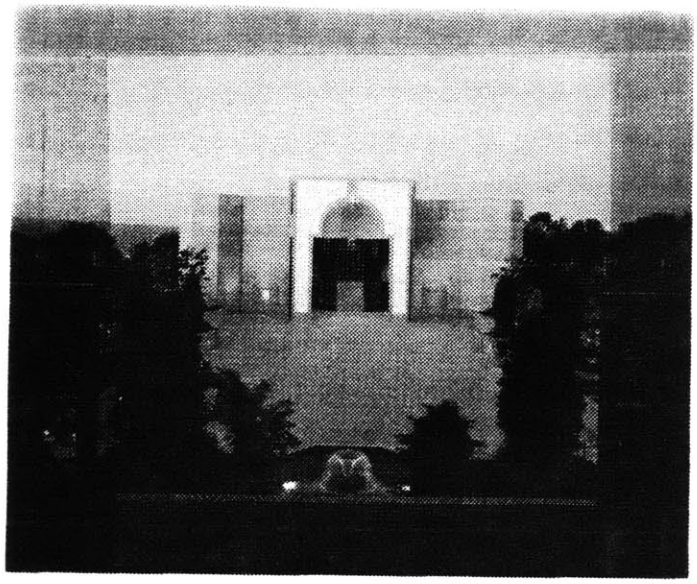


Fig. 1.18 Fourth Type - Ismaili Jamatkhana and Center, Burnaby, British Columbia, Canada. Completed in 1985. Designed by Bruno Freschi. First permenant Jamatkhana in North America.

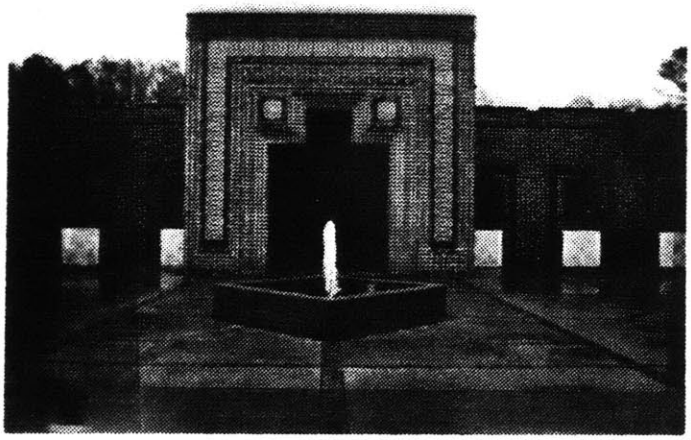


Fig. 1.19 Fourth Type - Atlanta Jamatkhana and Center, Georgia. Completed in 1989. Desgined by Design Synthesis Inc., Vancouver. (Farouk Noormohammed/ Partner Incharge)

In addition, there are other non-religious Islamic cultural centers which have been established by Muslims in collaboration with the Western world. These are meant to build new bridges of knowledge and cooperation between the Muslim world and the predominantly Christian West. The Arab Institute in Paris (*Institut du Monde Arabe*) designed by Jean Nouvel, among others is a well known example of this effort.

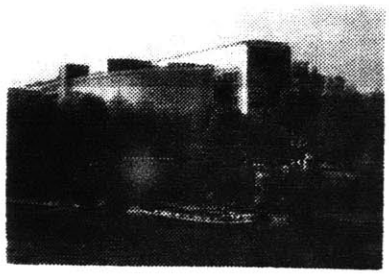


Fig. 1.20 Arab Institute, Paris. Completed 1987. Designed by Jean Nouvel.

Each of the above types require a unique design approach in terms of scale, budget and site conditions by the architect. In order to give some focus to my study, I have chosen four case studies, two each from the second and fourth type. This selection was made both, because they are well published cases, and of my familiarity with them. The case studies of London Central Mosque designed by Sir Frederick Gibberd and partners and the Mosque and Islamic Cultural Center, Rome by Paolo Portoghesi, Vittorio Gigliotti and Sami Mousawi were selected from the list of congregational mosques. The Jamatkhana, a religious building for the Ismaili Nizari Sect was selected from the fourth type. The case studies of the Ismaili Center, London by Casson Conder Partnership and the Burnaby Jamatkhana and Center by Bruno Freschi will illustrate the uniqueness of this type.

The image of Islam in the eyes of the West

Regardless of their ethnic heritage, all Muslims in North America and Europe are members of a minority, by the virtue of their faith. Therefore, it is essential to shed some light on the kind of meanings these Institutions can carry for the host society or the non users. Further, what are some of the misconceptions or attitudes among the West-

erners towards labels such as "Islamic", "Arab" and so forth. The idea of representation is therefore central to this discussion. The description of the verb 'to represent' by Webster Contemporary Dictionary includes; "to serve as the symbol, expression, or designation of" and "to set forth a likeness or image of; depict; portray". Two conditions seem to be necessary for representation, as implied by the above definitions. First, in order for a subject or idea to be a symbol, it must correspond to some real situation, object, action or their immediate implications. The second condition for a creation of picture or image in ones mind or represent, it must attribute to the corresponding reality through some shared human conventions or understanding. The former tends to be associated more with the real and palatable objects yet with the general implications while the latter is abstract yet partial, and aggregated.

These following thoughts on the abstract representation of Islam and its societies, in the West are not an outcome of an analytical or an anthropological survey of any sort but through personal observations and vis-a-vis the literature which has been published on the ongoing debate on the practice of "Orientalism". These observations also do not discount the fact that human nature is such that each society tries to categorize the other into stereo types, often leading into blatant generalizations and misconceptions. In this age of post industrial and media society, one would expect these trends of prejudice and categorization to be abandoned but unfortunately these trends have persisted due to social, political and historical relations among societies.

The general misconception about the notion of an 'Islamic culture' is that the expression "tends to seen in terms of the so-called primitive cultures, as it is sometimes seen in

anthropology, or of some particular, real or presumed 'religious culture' such as Christianity."[13] The Islamic world, as established earlier is culturally diverse and the immigration history of Muslims in North America and Europe reflects that variety also. The Middle East and North Africa were the cradles of Islamic civilization, but today more Muslims live outside these geographic areas in countries such as, Pakistan, India, USSR, China, Philippines, Malaysia and Indonesia and so on. Therefore, lumping all Muslims including Western converts into one category is a gross misrepresentation of the diversity which Islam has allowed for and sustained over the past fourteen hundred years of its history. In North America and Europe, people often accept popular images of the nomadic bedouin as the norm for the Arabs. Famous films including the, 'Thief of Baghdad', 'The Sheik', 'Lawrence of Arabia' and many others have often provided the Western audience with deceptive images of the Middle East. It is seen as a land of mystical beliefs, magic carpets and above all, an ever-present medievalism. The stereotyping of Muslims was in part inspired by the distorted and objectified view of the East propagated by some Orientalists.

In his book 'Orientalism' Edward Said proposes that the interpretation of others (the East) stemmed from a position of dominance, and accompanied the imposition of Colonialism and modern power political structure in some parts of the Middle East. He writes;

"....Orientalism can be discussed and analyzed as the corporate institution for dealing with the Orient - dealing with it by making statements about it, authorizing views of it, describing it, by teaching it, settling it, ruling over it: in short, Orientalism as a Western style dominating, restructuring, and having authority over the Orient." [14]

There are two main branches of Orientalism. The first pertains to a group artists, mostly from Western Europe which traveled in nineteenth century to distant Islamic lands and depicted what they saw or what they imagined in a exotic fashion. The second branch is linked with the scholars who were and still today, are interested in the study, publication and interpretation of texts. Though Said's primarily deals with the second branch, the issues raised in the book could be also posed to the arts produced by Orientalists with the implication of, or the Orient (Islamic world) as the subject matter. The Romantic movement in England which gained momentum in the early years of nineteenth century was a major motivation for the increasing cultural and scholarly interest in the East. The movement's enthusiasm for early and distant cultures fueled a wider and much older interest in the Orient. Another factor which heightened interest in the Orient was the growing preoccupation with archeology. Architects of the Romantic Movement trying to recover the Gothic and Greek styles were increasingly fascinated by the picturesque and the so called 'exotic' moods of Islamic Architecture. With the ease and safety of travel came a growing number of lavish sketches and travel books on the Islamic world which included Arab countries of North Africa and Western Asia, Turkey, Turkey controlled Greece and the Balkans, Persia, and India.[15]

One common argument attributed against the Orientalist is their depiction of the Orient as unchanging and frozen. As Linda Nochlin claims in her criticism of Gérome's 'Snake Charmer', "Gérome suggests that this Oriental is a world without change, a world of timeless, atemporal customs and rituals, untouched by the historical processes that were "afflicting" or "improving" but, at the any rate, drastically altering Western societies at the time. Yet there

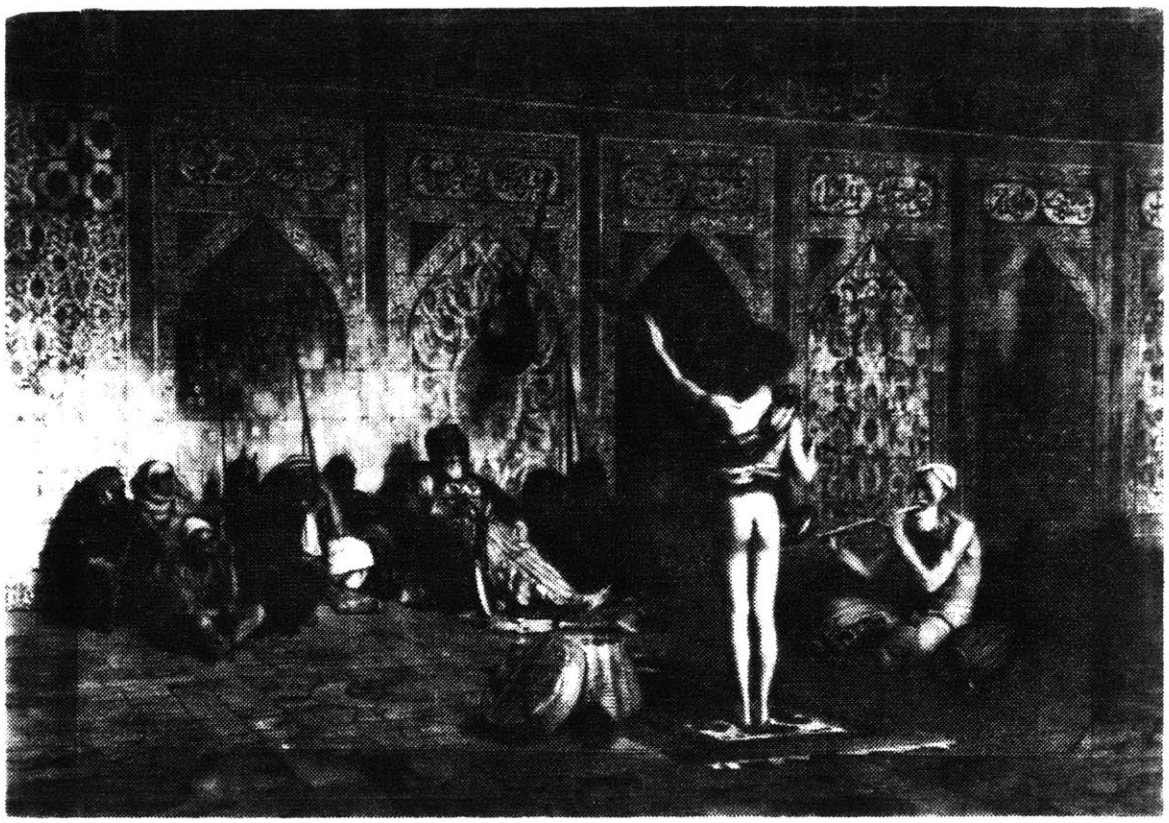


Fig. 1.21 'The snake charmer' by Jean-Léon Gerome. Executed in late 1860s. (Williamstown, Massachusetts, Sterling and Francine Clark Art Institute)

were in fact years of violent and conspicuous change in the Near East as well, changes affected primarily by Western power - technological, military, economic, cultural - and specifically by the very French presence Gérome so scrupulously avoids."[16]

The medium of this romantic expression included photography and architecture also. The demolished Bandstand in New York Central Park by Jacob Mould and Nash's pavilion in Brighton are extreme architectural examples of this fascination with the exotic. The purpose here is not give a historical overview of European painter's and architect's search for exoticism but to illustrate that these depictions of the Islamic world were a communication bridge for the mass culture in the West towards their Eastern counterparts in the nineteenth century. The question impinging

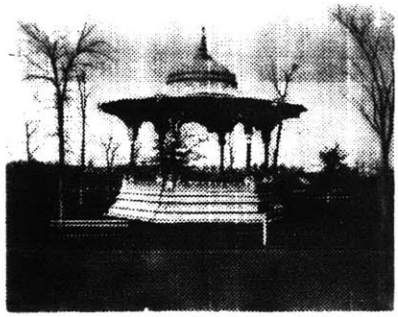


Fig. 1.22 Bandstand, Central Park, New York by Jacob Wrey Mould, 1859-1886. (Demolished)

Fig. 1.23 Principal Entrance to the Royal Pavillion at Brighton, designed by John Nash, 1817-1824.

upon this debate is, do those pieces of art work scattered in several museums and architectural pavilions retain their hold on the Western societies imagination of the Eastern society in the twentieth century.

Frame work for the study

'Building' can be defined both as an object and a process of architecture. While the verb 'to build' implies the process, the noun 'building' is the object or the product. Both are inter-related through a synthesis of intent and purpose and lie at the core of this investigation. Every step of the process is as important as the final outcome, though as a point of departure it is equally important to distill the procedures suggested by the object. There is an inherent duality in the object which implies both action and state of being in architecture, i.e. existence. In this duality lies the interpretive realm of the user or the non-user and hence the basis for my inquiry and analytical study in this thesis.

The process and the product both involve many overlapping dimensions and therefore such a study can be approached from several angles and often competing views. Today, it is also true that any substantial architectural inquiry is set by the program and approach adopted by the author, especially when questions, which are often rhetorical, of memory, type and language add to the complexity of the relevant issues. As Manferdo Tafuri summarized this dilemma;

"To criticize, in fact, means to catch the historical scent of phenomena, put them through the sieve of strict evaluation, show their mystifications, values, contradictions and internal dialectics and explode their mystifications, values, contradictions and internal dialectics and explode their entire charge of meanings. But in the period we live

in, mystifications and brilliant eversions, historical and anti-historical attitudes, bitter intellectualisations and mild mythologies mix themselves so inextricably in the productions of art that the critic is bound to start an extremely problematic relationship with his accepted operative practice, particularly in considering the cultural tradition in which he moves."[17]

Apart from the architectural considerations, which involve overlapping issues of aesthetics, functions, structure, construction and context, the realm of the process and product is also transparent to the three significant factors, which include economic limitations, the sociological connotations and the political intentions. Within the limited scope of this inquiry, the emphasis will be placed more on the architectural character of these Islamic Institutions, yet one cannot afford to completely ignore the illustrative stories attached to each of these buildings, from the conception of a desire to build such a building within the community, to the actual act of building and sustaining its daily function.

Three important factors seem to contribute significantly to the issue of architecturally representing Islam in these Institutions; first there is the insistent question of the local vs the universal, i.e the interpretation of artifacts that belong to a particular culture in history but at the same time are grouped together as Islamic art or architecture, having a trans-cultural character, arguably acquired from the universal nature of the Islamic religion itself. From this perspective, there is an inherent assumption of the religion's influence on the cultural products of its followers. The second important factor relates to the identification of forces, formal or symbolic and social or political, which knit and weave the Institution in its setting and context. The

third paradigm pertains to the associative quality and evocation of meanings for the buildings' users and non-users. The question of authenticity is central to this issue and is primarily an outcome of the compatibility of past types with the building materials and modern means of construction.

All the cases studies have been well published and documented in various architectural magazines and journals and therefore much of this study will be based on secondary sources which include critical writings on the buildings, architect's statements, and photographic brochures. Except in the case of Burnaby Jamatkhana, which I have personally visited and prayed in occasionally, I am working with a handicap of relying heavily on the above secondary sources and I am fully aware that nothing can replace the actual experience of personally visiting and viewing an artifact. Thus, it may be hoped that this endeavor, although faced with the difficulty of making architectural judgements based solely on the above sources, will bring forth design issues and extract principles which are relevant and can be used to inform the designers of future Islamic Institutions in the West.

I view each of the case studies as unique endeavors by their architects and therefore each of them has been analyzed as individual cases, without following a strict methodology. However, in the synthesis sections at the end of chapter four and five, and in the epilogue, I have attempted to highlight general trends and issues which surface. In all the four instances, there are other functions such as libraries, religious schools and community centers which are attached to the prayer space. Generally, they are referred to by the architect as cultural centers and for sake of consistency, I have maintained that classification also.

This does not by any means, deny the cultural implications of the religious buildings which, in my mind, are by themselves cultural centers *par excellence*. In conclusion, my interest in the subject of this thesis stems from a past design experience of such buildings and my intentions in performing this study are, as Tafuri puts it, "to avoid moralizing in order to see"[18] and to seek out "the the new values nesting in the difficult and disconnected set of circumstances we live in, day by day".[19]

Notes

[1] Kevin Lynch, *What time is this place?*, Cambridge: MIT Press, p 1

[2] Ismail R. Al-Faruqi, "Islamic Ideals in North America", in *The Muslim Community in North America*, (Earle Waugh, Baha Abu Laban and Regula Qureshi Eds.), Alberta: University of Alberta, 1983, p 267

[3] An Arabic term for community of believers.

[4] Allen E. Richardson, *Islamic Cultures in North America*, NY: The Pilgrim Press, p 25

[5] John Lawton, "Muslims in Europe: The Presence"; *Aramco World Magazine* Vol 30, No. 1, Jan - Feb 1979, p 4

[6] Yvonne Haddad & Adair Lummis, *Islamic Values in the United States*, NY: Oxford University Press, p 3

[7] Ibid, p 3

[8] James Dickie, "Allah and Eternity: Mosques, Madrasas and Tombs"; in *Architecture of the Islamic World*, (George Mitchell Ed.) NY: Thames and Hudson, p 16

[9] Gulzar Haider, "Brother in Islam, Please draw us a Mosque"; *Unpublished Paper*, Submitted to the conference titled; Making Space for Islam: Spatial Expressions of Muslims in the West, Nov 1990

[10] Ibid

[11] The call to prayer

[12] A letter to the Editor published in East London Advertiser on the debate over East London Mosque. Quoted in John Eade, "Islam, Religious Buildings and Space in London"; *Unpublished Paper*, Submitted to the conference titled; Making Space for Islam: Spatial Expressions of Muslims in the West, Nov 1990

[13] Muhsin S. Mahdi, "Islamic Philosophy and the Fine Arts"; in *Architecture and Community*, (Renata Holod, Ed.), Aperture: Islamic Publications Ltd., 1983, p 21

[14] Edward Said, *Orientalism*, NY: Vintage Books, 1978, p 3

[15] Donald A. Rosenthal, *Orientalism: The Near East in French Painting 1800-1880*, NY: Memorial Art Gallery of the U of Rochester, 1982, p 8

[16] Linda Nochlin, "The Imaginary Orient"; in *The Politics of Vision*, NY: Harper & Row ,1989, p 37
[17] Manferdo Tafuri, *Theories and History of Architecture*, London: Granada Publication, 1980, p 1
[18] Ibid, p 2
[19] Ibid, p 2

2. Theoretical Discourse: Art and Architecture of the Islamic World

The Islamic world spreads a horizontal expanse between Asia and Africa, from the shores of the Atlantic to the several islands in the Pacific. There are host of countries, languages, ethnic origins and above all many sects within the boundaries of the Muslim world. Can these congeries of people be considered unified in any way? The key element is conversion to Islam and making it a focus of the rhythm of life and culture at large. An architect building for Islam in the West is in a difficult position of designing for an immigrant population which is bound together by their participation in the Islamic experience, but individually influenced by many other local and regional factors. Today, most traditional cities in the Islamic world are left with their great mosques, madrasas, shrines, palaces, gardens and houses, but not free from influences of the colonial times and the modern era. The 'Islamic' city, the monuments and the interpretive literature on them, are the main sources of inspiration from which the designers can search for an intellectual and formal dialogue in their building.

The study of Art and Architecture of the Islamic World

The relative underdevelopment of the field of study on the visual arts of the Islamic world poses certain constraints and limitations in this search. Based on the limited factual

and intellectual knowledge, it is extremely difficult to establish a clear understanding of the kind of meanings that these forms evoked at the time of their creation and the successive connotations they acquired over the layers of time. Many experts on the art and architecture of the Islamic world easily fall into the trap of identifying only the uniqueness and singularity of Islamic forms and detaching them completely from other artistic endeavors such as the Western Arts.

Amazing is the number of renowned contemporary critics of art and architecture who have attempted to define and decode the message of Islamic Architecture, and consequently fall into a similar mode of generalizations about its nature, intentions and characteristics. As Christian Norberg-Schulz with his existentialist approach claims, "... the spatial boundary of Islamic architecture may be described as a continuous, insubstantial surface structured by a boundless ornament, where faint echoes of the world of things appear and disappear."[1]

The traditional Islamic world did not develop an elaborate critical system of artistic description and evaluation. The scholars therefore have no choice but to understand the tradition form outside and develop hypothesis and judgements on the craftsmen's intentions and the meanings projected by the forms. Clifford Geertz offers an explanation of this lack of descriptive archival material in his advice to students of non-Western arts, especially the so-called 'primitive arts'. He writes;
"....that the peoples of such culture don't talk, or not very much, about art - they just sculpt, sing, weave, or whatever, silent in their expertise. What is meant is that they don't talk about it the way the observer talks about it- or would like them to - in terms of its formal properties, its symbolic

content, its effective values, or its stylistic features, except laconically, cryptically, and as though they had precious little hope of being understood."[2]

He further adds that they talk about who owns it, uses it, what role it plays in various activities but that talk is "about something else - everyday life, myths, trade or whatever."[3]

Oleg Grabar, an art historian, is a great advocate of adopting a strict methodological approach through written texts and other means of studying Islamic art and architecture. He believes that scholars tend to seek general and abstract meanings in what could have been concrete and personal experiences. Efforts to build abstract constructs, for which limited archaeological data exists might futile and inaccurate. A danger exists when "unique cultural experiences can be easily be transformed into meaningless and obvious generalities. The opposites dangers are either that a unique experience becomes so specific as to unavailable for sharing and even explaining or that an artificial search for presumably universal values falsifies the truth of any individual's culture or experience."[4]

Twentieth century scholarship still remains more or less scattered in academic centers in Europe and America. The methods were developed outside the culture and some scholarly efforts cannot be seen in isolation from the Orientalist tendencies of the past. Many Western scholars recognize and mention the lack any substantial participation by the Muslim world in developing scholarly techniques of studying Islamic art, architecture and city form. This unfortunate lack of participation has caused acute problems for the advancement of the field of study. With the exception of some contemporary Muslim scholars such as Nader Ardalan, Ismail Al-Faruqi and others, few have

contributed significantly in the pursuit of knowledge on Islamic visual arts. Some Muslim scholars, who have made some attempts to participate in the scholarly pursuit often find themselves following the same techniques followed by the Orientalists, which were developed outside the culture, as pointed out by Terry Allen; "...the idea of the 'Islamicness' of Islamic art has been picked up by Muslims unaware of how deeply rooted it is in a highly culture-bound Western view of the 'East.'"[5]

With the emergence of modern political boundaries of countries in the Islamic world, the research on Islamic Art and Architecture has faced another hurdle. The new governments sponsor publications and research on subjects which can be classified only under their own national heritage. This tends to compartmentalize research and common trends and themes cannot be deduced from diverse efforts. These national and ethnic considerations take predominance over collective addition of knowledge to Islamic history. Turkish scholars look for Turkish typological elements, while Pakistanis look for motifs and patterns which are specific only to the country without considering the whole region.

Dogan Kuban in his plea to Muslim scholars for directing their efforts in interpreting the modern environment and architecture says, "Our structures will be mere imitations like our history which has been written by scientifically honest but culturally prejudiced foreign scholars,...."[6] He further adds, "All this is not to imply that the orientalist tradition is without value. It is very valuable as a source for documentation, since otherwise it would be a difficult task to recreate a contemporary Muslim historiography."[7] The issue here is that in any research program whether carried out by a Muslim or a Westerner, great care should taken to

avoid pitfalls of previously used methodologies and constructs. An alternative would be to device methods which originate from within the culture but are based on principles which can be used by scholars from outside the culture also.

Scholarly efforts in the West, for the past few decades have also been directed towards individual regions, historical periods, subject matters or techniques, after vague generalizations failed to provide substantive addition to the body of knowledge. However, there are certain drawbacks of specialization as the studies might overlook "certain links among the various Muslims centers and the interchange of artistic ideas among the different craftsmen"[8] This diversification also is disappointing for people who seek a generalized and easily accessible knowledge of Islamic art. But among the several arguments, constructs, evidences and sometimes misconceptions in the gradually increasing literature on the subject, one common belief remains that it was indeed the faith in its manifested expressions that was the consistent inspiration and exerted some control of artistic creations and urban form.

In summary, there are considerable gaps of knowledge on traditional Islamic art and architecture and whatever knowledge base exists is predominantly due to the scholarship from outside the culture. In recent years, there have been efforts and official endorsements by many Islamic nations for the revival of 'Islamic architecture' as an insulation from the tainted image of the International style or due to nostalgic tendencies which often lead to regressive traditionalism and historicism. The scholarship has to proceed much further but without cultural prejudices and only in mutual co-operation between scholars from within the culture and outsiders, before a clear understanding can

be established of the meanings which the arts and the monuments evoked at the time of their creation and acquired through successive layers of time. At the present stage, much intellectual work has to done before a clear distinction can be made between different levels of understanding the role of faith in the inspiration and control of the arts and built form. Relying only on the the products as we see them today might be misleading before developing a through a theoretical background a clear understanding of the process is accomplished.

Oleg Grabar formulated a series of questions which he believes are asked by designers in the Islamic world, desperately seeking to establish a dialogue with the past but who generally fail to do so without falling prey to nostalgia and the stigma of revivalism. Those question are equally relevant for the present topic and include;
"Is there an Islamic system of visually perceptible symbols and signs? How universal is such a system and what are its variants? What are the sources of the system, the revealed and theologically or pietistically developed statement of the faith, or the evolution of visual forms over fourteen hundred years? In what fashion and how successfully were signs and symbols transformed into building forms? How valid is the experience and memory of the past for the present and the future?"[9]

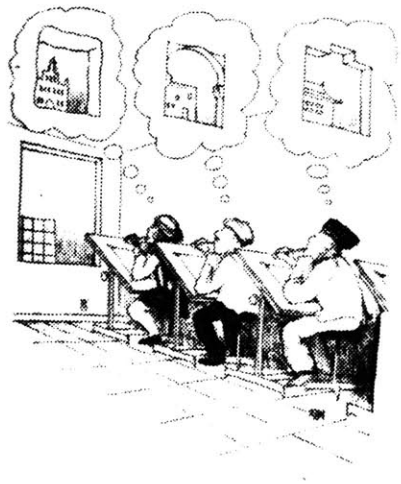


Fig. 2.1 How universal is the system of visually perceptible symbols of Islamic Architecture?

Even with the limitations of the scholarly material presently available, there have been commendable attempts by historians and theoreticians such as Oleg Grabar, Richard Ettinghausen, Terry Alan, K. Creswell, Ronald Lewcock, Nader Ardalan and many others to address the above queries and concerns and they have been a vital source of reference for this paper.

The Prophet, the messenger of God, had probably a moderate role in the formation of early Islamic material culture. His importance lay in the theological and social realm. It is the cultural experience of the followers of the faith and the ever increasing number of converts which accounts for the formation of the arts and the built form. With the exception of the Sufi system of thought on Persian architecture, there has been no substantial study which would identify the sign and symbol system of visual arts on which many of these cultures operated. Richard Ettinghausen believes that the societies converting to Islam retained some of the symbols from their past cultures and they seem to be pertaining to secular themes or "with what may be called "basic" religious symbols such as earth, fire, and life."[10] Though he does not offer any textual evidence or prove of their presence or visual manifestations in the arts or architecture.

If we turn to Islamic philosophy and thought to search for the answers, they are replete with esoteric meanings yet charged with multitude of interpretations and inspirations. "This is what Islamic philosophy is all about: it is the search for order and harmony in the natural world, the intelligible world, the human soul, and the city. It is an account of such order and harmony where it exists, and an account of how to restore order and harmony in man an in the city. It looks at the work of art as being in the service of this objective."[11] Except the famous verse on the Niche of Lamps, the Quran is silent on the physical characteristics of mosques or for that matter on any other direct architectural references. Islam did not possess the codified liturgy which Hinduism, Buddhism or even Christianity possessed. The decoration in most instances were limited to geometric motives and calligraphic verses from the Quran. In the absence of representations of humans, the connec-

tion with myths and allegories is all the more difficult. Oleg Grabar boldly concludes on the lack of signs and symbols; "Except for the Arabic alphabet, there was no coherent, consistent, and reasonably pan-Islamic acceptance of visually perceived symbols; there was no clearly identifiable sense, even, of forms considered to be one's own, culturally discrete. ....that it is not the forms which identify Islamic culture and by extension the Muslim's perception of his architecture, but sounds, history, and a mode of life."[12]

This discussion does not by any means exclude or undermine the influential power of Islamic philosophy or thought, which might have affected the patrons, practitioner or the mass culture. But with the present limitations of the scholarship in failing to find any concrete symbolic references pertaining to architecture either in the theoretical constructs or historical written text, one has to rely on existing architecture, archaeological constructs of perished monuments or particularly on traditional 'Islamic' cities or medinas which still have sustained some of their characteristic features. Within the limited scope of this study, I will attempt to briefly iterate concepts related to Islamic city and, its built form and the various interpretations put forward to explain the extensive use of geometry and ornament in its manifestation.

The Islamic city and its built form

"....the complex structure of the city emerges from a discourse whose terms of reference are somewhat fragmentary. Perhaps the laws of the city are exactly like those that regulate the life and destiny of individual men. Every biography has its own interest, even though it is circumscribed by birth and death. Certainly the architecture of the

city, the human thing par excellence, is the physical sign of this biography, beyond the meanings and the feelings with which we recognize it."[13] (Aldo Rossi, 1982)

In the middle of the century, the advent of Islam initiated a new era of urban development in the Middle East. Many new cities were built and new urban vigor and prosperity were brought to the declining Roman and Persian towns. Many historians have pointed a striking paradox in the fact that Muslim Arabs should have established cities at all. The Arabian Peninsula was mainly inhabited by nomads and to establish cities in such areas seemed a complete foreign idea. But the historical fact remains that the propagation of Islam by the Arab armies was on many occasions accompanied by extraordinary urban development. Islam and its impact on the way life imparted a significant spatial personality on the city form; whether they were Hellenistic cities such as Damascus, Aleppo, Alexendria, and Jerusalem or they were creations of the Muslim conquerors themselves, such as Kufa, Basra, Qayrawan, Samarra and so on.

In light of the recent research and scholarly struggle over the concept of 'Islamic city', it is worthwhile quoting two distinct and opposing positions. Carl Brown writes;
"Cities are, in one sense, becoming increasingly alike or at least faced with similar problems and prospects. Yet, anyone who has had the opportunity to experience, say, Fez, Istanbul, or Isfahan would argue that such cities possess a cultural core, however elusive to describe, that is and will ever be distinctive. And even if experts and laymen might dispute what generic label to apply-whether Islamic, Near Eastern, Western Asian, or some hyphenated sub-category such as Arabo-Islamic or Turko-Islamic - there could be a consensus that these cities are properly

distinguishable from New York, Paris, Calcutta, Nairobi, or Shanghai."[14]

While Ira Lapidus disagrees with the above assessment and claims, ".... we can no longer think of Muslim cities as unique, bounded, or self-contained entities. Cities were physical entities but not unified social bodies defined by characteristically Muslim qualities."[15]

Many scholars would disagree with the bold assessment of Professor Lapidus and yet fail to give a precise definition of the term 'Islamic City' and its constituent elements which were universally adopted. On other hand, one cannot over look the certain distinctive features which Professor Brown relates to and have been a subject of inquiry by several scholars. Islam taught its followers a way of life through certain principles which formed an ideological base for cultures which were converted to the religion. In the early centuries of Muslim expansion, the development of new cities was not only due to political and military considerations but also to establish the new faith. The general argument given for the establishment of the cities is that the five pillars of Islam could only be properly performed in a communal setting and for this reason the nomadic and rural life was not encouraged.

Three primary spatial features seem to be consistent in many Islamic cities. First the public elements which include the Friday Mosque, the markets, the educational and social buildings. Second, the semi private and private elements which are formed by the residential quarters and their individual units. Lastly the system of open and street net work. However, the terrain, the climate and local conditions determined the character and inter relationship between these primary elements.

Abu-Lughod in her recent paper 'The Islamic City', has listed certain principles under which these elements were combined, although she concedes that it is "exceedingly hard to unpack this complex [local constraints] bundle to determine the extent to which Islam influenced any one of them at any point in time."[16] Her central argument in the paper is that there were some principles rather than distinct architectural elements which gave shape to the Islamic City. Her list of principles include the juridical distinction between the local populations and the *Umma*, the segregation of the genders and the property laws which governed the rights and obligations

There have been many attempts by other scholars also to decode the urban patterns in traditional Islamic cities and certain key issues seem to emerge from their discussions. Apart from the local forces which moulded the layout of the Islamic city, the observance of the religion was a crucial contributing factor in shaping its form. The dense patterns of settlements clearly differentiated between the public and the private. The Friday mosque being the focus of the city with the adjacent *suq* or market and other buildings such as the *madrasas*, *hamamas* forming the public realm of the settlement. While the residential character formed by

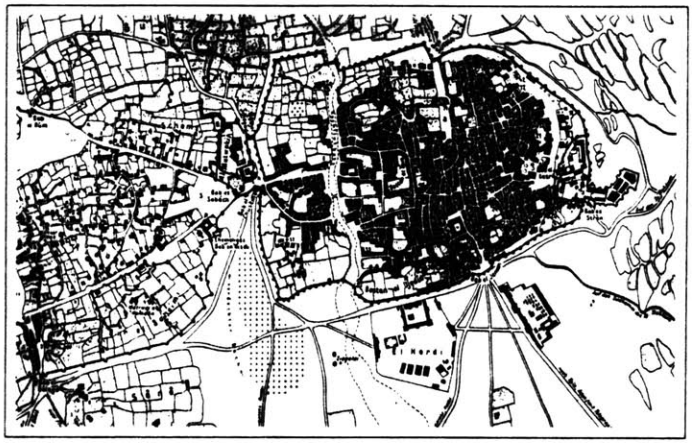


Fig. 2.2 San'a, Yemen. Plan of the old walled city. The dense character and the division of residential zone into separate quaters, was a typical feature of many traditional Islamic cities.

the division of land into separate quarters, each focused on a central street from which short, dead-end lanes leading to the individual units. The tribal or neighborhood *masjid* was another focus for these quarters. Thus, as cities are processes rather than products, the Islamic societies' social needs were reflected in the lay out and character of their built environment, although the precise architectural solutions differed according to the local conditions and customs.

".... we must be able to show that, by understanding and explaining Islamic Architecture, we are doing more than explaining Islamic architecture, we are doing more than explaining a specific culture and its inheritance; we are observing a unique way of creating an architecture that, because of its discrete and unique cultural setting, focuses on the relationship between men and buildings, not between buildings and buildings, not even architects and buildings."[17]

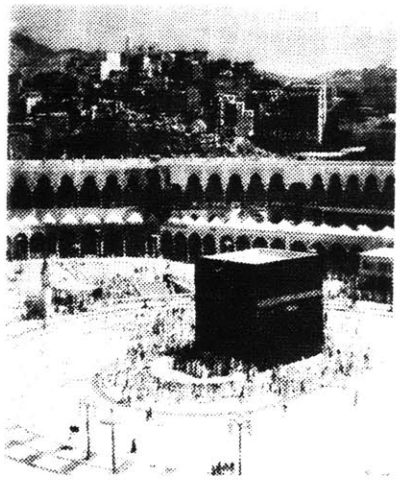


Fig. 2.3 The Kabaa, a unique Islamic symbol.

The Kabaa, is the uniquely Islamic architectural symbol. Its presence is felt not only symbolically in the heart of every Muslim but is remembered when turning towards the *Qibla* wall while in prayer The minaret is another symbol which is associated with Islam and has consistently signified the presence of the religion in many contexts. The Dome of the Rock, The Taj Mahal and some others are unique monuments which have acquired universal associations with the world of Islam. Apart from these unique symbols, the search for icons has to be focused on a wealth of typological arrangements and forms which have been consistently used such as the *iwans*, courtyards with porticos, hypostyle type, centralized type, domes, *muqarnas* and so on. Some of them have a pre-Islamic origin and all of them a non-liturgical function. The idea of interiority and

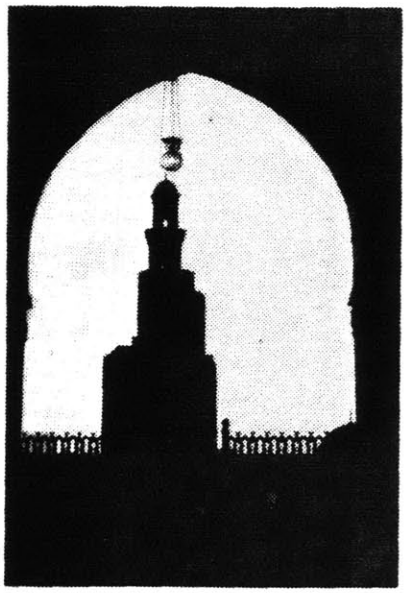


Fig. 2.4 A minaret; a symbol signifying the presence of Islam. (Ibn Tulun, Cairo)

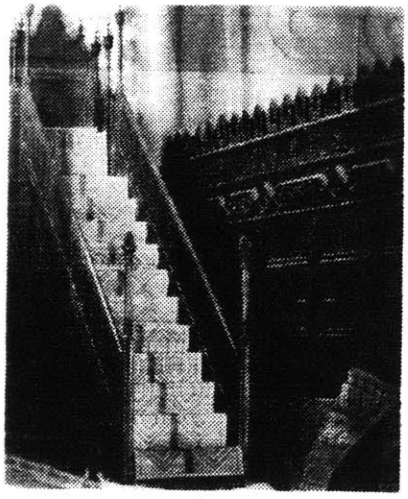
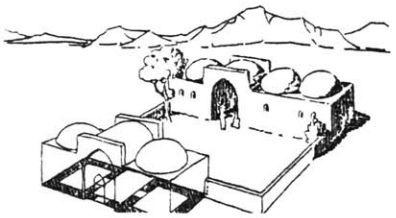


Fig. 2.5 Minbar; an architectural form developed due to a specific liturgical need. One of the oldest surviving minbars. Kairouan Great Mosque, 9th Century AD.



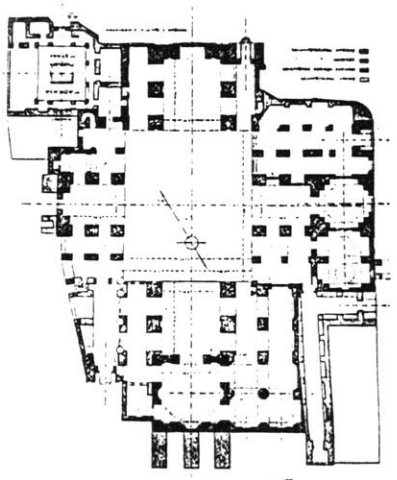


Fig. 2.6 From a traditional house at Shusp, Khunik to the Masjid-e-Jami of Ardestan, the iwan type became ingrained in the collective conscioness of many Persian civilizations, after the advent of Islam.

surface articulation are another consistent thematic elements within these types. However, each culture adopted some these types and transformed them to suit their needs. On the other hand there are some typological forms such as the *mihrab* or the prayer niche, *minbar* or the pulpit, ablution fountain and so on which developed due to a specific liturgical needs of the mosque.

Richard Ettinghausen in his article 'Originality and Conformity in Islamic Art'[18] attempts to trace the development of the four iwan type from residential structures in Iran. As they were adopted in Palaces, Mosques, *Madrasas* and even Hospitals not only in Iran but in many Islamic cities, they were recognized as symbols of an Islamic Institution. "As in most instances of symbolism, the proof of meaning lies less in the form itself than in the conscious or unconscious make-up of the viewer or use."[19] A successive use of such types but with transformations and modifications further ingrained their meaning within the collective consciousness of the culture.

The central question impinging upon this debate is whether these icons can be used just as vehicles for communication of meaning and symbolic expression or as inherent characteristics of new architecture and surviving the new meanings attached to them. As Grabar proposes that their "existence within the evolution of Islamic Architecture of an *order of meaning* which is inherent neither to forms nor to functions, nor even to the vocabulary used for forms and functions, but rather to a relationship among all three."[20] The challenge is to find that relationship which is suitable for today, without operating on nostalgic tendencies.

Geometry and Ornamentation

Apart from the typological elements, geometry, decoration and calligraphy are always thought to be a major characteristics of Islamic art and architecture. Most architects engaging in a dialogue with the past tend to rely extensively on geometry and ornament, both in modern building programs in the Islamic world and the Islamic Institutions built in the alien contexts. The whole debate will be based on psychological and cultural responses put forward by the scholars on the abundant use of abstract geometry in the visual arts of Islam.

"... that to study an art form is to explore a sensibility, that such a sensibility is essentially a collective formation, and that the foundations of such a formulation, and that the foundation are as wide as social existence and as deep, leads away not only from the view that aesthetic power is a grandiloquence for the pleasure of craft."[21] (Clifford Geertz, 1983)

There is an apparent problem in the proposition that the creative acts in Islam gave birth to predominantly "geometricized arts", without clearly identifying the spatial structures of each cultures which gave rise to them. Yet several

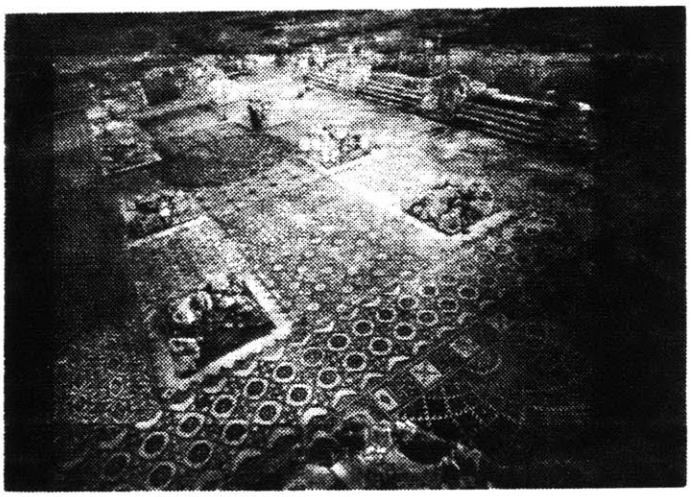


Fig. 2.7 Khirbat al Mafjar, bath mosiac floor, 8th Century. Excessive ornamentation.

explanations have been given by scholars to address the unique role of ornamentation and geometry in visual arts and to define the 'sensibility' on which Geertz's above hypothesis is hinged on. Ettinghausen and Grabar cite four principal elements which contributed towards the formation of Islamic arts, especially before the Prophet's death. The four elements were, "a ritual or prayer to be accomplished by preference in a mosque, an accidental prototype for the mosque in the house of Muhammed in Medina, a reluctance towards representation of living beings, and the establishment of the Koran as the most precious source of Islamic knowledge."[22] Given the above needs and limitation and coupled with a fear of punishment in case of going against the wishes of God, as revealed through the book and the Hadith, Grabar concludes, "...as Islam imposed upon itself a number of limitations on the iconographically significant, it simply concentrated its energies on the ornamental."[23] In the scholarly literature on the subject, two focuses or approaches can be seen as dominant. The first is the mystical approach which predominantly views Islamic art as sacred and esoteric, while the second approach focuses on the artistic expression in the Islamic world as a cultural, social, rational and above all a historical phenomenon. Both the arguments cannot be seen in isolation as they are the two faces of the same image and undoubtedly with some overlap. But for the sake of simplification and categorization they will be presented as two distinct approaches.

Mystical approach

"'*Allahu jamilun Uhibu al-jamal*', God is beautiful and He loves beauty."[24]

The Prophet's famous *hadith* is often quoted by the advocates of the mystical approach, in an effort to ground the

foundation of the subjective realm of beauty in the powers of the almighty. Texts by great mystics, philosophers and thinkers such as al-Ghazzli and Jalal al-Din Rumi are also some of the common references for this point of view. Most of the mystical writings have to be seen in view of the their main interests and intentions, which primarily were of a spiritual nature and not the material world, as it was only seen as a vehicle for the soul's journey to its ultimate destiny. There is profound distinction made by al-Ghazzali between the notion of the inner beauty vs the apparent exterior skin. The search is for discovering the essence which lies within; "....he who appreciates the inner values more than the outer senses, loves the inner value more than the outer ones."[25] Richard Ettinghausen's conclusion of this opposition yet a cohesiveness between the body and the skin, the exoteric and the esoteric, and form vs the structure is perhaps questionable as he writes; "...[it] reveals two approaches to art, those of the inner and the outer eye, one religious and the secular."[26] I would propose that beauty can be found also in the secular realm because through its passage every soul has to travel, as long as it is aware of and recognizes the temporal state of the material world and the permanence of the world after.

Ismail al- Faruqi, a strong advocate of the mystical approach and an outspoken critic of what he defines as the Orientalists 'Misconception of the Nature of Islamic arts,'[27] illustrates opposed positions and intentions in the Greek arts vs the Islamic arts. He argues from a debatable position, that the Western arts have to be seen in light of the legacy of the Greeks only, which were a vital source of inspiration for them. Naturalism was at the core of the artistic endeavor. Nature was not to be copied as it existed but it was to be depicted through the body of man, as it was an embodiment of perfection in nature. This centrality of

man then gave rise to the depiction of the Gods in the image of man. On the other hand he believes that in the Near Eastern art or the Islamic art, the divine cannot be represented because of man's limited capacity and the impossibility of expressing the inexpressible and the absolute. Stylization was adopted to break free from the bonds of naturalization as professed by Christianity and denial of any transcendental quality in nature. His interpretation of 'Tawhid', a basic foundation of the religion, includes "the ontological separation of the Godhead from the whole realm of nature."[28]

Nader Ardalan and Laleh Bakhtiar also approach the subject from a mystical point of view, yet with a unique interest in the spiritual manifestations. "The traditional artist creates the external art form in the light of the inspiration which he has received from the spirit; in this way the art form is able to lead man to the higher states of being and ultimately to Unity."[29] The status of the craftsmen as individual is not important and his creations are seen in relation to and as a reflection of the whole society. His efforts should be directed towards the manifestation of the beauty residing in archetypal elements which were an integral part of every creation. This view is supported by the fact very little information whether historical or legendary on the architects of great monuments in comparison to their counterparts in the West. Architecture is seen as an expressive medium resonating the cosmological orders.and the architect is "he who geometricizes".[30]

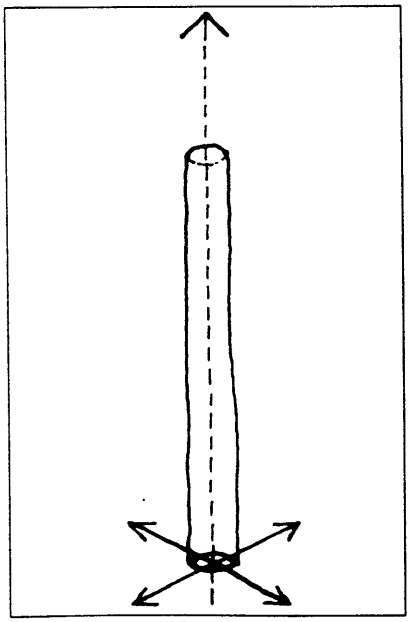


Fig. 2.8 Mystical approach; the minaret is seen as reflecting man's ontological axis.

Gulzar Haider also has a mystical approach towards the built form of the Islamic world but with even more complex level of abstraction and ambiguity in the theoretical constructs. He is clearly attempting to extract meanings and establish a connection between the built work with the

religion, but with hermetic overtones, which are often academically difficult to shield against criticism. He is clearly aware of this predicament and confesses this in his paper,'Islam, Cosmology and Architecture' by writing; "The very title of this paper will quickly classify it as one of those esoteric, spiritual, emotional, rational, perhaps idealistic, and worse yet "academically indefensible" pieces of writing."[31]

Apart from the connotations of *Tawhid*, the humanness of the Prophet, the prohibitions of animals and so forth, one philosophical element of the duality and almost a state balance between the *Zahir* (exterior) and the *Batin* (interior) seem to be a major concern for these writers. The concept predates Islam, but through the writings one can see its strong connections with the teachings of Islam. But its manifestation in the built form still remain ambiguous as does the middle ground between metaphysical and the natural, the soul and the body and the subjective and the objective.

"A sacred art's power of integration derives from the inexhaustible nature of its object or ideal; in fact there is no possible form that could express the spiritual ideal of Islam exhaustively. Even so, there must exist in any ethnic environment or at any level of forms a best possible way of expressing this ideal. ....this is an example of the phenomenon of diversity in unity, or unity in diversity, and proves indirectly that Islam is not a synthesis invented by man."[32] (Titus Burkhardt, 1976)

The concept of 'Unity in Diversity' is another common way the protagonist of the mystical approach, group the arts within the umbrella of the term 'Islamic'. It is believed that the artistic endeavors executed in different geographical

locations, materials, styles and so forth are to be considered unique in their own terms, yet that uniqueness is superseded by the transcendental quality of the ideal which resides, in each of them. Geometry and the science of numbers are considered as the vehicles through which the the metaphor of oneness of the divine is manifested. "Geometry as the expression of the "personality" of numbers permits traditional man a further exploration into the processes of nature."[33]

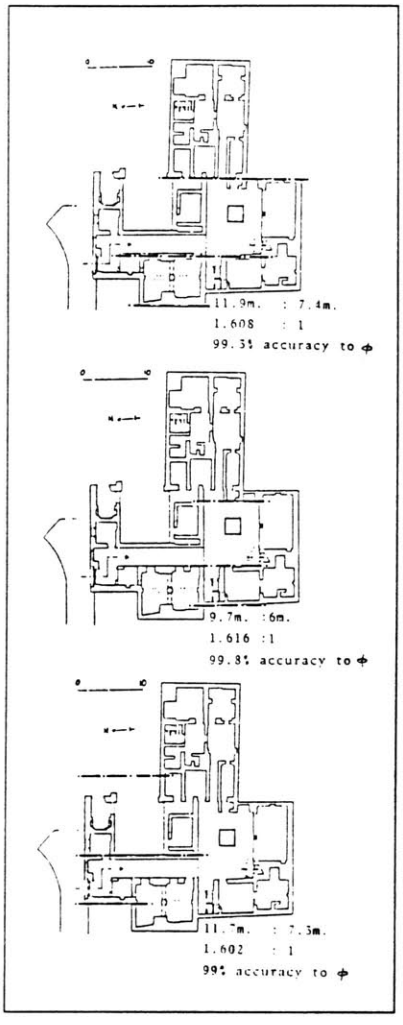
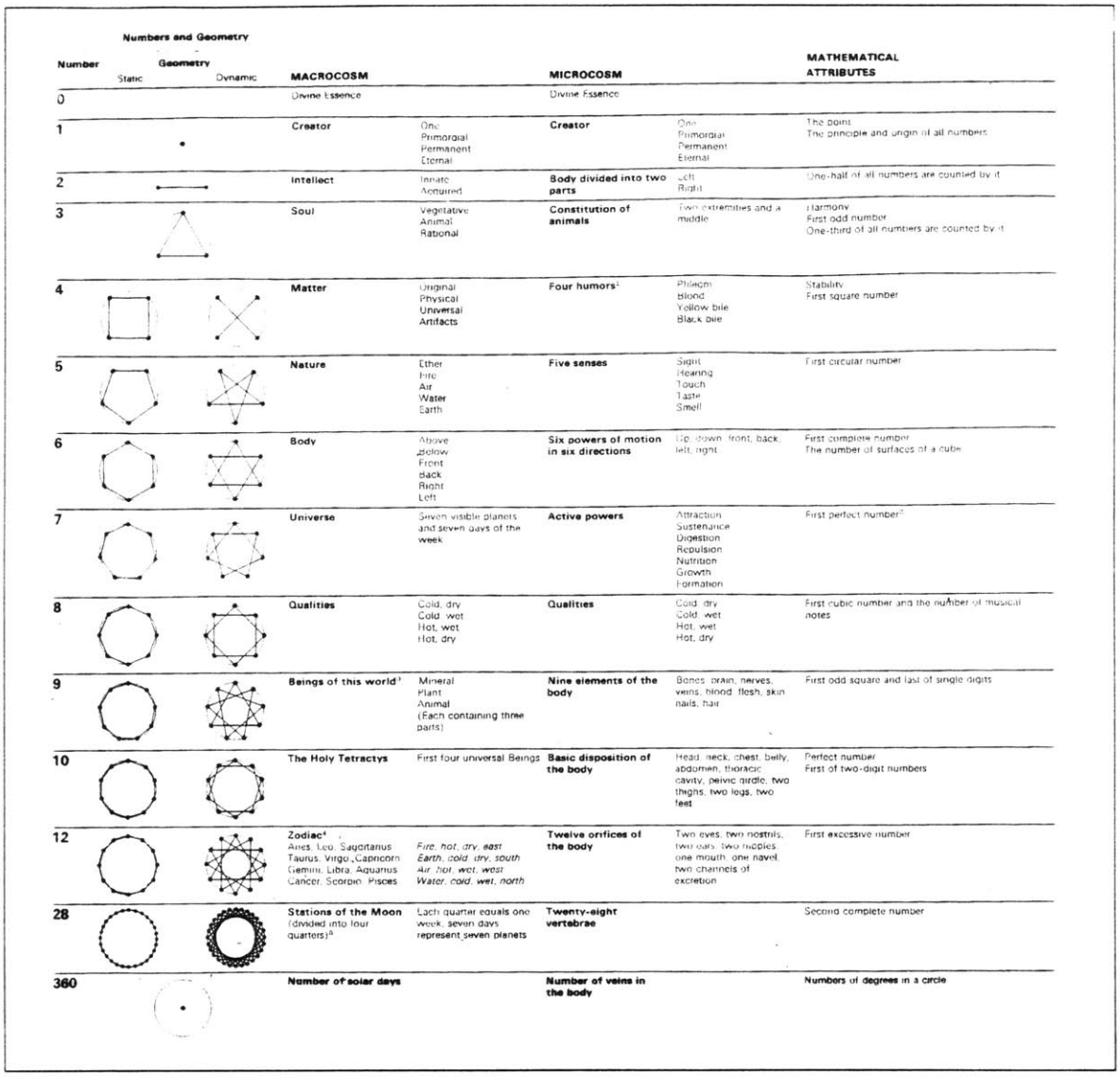


Fig. 2.9 Proportions of basic divisions of the general layout of Cairene houses. Study conducted by A. A. Sultan.

Al-Faruqi claims that repetitive geometric patterns in Islamic Architecture and Art were developed due to the logical structure of Arabic, the language of the book. Arabic Language "is made up primarily of three-consonant roots, each of which is susceptible of conjugation into over three hundred different forms by changing the vocalization, adding a prefix, suffix or 'middle-fix'."[34] Arabic Poetry also derives its repetitive mode from the same origin, whereby each verse is autonomous, complete and independent. Seyyed Nasr Hossein writes;

"Each number and figure, when seen in its symbolic sense, is an echo of Unity, and a reflection of a quality contained in principle within that Unity, which transcends all differentiation and all qualities and yet contains them in a principle manner."[35]

Creativity lies in the combination of squares, circles, triangles, polygons and so forth. Each geometric shape and the repetitive number it generates is seen in its symbolic sense. Mathematical ratios and formulas are the ways and means to abstract nature. As suggested by Sultan in his study of the Cairene houses where he claims that the layouts in section and plan both incorporate the ratios of " .... ø, Pi and the 3-4-5 triangle".[36] The pentagon star is related to cosmological significance of number five and its



Numbers and Geometry

Number	Geometry (Static / Dynamic)	MACROCOSM		MICROCOSM		MATHEMATICAL ATTRIBUTES
0		Divine Essence		Divine Essence		
1	•	**Creator**	One Primordial Permanent Eternal	**Creator**	One Primordial Permanent Eternal	The point The principle and origin of all numbers
2	—	**Intellect**	Innate Acquired	**Body divided into two parts**	Left Right	One-half of all numbers are counted by it
3	△	**Soul**	Vegetative Animal Rational	**Constitution of animals**	Two extremities and a middle	Harmony First odd number One-third of all numbers are counted by it
4	□ ✕	**Matter**	Original Physical Universal Artifacts	**Four humors**[1]	Phlegm Blood Yellow bile Black bile	Stability First square number
5	⬠ ✶	**Nature**	Ether Fire Air Water Earth	**Five senses**	Sight Hearing Touch Taste Smell	First circular number
6	⬡ ✶	**Body**	Above Below Front Back Right Left	**Six powers of motion in six directions**	Up, down, front, back, left, right	First complete number The number of surfaces of a cube
7	⬡ ✶	**Universe**	Seven visible planets and seven days of the week	**Active powers**	Attraction Sustenance Digestion Repulsion Nutrition Growth Formation	First perfect number[2]
8	⯃ ✶	**Qualities**	Cold, dry Cold, wet Hot, wet Hot, dry	**Qualities**	Cold, dry Cold, wet Hot, wet Hot, dry	First cubic number and the number of musical notes
9	⯃ ✶	**Beings of this world**[3]	Mineral Plant Animal (Each containing three parts)	**Nine elements of the body**	Bones, brain, nerves, veins, blood, flesh, skin, nails, hair	First odd square and last of single digits
10	⯃ ✶	**The Holy Tetractys**	First four universal Beings	**Basic disposition of the body**	Head, neck, chest, belly, abdomen, thoracic cavity, pelvic girdle, two thighs, two legs, two feet	Perfect number First of two-digit numbers
12	⯃ ✶	**Zodiac**[4] Aries, Leo, Sagittarius Taurus, Virgo, Capricorn Gemini, Libra, Aquarius Cancer, Scorpio, Pisces	*Fire, hot, dry, east* *Earth, cold, dry, south* *Air, hot, wet, west* *Water, cold, wet, north*	**Twelve orifices of the body**	Two eyes, two nostrils, two ears, two nipples, one mouth, one navel, two channels of excretion	First excessive number
28	⯃ ✶	**Stations of the Moon** (divided into four quarters)[5]	Each quarter equals one week, seven days represent seven planets	**Twenty-eight vertebrae**		Second complete number
360	•	**Number of solar days**		**Number of veins in the body**		Numbers of degrees in a circle

Fig. 2.10 Numbers and Geometry. Table extracted from the book 'The Sense of Unity: The Sufi Tradition in Persian Architecture' by Nader Ardalan and Laleh Bakhtiar.

relation to the five pillars of Islam.

Each color is seen from a "metaphysical point of view"[37] and the color "Green is viewed in Islam as the superior of the four colors [Blue, Green, Red and Yellow] because it embodies all of the others. Green is hope, fertility, and eternity with its two inherent dimensions of past (blue) and future (yellow), and its opposite, the present seen as red."[38] Grabar's response to the symbolism of colors is; "One cannot explain the symbolism of the colors of a Persian

dome as a reflection of the mystical or even archetypal unity of creation, or the whiteness of North African town as a reflection of the mystical or even archetypal unity of creation, or the whiteness of a North African town as reflection of the purity of the Prophet's message, without concrete textual or ethnographic evidence, that is without the agreement of the culture itself."[39] However, some theoreticians argue that as some pigments such as green, were more expensive than others and therefore, were used only in special places and over a period of time acquired symbolic meanings.

A striking paradox is that many scholars subscribing to the mystic approach reject the Orientalist concepts such as the 'Horror Vacui' (which is discussed later in the chapter) but have graciously accepted the generalized term 'Arabesque' which "suggests an arbitrary Western approach to Islamic art - there is no premodern Arabic equivalent for the term".[40] The term itself has been used in so many different aspects that today it is associated with a range of things and sometimes with too many things; "It [Arabesque] is ubiquitous in all Muslim lands and constitutes the definitive characteristic or element in all Islamic art."[41] The 'Arabesque' are seen as visual expressions of the stages through which each soul has to pass in the journey towards the ultimate. Each Arabesque has an implied center, as is the concept of unity in all God's creations.

The above discussion by scholars, most of them of Muslims, seems to be centered on the notion that the artistic creations of the Islamic world have to be seen in the light of the religion and are bearers of meanings of the cosmos and the natural order. It is believed that Islam revealed itself in the arts through the law established primarily by the book, the hadith and the sharia and also through the spiritual

path which is based on cosmology. Geometry and the science of numbers are the mediums through which unity is represented. The geometric principles are universal in nature and the patterns derived from these principles are the metaphor of the presence of the almighty in all mankind's creation. There exists a duality between the inner beauty and exterior beauty and that tension has to be explored and enhanced in the patterns. Esoteric meanings are extracted from nature and have remained the fundamental principals for the arts and the built work of the Islamic world. These meanings are so esoteric and ambiguous in nature that sometimes more than one and often contradictory meanings are attached to a single form. Lack of textual material gives rise to several different interpretations and to achieve a synthesis between varied interpretations can be problematic.

Art Historical Approach

"A historian must walk on the thin edge that separates self-gratifying but intellectually free antiquarianism from vibrant but ideologically charged contemporary quests."[42] (Oleg Grabar, 1983)

Historians studying Islamic art and architecture have extended various hypothesis on the role of geometry and ornamentation, which therefore can be lend understood as purposeful means that can lend themselves to more than one cultural explanation. The documentation and imitation of Islamic art in Europe started much earlier than the Romantic Movement. However, the first significant studies on Islamic art and architecture appeared in the early years of nineteenth century, with the most well known work done by Owen Jones and Jules Goury.[43] Curiously enough, Islamic monuments in Spain received the most

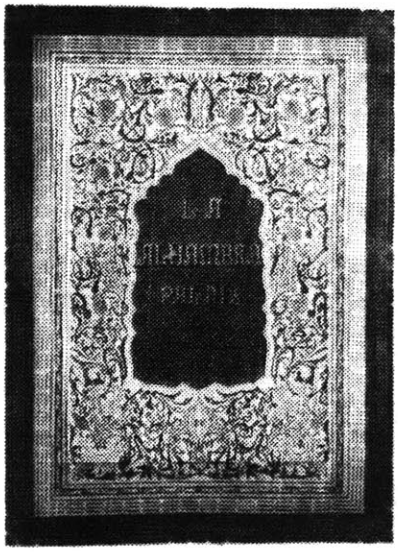


Fig. 2.11 Title page to volume I of Owen Jones and J. Goury; 'Plans, Elevations, Sections and Details of the Alhmabra', 1841

Fig. 2.12 Mshatta from the Umayyad palace, 8th century; abstract relationship between forms.

attention in the interpretive analysis of these early Orientalists. Although their text was not free of sentimental and contemplative descriptions, their work did attempt to rationally interpret the geometry and ornament of key monuments such as the Alhambra.

Among contemporary historians of Islamic art, Grabar has proposed a few principles through which the vegetal, geometric or other designs are thought to have been subordinated in the formative centuries of Islamic civilizations. One of these principles relate to the abstract relationship between forms over other forms.[44] He observes that this relationship seems to imply that the form had been constricted into a vehicle for the expression of something else than itself. The emphasis on surface rather than three dimensional form is another principle, which he believes, was crucial in the formation of Islamic Art and Architecture. He argues that the culture's energies were consciously pushed in the direction of suppressing the monument's physical properties or camouflaging its three dimensionality, as if to create an art of illusion.

Excessive use of geometry and ornamentation have also been linked to nomadic ethos. The origin of this phenomenon is claimed to come from within certain nomadic ways of geometricising designs, known through weaving. Rugs and textiles hanging vertically in Arab nomadic tents were visually a part of the culture, and were supposed to have influenced the decoration of the buildings and art work in the formative years of Islam.

The concept of *horror vacui* or fear of empty space has also been attributed by many scholars to the excessive ornamentation. Ettinghausen explains this concept by writing; "In yielding to this horror vacui, the artist would either try

to eliminate the empty background to the highest possible degree or even better, let it play a decorative role of its own and by doing so accord it a positive character."[45]

He goes on to explain the relevance of this concept in terms of a social and psychological need of Muslims. He contrasts, the inner world of the city which was dense and tightly packed with residential units, with the hostile world outside the city walls with, "deserts, sparse plains or treeless mountains, where one encountered dust, robbers, wild animals and jinns".[46] The inner world was supposed to reflect the pleasantness which was enhanced through compact and intricate designs. However, the emptiness of a facade or an art work would remind the traditional people of the hostile world outside the city, and therefore every effort was made to fill up any empty space with a uniform skin. This argument has been criticized by many, as an exotic and whimsical illustration of the mentality of traditional Islamic civilizations.

Grabar also subscribes to the concept of horror vacui. However, in his study of the Alhambra, he claims that although the main objective was to cover the whole surface but every attempt was made in this case to make each part significant. This then contradicts Ettinghausen premise which alludes to the formation of a uniform surface, without any individuality of parts.

There has been a long struggle among historians over attributing symbolic meanings to the geometry and patterns. While some believe that the patterns were a mere decoration without any representational meaning, others scholars are convinced about their representational aspect. However, they fail to give any formal syntax for their interpretation. Needless to say, that very few of these

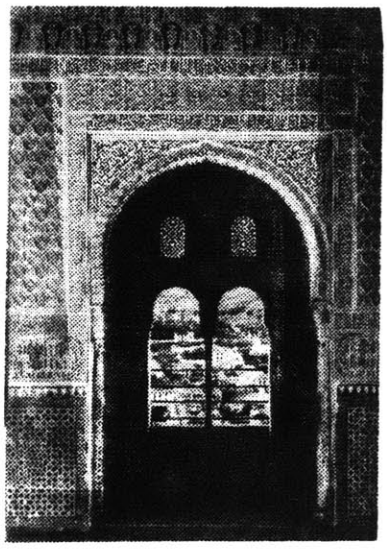


Fig. 2.13 The Hall of Ambassadors, central north alcove. The Alhmabra, 14th Century.

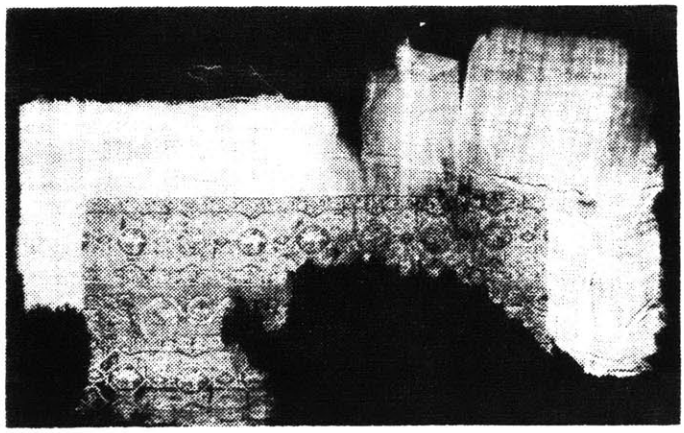


Fig. 2.14 Linen fabric with tapestry-woven tiraz inset, Egypt, eleventh century.

historians subscribe to the mystical approach, which attempts to give meaning to these forms, but without any textual evidence. Lisa Golombek with her textile metaphor has attempted to introduce some kind of symbolic meaning to them. She writes;

"It would seem that the origins of this love for the interlace may be found in the "textile mentality" that in certain ways possessed the society. The heightened importance of costume and the preference for soft furnishings made the development of textiles practically a cult in itself. The preeminence of textiles also helps to explain why it is possible, and perfectly acceptable, in Islamic art for different media to share the same decorative treatment - why it is that bookbindings, wood carving, architectural faience, and Koran pages all look like carpets."[47]

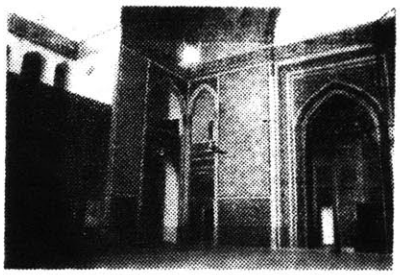


Fig. 2.15 Yazd, Masjid-1 Jami', 15th century, interior of sanctuary; "the fitted look".

She distinguishes two distinct approaches to decoration and their association to different types of costumes in Islam. The first mode pertains to that which has a 'fitted look', and frames various architectural elements, defining separate layers and elements.[48] The second type relates to the 'draped mode' which warps around the surfaces in a neutral fashion. There are no boundaries, zones and the surface moves around corners and bands, tying the en-

semble together.[49] The two modes can also be seen together in many monuments, as she describes the portal of Minare at Konya, which is a unique combination of both. "The outer frames resembles a curtain, drooping in the center, as often shown in thirteenth-century illustrations from the *Maqamat*. The inscription bands run vertically down the center like the two edges of the *abaya*, decorated with their *tiraz* bands. One could even imagine the lateral ornaments as applied braid, terminating in tassels."[50]

Apart from these cultural explanations, efforts have also been directed towards viewing the geometry and ornament as an autonomous discipline in order to categorize and group according to type of motifs, level of intricacy, geometrical formulation and materials. Faruqi distinguishes between patterns which are geometric or vegetal. He writes;

"Arabesque are floral or geometric, depending on whether they use the stalk-leaf-flower (*tawriq*) or the geometric figure (*rasm*) as artistic medium. The geometric figure can be linear (*khatt*) if it uses straight and broken lines, or trajectory (*ramy*) if its uses multicentered curved ones. It may also combine all these together and be called the (*rakhwi*) Arabesques are planar if they have two dimensions, as most decorative ones on walls, doors, ceilings, furniture, cloth and carpets, book covers and pages have. They can be also be spatial, or three dimensional, constructed with pillars and arches and the ribs of domes."[51]

The vegetal and geometric distinction is also applied in Grabar's description of early Islamic monuments. He divides them into basically three categories. The vegetal and purely geometric form the first two categories, while the third is a miscellaneous group which cannot be incorporated into any of the first two. Ettinghausen in his article

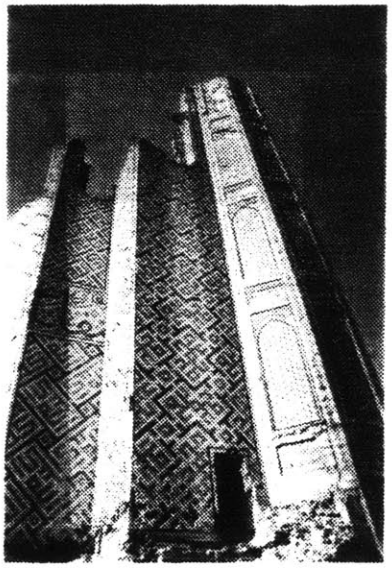


Fig. 2.16 Samarqand, masjid-i Jami of Timur. Side of iwan pylon showing juncture with octagonal minaret; "the draped mode".

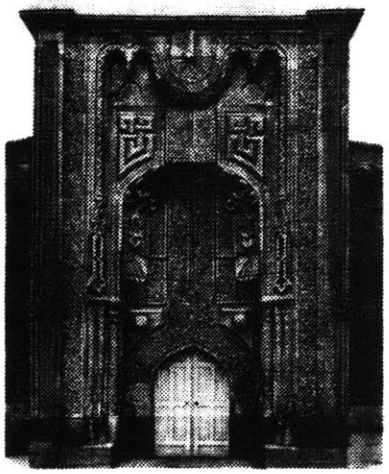


Fig. 2.17 Konya, Ince Minare, thirteenth century, portal; a combination of both styles.

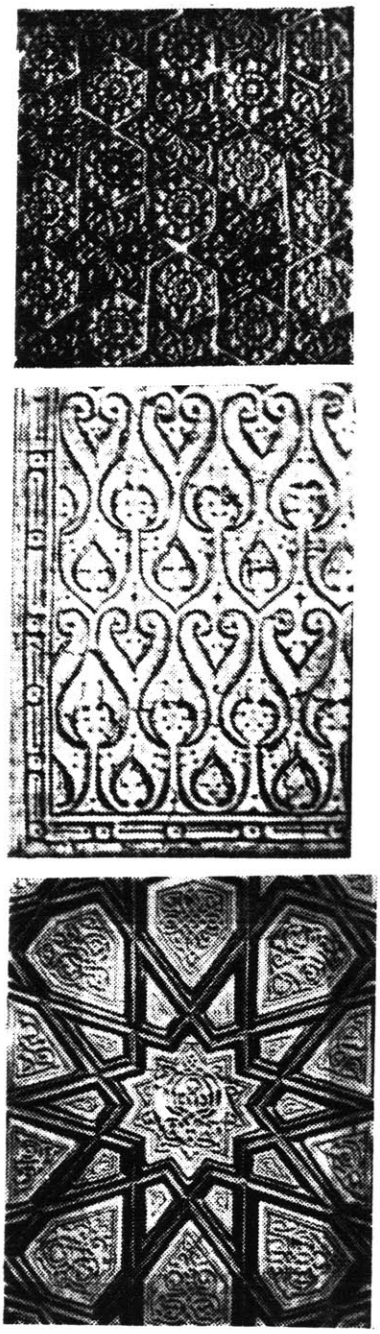


Fig 2.18 The three stylistic divisions by Ettinghausen (from top to bottom); a) 'skeletal' (wooden doors in Egypt, 14th century), b) 'sinious lines' (stucco cast, Samarra, Iraq, 9th century) and c) 'tile like fashion' (tile panel, Nishapur, Iran, 13-14th century).

'The Taming of the Horror Vacui'[52] also distinguishes between three major systems of geometry. The first scheme relates to the skeletal configuration of either geometric or curvilinear outline, almost extending rigid structure onto the field. The spaces between the motifs are filled with other patterns leaving no background and turning the negative field into positive. The second scheme is made of sinuous lines spread uniformly across leaving no difference between design and background. The thirds method relates to the a repetition of pattern which covers the field in a tile like fashion, implying almost a grid on to the field.

Some scholars have turned to written sources to search for the relationship between the geometry as a science and the aesthetics of the crafts. Much work still has to be accomplished in this area of research. The Soviet scholars and many others have attempted to analyze buildings according to proportional systems. However, methodological problems can often lead to false conclusions in these studies. Though some of these generative design principles are viewed by El-Said and Parman and many other as symbolic manifestation of the divine and cosmos and so forth, some historians view them as practical solutions to architectural and ornamental needs.

In conclusion, we can see that like the mystical approach, the art historical approach has put forward several hypothesis for the use of ornament and geometry in Islamic art and architecture. However, two distinct views become apparent in this approach. The first relates to the cultural needs of the society, while the second looks at it from rational or a positivistic perspective. The cultural explanations center primarily around nomadic ethos, textile metaphors, the supremacy of form over surface and ambiguity. While the rational approach, beginning with Owen Jones,

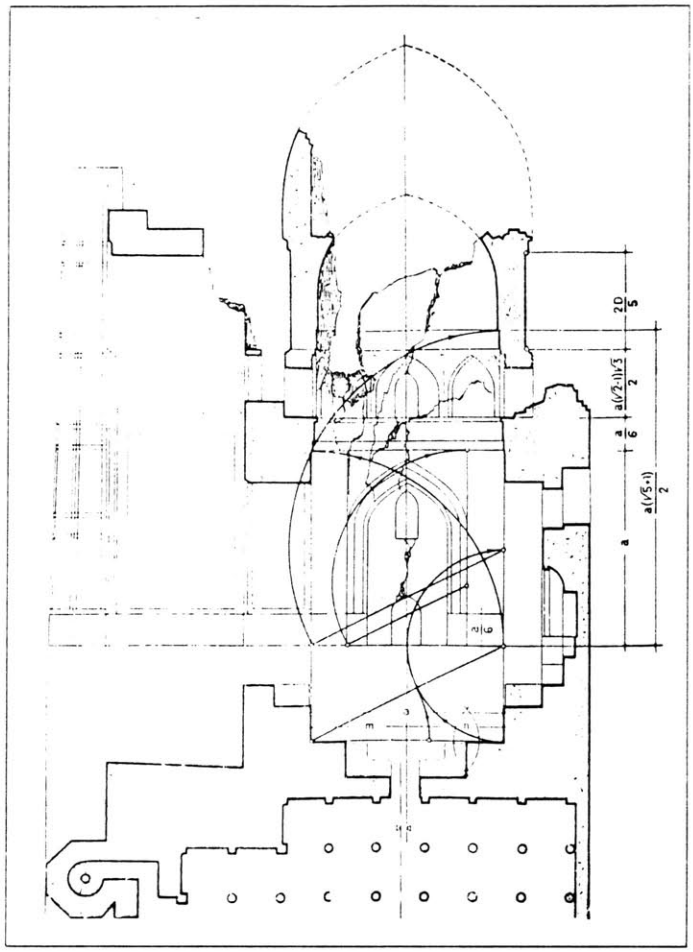


Fig. 2.19 Plan and Section of the main dome of the Masjid-i Jami of Samarqand (after Bultaov). Positivistic approach.

still has to be researched at greater depth before any conclusive hypothesis can be extended.

It is unfortunate that between the many explanations given for Islamic art and architecture, there have been no significant attempts by contemporary scholars to view these extreme positions collectively. Or are they irreconcilable positions? As Gulzar Haider, experiencing the same dilemma writes:

"Very often the positions are frozen, and lines so firmly drawn that one group can no longer face the other. Open discourse is essential, and only honest criticism can bring the polarized academics of Islamic architecture close together."[53]

Notes

[1] Christian Norberg-Schulz, "The Architecture of Unity"; in *Architecture Education in the Islamic World*, (Ahmet Evin Ed.), Proceedings of Seminar ten the series, Architectural Transformation in the Islamic World held in Granada, Spain April 22-25, 1986, Singapore: Concept Media/ The Aga Awards, 1986, p 9

[2] Clifford Geertz, "Art as Cultural System", *Local Knowledge*, NY: Basic Books Inc., 1983, p 97

[3] Ibid, p 97

[4] Oleg Grabar, "Symbols and Signs in Islamic Architecture"; in *Architecture and Community: Building in the Islamic World Today*, (Renata Holod & Darl Rastorfer Eds.), The Aga Khan Award for Architecture, Geneva: Aperture/ Islamic Publications, 1983, p 25

[5] Terry Allen, "The Arabesque, the Bevelled Style, and the Mirage of an Early Islamic Art"; in *Five Essays on Islamic Art*, USA: Solipsist Press, 1988, p 2

[6] Dogan Kuban, "The Geographical and Historical Bases of the Diversity of Muslim Architectural Styles: Summary of a Conceptual Approach"; *Islamic Architecture and Urbanism*, Selected Papers from a symposium organized by the College of Architecture and Planning, King Faisal University, Dammam: King Faisal University, 1983, p 2

[7] Ibid, p 2

[8] Richard Ettinghausen, "The study of Islamic Art"; *Islamic Art and Archeology Collected Papers*, (Myriam Rosen-Ayalon Ed.), 1984, p 1237

[9] Oleg Grabar, "Symbols and Signs in Islamic Architecture"; in *Architecture and Community: Building in the Islamic World Today*, (Renata Holod & Darl Rastorfer Eds.), The Aga Khan Award for Architecture, Geneva: Aperture/ Islamic Publications, 1983, p 26

[10] Ibid, p 27

[11] Muhsin S. Mahdi, "Islamic Philosophy and the Fine Arts"; in *Architecture and Community: Building in the Islamic World Today*, (Renata Holod & Darl Rastorfer Eds.), The Aga Khan Award for Architecture, Geneva: Aperture/ Islamic Publications, 1983, p 21

[12] Oleg Grabar, "Symbols and Signs in Islamic Architecture"; in *Architecture and Community: Building in the Islamic World Today*, (Renata Holod & Darl Rastorfer Eds.), The Aga Khan Award for Architecture, Geneva: Aperture/ Islamic Publications, 1983, p 29

[13] Aldo Rossi, *The Architecture of the City*, Cambridge: MIT Press, 1982, p 168

[14] Carl Brown, *From Medina to Metropolis: Heritage and Change in the Near Eastern City*, Princeton, NJ: Darwin Press, 1973, p 19-20

[15] Ira M. Lapidus (Ed.), *Middle Eastern City*, Berkeley: University of California Press, 1969, p 73

[16] Janet Abu-Lughod, "The Islamic City"; *International Journal of Middle East Studies* Vol 19, No. 2, May 1987, p 162
[17] Oleg Grabar, "The Iconography of Islamic Architecture"; in *Content and Context of Visual Arts in the Islamic World*, (Priscilla P. Soucek Ed.), Philadelphia: Pennsylvania State University Press, 1988, p 59
[18] Richard Ettinghausen, "Originality and Conformity in Islamic Art"; *Islamic Art and Archeology Collected Papers*, (Myriam Rosen-Ayalon Ed.), 1984, pp 89-157
[19] Oleg Grabar, "The Iconography of Islamic Architecture"; in *Content and Context of Visual Arts in the Islamic World*, (Priscilla P. Soucek Ed.), Philadelphia: Pennsylvania State University Press, 1988, p 53
[20] Ibid, p 55
[21] Clifford Geertz, *Local Knowledge*, NY: Basic Books, 1983, p 99
[22] Richard Ettinghuasen and Oleg Grabar, *The Art and Architecture of Islam: 650-1250*, (The Pelican History of Art), London: Penguin Books, 1987, p 23
[23] Oleg Grabar, *The Formation of Islamic Art*, New Haven and London: Yale University Press, 1973, p 189
[24] Prophet's Hadith, quoted by Seyyed Hossein Nasr, "The Contemporary Muslim and the Architectural Transformation of the Islamic Urban Environment"; *Towards an Architecture in the Spirit of Islam*, Proceedings of Seminar One in the series Architectural Transformations in the Islamic World held at Aiglemont, Gouvieux, France in April 1978, Philadelphia: The Aga Khan Awards, 2nd Edition, p 2
[25] Quoted by Richard Ettinghausen, "Al Ghazzali on Beauty"; *Islamic Art and Archeology Collected Papers*, (Myriam Rosen-Ayalon Ed.), 1984, p 19
[26] Ibid, p 21
[27] An article referred to by him in the book, *Tawhid: Its Implications for Thought and Life*, Kuala Lumpur: International Institute of Islamic Thought, 1982
[28] Ibid, p 240
[29] Nader Ardalan and Laleh Bakhtiar, *The Sense of Unity*, Chicago: University of Chicago Press, 1973, p 7
[30] Ibid, p 9
[31] Gulzar Haider, "Islam, Cosmology and Architecture"; *Theories and Principles of Design in the Architecture of Islamic Societies*, (Margaret Sevcenko Ed.), Aga Khan Program for Islamic Architecture, 1988, p 78
[32] Titus Burkhardt, *Art of Islam: Language and Meaning*, London: World of Islam Festival Publishing Company, 1976, p 117
[33] Nader Ardalan and Laleh Bakhtiar, *The Sense of Unity*, Chicago: University of Chicago Press, 1973, p 27
[34] Ismail al Faruqi, *Tawhid: Its Implications for Thought and Life*, Kuala Lumpur: International Institute of Islamic Thought, 1982, p 248
[35] Seyyed Nasr Hossein, "Foreword"; *The Sense of Unity*,

(Nader Ardalan and Laleh Bakhtiar), Chicago: University of Chicago Press, 1973, p xiii

[36] A.A. Sultan, Notes on the Divine Proportions in Islamic Architecture, *Process Architecture* No. 15, May 1980, p 162

[37] Nader Ardalan and Laleh Bakhtiar, *The Sense of Unity*, Chicago: University of Chicago Press, 1973, p 47

[38] Ibid 50

[39] Oleg Grabar, "The Iconography of Islamic Architecture"; in *Content and Context of Visual Arts in the Islamic World*, (Priscilla P. Soucek Ed.), Philadelphia: Pennsylvania State University Press, 1988, p 53

[40] Terry Allen, "The Arabesque, the Bevelled Style, and the Mirage of an Early Islamic Art"; in *Five Essays on Islamic Art*, USA: Solipsist Press, 1988 p 2

[41] Ismail al Faruqi, *Tawhid: Its Implications for Though and Life*, Kuala Lumpur: International Institute of Islamic Thought, 1982, p 256

[42] Oleg Grabar, "Reflections on the study of Islamic Art"; *Muqarnas* Vol 1, 1983, p 5

[43] A book by the title of *Plans, Elevations, Sections and Details of the Alhambra* was completed in 1845

[44] Oleg Grabar, Formation of Islamic Art, New Haven and London: Yale University Press, 1973, p 200

[45] Richard Ettinghausen, "The Taming of Horror Vacui in Islamic Art"; in *Islamic Art and Archeology: Collected Papers*, (Myriam Rosen-Ayalon Ed), Berlin: Gebr Mann Verlag, 1984, p 1306

[46] Ibid, p 1308

[47] Lisa Golombek. "The Draped Universe of Islam"; in *Content and Context of Visual Arts in the Islamic World*, (Priscilla P. Soucek Ed.), Philadelphia: Pennsylvania State University Press, 1988, p 59

[48] Lisa Golombek, "The Function of Decoration in Islamic Architecture"; *Theories and Principles of Design in the Architecture of Islamic Societies*, (Margaret Sevcenko Ed.), Aga Khan Program for Islamic Architecture, 1988, p 40

[49] Ibid 41

[50] Ibid 43

[51] Ismail al- R. Faruqi, *Tawhid: Its Implications for Though and Life*, Kuala Lumpur: International Institute of Islamic Thought, 1982, pp 257-58

[52] Richard Ettinghausen, "The Taming of the Horror Vacui"; Islamic Art and Archeology Collected Papers, (Myriam Rosen-Ayalon Ed.), 1984, p 1305-1318

[53] Gulzar Haider, "Islam, Cosmology and Architecture"; *Theories and Principles of Design in the Architecture of Islamic Societies*, (Margaret Sevcenko Ed.), Aga Khan Program for Islamic Architecture, 1988, p 78

3. Theoretical Discourse: Heritage and Tradition

New shelters and settlements are built continuously to aid members of our society to perform the daily activities of their lives. Apart from felicitating the functional, structural, climatic and economic needs of these new interventions, in today's modern age the designers are expected to, "put forward an order that is not yet known, which cannot be drawn from a defunct belief in pre-established harmony, but that nevertheless must be gleaned from perception, and not postulated a priori, as a solipsistic construct."[1] Further, the architect "must discover order that transcends historical styles, while keeping the primordial meanings of architecture in the continuim of human history. He must search for such an order implementing the power of abstraction demanded today by the generation of architectural ideas, but without creating an architecture that speaks only about meaningless technological processes; in other words, with out losing the world as lived as a primary horizon of meaning."[2]

This difficult task of reading into the deep structures of the environment to enable future inventions, placed on the shoulders of the architect not only involves a strong commitment but also involves the dangers of personal interpretations and generalizations. Sociologists have long struggled to pinpoint the variations in meanings and interpretations that terms and phenomena such as ideology, collective consciousness, religion and culture embody. For instance, the various definitions of the term 'ideology' put forward by diverse thinkers and as described in the the

Fontana Dictionary of Modern Thought include, 1) "the 'science of ideas' which would reveal to men the source of their baises and prejudices', 2) 'to characterize IDEAS, ideals, beliefs, passions, values, WELTANSCHUUNGEN, religions, political philosophies, moral justifications;" and 3) " as one kind of SYMBOL system."[3] Any attempt to understand the co-relation between such terms and architecture is complicated, and to untangle their unquantifiable implications is a formidable task. The architect is at the mercy of the body of knowledge which is available and his/ her personal instincts and abilities to decipher this body of information and further to translate it into built form. Personal attitudes and preferences among others actively inform and guide this process of dialectic and transformation.

The implications of heritage and tradition, within the realm of architecture have been a source of debate for the past few decades. No matter where the various architects or architectural theoreticians stand on this issue, sociologists and anthropologists maintain their position that there are certain attributes which stubbornly persist in one form or another even as a society undergoes fundamental changes. These attributes are then vital elements for the survival of culture. These do not discount the aspects which may not be directly observable and yet continue to influence the society. The recurring behavior patterns form another living proof and are a direct outcome of the particular norms professed by the society. Therefore, each tradition guides its followers with ideas, norms, meanings and above all values which are refined, modified, and sometimes nullified or added to with the passing of each generation.

Human need for continuity

Studying the past is like venturing into unfamiliar territory, yet the present in which we are submerged in today is part of a historical process. The need for continuity and for maintaining a state of balance between the impetus for change and the desire for stability has been established and reestablished as fact over the course of history, as a physic and physical need of humankind, by philosophers, social thinkers, anthropologists, and environmental designers alike. Each theory put forward by people of different disciplines and interests and at different periods of history differs from others in its attitudes towards the concepts of the 'past'.

In his theory of knowledge, Sir Karl Popper explains that tradition is valued because of our need for a certain predictability in social life. In this sense tradition provides us with order and regularity in our environment; it provides us with a means of communication and a set of 'conventional usages and ideas', through which we operate. Progress is made by standing firm on the foundations of predecessors; by building on certain traditions while rejecting others. The growth of knowledge takes place through criticism and modification, rejection and destruction of earlier myths without excluding the possibility of the formation of new myths or doctrines. Popper's theory of knowledge is based on the observation of general sociological expressions rather than architecture. Stanford Anderson, in his effort to apply it to the arts and the built environment concluded; "the most treacherous impact of tradition is upon those who seek to escape their tradition, rather than to acknowledge, and reshape it".[4]

The terms 'Tradition' and 'History', though sometimes used synonymously can also carry different meanings, as

pointed by John Hancock, a historian, who tries to establish some distinction between them. He categorizes 'Tradition' as cultural forms which are handed down through generations and which are then the vital elements which are the cause for the survival of the vernacular. It is the "unwritten building code of imagery, materials and technology and the shared values of the builders and their users".[5] Meanings are stable in an environment where change and growth are gradual and incremental. 'History' on the other hand is pluralistic in nature and 'Knowledge exists in greater variety but in less depth."[6] Choice is open ended, which renders the forms and their meanings volatile and subject to various interpretations. Hancock further argues though these terms may seem at the two extremes of the spectrum, there is a territorial link between them which becomes the ground for exploration, as architects emulate the past on a philosophical, formal, abstract or analytical level.

Throughout the epistemological theories outlined above, tradition and heritage seem to be viewed solely from a rational and intellectual perspective rather than as a phenomena which is a result of dynamic social and material processes. Human nature, though sometimes irrational, does not always intellectually question the forces of change, but in fact works with the flow and tries to adapt and respond to it through the generation of life. Similarly, knowledge changes, grows, falsifies and continually updates itself, but as designers we respond more to its obvious physical and literal manifestations. To clarify this point, it is appropriate to quote Serge Santelli, a French-Tunisian architect and a winner of the Aga Khan Award for Architecture in 1983 for the design of the Résidence Andalous in Tunisia. "..I believe that a building that does not have a courtyard is not really a Muslim building."[7] Though the courtyard house has been the most persistent type in

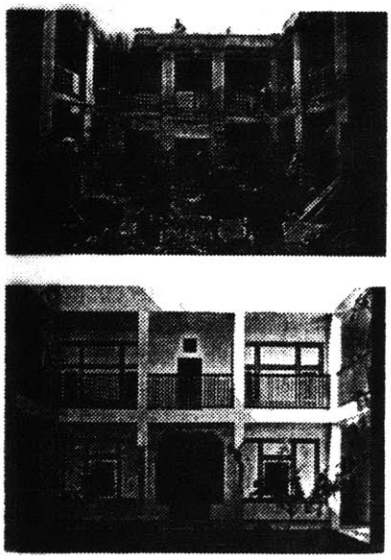


Fig. 3.1 Résidence Andalous designed by Serge Santelli, inspired by the spaces and scale of the old funduqs. The only form of Muslim building?

Muslim regions across the world, there are other Islamic regions where other types have been dominant for centuries. In modern times the detached house surrounded by a landscape and perimeter wall has become dominant universally. Does living only in a introverted house type make one a good Muslim or is it just the very act of submission and prayer that determines one's fate? The idea of dwelling and shelter is a universal need of mankind but as architects we have to identify the cues which give a place its 'meaningful' existence' not through generalization as in the above example but through proper understanding of the esoteric aspect of a time and place. The central argument of the above rhetoric is that it is futile to deny the relevance of past but that does not advocate and validate adopting traditionalism or historicism. 'History' and 'Tradition' both have to be viewed critically and their esoteric essence has to be understood, mastered and reused rather in their physical and literal manifestations.

The modern movement in architecture did attempt to break with the past as a figurative and philosophical reference, at least in its formative years, and as a result there has been a chorus of abuse in the form of extensive literature against it. The ills and the fragmented state of the modern city was blamed solely, and sometimes naively, on this rupture with the past. I certainly have no intention of repeating those arguments. Though one essential point against this excessive literature as questioned by Tafuri is, "..whether it is legitimate to speak of a Modern Movement as a monolithic corpus of ideas, poetics and linguistic traditions."[8] On the other hand, some still argue that history and tradition are such integral part of human society that modernism's "ruptures were posted against historicism, not history - in order to transform the past in the present, not to foreclose it."[9] Stanford Anderson tries

Fig. 3.2 Sketch of the Acropolis in Athens, by Le Corbusier during his trip in 1911.

to prove this point also through his observation of Le Corbusier's trip to the Parthenon. He went there "..neither to reinforce for himself older conventions of architecture nor to re-record what had already been emphasized about its canonical buildings" but to be "..involved in such matters as movement and time in comprehension of the site, and the play of light on materials and form."[10] New layers of meaning were added by his interpretations. Therefore, the past is not only valuable for a set of iconographic and mental images as projected by the advocates of Post Modernism but also for a vital source for "abstraction of "pure forms".[11]

Two central arguments can be distilled form the above discourse on the relevance of the Past. First is the use of history to directly influence social behavior, a deterministic belief in the human response to the physical environment. The second argument is based on the search for the strengths and positive aspects of the existing environment which can help determine the future - the use of precedent and of continually searching for new meanings of past endeavors, trying to reap the benefits of the wealth that we have inherited.

Working with the Past

In his book "Design Thinking", Peter Rowe has described two positions which, among many, can be "interpretive frameworks employed in seeking substantiation and grounding in meaning for architectural production."[12] The first realm of inquiry is seen by him, as the relationship between nature and built form. It is seen as validating architecture to a set of events which lie outside its realm. The second realm of inquiry is seen as in relationship to itself and the locus of inquiry center's around the world of objects which are already a domain of man's existence and enterprise. Three overlapping strategies can be seen at work in this referential perspective; on language, bricolage and the use of type. The two realms cannot be seen as completely distinct positions, and according to him, they provide "a vantage point from which some measure of legitimation may be secured for a position's proposals and subsequent production."[13]

Within the confines of this study, architects can be seen to conform more with the second realm and therefore, I will focus the following discussion of architecture from a referential perspective. This perspective is not only central for the designers of these immigrant institutions, but is also a common focus for many architects today, as for them architecture's values now no longer exist in "its redemptive social power, its transformations of productive processes, but rather in its communicative power as a cultural object."[14] Moreover, I believe that from within this perspective, the notion type is key, which can be narrowly defined as a shared mental object or ideas.

The analogy of architecture with verbal language has been a subject of debate among many architectural theoreticians. Verbal language is normally regarded as a structure

which can and is used to describe something outside itself, often with no particular agenda or purpose. The problem with the semiotic aspect of architecture is because it is based in linguistics it tends to "oscillate between the study of language and the study of aesthetic."[15] Moreover, I see the idea of bricolage and the use of type which have a interpretive dimension, as enhancing this semantic aspect of architecture. The concept of bricolage, among contemporary theoreticians, has been professed very strongly by Rowe and Koetter in their book 'Collage City'. They write; "Indeed if we are willing to recognize the methods of science and 'bricolage' as concomitant propensities, if we are willing to recognize that they are-both of them-modes of address to problems, if we are wiling (it may be hard) to concede equality between the 'civilized' mind (with its presumption of logical seriality) and the 'savage' mind (with its analogical leaps), then in reestablishing 'bricolage' alongside science, it might be ever possible to suppose that the way for truly useful future dialectic could be prepared."[16]

After the failures of positivistic planning principles, they are arguing for the architect's role as a bricoleur. The central idea is that past inspirations and fragments can be taken as elements and transformed into the urban vocabulary of today. This transformation is not recommended for merely contextual fitness but as a design strategy for continuity. The difficulty in viewing architecture as a bricolage, in my mind, is the legitimacy and coherence in combination. One on hand, it can be used as a graveyard for the past, reminding us of 'how things were', on the other hand it can lead to misconstructed meanings and symbolism.

Fig. 3.3 The 'Primitive Hut' from Essai sur l'architecture, 1753 by Marc Antoine. The search for the beginnings.

The third strategy, the notion of architectural type, has

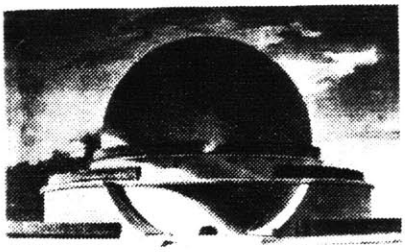


Fig. 3.4 Project for a cenotaph for Issac Newton, 1785, by Boullée.

emerged as a dominant idea in architectural theory for the past three decades. As Rafael Moneo puts it lucidly; "To raise the question of typology in architecture is to raise a question of the nature of the architectural work itself. To answer it means, for each generation, a redefinition of the essence of architecture and an explanation of all its attendant problems. This in turn requires the establishment of a theory, whose first question must be, what kind object is a work of architecture? This question ultimately has to return to the concept of type."[17]

The idea of type has been alive among philosophical traditions for a long time, from Plato's concepts to its present implications. However, the first active articulation of the idea in architecture came about in eighteenth century, with theoreticians such as Laugier, who wanted to deny the permanence of eclectic styles such as Rococo and searched for new formal principles of architecture. The famous drawing of the primitive hut is a good illustration of their grounding of meaning of architecture into science on one hand, and myth on the other. This idea of type emerging from the rational philosophy continued with romantic classicism of Ledoux and Boullee. Quatremere de Quincy explored the idea of type as "pre-existent germ", however he clearly did not refer to it is as an ideal for mechanistic reproduction. The idea of type to him was metaphoric and a linkage to the past.

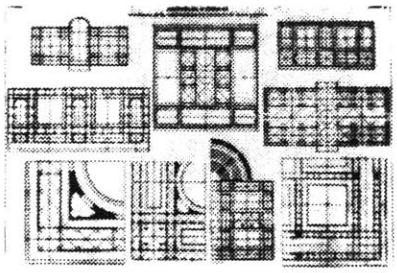


Fig. 3.5 Possible combinations and permutations of plan forms from Durand's Précis, 1802-09.

The word type comes from " a Greek word 'typos', a word which expresses by general acceptances (and thus is applicable to many nuances or varieties of the same idea) what one means by model, matrix, imprint, mold, figure in relief or in bas-relief....".[18]

Type was thus distinguished from model, which was

conceived as an ideal, perfect and impossible to copy, almost utopic, nevertheless something to be strived for. The idealism of Durand, however turned this concept into geometric constitutions and as result a total disregard for the external forces. He saw the architect as generator of complex forms following rules of combination. He wanted to fulfill the practical necessity for providing new functional needs in building, with old methods of space formation, nevertheless at a different scales and rhythm.

The invention of new materials and technology gave another dimension to the idea of type - the idea of prototype. This transformation was obviously a reflection of the mass production techniques and the limitless repeatability of singular elements. What was thought to be a blessing in the formative years of modern architecture turned out to be a menace, as repetition created soulless urban textures. Curiously enough, the revitalization of the notion of type among architectural theoreticians in the past few decades came with a rationalist conception of architecture - a reappropriation of the ideas propagated by Quatremere de Quincy and others. Gulio Argan's article 'On typology of architecture', which was published in 1963 was a self-proclaimed reference to the earlier rationalist tendencies. It was viewed by him as "inventive aspect being merely that of dealing with the demands of the actual historical situation by criticizing and overcoming past solution deposited and synthesized schematically in the 'type'."[19]

Successively, the notion of type became a well discussed topic among theoreticians and was viewed as an operational and an underlying principle. As Habraken proposes, it becomes the shared images of social bodies.
"The concept of type, I suggest, is much more that a mean of classification and more than a way to indicate the

historic origins of form. It is a complex form that lives within a social body: a knowledge, familiar to a group of people by common experience. Types come and go with societies and their cultures. They are, to a large extent, those cultures."[20]

Among much written literature on the concept, the ideas proposed by the Rossi and Colquhoun, Oeschlin and Vidler have attempted to challenge the modernist notion of functionalism and design process. Rossi views architecture as an autonomous discipline. The permanence of types and their integrity within the city are the living proof of its autonomy. Colquhuon on the other hand, in his famous essay "Typology and Design Method" attempts to guide the direction of typology towards structural linguistics and issues of iconography. To him ideology is an inherent component of architecture which is expressed through the notion of type. He writes;

".... a plastic system of representation such as architecture has to presuppose the existence of a given system of representation. In neither case can the problem of formal representation be reduced to some preexistent essence outside the formal system itself, of which the form is

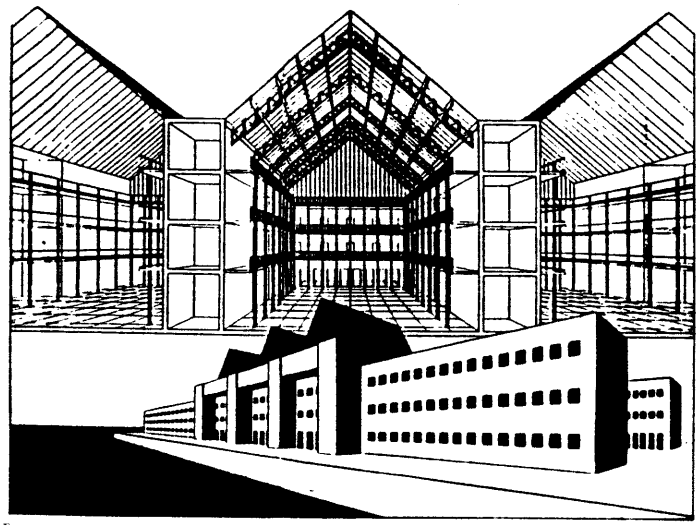


Fig 3.6 Project for the Regional Hall in Trieste, by Aldo Rossi, 1974. Architecture seen as an autonomous discipline and in dialogue with its past types.

merely a reflection. In both cases it is necessary to postulate a conventional system embodied in typological problem-solutions complexes."[21]

While Rossi stresses on the autonomy of architecture, Colquhoun stresses its signifying potential. In conclusion, the notion of type today, can be seen on one hand from a rationalist perspective and on the other as a emotionally charged vector with potent possibilities. Coherent architectural meaning can only exist within an established context. The notion of memory is linked to the redefinition of typology. However there has to be a search for the true essence of type, otherwise there is a possibility that the superficiality of our relationship with history will continue unresolved.

Notes

[1] Alberto Pérez Gomez, "Abstraction in Modern Architecture"; *VIA* 9, (Re-Presentation), Journal of the Graduate School of Fine Arts, University of Pennsylvania, 1988, p 74
[2] Ibid, p 74
[3] Fontana Dictionary of Modern Thought
[4] Stanford Anderson, "Architecture and Tradition that Isn't "Trad, Dad,"; *The History, Theory and Criticism of Architecture*, (Marcus Whiffen Ed.), Cambridge: MIT Press, 1965, p 81
[5] John E. Hancock, "Between History and Tradition: Notes Toward a Theory of Precedent"; *Harvard Architectural Review* Vol 5, (Precedent and Invention), Publication by students of the GSD, Harvard University, 1985, p 65
[6] Ibid, p 65
[7] Serge Santelli, "On creativity, Imagination and the Design Process"; *Space for Freedom: The search for architectural excellence in Muslim societies*, (Ismail Serageldin Ed.), The Aga Khan Award for Architecture, London: Butterworth Architecture, 1989, p 231
[8] Manferdo Tafuri, *Theories and History of Architecture*, London: Granada, 1980, p 2
[9] Hal Foster, "(Post) Modern Polemics"; *Perspecta* 21, (The Yale Architectural Journal), 1984, p 148
[10] Stanford Anderson, "Critical Conventionalism"; *As-*

semblage 1, October 1986, p 21

[11] Ibid, p 21

[12] Peter Rowe, *Design Thinking*, Cambridge: MIT Press, 1987, p 153

[13] Ibid, p 153

[14] Mary Mcleod, "Architecture and Politics in the Reagan Era: From Postmodernism to Deconstructivism", *Assemblage* 8, Feb 1989, p 27

[15] Alan Colquhoun, "History and the Architectural Sign"; *Essays in Architectural Criticism*, (Oppositions Books), Cambridge: MIT Press, 1985, p 129

[16] Colin Rowe & Fred Koetter, *Collage City*, Cambridge: MIT Press, p 105

[17] Rafael Moneo, "On Typology"; *Oppositions* 13, 1978, p 23

[18] Quatremere De Quincy, "Type"; Introduction by Anthony Vidler, *Oppositions* 8, Spring 1977, p 148

[19] Giulio Carlo Argan. "On typology of architecture"; (Translated by Joseph Rykwert), *Architectural Design* Vol 33, Dec 1963, p 565

[20] John Habraken, *The Appearance of the Form*, Cambridge: Awater Press, 1985 p 25

[21] Alan Colquhoun, "Typology and Design Method"; *Essays in Architectural Criticism*, Cambridge: MIT Press, 1985, p 49

4. Case Studies: The two Friday Mosques

The London Central Mosque by Frederick Gibberd and Partners

In Britain, the Muslim community's desire to build a permanent mosque, curiously enough, goes back to the earlier half of this century when the colonial powers of Britain occupied a significant portion of the Islamic world. By that time, the preoccupation with the portrayal of the exotic nature of distant eastern cultures by Orientalist artists, had been replaced with a new interest in the emerging building technologies and new materials. However, the legacy of exoticism in Islam did not die with the death of Orientalism, and in fact lingered on in the memory of the people through surviving structures, paintings, literature and so forth. After the British had finished building their Palladian type civic structures, neo-Gothic churches and cathedrals, and luxurious bungalows in Muslim centers of their colonial strongholds, and after their artists at home had gone to great lengths to explore the provocative nature of Islamic forms, the Muslim community made ready to establish a legacy of their own; a mosque in the Victorian city of London, on a prestigious site with layers of great Western architectural traditions as its context. Almost fourteen years have elapsed since the concrete minaret and gold color sheathed dome of the mosque rose among the tall trees of the Regent's Park area. Today, my analysis of this mosque will attempt to show how the structure is merely an extension of a main stream International style of design, cautiously dressed in an 'Islamic' wall paper to evoke an associative quality with the glorious building

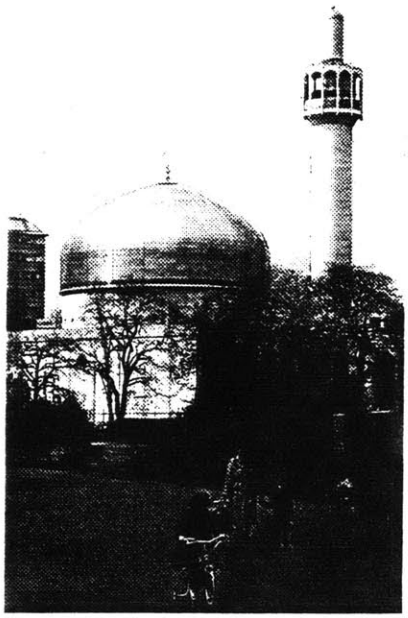


Fig. 4.1 View of the London Central Mosque from the Outer Circle Road.

traditions of Muslims in the world.

On the orders of King George VI, a site adjacent to Hanover Gate, in Regent's Park was placed at the disposal of the Muslim community in 1944, by the Crown Land Commissioners. However, this gesture of goodwill was not free of mutual co-operation and in exchange a "permission to build an Angelican Church in Cairo"[1] was requested by the church order through the authorities. An existing mansion on the site was also a part of the grant, which was converted to an Islamic center. At the time, it adequately fulfilled the religious and social functions of the community. But soon after World War II, Muslims immigrants, seeking a prosperous economic life had began pouring into the country. A striking paradox, is that what years of colonial suppression did not significantly emancipate, was easily triggered off after the British had sailed for their shores, by the harsh economic realities in the Muslim lands. A movement to build a new structure on the site picked momentum in 1959, when a design was submitted to the Royal Fine Art Commission. Anticipating an increasing number of Muslims settling in the city, the size of the building proposed by the community was overwhelmingly large. The authorities outrightly rejected the proposal on the grounds that "the bulk and height were out of scale with the environment."[2] Sir Frederick Gibberd who himself won the competition for the project at a later date, was curiously enough a member of that board too.

The battles with the residences of Regent's Park over the clash of "architectural values"[3] began with the design proposal and continued through its entire history of development. Finally, after much debate between the authorities and the community, it was decided in 1969 that an open International competition would be held with more of a

restricted and focused brief. The community also formalized its leadership and formulated the Council for Management of the Mosque, which had twenty four board of trustees. Consequently, which also appointed three assessors of the competition, Professor Sir Robert Matthew, M.A. Ahed, an architect in Pakistan and L. Blanco Soler, a practitioner in Spain. The brief this time was changed considerably with additions of phrases such as; the building should be "the center point and focus of Muslim religious observances in London"[4] and "not be of scale with the Nash Terraces."[5] A significant importance was placed on the image of the building and was summarized in the brief as; " ....the Muslim community of London to be inspired by the visual affect of the mosque as being reflective of traditional mosques in which they had worshipped in their own countries."[6] A mosque accommodating fifteen hundred people, ablution facilities, library and reading rooms were some of general requirements of the brief. A public hall with a capacity of at least of a thousand people was also required and it was also suggested that it be located under the prayer hall. Accommodations for the administrator, the Imám and the staff were also requested within the brief.

Fifty two designs from seventeen countries were submitted to the committee, out of which forty one were International entries - with a majority participation from architects in Muslim countries. The solutions ranged in styles form "East End barbershop through Hindu to New Brutalism."[7] The proposal submitted by Frederick Gibberd and Partners was awarded the first prize and it was hailed by the committee for responding appropriately to the scale of the surrounding texture, while incorporating the functions of the mosque. However, some objections were raised over the the dome's shape which they felt was not prominent

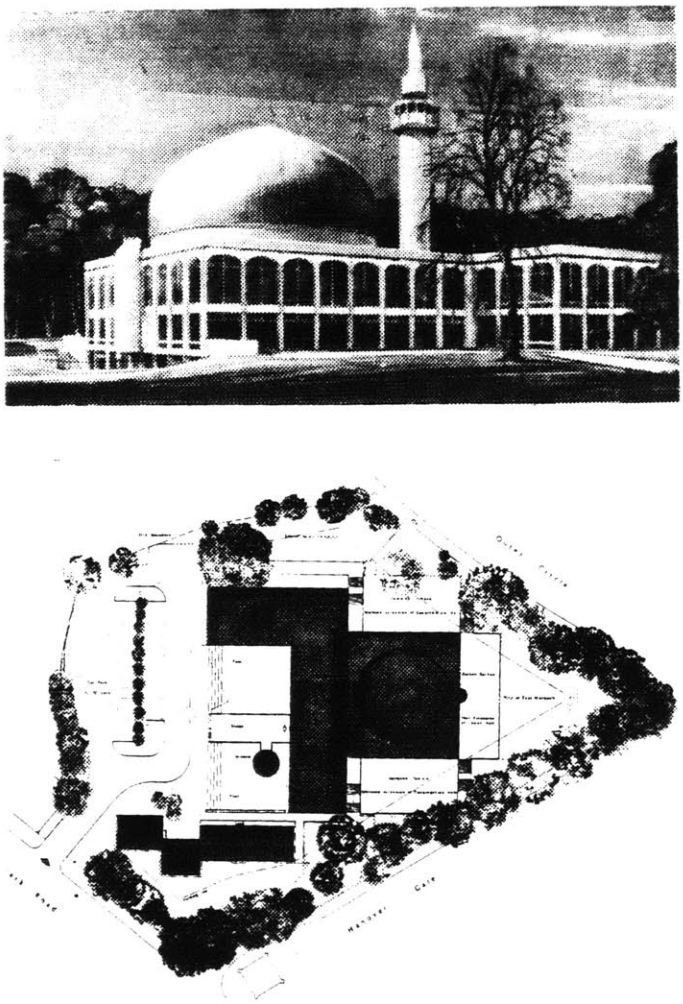


Fig. 4.2 Competition Entry by Frederick Gibberd, 1969. Site Plan and rendering of the building.

enough in the building. In addition, it was also felt that the semicircular mihrab niche, should not protrude from the rear facade and the minaret should not be an isolated element in the plaza but should rise from within the mass of the building. The solution was essentially a central prayer hall mass with a dome, flanked by two wings and a central plaza with a free standing minaret rising from a reflecting pool and accessible by a small bridge form the plaza. Clearly a symbol, which had lost its primary function of the call to prayer and was now being used for proclaiming to the outside world of the presence of Islam. The four centered type Persian arch, in precast panel form

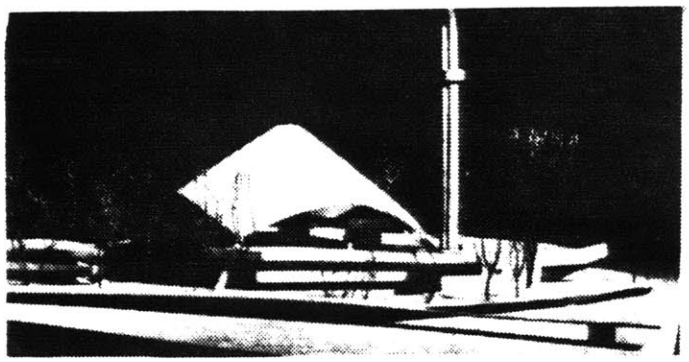


Fig. 4.3 Second Prize winner by Maruyali and Aksut of Istanbul. View of the model.

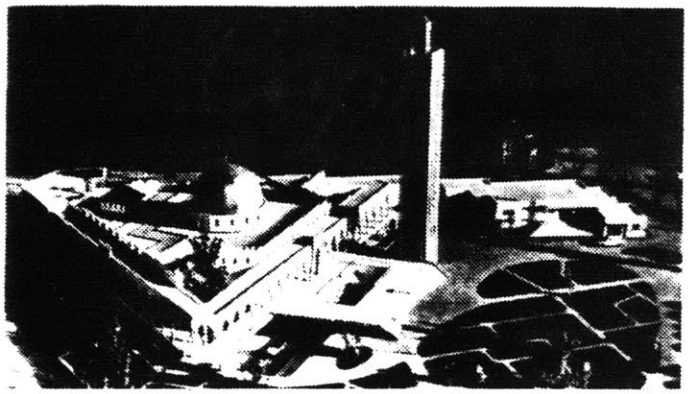


Fig. 4.4 Joint Third Prize winner by Toan Chafai and Azebi of Rabat. View of the model.

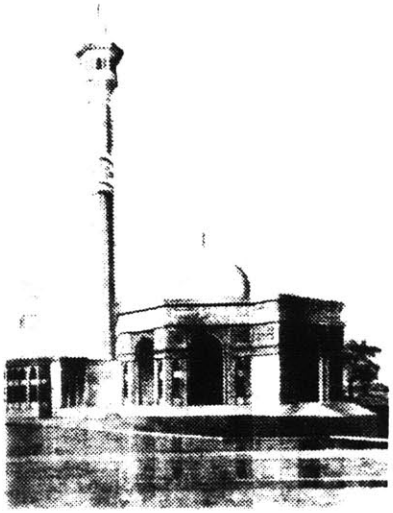


Fig. 4.5 Joint Third Prize winner by the Arab Bureau for Designs and Technical Consultations in Cairo. Rendering of the Mosque.

was used consistently throughout the design but with an horizontal band, unlike the final design of the building. The horizontality of the mass was a key idea in the whole design, accentuated by a bulbus form of the dome and the verticality of the minaret.

The second place was given to the entry submitted by Marulyali and Aksut of Istanbul. It was speculated by architectural critics, that the Jury was impressed with their modern idiom, however it was felt that "they used many of those themes which are already the international currency in architecture, the resulting building is an exciting conference center, but not the religious monument the promoter were expecting."[8] The third place was shared between the firms of Arab Bureau for Designs and Technical Consulta-

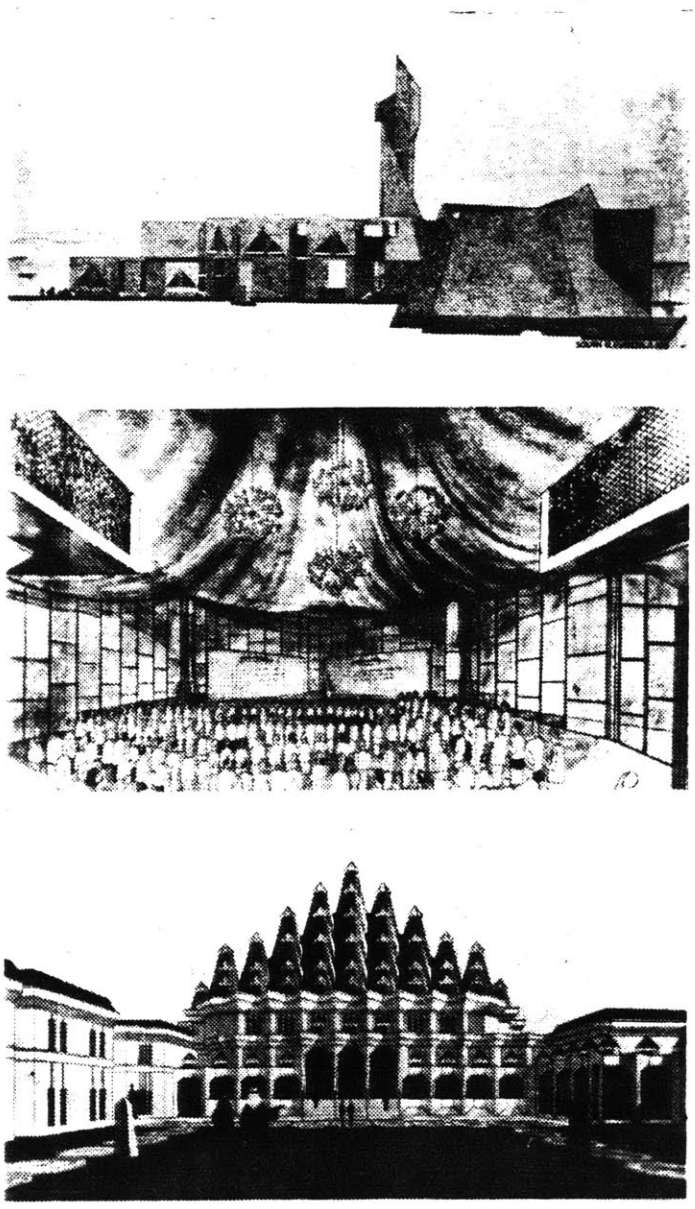


Fig. 4.6 Unpremiated entries of the competition. (from top to bottom); a) Scheme by Sameer Issa; b) Interior of the prayer hall by Hijjas Bin Kasturi; c) Scheme by Crosby/ Fletcher/ Frobes

tions in Cairo, and Toan, Chifai & Azebi of Rabat. Both approached the project with an attitude which implied a return to the classical traditions of Islamic Architecture, but not without their preoccupations with indiscriminately borrowing from various traditions. Local observers eagerly awaiting the results of the competition were generally critical of all the entries, as one critics observed, "that the entries from Islamic countries are no more successful in

reinterpreting the mosque tradition than the handful for Western Europe."[9]

The competition drawings by Gibberd were quite suggestive of the attitude which he had taken towards the project, from the start. The brief required a building which reminded people of mosques in their homeland and he made every attempt to do so in the project. Nevertheless, he could not avoid his own interest in modern architecture, with its clean cut lines, simple open plan interiors, the use of precast concrete with glass in-fill panels and so forth. Moreover, he also stressed the need for a building which would be well constructed and could withstand its use by hundreds of people five times a day.

"Just what Nash would have liked?"[10], "East meets West in Regent's Park"[11] and "Islam Comes West"[12] were some of the titles of the articles published in popular architectural journals, during the competition and execution phases of the project, indicating that it had received mixed reviews among critics. The embracing of the building in the context of London by some, especially after the building was finished in 1977, cannot be divorced from the fact that a major revision in thinking was going on at that time among architects, especially who were designing in Islamic countries. Modernism had left deep scars in the city fabric and propagandists of International style were critically evaluating their stance. European architects working for oil rich states in the Gulf after the end of colonialism, with the due blessings of their patrons, had generally designed buildings with "vulgar versions of Western architectural dress".[13] Projects in the Islamic world which were replete with "international modern design with its standard clichés - the glass-slab hotels with balconies and kidney-shaped pool, the air conditioned lobby with tinted plate-glass

windows, the whitewashed concrete frames, etc"[14] and were slowly coming under criticism and reevaluation. Some critics obviously thought the immediate alternative for that past insensitivity, was scooping out recognizable and obvious elements from tradition and attaching it to contemporary buildings. While European architects working in Islamic contexts had failed to give Muslims the due representation of tradition in their new buildings, Gibberd had skillfully managed to attach it to the mosque for immigrant Muslims, in an alien context. That triumph had to be hailed and acknowledged by the critics. As Phil Winsdor soon after the opening of the mosque, and overwhelmed by its functional aspect, wrote;

"It is this careful provision of facilities which has impressed Moslem visitors, causing surprise when they learned it was the work of a Westerner. They seem to have no doubt that the Mosque will be generally well received, and that it acclamation form the building's users must be proof of its success. Other western architects with eyes on the Arab States would do well to study it."[15]

However there was an outcry by some local people and critics, such as Ronald Lewcock, who felt strongly about the failure of the scheme in its interpretation of the past. He wrote;

"Here a literal rendition of Islamic features is executed in a cardboardish style, structural elements are used to provide non-structural symbolism, arbitrarily selected patterns and forms from a variety of styles and cultures are mixed indiscriminately, and a building erected by the richest religious community in the world, in terms of immediate buying power, is likely to prove skimped and inadequate."[16]

Sir Frederick was overwhelmed by the controversial re-

views his design was receiving. His cathedral in Liverpool had already received mixed reviews on the dialectical relationship between the exteriors and interiors. While some critics were asking, "How does he do it?"[17] others were impressed with his functional scheme. He responded to this dilemma by defensively claiming, "Everybody likes it, except other architects."[18]

While the architectural team had their share of stirring controversial debates on their scheme, the management committee of the community had also their fair share of problems. There was almost a five year gap between the end of the competition and the beginning of construction in 1974. Now that the Muslim community had fought their battles with the municipality, local residents and the general bais in the society against immigrants, internal strife took over between different groups within the leadership structure. The council for Management of Mosque, which acted as the client's for the project, was comprised primarily of ambassadors from various Islamic countries. Each ambassador had his own opinion on how a mosque should work, obviously baised by the traditions of their country. Changes to the program in the competition brief, coupled with an embarrassing discovery of the incorrect orientation to Mecca, delayed the detailed design phase of the building.

The majority of the funding for the project came from a fund-raising tour undertaken by the ambassadors of Saudi Arabia, Kuwait, Libya and Tunisia to the oil rich countries in the Gulf. Even developing countries, such as Pakistan and Egypt, were approached; however these countries contributed more in the form of decorations, carpets and so forth. Wherever the representatives went, the model of the building was taken also, as a symbol of the triumph of

Muslims living in London. Some sources say donations were also collected form foreign visiting Muslims and the local residents of the city. The project cost was estimated at four million pounds.[19] Obviously, published sources do not disclose the details of the internal political structure and how each committee member influenced the final design decisions of the architect. However, the political implications of a managing committee comprising of ambassadors from several different states cannot be underestimated, especially when funding for the project was not uniformly divided among all the Muslim countries involved in the project.

The published sources also do not disclose how much input a common immigrant Muslim might have had in the design process, through questions asked during public presentations and so forth. Nevertheless, after the project was built, the opinion among believers were made public in every possible way, especially in journals across the Islamic world. The word on the proclamation of triumph of the Muslim community in London had to be spread in each and every corner of the Islamic world. Curiously enough, when the scaffolding on the building was slowly being dismantled and the eight tubular steel lattice frames were forming the contour of the dome, the dwellers of London were receiving another lesson on Islamic civilizations also, through the 'Festival of Islam'. During the spring and summer of 1976 country-wide efforts were being made, particularly in London by the organizers of the event, to present the totality of the Islamic culture and civilization. The unique collaboration between scholars, governments and institutions of the Islamic world had resulted in this event, with the goal of removing the several misconceptions in the mind of the Westerners about Islam and its followers. The London Mosque was a good way of

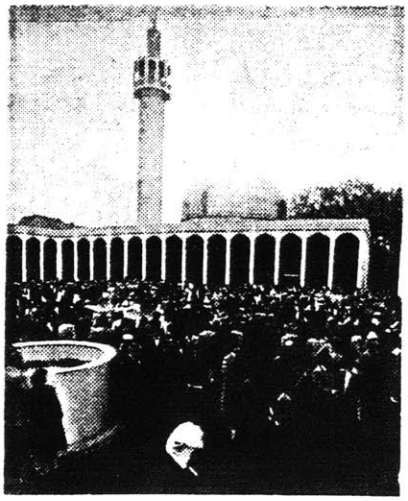


Fig. 4.7 The community gathering for the 'Id al-Adha' celeberations at the mosque.

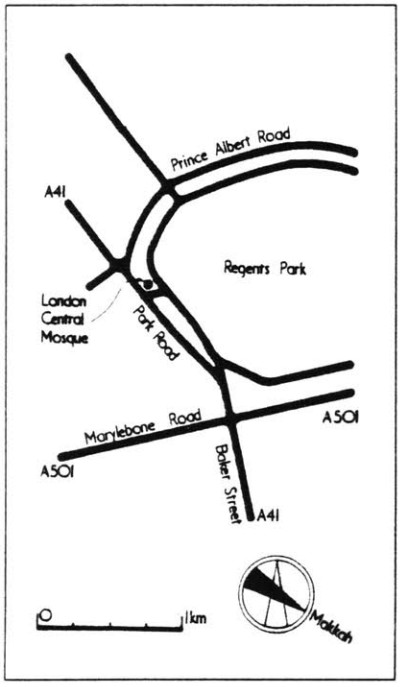


Fig. 4.8 Locational Plan

illustrating how Muslims had lived through the modern age and yet managed to continue their traditions, especially in their built form!

Indeed, even today the London Central Mosque stands as a architectural symbol for Muslims in the West. I have no doubt of its merit as an Institution which binds the community in sharing the unique experience of being a Muslim. On the *'Id al-Adha'* and *'Id al-Fitr'* prayers and many such festive occasions it accommodates a great number of Muslims, joining in prayer and prostrating in the direction of Mecca, the house of God. Leaving aside their national, regional, ethnic and sect-related differences and standing in parallel rows with a singular motivation of following the path laid down by God and his Prophet. Under the roof of this institution all men are equal, a rich man can stand next to a poor, a black next to a white, an Arab next to a Sub-Continental, an employer next to an employee and an educated next to a illiterate. Nevertheless, my criticism of this building comes from an architectural perspective, which not only stems from image-related problems, which have been iterated earlier, but also functional aspects. I will attempt to illustrate these issues through an analysis of the building.

The Site

The two most significant issues for the site of the mosque were; responding to the picturesque scene of the Regent's Park and protecting any intrusion on the architectural legacy of Nash's terraces surrounding it. The building is located on the western green belt of the park wedged between the Park Road on one side and the Outer Circle Road on the other. The Hanover Terrace built by John Nash between 1811 and 1825 is towards the eastern part of

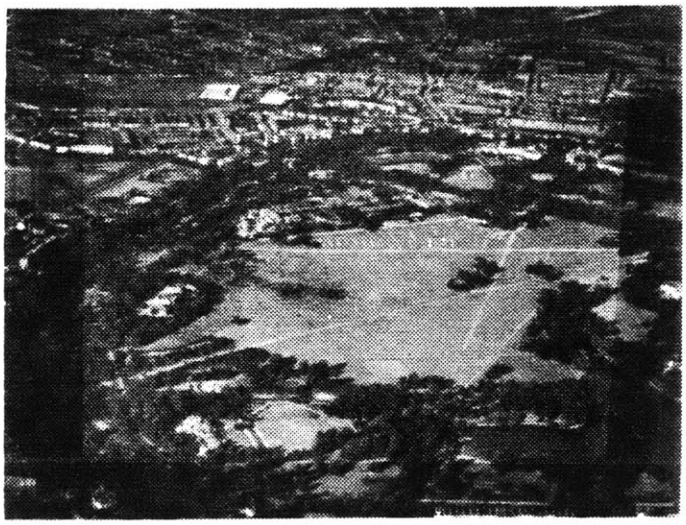


Fig. 4.9 View of the Regent's Park, looking North.

the site. The Abbey Lodge is towards the north westerly direction of the site, while the Hanover Lodge abuts the Park road in the south eastern side of the site. The Hanover Gate is an entrance marker to the Outer Circle Road and the park in general. The residential texture of the area cannot be exactly defined as dense, nevertheless its pavilion type buildings are diffused between the natural landscape.

Pevsner suggests that the intriguing idea behind these neoclassical town houses by Nash, was the combination of the Picturesque of the eighteenth century with the Garden City ideas of the twentieth century.[20] He writes;
"For these vast terraces face a landscape park, and a number of elegant villas are placed right in the park - the fulfillment of what had been shadowed in the juxtaposition of houses and lawn in the Royal Crescent at Bath."[21]

However, that idea has not been consistently visioned by the architects making interventions along the edge of the site and as it is apparent from the site plan the mosque, Gibberd also makes no attempt to recreate that relationship also.

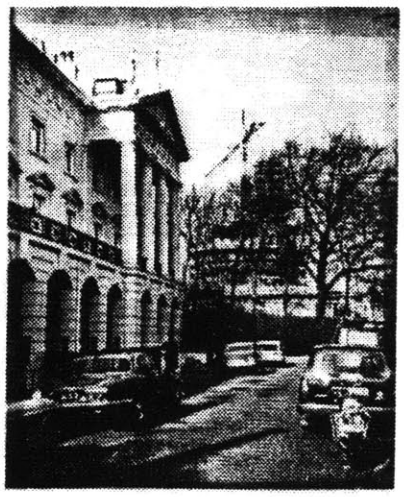


Fig. 4.10 View of the Mosque under construction from Hanover Terrace.

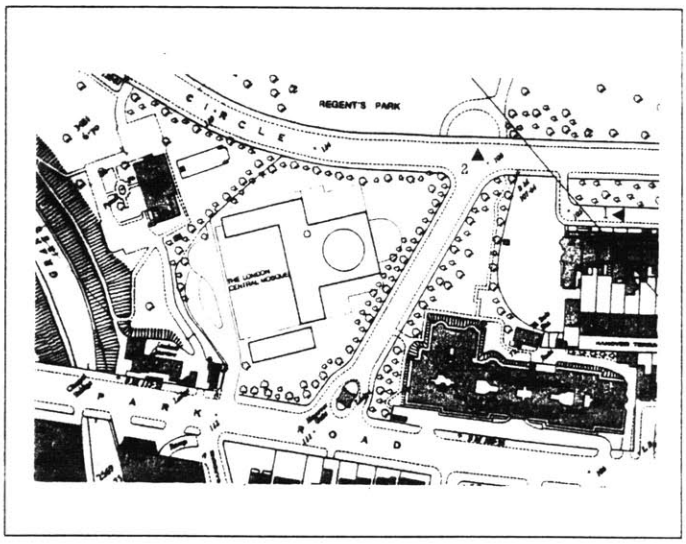


Fig. 4.11 Site Plan

The Crown Commissioners had requested that every possible measure should be taken by the designers to maintain the tree belt surrounding the site. Apart from the landscape and ecological concerns for this imposition, it obviously meant that the building will remain hidden from the precious architectural treasure of London, the Hanover Terrace in the West. The horizontal mass of the mosque was twenty five feet lower than the Terraces anyway, and the chances of imposing on it were quite minimal. However, if some trees were to be cut for the service entrance on the northern side of the site, off the Outer Circle Road, it would provide an opportunity for an evening stroller in the garden for a pleasant surprise, a "picturesque" view of the mosque. But this time, its Oriental form is not an unauthentic version, such as the one emulated by Nash's Royal Pavilion at Brighton but has been authenticated by the blessings of its Muslims Patrons and executed for them by Sir Frederick Gibberd.

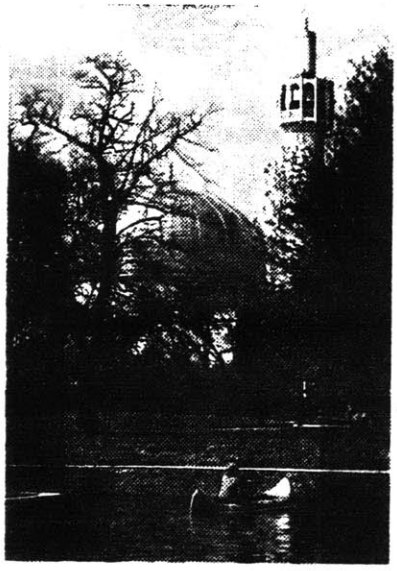
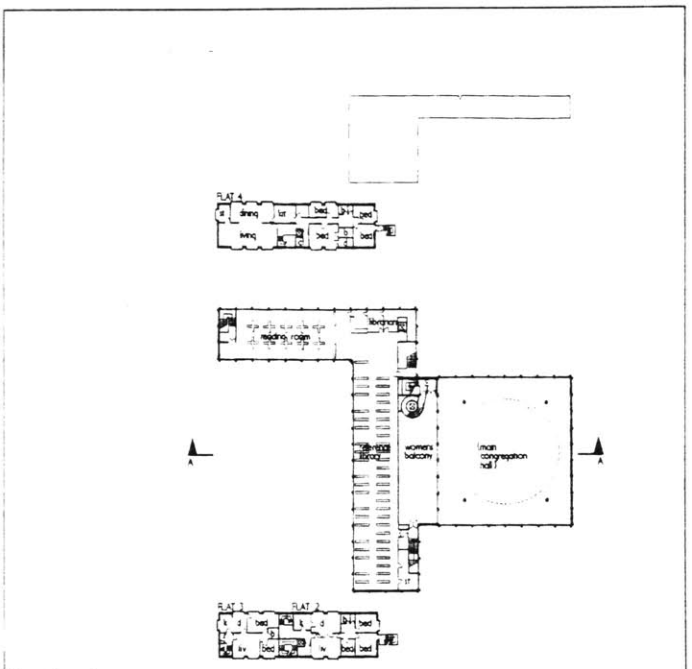


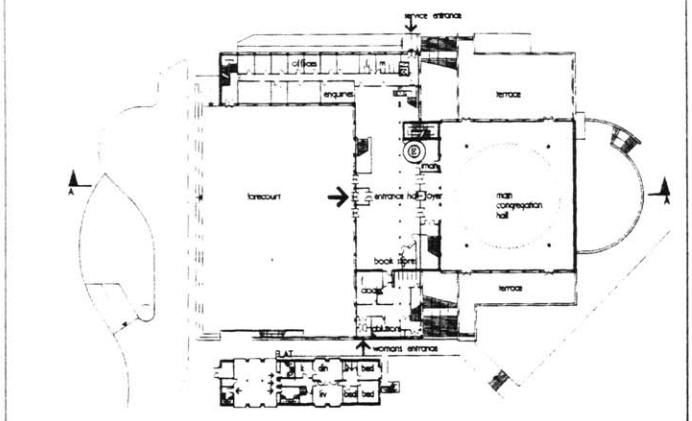
Fig 4.12 A 'picturesque' view of the building from Regent's Park!

The program and spatial sequence

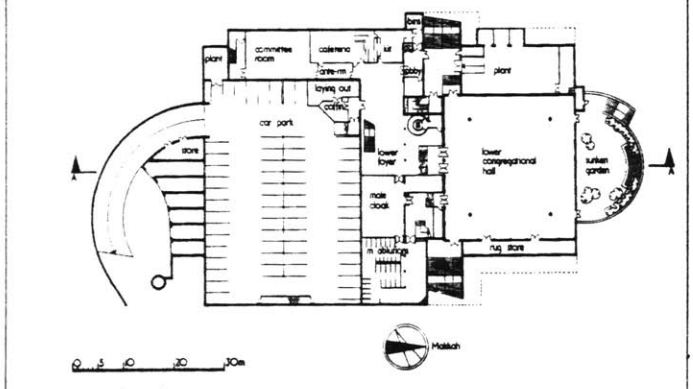
The program, after its subsequent change from the compe-



First floor plan.



Ground floor plan.



Lower ground floor plan.

Fig. 4.13 Floor Plans

tition brief, could now functionally be divided up into three zones. The mosque with its main prayer hall, women's prayer area and lower congregation hall, the Islamic cultural center with its library and administration, and the residential component with essentially flats for the staff members. Gibberd observing that Islam is not only a religion but also a way of life decided " that it [functions] should be combined together, as one composition".[22]

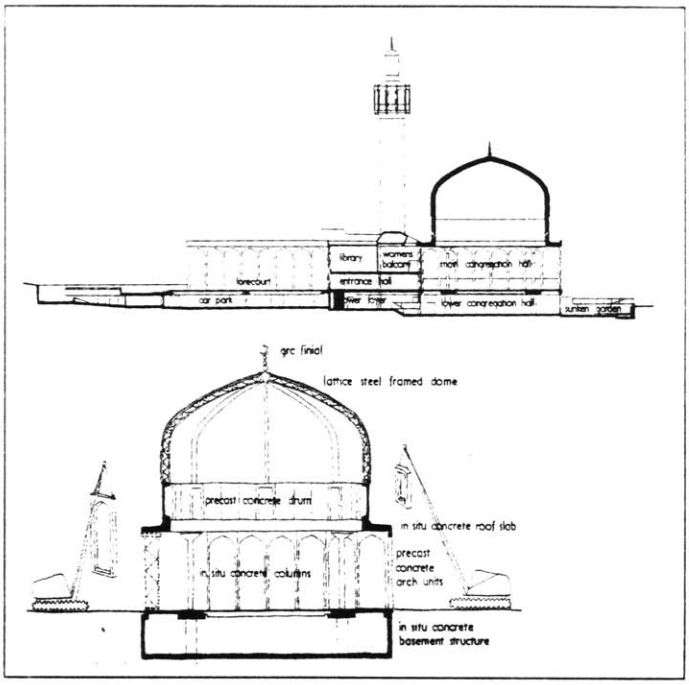


Fig. 4.14 Section and Assembly of sturctural components.

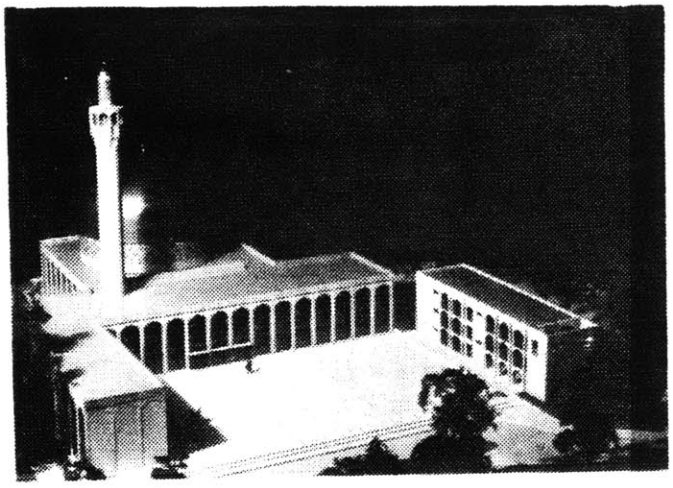


Fig. 4.15 Final Scheme; View of the model.

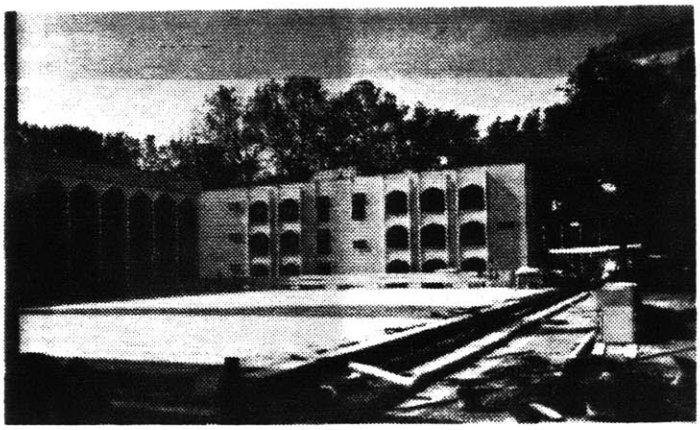


Fig. 4.16 View of the plaza, with the residential block in the background.

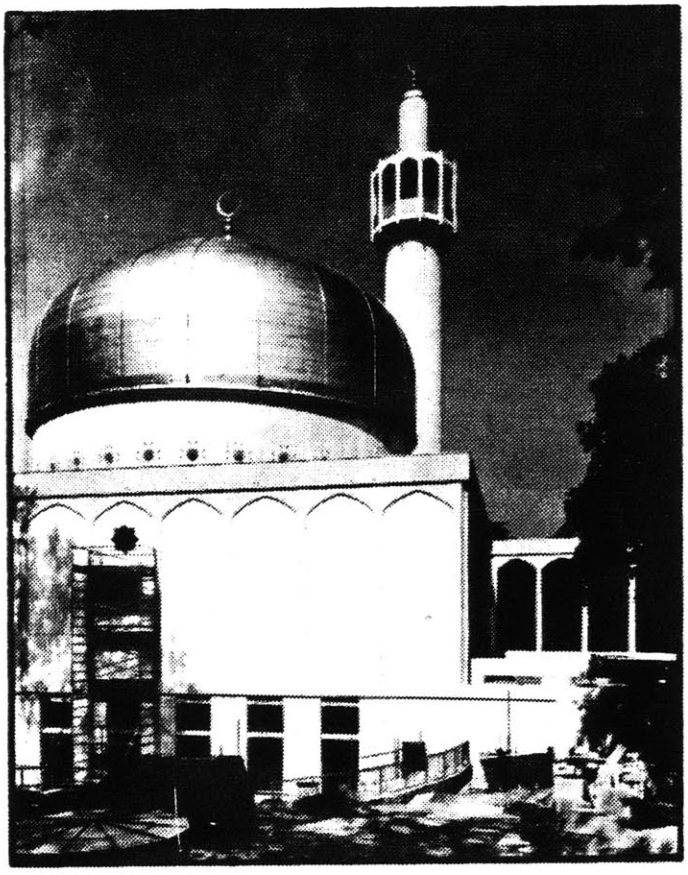


Fig. 4.17 Exterior view of the Qibla Wall

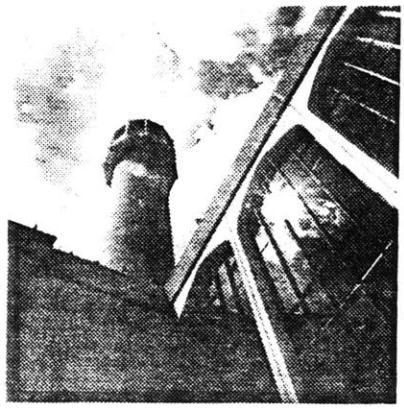


Fig. 4.18 View of the minaret and the precast concrete panels.

The cultural functions of the center were housed in a L-shaped wing attached to the prayer hall volume, which fulfills the religious function. Both are adorned with thin precast concrete arches which were in-filled with glazing panels in most parts of the exterior wall. The residential component of the center is very close to the main building, yet a physically detached form with a facade which has more wall space than glass for privacy. It repeats the same Persian arch motif but with more of a horizontal emphasis in the individual openings. The ground floor units in the building are lower than the level of the plaza and have to accessed by a flight of stairs. A parapet wall further separates the public nature of the plaza form the flats.

Most people access the complex, either on foot or in a motor vehicle, from the Park Road, however there is a pedestrian walkway from the Hanover Gate side, leading to the women's entrance, entrance to the lower ground floor and the flats for the staff. A believer on foot visually confronts the plaza, immediately on entry to the site. A motorist, on the other hand has to drive on to the ramp leading to an underground car park, with a capacity of sixty cars. The motorist can then access the building from the lower ground floor, and enter the ground floor through a flight of stairs connecting the lower foyer to the main entrance hall.

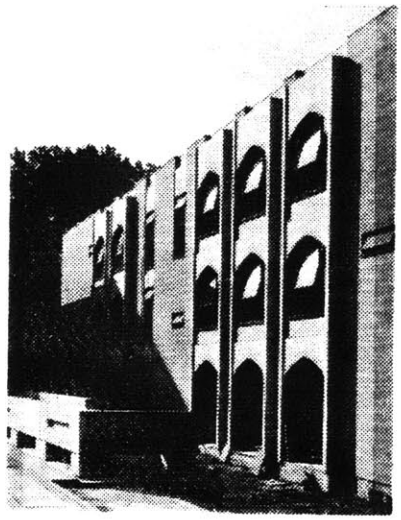


Fig 4.19 View of the resdential block.

The plaza which is raised about a foot from the walkway, has some-what of a resemblance to the traditional hypostyle mosque courtyards, with a long span of open space and a prayer hall in the background, with a dome adorning the central area and a minaret emerging from the mass. The crescent, which has become a symbol of Islam, adorning the tops of these archetypal forms. However, here a believer instead of penetrating a forest of columns causing a dance of light and shade and implying layered sequence

of spaces, he has to approach the cold feel of tinted glazing panels and into a "western-style foyer".[23] The women have to enter on the side and arrive into a space, through a set of double doors, leading to the ablution and cloak room area. They then can access the top floor balcony on the Western side of the main prayer area through an uncelebrated staircase tucked away in a corner. This area is reserved only for members of the female sex and is visually segregated from the main prayer area by a set of pierced wooden screens.

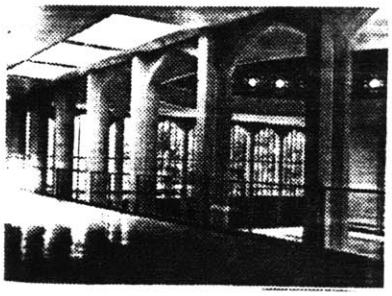


Fig. 4.20 Women's balcony overlooking the main prayer hall. (The wooden screens, visually separating the two sexes were not yet installed)

In the competitions proposal, Gibberd had placed some portion of this balcony over the main prayer area. However, for some members of the committee, this implied the superiority of women over men. Therefore, this solution was condemned on theological reasons stating that "the presence of the women inspires a different kind of devotion from that which is requisite in a place dedicated to worship of God's (Lane)."[24] Subsequently, Gibberd was asked to move the balcony back, so that its front end lines up with the back end of the prayer hall and in turn no women prays on top of men. This adjustment in the plan, resulted in a lengthening of the wings and a long and linear

Fig. 4.21 Western style entrance foyer to the Prayer hall.

reference room in the library.

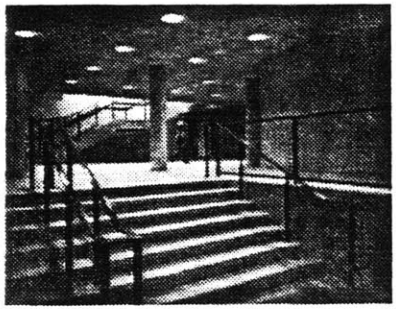


Fig. 4.22 Staircase from the lower prayer hall to the entrance lobby.

Men entering the building from the plaza, pass through a series of double doors and into the entrance hall and visually confront a straight row of columns, signalling the entry to the prayer hall. The half cylinder of the minaret penetrating from the orthogonal geometry of the lobby, signifies its presence within the other wise horizontal feeling in the lobby. Apart form the prayer hall, the entrance hall way is the most important space in the scheme, as it leads to the several components of the building. However, its long and linear volume with staircases leading to the various levels of the building, has a close resemblance with that of a corporate office environment, with straight lines, and simplicity of texture and materials. Men cannot directly proceed to the prayer area as the ablution, which is a necessary ritual before prayer has been accommodated in the floor below. They can access the lower ground floor through a flight of stairs to arrive at the foyer, which then leads to a series of interconnected spaces with cloak room, washrooms and ablution facilities. After performing the ablutions they may wish to proceed back to the main prayer hall or pray in the lower congregation hall.

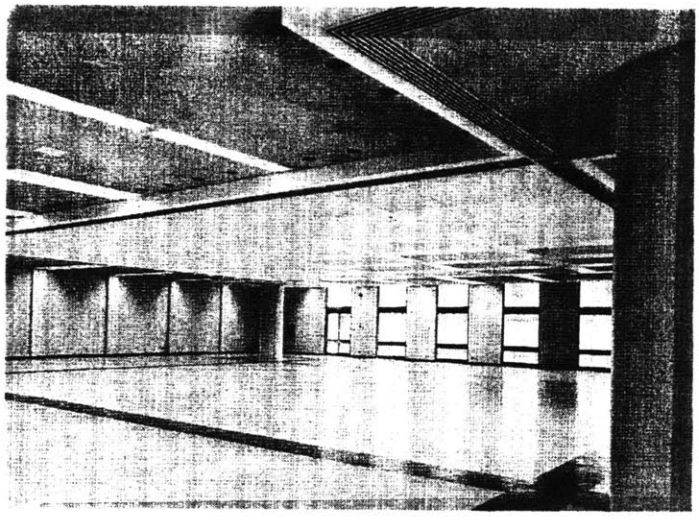


Fig. 4.23 The public assembly hall in the basement.

The main congregation hall is a double height, cubical volume with four mushroom columns supporting the dome. The qibla wall, which is usually the culmination of the visual experience in a mosque, is no more than a bare concrete wall repeating the same Persian arch motif. The mihráb and minbar were imported from an Islamic countries and Gibberd was not responsible for designing these later additions. The shape of the dome repeats the profile of the four centered arch and sits on a drum, with small round oculi, glazed with color glass, punched in for light. Each opening in the rim of the drum is a group of nine oculi, with the central one larger than the surrounds. The glazed

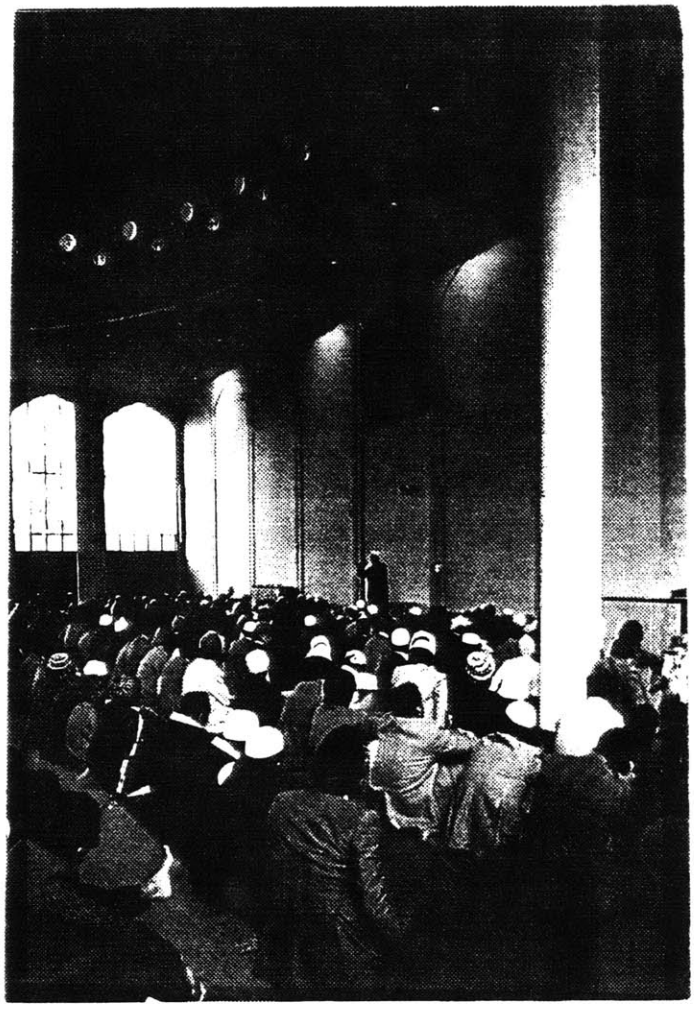


Fig. 4.24 View of the Prayer Hall

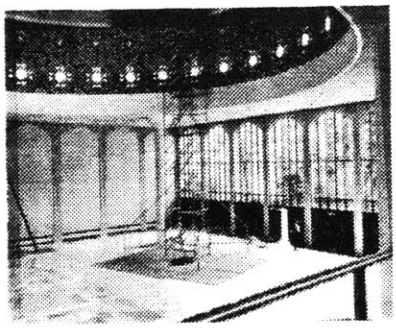


Fig. 4.25 View of the Prayer Hall under construction.

northern and southern walls are a major source of light in the prayer hall, although at times almost a glaring light enters the space due to the higher ratio of the voids in comparison to the solid. The prevailing paucity of sunlight in the city of London, probably determined this design decision. Terraces are located on both sides of the prayer hall, which can be covered with marquees and used for accommodating huge crowds which gather for special prayers.

The shorter arm of the L-shaped wing, on the ground floor is occupied by the administrative offices. The access to

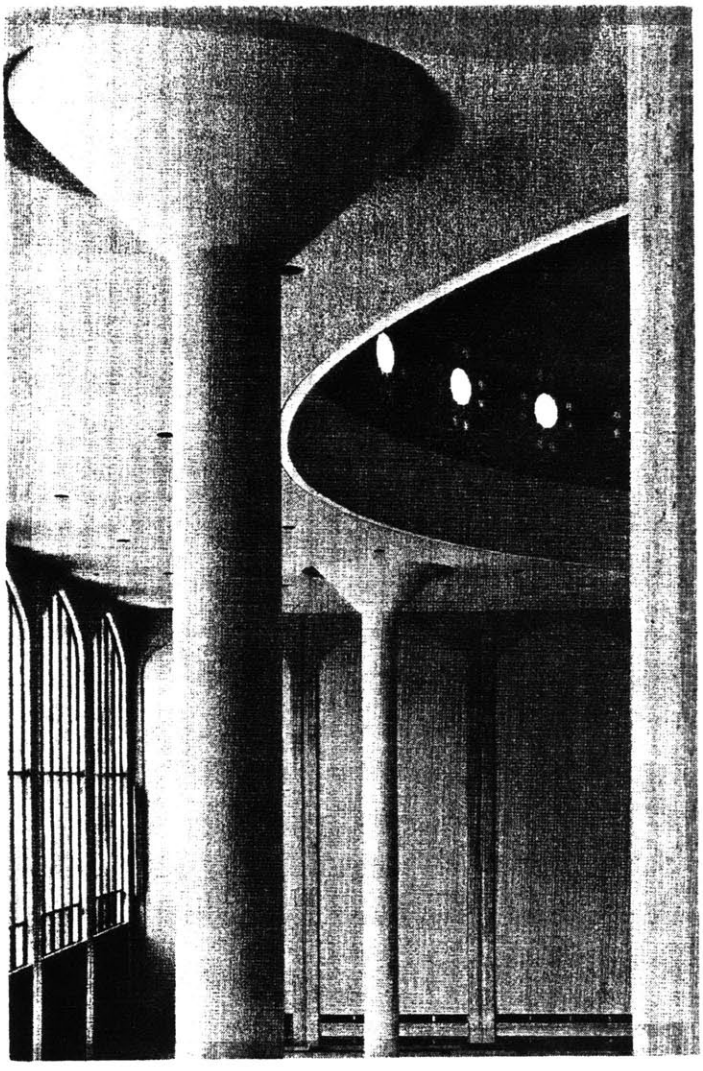


Fig. 4.26 View of the Mushroom columns.

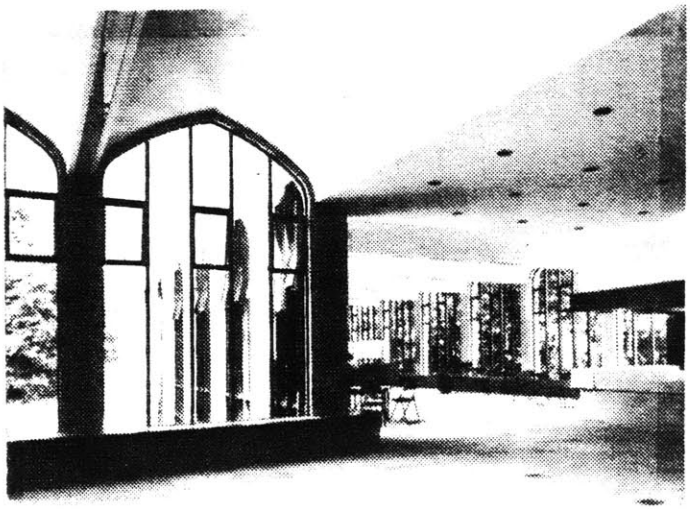


Fig. 4.27 View of the library on the top floor, overlooking the plaza.

these offices and to the library on the upper floor is off the entrance hall. The library is primarily divided into two sections. The shorter arm of the L-shape occupies the reading wing, while the stacks and the reference section occupy the longer arm. The administration of the library and circulation from below are located at the intersection of these two wings. The vaulted ceiling, in the library which is planned according to the rhythm of the exterior arches is visible from outside and is unique feature in the building.

The congregation hall in the lower ground floor, the only air-conditioned space in the building, is merely a glorified version of a multipurpose hall,.with simple straight lines in the various tectonic elements, such as dry wall bulkheads, air-conditioning grills and so forth, in the ceiling and walls. A rug store is located on one side of this hall. The hall opens on to a sunken garden which is half circle in plan. The minaret is also accessed from this floor by an elevator which is situated in a central shaft or through a spiral stair case which wraps around this shaft. Other subsidiary spaces such as cafeteria, kitchen, committee room, mechanical, storage for the coffins and so forth are also located

Fig. 4.28 The foot of a corner facade unit.

Fig. 4.29 Typical precast units with a Persian arch motif.

on this floor.

The residential wing of the complex is essentially designed around a central corridor, off which individual units are located. The facade of this wing has obviously been designed to be consistent with the exterior "Islamic" expression of the mosque, however the plans do not reflect any such unique characteristics and are simply pragmatic flats found in many parts of London, or for that a matter in any part of the world today.

Structure and Materials

The planning of the whole buildings works on a module of 3.15 meters (approx 10 feet and 4 inches) and the position of the structural members, partitions, and circulation shafts are all in conformity with this grid. The facades is composed of precast identical framed units. Each unit consists of two columns joined by the arch at the top and tied at the bottom to a sill which is mounted on top of the in situ basement floor. The light color of the ground Derbyshire Spar aggregate, almost with a creamish hue, was used to suppress the mass, so as not to obtrude upon the surrounding architecture. The panels with no glazing were filled in with white mosaic. The precast parapet, finished in mosaic, is mounted on top of these panels and acts as a beam against lateral forces. The minaret rising from the mass, consists of two concentric shafts. It was poured in place simultaneously in sliding shuttering and executed in the same materials and texture. The juxtaposition of the light color concrete in contrast with the anodized framed glazing, is a consistent vocabulary throughout the building.

The dome is a unique feature of the building, with a profile which attempts to emulate the Persian model, however

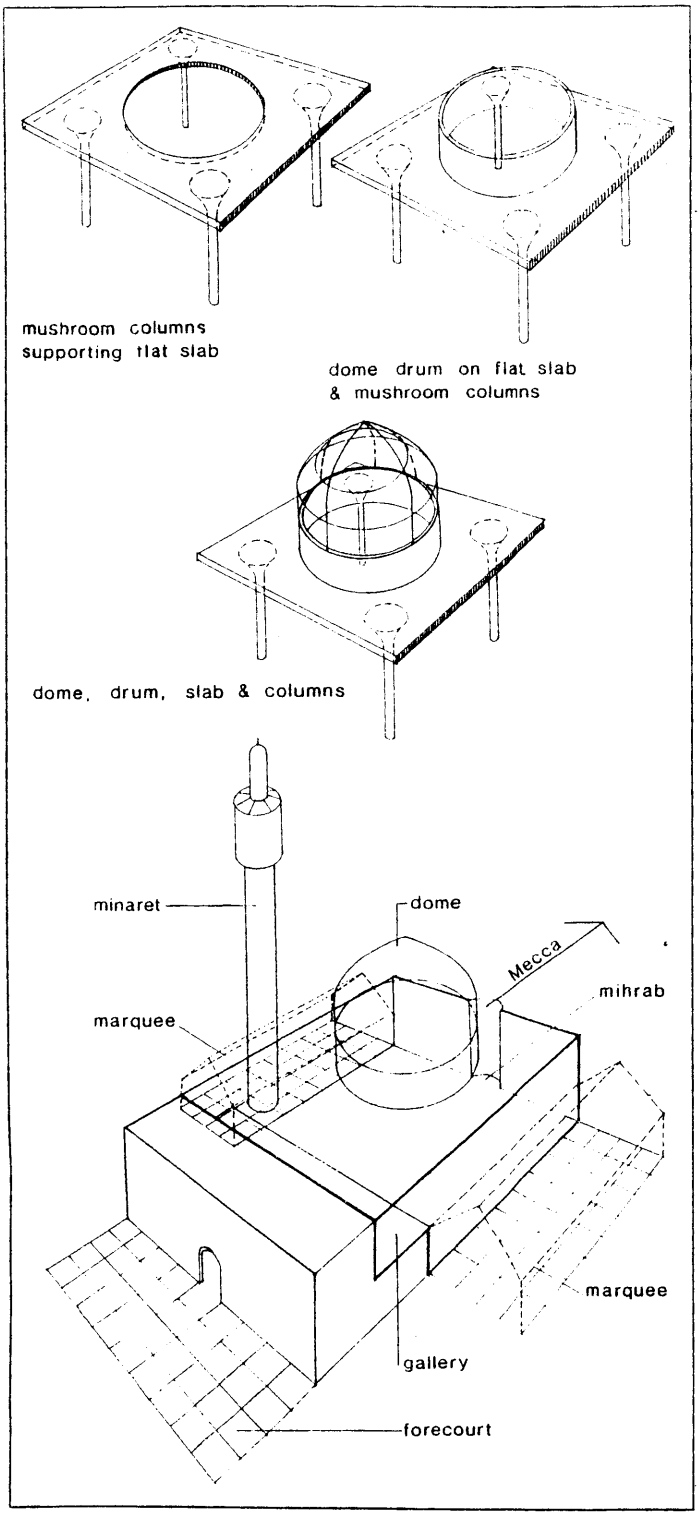
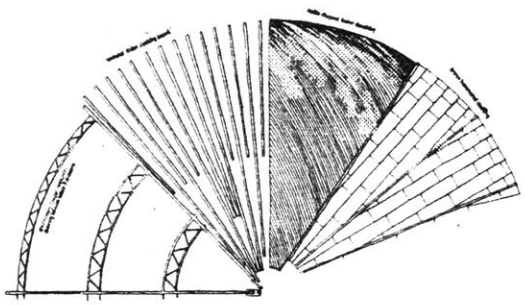
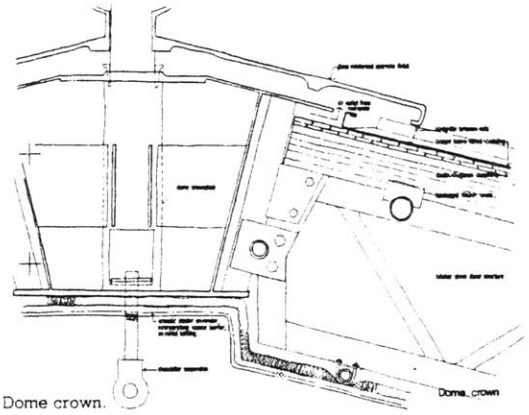


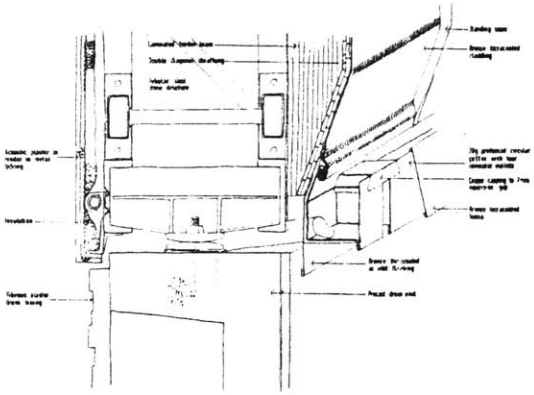
Fig. 4.30 Structure and various elements of the mosque.



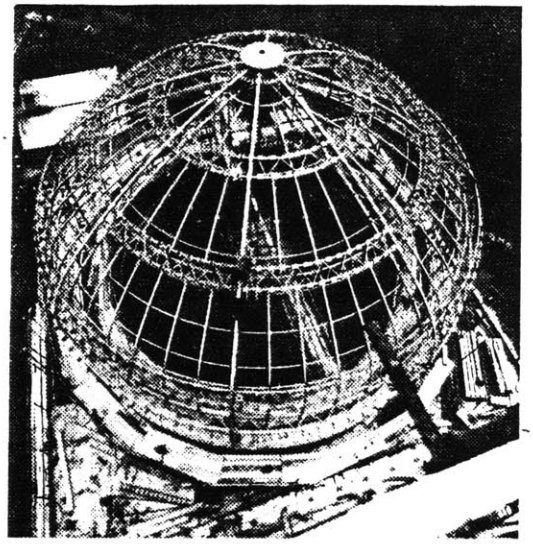
Dome construction sequence.

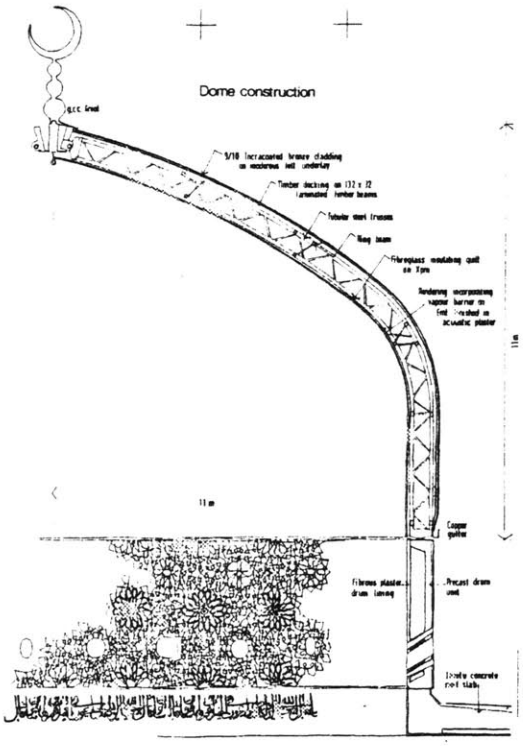


Dome crown.

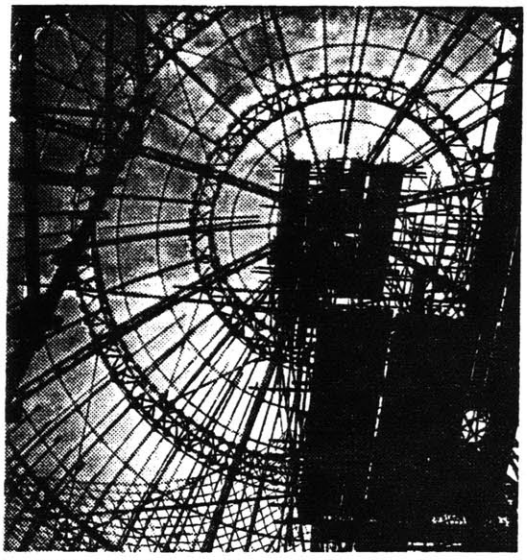


Base of dome.





Dome construction.



Tubular steel structure of dome in place. Seen from above and below.

Fig. 4.31 The dome under construction and its design details.

with bulky proportions and with more of an emphasis on the horizontality of the form. The prayer hall roof slab acts like the horizontal surface of a table which is supported with four legs, the four mushroom columns, which become homogeneous with the structure of the slab. The flat horizontal surface of the slab has a large circular hole in the center, from the edge of which rises a reinforced concrete ring beam, carrying the precast concrete drum segment with punched circular windows. On top which the light structure of the dome, consisting of eight tubular steel lattice frames rising from the drum to the apex rest. On the outside, these frames are clad with a copper alloy sheeting, gold in color and fixed to double diagonal boarding, while on the inside acoustic plaster finish is mounted on the expanded metal.

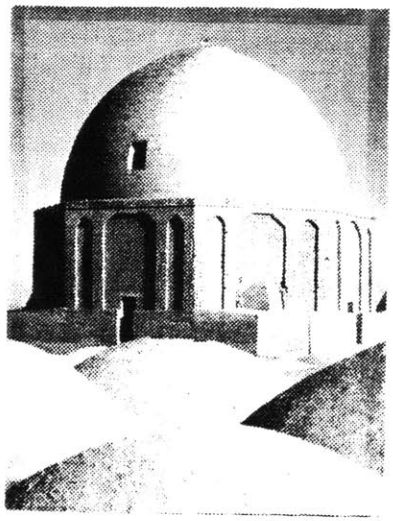


Fig. 4.32 The precedent; the dome of Friday Mosque, (Masjid-i Jummah) in Isfahan; 8th to 17th century

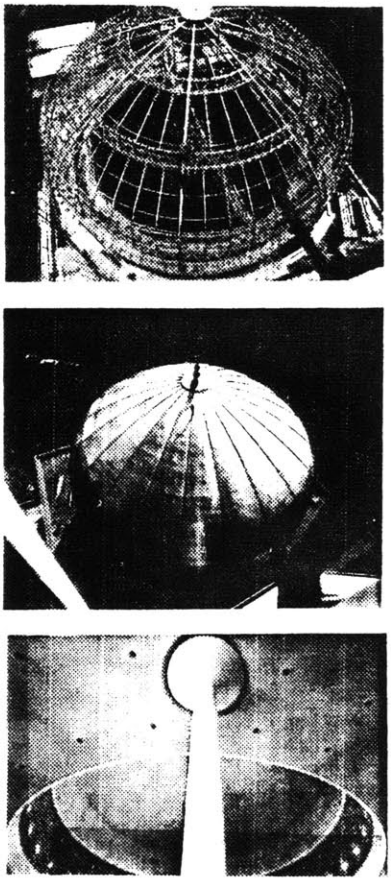


Fig. 4.33 The dome.

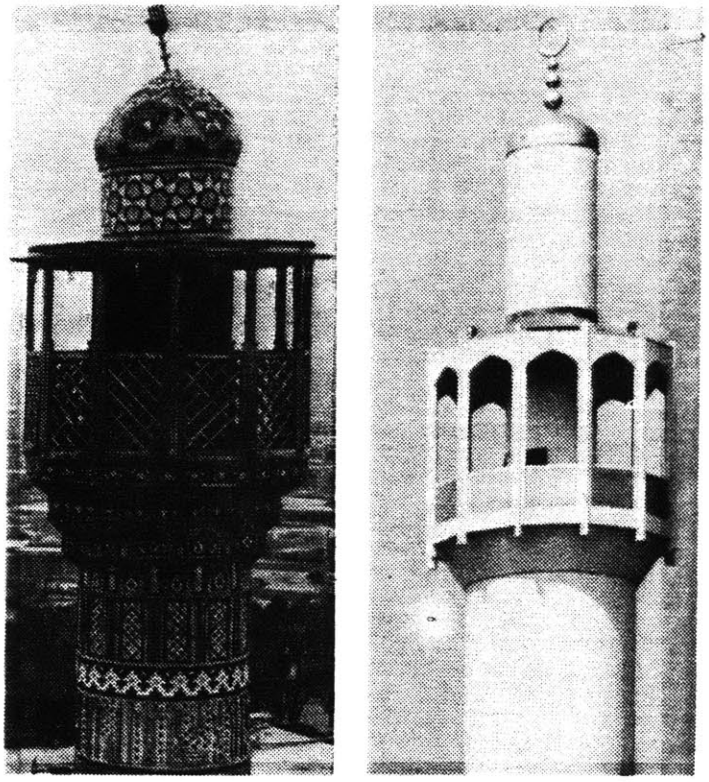


Fig. 4.34 The minaret of the Friday mosque in Isfahan & the minaret of the London Mosque. A close resemblance.

Analysis and Criticism

An embarrassing discovery for the committee members, after the working drawings were nearing completion, was the inaccurate orientation towards Mecca. The building was so tightly wedged between the corners of the site and a shift in the angle by fourteen degrees would have caused a major change in the whole design. The Crown Commissioners were approached by the leadership of the community and through their good will the site lines were modified, resulting in the use of the same design with only a shift in the direction of the building.

In analyzing such building programs, one cannot solely direct criticism towards the designer, as the client's attitude and vision are equally important in the design process. As iterated earlier, the competition brief stated the need for a building which would remind the users of the mosques in the land of their fore-fathers, while no attempt was made to demand a building which authentically transforms those images into a contemporary mode and relies on abstract qualities from the past in its spatial manifestations. The insistence on part of the client in separating the interior decoration of the building from that of the architectural endeavor, seems to be another major factor which has caused the building to be labelled as "cardboardish" in its attempt to represent Islamic architecture.

The prayer hall of the building is a good illustration of this lack of vision on part of the architect and the client. Gibberd claims, "The primary function of a mosque is communal prayer and unlike the church it is a simple building required only to accommodate the worshippers kneeling on prayer mats, facing towards Mecca. The simplest way of arranging a series of rectangular prayer mats is in a rectangle and so the Prayer Hall or Congregation Hall is a

rectangle arranged with its short axis oriented towards Mecca which is marked my a niche, the Mihrab."[25]

His above assessment of a Mosque is fairly accurate; however, he makes no attempt to illustrate how that rhythm of the prayer matts has been translated into the proportioning module of his mosque's prayer hall. The only correlation which is apparent between a prayer rug and the volume of the prayer hall is that both are rectangles in plan. Except the regular, almost monotonous, march of the Persian arch motif in the walls, there is no rhythm in the location of columns or any articulations in the ceiling which would suggest or even hint at the relationship between a prayer mat and the spatial manifestations of the prayer hall. On the exterior, the Persian arches are toped with a horizontal parapet wall, giving them some sort of shaft and head relationship, without any apparent base. However, in the interiors of the prayer hall the central point of the arch falls only inches away from the ceiling and that awkward transition between the vertical and the horizontal planes is visually quite disturbing.

The drum of the dome sits clumsily on a flat slab without any transition between the horizontal plane and the vertical surface. The omission of the transition elements such as, the muqarnas vault or the famous Ottoman triangle, clearly hint at the structural capabilities of modern materials which do not necessitate their use. However, the characteristics features of archetypal forms, such as a dome, have a distinctive memory in the eyes of the beholder and this gesture seems to violate that associative meaning. In other words, no attempts were made to understand the principles associated with the archetypal form and abstract them into a modern idiom.

Fig. 4.35 View of the prayer hall with an expensive stone floor material which was later covered with carpet.

The floor material for the prayer hall was initially specified in the construction documents as plastic tiles, which were to be covered with carpet. Subsequently however, with a great monetary expense, a polished stone from Algeria capable of taking a deep shine, was imported to replace the tiles. The committee wanted the best materials possible for the prayer area, no matter if that surface was going to be covered with carpets anyway. A star-shaped stained glass window, designed by the architect, adorned the panel above the position of the mihrab. But its removal or blocking of its appearance from within the prayer hall was suggested by the committee on the grounds that; "it is reminiscent of the so-called 'shield of David'"[26] and the symbol therefore would remind believers of the Jewish faith. Lewcock refutes this position claiming that the star is an old Arabian symbol, which has appeared in many old mosques in Arabia and was associated with the Jewish faith only after the late middle ages. However, the client's felt the political implications of using a symbol with mixed signals might be problematic.

The high cost of such a building program understandably resulted in the collection of decoration including wooden

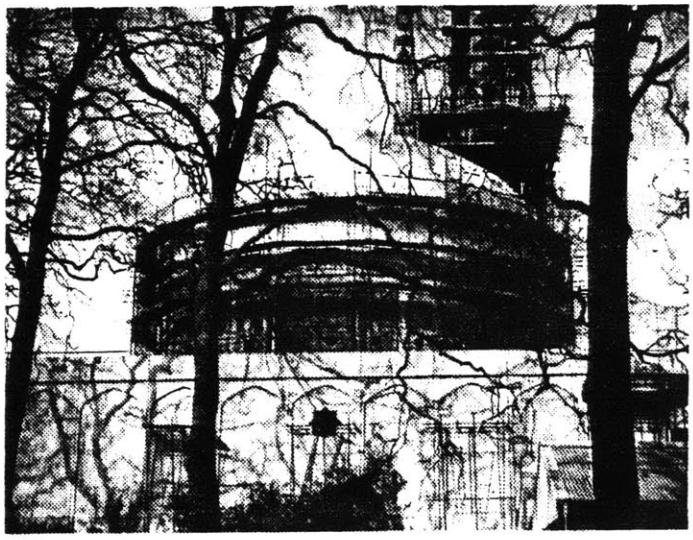


Fig. 4.36 Exterior view of the Qibla wall with the controvertial star window.

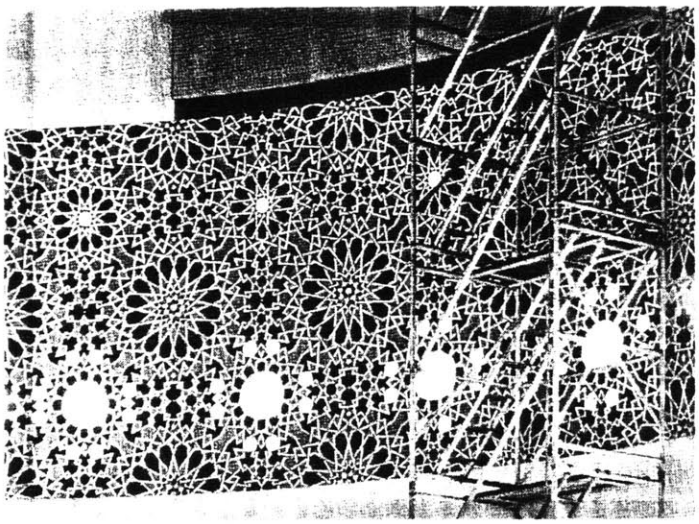


Fig 4.37 View of the pattern adorning the interior of the drum of the dome. The circular geomtery is squeezed into the linear pattern.

screens, mihrab, minbar and so forth, which were successively added after the building was constructed from various countries. Phenomenal coordination efforts are needed for arriving at some sort of unity in materials, colors, patterns and texture of an ornament. Obviously, the client's were not fully aware of this issue and requested donations from various Islamic States, each with their own traditions and expertise in different crafts. However, the pattern which adorns the drum in the interior was designed and specified by the architects. The pattern has been used in many building traditions of Islam, however in this case the circular geometry of the oculi is squeezed and forced to fit in the otherwise straight line interlaced geometry of the pattern.

The accommodation of the ablution ritual in the lower ground floor of the building is another source of concern in the design. The break in the experience of the building by going down and moving back again after performing the ritual seems to work against the liturgical needs of a mosque. The internal layout of the facility in both men's and women's section makes them no more than "glorified public lavatories."[27] Over the history of Islam, each culture

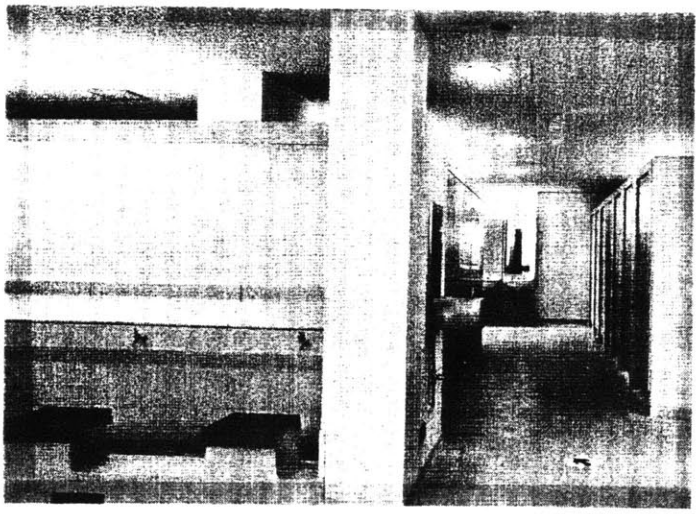


Fig. 4.38 The ablutions for men; "Glorified public lavatories".

developed their own means of accommodating this ritual. But in every case an architectural solution ensured its performance in a dignified and proper manner. The architect was probably unaware of this need and clients obviously raised no objection of its appropriateness. Each believer has a basin-like fitting arranged in a row with little privacy and the lavatories in close proximity.

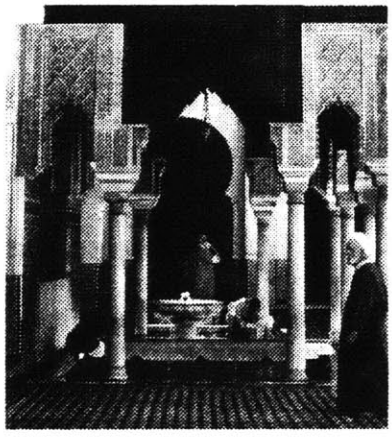


Fig 4.39 Believers performing the ablution ritual outside a tradtional mosque in Fez.

One of Gibberd's primary goals from the start, was providing a building which was well constructed and which he successfully managed to achieve. As he proclaims, " Its very important that this should be technically, a superb piece of construction - and it is."[28] He meticulously specified tolerances of the panels within millimeters, which necessitated hand finish of many elements. Details of waterproofing, windows, doors and so forth were carefully considered to provide a long lasting building. On the exterior, by placing the two wings on the perimeter and creating a plaza provided enough space for large congregational prayers. It also provides overflow space for disbursement of crowds gathering for these special prayers and over the years, as the building is aging it has become

an important social meeting place for the community. The library wings overlooking the the plaza, enjoy the wonderful view of Regent's Park and have become a great source of learning for the Muslims in London.

However, Gibberd's wish to remind people of their traditional mosques in the form of his building has been too literal and obvious, and no attempts were made by his design team to avoid this pastiche attitude towards the building traditions of Islam. The clients on the other hand, also lacked a vision which would direct the architect in a certain direction, resulting in a building which is no different than a standard cliche of modern architecture, yet dressed with the clothes of its Muslim forefathers.

Mosque and Islamic Cultural Center, Rome by Paolo Portoghesi, Vittorio Gigliotti and Sami Mousawi

Rome, the capital of Christendom and a place where history and tradition surround every rhythm of its dwellers life, has received a new addition to its great architectural heritage, a mosque for immigrant Muslims. While some have compared the erection of this mosque to "building a Center for Communist Studies in downtown Washington" [29], others see this as purely a political move, enhancing closer ties between two cultures, which during the course of history have been hostile towards each other on many occasions. While the Muslims of London were fighting their own battles with the city of London, the battles for Roman Muslims were being fought between Nations and among Kings. The mosque's form is slowly appearing as the scaffolding is dismantled from its facades, at the base of the Monte Antenne, in a suburb of Rome. The building is

nearing completion at the time of writing this thesis and therefore, I have an handicap in assessing this building, whose struggle for existence goes back several years. It has to be done primarily through drawings, architect's statements, and recently published photographs of the complex under construction. For fear of speculating inaccurately how the exterior and interior design will finally emerge after the building has been completed, I am tempted to direct this analysis in a different direction. The study will attempt to come to terms with issues pertaining to the building's formal language and the rhetoric published by its celebrated chief designer, Paolo Portoghesi, instead of focusing specifically on spatial sequence, materials and so forth. The building, stooped in self-proclaimed historical references, can be seen both in light of Portoghesi's other works and also as the only building ever in contemporary times which incorporates "a unique Islamic-Baroque-Art Nouveau-Post Modern Synthesis that will move and strike a chord in the memory of all who enter".[30]

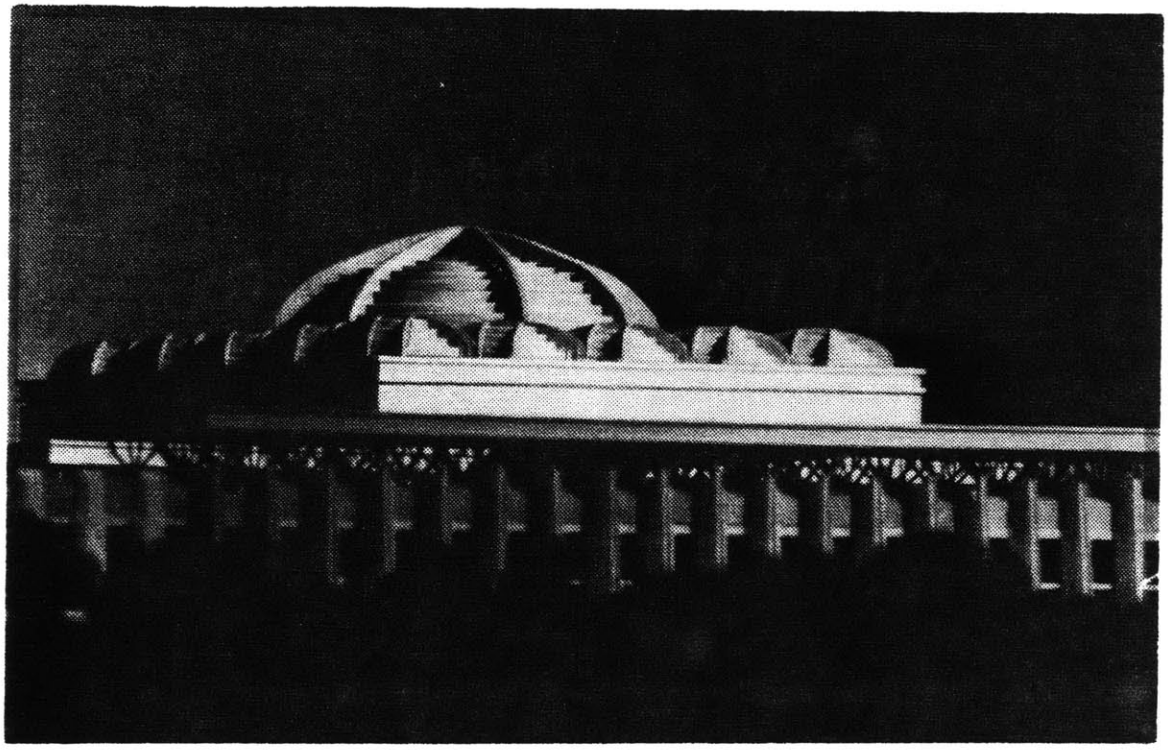


Fig 4.40 The Rome Mosque; View of the Model.

There are conflicting accounts in the published sources on the exact year in which the first overtures were made by the Arabs to establish a mosque in the city of the Popes. Arabs sources claim that the struggle with the Vatican and the Italian Government started about the middle of the century. However, other sources claim that the first official proposal was made by a group of Arab Ambassadors in 1960s. The Muslim immigrant community in Rome was caught in the cross fire between the political and religious battles of primarily two nations, each representing the world's most populous religions. The community decided that while negotiations were underway between two religious super powers, they needed an organization which would at least make their soft voice heard among the thunder of the battle. An independent organization was established in 1966 by the Muslim community, which until today is an active voice for Roman Muslims and will be ultimately housed in the complex after its completion. However, the organization was not formalized and registered until 1972, when the ambassadors of Islamic countries to the Italian Republic and the Vatican, and the local community, finally managed to convince the authorities for legalizing their organization. It was named the "*Centro Islamico Culturale d'Italia*" (Islamic Cultural Center of Italy) and became an Italian incorporated body instituted by decree of the President of the Republic and subject to control by the Department of Worship of the Ministry of Home Affairs.

The official representation of Muslims in the country paved the way for another historical event, an official trip by Late King Faisal of Saudi Arabia in 1973. What could not remotely be conceivable a few years before, came as a surprise for many in the political arena and among the masses. During his talks with government officials, the city

of Rome had agreed to donate a piece of land for a mosque, if the Arabs were prepared to finance the project. His visit, therefore, not only helped the community overcome the political problems but also a major financial hurdle. Consequently, the Late King's successor, King Fahad pledged over half of the twenty million dollars estimated for construction. Other nations of the Islamic world eagerly followed suit, with generous donations and obviously did not want to fall behind in this international and historic event.

The Vatican had a pivotal role in the unfolding of these events. The notion of giving due recognition to other religions by the Church goes back to the time of Pope John XXIII, who issued summons in 1959 embracing the entire Catholic world, and asked the delegates to be sent to an ecumenical council, which came to be known as the Vatican II. After his death in 1963, Pope Paul VI continued the same program laid down by his predecessor, in an effort to come up with a clear guidance on Church's adjustment to the twentieth century. Apart from its modifications toward its own theological and political positions, a major revision came on its relationship to the non-Christian religions. The relations with Muslims were summarized in the Documents of Vatican II as;

"Islam: The Church regards with esteem also the Moslems. They adore the one God, living and subsisting in himself, merciful and all-powerful, the Creator heaven and earth, who has spoken to men. .... Finally, they value the moral life and worship God especially through prayer, almsgiving and fasting.

In the course of centuries there have been indeed been many quarrels and hostilities between Christians and Moslems. But now the Council exhorts everyone to forget the Past, to make sincere efforts for mutual understanding,

and so to work together for the preservation and fostering of social justice, moral welfare, and peace and freedom for all mankind."[31]

Apart from the above declaration, Pope Paul VI continued his efforts until his death in 1978, to bridge the communication bridge between the Muslim world through philanthropic gestures such as opening a special commission for immigrants and designating a day in the Roman Catholic calendar for them.

The site for the project was assigned by the government in 1974, after many deliberations and much opposition, as this political gesture of goodwill was at odds with the popular sentiments. Every neighborhood and interest group wanted to keep this intervention away from their own area. Unfortunately, some Romans saw this mosque as a "potential nucleus for Arab ghetto."[32]

The thirty thousand square meter (approximately seven and a half acre) site, situated relatively apart from the city was originally a public refuse dump and had been designated in the Rome General Master Plan as "public services". It is located at the foot of Monte Antenne, a hill which rises to about forty meters above the Tiber valley. Soon after the possession of the site, preparation of a design for a mosque was underway. However, the first proposal failed to win the approval of the city planning committee and in consultation with the authorities, an international competition was held in 1975.

Forty entries were submitted by architects from the Islamic and European countries to the competition, out of which four designs were designated as finalists. The projects submitted by an Iraqi architect Sami Mousawi, working in

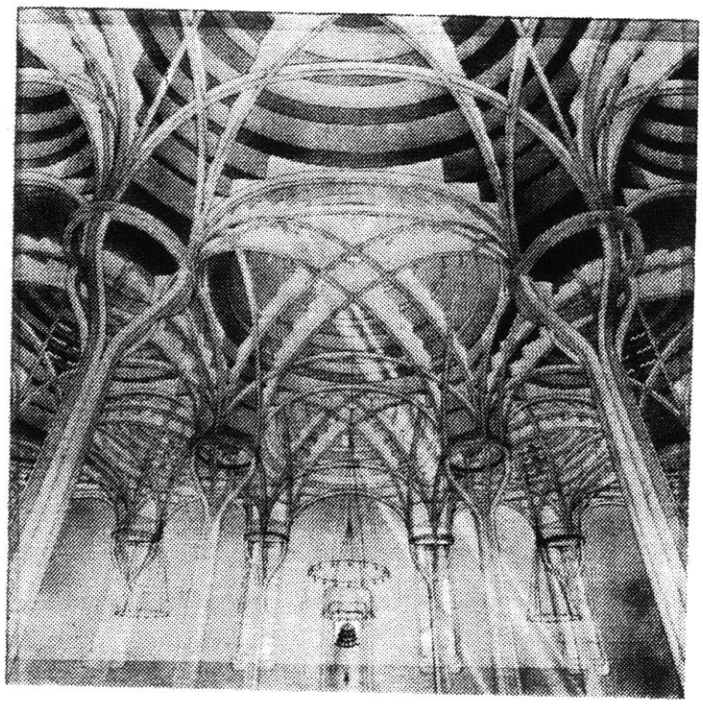
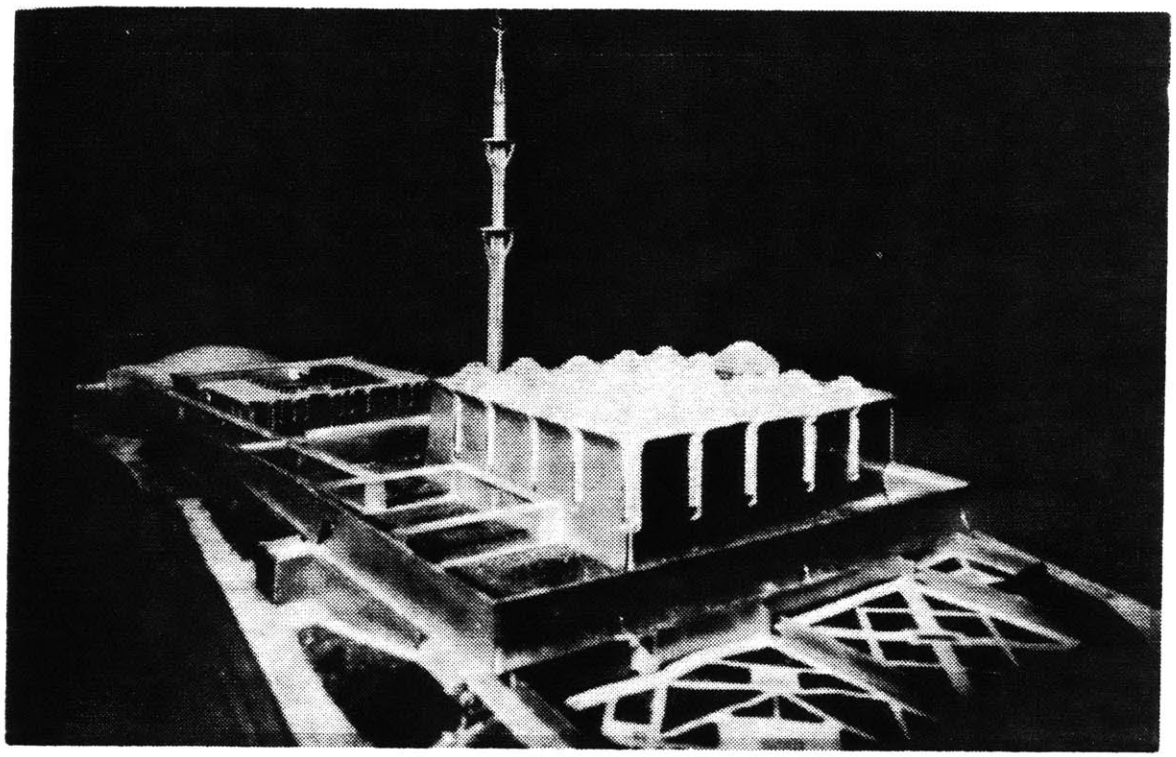


Fig 4.41 Rendering of the Prayer hall in the competition submission by Portoghesi and Gigliotti. A Prize winner!

Fig. 4.42 Model of the competition entry by Portoghesi and Gigliotti.



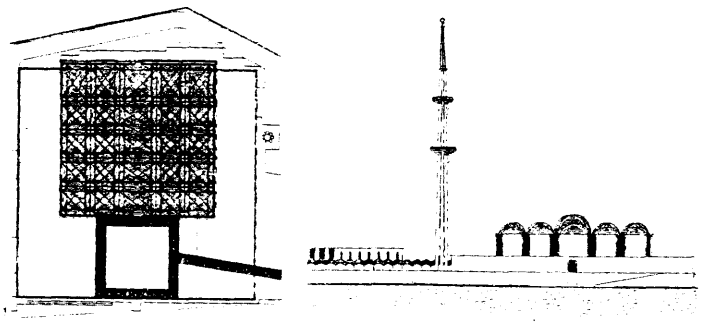


Fig. 4.43 Plan of the mosque building in the competition entry by Potoghesi and Gigliotti.

England and that of Italian architects Paolo Portoghesi and Vittorio Gigiliotti were highly praised by the "well known experts in Islamic Architecture and culture"[33] on the committee and consequently recommended their proposals to the leadership of the center. The former was judged the most appropriate. However, the latter was also recommended because of its "splendid Islamic atmosphere of its prayer room, which echoed that of the most ancient and prestigious mosques of Islam, as well as for the advanced constructional technologies....".[34]

The two groups were consequently asked to design a joint proposal, so that the community building their first permanent mosque could benefit from the best of both the worlds. The leadership did not realize that it was politically, stylistically and ideologically an opposed match. Though both the firms had worked extensively in Islamic settings, especially in the Middle East, Portoghesi had, to a far greater extent become a focus of international renown and a source of and subject for critical inquiry by many, including people like Bruno Zevi, Leonard Benevolo and Manferdo Tafuri. His background as a professor, an avid writer of architectural history and contemporary theory, and his alliance with the so called 'Post Modernist' movement would have overwhelmed any practitioner. Tafuri describes him as an architect "whose theoretical production has been accompanied by skillful professional and promo-

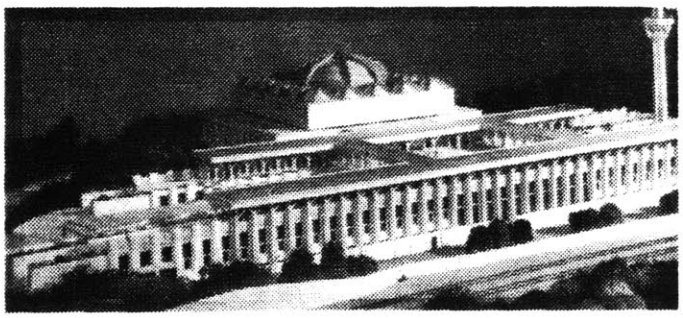


Fig. 4.44 View of the model. Joint proposal by Paolo Portoghesi, Vittorio Gigliotti and Sami Mousawi in 1978.

tional activities."[35] Nevertheless, even with what Portoghesi terms as, "a continual battle"[36] the teams did manage to prepare a joint proposal which was then approved by the city authorities.

At some point in the initial phases of the project, there was an agreement between the Islamic center and the Italian officials that the cultural facilities of the center will be placed at the disposal of the Rome Council. This was obviously a political decision, however it was looked upon by the Italians as a gesture which would "promote mutual knowledge and understanding between Romans and Muslims."[37] The published sources do not reveal exactly how much interaction took place between the Council and the Muslim leadership; however, the long delays with each phase of project, are indicative of the disputes. One can easily understand the political implications of a project for which a competition was held over a decade ago, but still today the Muslim community in Rome is waiting for a minaret, a symbol of their faith, to be juxtaposed against the lush green pines of Monte Antenne.

The joint proposal was first unveiled in 1978, almost two years after the competition. It was extensively published in architectural and local journals, both because of the growing general interest among the local population of the political implications of the project and also the promoter's

interests in proclaiming to the public their on-going pursuit for the project's actual realization - in other words, claiming their triumph after the war of words was over. The reviews were quite critical of the design's relationship to the urban context. The severity with which these arguments were waged were not devoid of the political bais of each assessor. As a columnist in an American architectural magazine observes; "....the intensity with which the debate has been waged suggest an underlying sense that some unstated assumptions about what Rome represents, and what a Roman monument should be, are being flouted."[38] However, if one looks at the assessment of Franco Purini, a famous Italian critic and architect, written over eleven years later when the mosque was half completed, it paints a completely different picture. He writes; "The rising of Paolo Portoghesi's mosque in the Rome landscape has at last announced the architectural redemption which the capital has been awaiting for decades."[39] The two opposed positions, spaced over many years, are quite indicative of the controversy a singular project of such a nature can stir and how opinions presented to the public through the popular press change over time.

The final outcome of the project, as observed by many critics, seems mainly due to the efforts of Portoghesi. His original competition entry bears a close resemblance with the final design, especially in the way the cubical volume of prayer hall sits in the landscape, the column design, floor patterns and so forth. In his earlier proposal, however the mosque, the cultural center and the auditorium were housed in separate pavilion type buildings connected by covered courtyards.[40] He has written eloquently on this project over the past years, and a cursive look at the mosque and his past work further confirms his major involvement with the project. For simplification purposes, I will direct all my

comments and criticism towards Portoghesi, however I am fully aware that there must have been substantial contributions towards the project as a whole by other designers, including his partner, Vittorio Gigliotti and the design team led by Sami Mousawi.

Before attempting to proceed with the analysis of the mosque, it would be fruitful to discuss some of the theories which Portoghesi has been propagating and why his ideas have been under severe criticism by critics, especially by his Italian counterparts. His career as an academician began soon after his graduation from University of Rome in 1957. He started teaching architectural history at the University after five years and then moved later to Milan where he was appointed a full professor at Milan School of Engineering in its faculty of architecture. After a few years, he was appointed the dean at the school, a position which he held until 1976. It was during his stay in Milan that he entered the competition. He later moved back to Rome, where he has taught architectural history as a full professor, since 1982. Both his appointment to the directorship of the Architectural section of the Biennale of Venice between the years of 1979 to 1982, and then his promotion to the chair of the Presidency, made him an international figure among architectural circles.

Fig. 4.45 "Architectural self-portrait" by John Blatteau used in the 1980 Vennice Biennale titled, "The Presence of the Past". Portoghesi was the director of the architectural section of the exhibition.

His earlier book Roma Barocca was a clear indication of his interest in Baroque Architecture. *'Le Inibizioni dell'architettura Moderna'* his own publication and the monograph by Christian Norberg Schulz named *"Alla Ricerca dell'Architettura Preduta"* were among the earlier well known publications illustrating his theories and work. Both books were attempts to illustrate how a work of architecture built today can incorporate the notion of 'place' and 'history'. Curiously enough, these pieces of writing

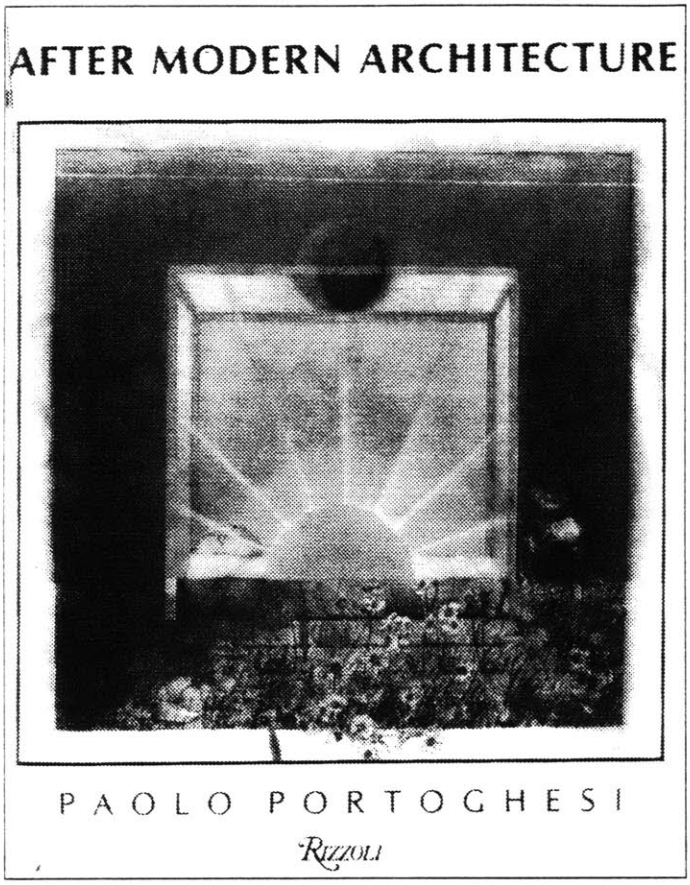


Fig. 4.46 The cover page of Portoghesi's book; 'After Modern Architecture'. The drawing titled, "The birth of Modern Architecture", was by Thomas Beeby,1980.

incorporated much of what had been said earlier by others, and offered no radically new ideas. The importance of 'place' had already been propagated by the existentialists and the notion of deriving inspiration from the past had been introduced much earlier by many theoreticians, after modernism had devastated the city fabric. However, his article "End of Prohibitionism" published in the monograph for the Venice Biennale of 1980 which was titled "Presence of the Past", triggered of his long battles with other contemporary critics. Although, his earlier projects and publications before the article had been indicative of the direction of his theories, but his formal association with the 'Post Modernist' movement became internationally known, after his involvement with the Biennale. He later published many books on the subject, which among others included, 'After Modern Architecture', and 'Postmodern:

The Architecture of the Postindustrial Society'.

In order to seek a distinctive argument, the polemicists of postmodern architecture, including Portoghesi, presented their ideas as a reaction to the modern movement, refuting its transcendental qualities. Portoghesi defines "Modern" as a collection of forms which, in their formative phase during the early decades of the century, were a result of innovative endeavors by some architects in Europe and America. However, their indiscriminate use after 1930s throughout the world, gave rise to a negative impact. From his perspective, the fall of the modernist was inevitable, as he cheers Charles Jencks for lucidly declaring its demise; "Charles Jencks, a brilliant Anglo Saxon scholar who has analyzed the most recent developments in architecture from a linguistic point of view, believes that this sunset has already occurred. With lucid irony he pinpoints the exact date for the death of "modern architecture": he has it coincide - at 3:32 PM, July 15, 1972 - with the dynamiting of the Pruitt-Igoe housing project,....".[41]

The general denial of the modern movement by the post-modernist is hinged primarily on three premises. First, the grouping of all modern architecture into one monolithic idea which was governed by rational thought and functional determinism. Second, the modernist view of history as composed of independent autonomous periods, which are then separated by radical breaks. The last premise stems from the second, whereby these periods have been viewed by the avant garde as holistic and homogeneous. Portoghesi incorporates these general premises within his argument, however his theoretical constructs have attempted to go beyond these rudimentary arguments. Among other concepts, the manipulation of historical signs has been his keen interest, and his experiments with the

Baroque are clear manifestos of that fascination.

In an introductory essay, "Architecture born of Architecture"[42] , he explains how his disillusionment with his academic experience forced him to take a completely different route, from that which had been taught by his professors. "Before taking shape as a volume or summation of volumes, an architecture had to pass through the stage of functional diagram, that is, it had to originate on a sheet of paper as a set of rectangles of different sizes connected by lines or arrows, each with a brief caption inside, like the name plate on a copy book, that designated the function of the corresponding space, of which the little rectangle was the gene, so to speak, the dimensional and relational prefiguration."[43] Now that he had been liberated from these academic presuppositions, however, his creative mind will produce architecture which "derives from other architectures, from a non-fortuitous convergence between series of precedents which combine by means of imagination in a process involving the solitude of thought and the 'coral' nature of the collective memory."[44] Curiously enough, what he described as rectangles of different functional requirements, have been replaced in his architecture with rectangles of images from the past and "all the motifs that have been floating about in the international architectural and philosophical debate of recent decades."[45]

His written discourse is full of flamboyant phrases against modernism which include, "modern city as being the product of an alliance between bureaucracy and totalitarianism"[46] "toxic to the physiological regimen of urban growth"[47] and "static series of conventions"[48] While on other hand, in his rhetoric, the portrayal of postmodernism as a phenomenon which will "renew architecture as a product [that] comes out of a rather profound understand-

ing of the urban phenomenon."[49] and will reinstate "ambiguity, and irony, plurality of styles, double standards which allow for popular tastes....".[50]

The above brief synopsis of the postmodernist arguments professed by Portoghesi and fundamentally influenced through Jencks have continued to come under criticism as naive propositions, especially under the recent growing influence of Post-Structuralism and Deconstruction. Although in the present case study, I am primarily concerned with the analysis of the mosque, I cannot resist to briefly illustrate what those common criticisms are, as they not only apply to the self-proclaimed postmodernist but are equally valid for many designers in the Islamic world with their nostalgic tendencies.

In the theoretical discourse, I dealt with the apparent naive determinism in the proclamation of modernism as a monolithic set of ideas. It included a variety of subsystems which exhibited varying degrees of assimilation under different circumstances. Stanford Anderson suggests that historical periodization is useful as an operative mechanism but should not be turned into a dogmatic determinism. Conventions have a certain autonomy and form within our minds, however, they have to be tested against their relations with other cultural systems and their empirical constraints.[51] Historical periods are to some extent arbitrary constructs, partially created by historians; by their very nature they tend to highlight certain components of a time span. The radical breaks in history are not changes in actual substance and content but a mere restructuring of existing elements.

The holistic view of Post-Modernism of history emphasizes the continuity of a series of surviving elements, but

does not view them as processes which negate the ones previously used. Anderson views this linear model as useful, however he cautions against the use of this model to understand the totality of history. He views history more as multi-lineal, as he eloquently suggests;

"For any task, it is necessary to locate ourselves and our actions within a cultural field. These distinction could be significantly analyzed in synchronic studies. However, in thus locating ourselves in a cultural field we place ourselves not only in a synchronic problem situation, but also in one or more of an indefinite number of historical lines: a multi-lineal history.[52] He goes on to conclude that this multi-lineal approach gives us a chance today to view history critically, while recognizing its inherent contradictions and conflicts.

By limiting the thesis of their argument to primarily the negation of modern architecture, early postmodernists of which Paolo Portoghesi was a vital member, left much room for debate. Needless to say that their discourse was partial and their experiments with built form were a reduction of pluralism to the "true nature of kitch".[53] As Tafuri blatantly criticizes the design strategies of the so called 'Postmodernists';

"The obvious love of history is resolved, in practice, in the game of repeatedly "putting the mustache on the Mona Lisa," now a mass joke thanks to a visual culture more influenced by Disneyland than Duchamp."[54]

In the analysis of the mosque, I will attempt to show how Portoghesi's over-reliance on visual symbolism rather than spatial abstraction, has led to a building full of inherent contradictions and ambiguity of symbols.

Fig. 4.47 Portoghesi visiting Disneyland in 1984! The photograph was published in his book, "Paolo Portoghesi: a cura di Giancarlo Priori", featuring his complete works.

The Site

According to Portoghesi, the physical detachment of the site from the city of Rome necessitated a dialogue which would impart a "meaningful relationship to the metropolis."[55] The site has a unique curving boundary and is primarily accessed through two ends of its length, establishing a North-East and South-East axis. It is located at the foot of Monte Antenne, a hill covered with the evergreen vegetation of tall pines. The fact that it is located just under a hill gives an opportunity for viewing the hill-side surrounding it. Towards its north, the view of the Tiber valley is revealed, amongst the deafening traffic noise of Via Olimpica. Towards its south, the residential suburb of the city engulfs it with an architectural character which, according to Portoghesi, "does not remind us that we are in Rome".[56] On the eastern side of the site, hills covered with tall pines and lush green grass are located, visually dominating the whole area. The subway line called the 'Ferrovia Roma-Nord" hugs the site's western perimeter, across which the imposing structure of Acquacetosa Sports Center is defused within the landscape. The faint outline of Rome in the Tiber valley can be viewed from this side of the site, framed between the hills of Monte Mario and Villa Glori.

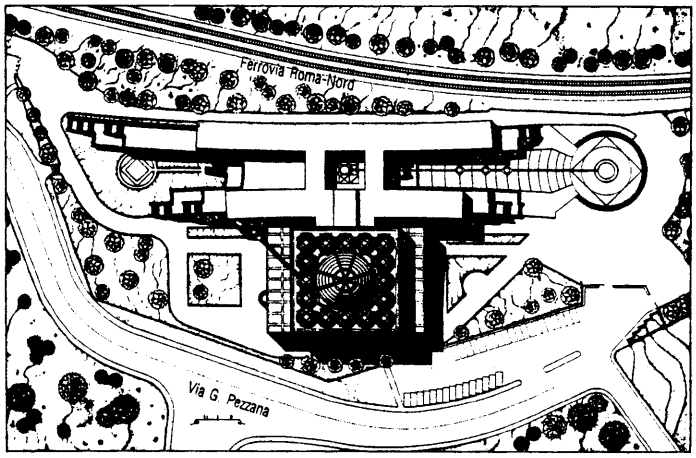


Fig. 4.48 Site Plan

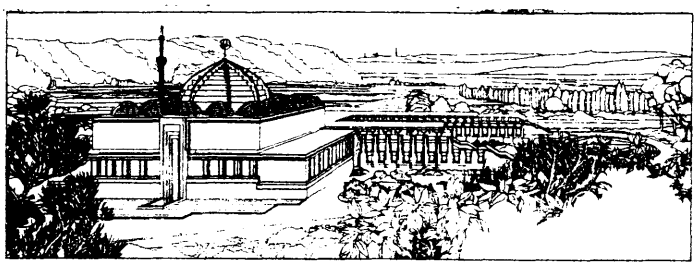


Fig. 4.49 A sketch showing the building and the surrounding hills.

The Rome council had imposed two major restrictions pertaining to site planning. First, it was recommended by the council that the complex be planned in relation to the road infrastructure connecting the city center with the mosque zone, in accordance with the Rome general planning scheme. This would necessitate the accommodation of small building structures towards the western edge, within the planning, in order to enable the citizens of the area to use the commuter train service. The second imposition was that the landscape architects would incorporate, within the limits of the site, at least one hundred and twenty tall pine trees of the same species as those on Monte Antenne.

The limited access routes to the site made it imperative for the architects to plan the building in relation to Via Pezzana, which makes almost a ninety degree turn on its southern perimeter. The wings of the center are therefore placed in relation to the approach of Via Pezzana towards the site, while the cubical volume of the prayer hall responds to the bending road, almost inviting the believers into the boundaries of the site. In summary, the diffused and loose character of the surrounding area and the spectacular views of the hills and landscape, were primarily the major forces impinging on the site. The building, apart from its response to the winding road and the natural landscape, thereafter consisted of forms responding to the

inner world of the site, created by the metaphoric intentions of Portoghesi.

The Scheme

The competition brief requested a building which would reflect an "Islamic way of life"[57] and at the same time attempt to establish an architectural relationship with the traditional environment of Rome. Portoghesi, responding to the brief, has laid out four themes in his report on the building, which represent his intentions in their entirety.

The first theme relates to the architectural interpretation of the 'place' where the complex is built. This idea, with undertones of Norberg Schulz's existentialist approach, is an effort to respond to the surrounding landscape, the hillside nature of the area and the loose and uncompact textures of the surrounding sites. The second concept stems directly from the client's need to establish an identity through their Institution's architectural expression. Portoghesi terms it as "full correspondence with the architectural traditions of Islam".[58] Needless to say that his postmodernist tendencies do not differentiate between the various traditions of Islam, as history to him is an accumulation of ideas translated into form, but only if the work is built before the advent of modernism. The 'modern' expression of the building through advanced technology was his third thematic element. According to him this was an essential

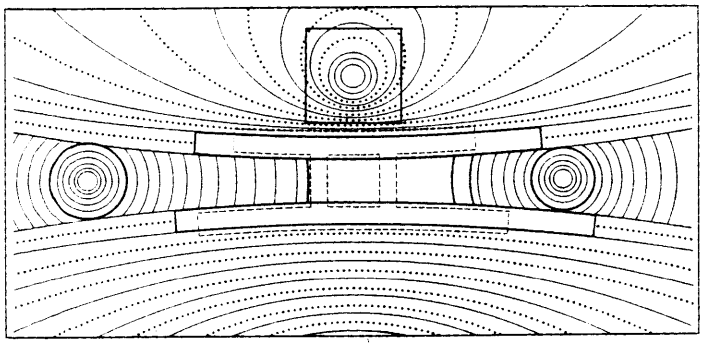


Fig. 4.50 The concept of 'place'; site forces influencing the design layout.

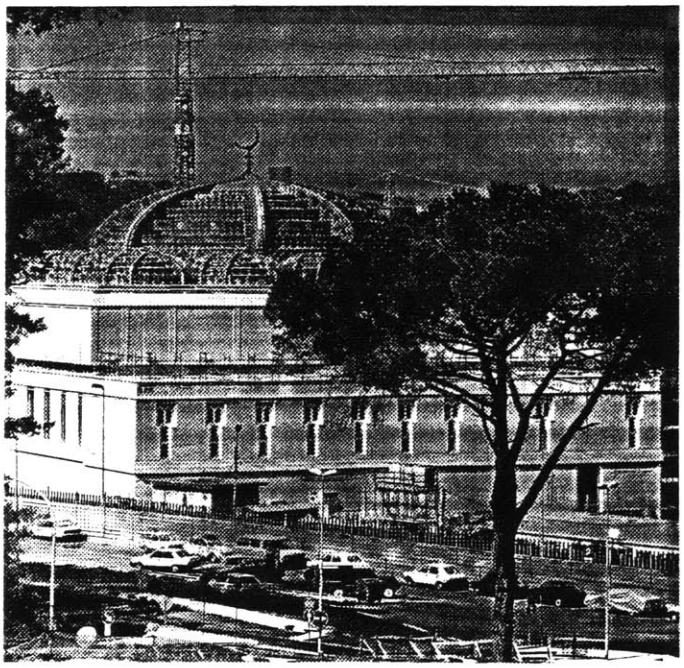
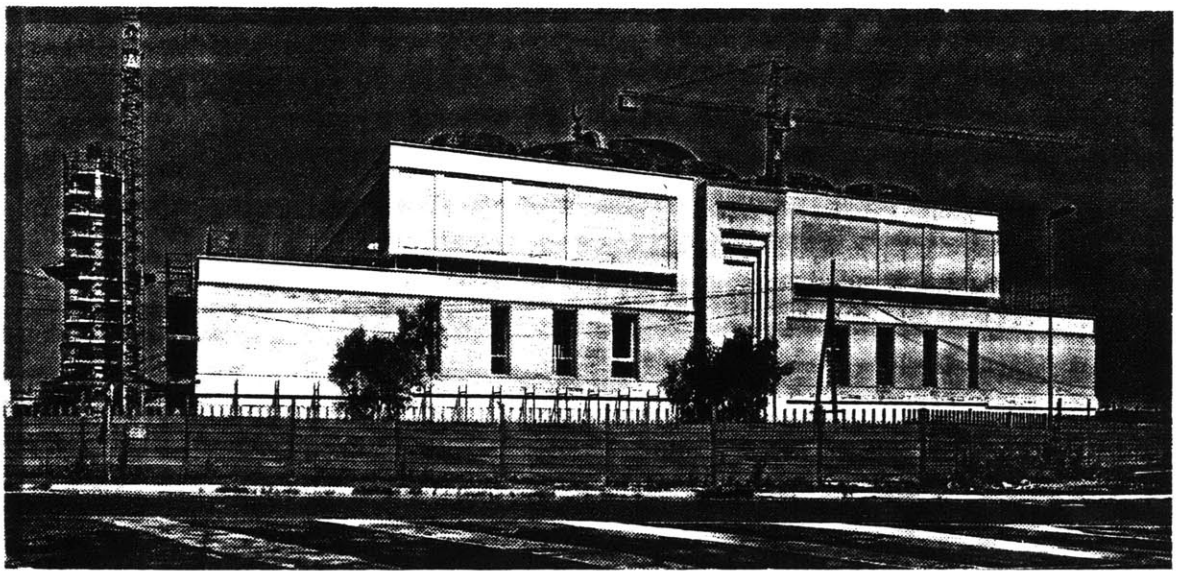


Fig. 4.51 Exterior View of the Prayer hall from Via Pezzana.

Fig. 4.52 Exterior View of the Qibla wall.



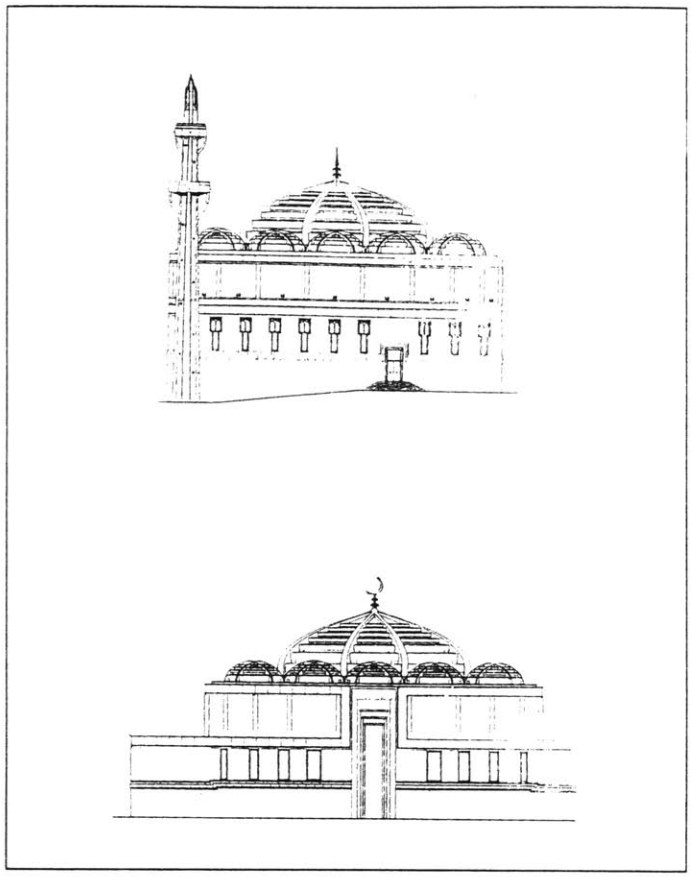
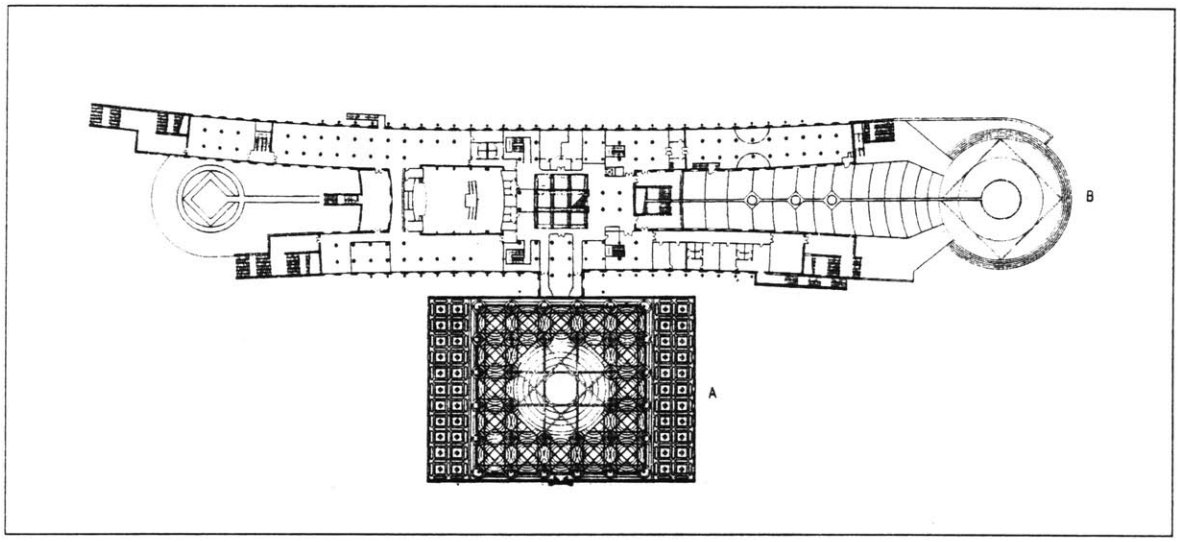


Fig. 4. 53 Side and Rear Elevations of the Prayer Hall.

Fig. 4.54 Floor Plan; A- Prayer Hall; B- Islamic Cultural Center.

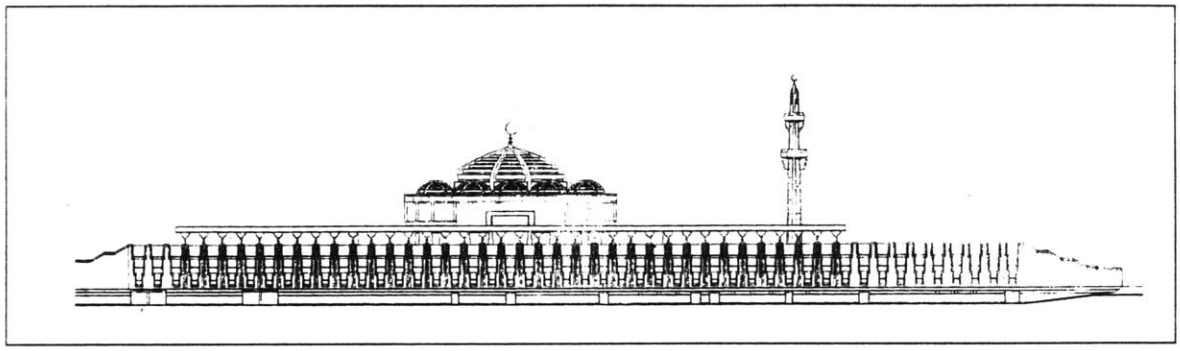


component of the scheme, so as 'to satisfy the demands of a contemporary religious community".[59] The last idea not only originated in response to the brief of the competition but also because of his own preoccupation with the images of the past According to him this theme relates to the establishment of an "organic relationship with the urban structure and architectural traditions of the city of Rome."[60]

The program, after many modifications over the years, called for a mosque accommodating two thousand worshippers and a smaller prayer hall for daily use. The cultural component of the center included a library, an auditorium with a seating capacity of four hundred people, exhibition spaces, reception halls, conference rooms and offices. A number of dormitory rooms accommodating students were also requested. Parking was a major concern of the clients and Portoghesi had to give up lot of garden space for accommodating this need.

Unlike his competition entry, in the final scheme, Portoghesi responded very strongly to the North-East and South-West axis of the site. This coupled with the fact that the orientation of Mecca from Rome is in the South-Eastern direction, gave him an opportunity to plan the whole complex and the placement of elements in relation to these axes. A cursive glance at the building, as one approaches the complex form from Via Pezzana, reveals the formal

Fig. 4.55 Longitudinal elevation: foreground - the Islamic cultural center; background - the Mosque and the minaret. (The minaret was later removed from this position.)



relationships between the different parts. He used the T-layout to place the mosque in relationship to the courtyard. The shaft of the T points in the direction of Mecca and is formed by the prayer hall and the open prayer court before it, in which the two cross axes meet. At the base of the crossing is the cultural center, above which the ambulatories enclose the court and extend in four arms forming an elongated and slightly concave H-layout.

The location of the site, distant from the main city, will make it imperative for most believers to commute to the mosque by car. The vehicular access to the site is from the eastern direction, while parking is scattered in the north and north-eastern parts of the site. However, there is a pedestrian entry to the complex, just before the ninety degree twist of Via Pezzana, leading to the auditorium side of the complex. Landscaped islands, placed intermediately between the parking areas and the paved plaza, greet the believer as he/ she makes his/ her way towards the prayer hall. Portoghesi quotes Quranic texts in reference to these gardens and according to him, they are meant to emulate images of Paradise.

After passing through these gardens, a believer arrives at the circular plaza which is raised a few feet from the ground level, with a pool in the center and a water channel connecting it to geometrically laid out distant water bodies. The circular plaza acts as threshold between the soft landscaped area and the building, indicating to the believer his/ her arrival at the sacred realm of the mosque area Portoghesi claims that in the Islamic religion "the distinction between the sacred and profane loses much of its meaning"[61] but the design decision to place the circular plaza in such coercive manner in the landscape obviously contradicts his assumption.

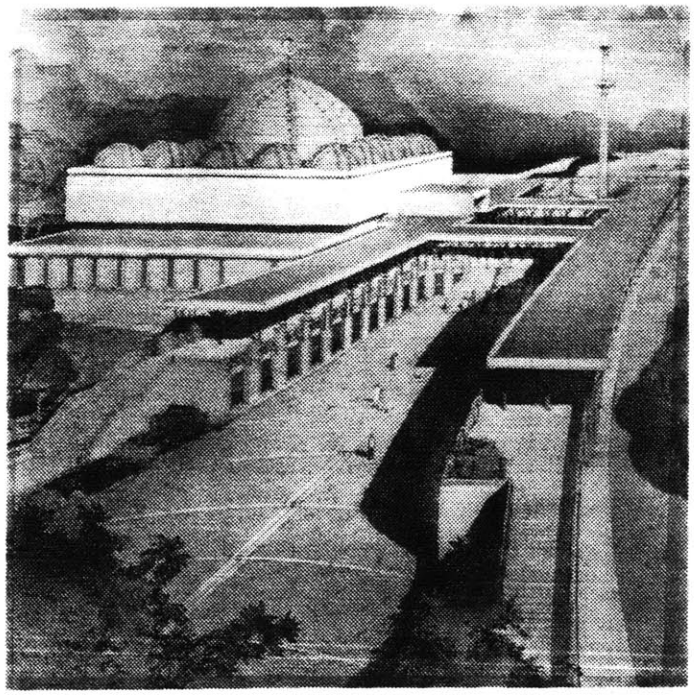


Fig. 4.56 A water-color rendering of the project showing the mall type space, inspired by the ziyada space in Ibn Tulun, Cairo.

After crossing the threshold, one passes through a long, paved mall type space, surrounded on the longitudinal sides by the arms of the cultural center on the ground floor level and the covered walkways on the upper floor. The rhythm of the arcade, with its widening column shafts, moves horizontally through the central courtyard and follows the geometrically designed canal down the other section of the mall. The feeling of this space was intended to remind people of the ziyada space in Ibn Tulun, with the minaret placed on the central axes. Its autonomous form, like an obelisk, was also intended as visual focus for people approaching the building from the Via Pezzana. However, on the client's insistence the minaret was removed from this central position at a later stage of design development, and placed in proximity to the western side of the mosque. Its original height of one hundred and thirty one feet was also considerably reduced. This was apparently or possibly a political restriction imposed by the planning authori-

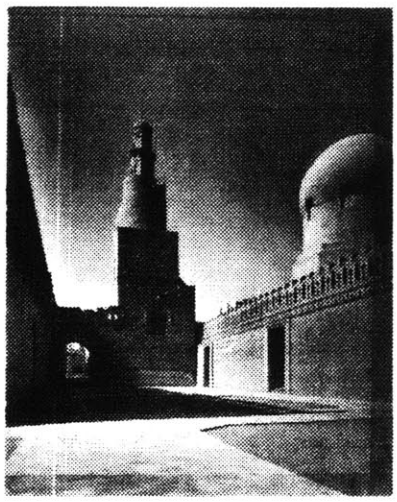


Fig. 4.57 The ziyada space in Ibn Tulun, Cairo.

ties. The minaret now responds to the prayer hall mass and is primarily an articulate pillar, similar to the one used inside the mosque but with enlarged proportions to fit its urban scale.

A grand staircase confronts the viewer next, which leads to the central court. The mosque proper, which is connected to the courtyard, is a squat rectangle surmounted by a square, and adorned with a central dome which is in turn surrounded by sixteen smaller domes. The sequential layering of spaces is very clearly enhanced by architectural elements; a clear transition from the circular plaza to the mall and then on to the stairs which lead to the grand court and then a shift in the axes which pulls the believer towards the prayer hall. However, this sequence does not work liturgically, as the believer has to enter the ground floor space, under the courtyard, off which the ablution facilities are located.

Apart from the prayer hall, the central space under the courtyard then becomes the most important space in the complex. The lower and upper prayer halls, the wings of the cultural center stretching into the landscape and the auditorium, all can be accessed through this space. It is placed to focus all the vibrant energies and the stasis of on opposing motion into a perfect square. A grand staircase, placed on axes to the entrance, leads to the auditorium. The roof of the auditorium, which is sandwiched between the H- wings, forms a terrace on the exterior and connects the pedestrian access off Via Pezzana.

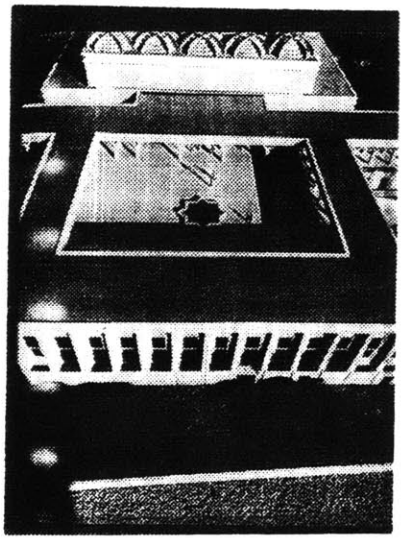


Fig. 4.58 View of the courtyard adjoining the prayer hall; photograph of a model.

The cultural functions are housed in two linear arms of the H wings. The northern-most wing accommodates two levels of floors, as the site slopes steeply towards that end, however the southern wing houses the student residences

on one side and has only one level of floor space. Various functions are housed in these rather long wings and are accessed through corridors which are placed alongside the exterior mall space. The ablution facilities are located next to the smaller prayer hall. After performing the ritual, a believer accesses the main prayer hall through an internal stair case which leads to the walkways above and which in turn leads to the main entrance to the prayer hall. The ritual of ablutions obviously suffers from the same predicament as the London Mosque.

The upper prayer hall is the culmination of the visual experience of the building whose design, according to Portoghesi, was "inspired by the mosques of the classic phase of Islamic architecture, that is it is conceived as a

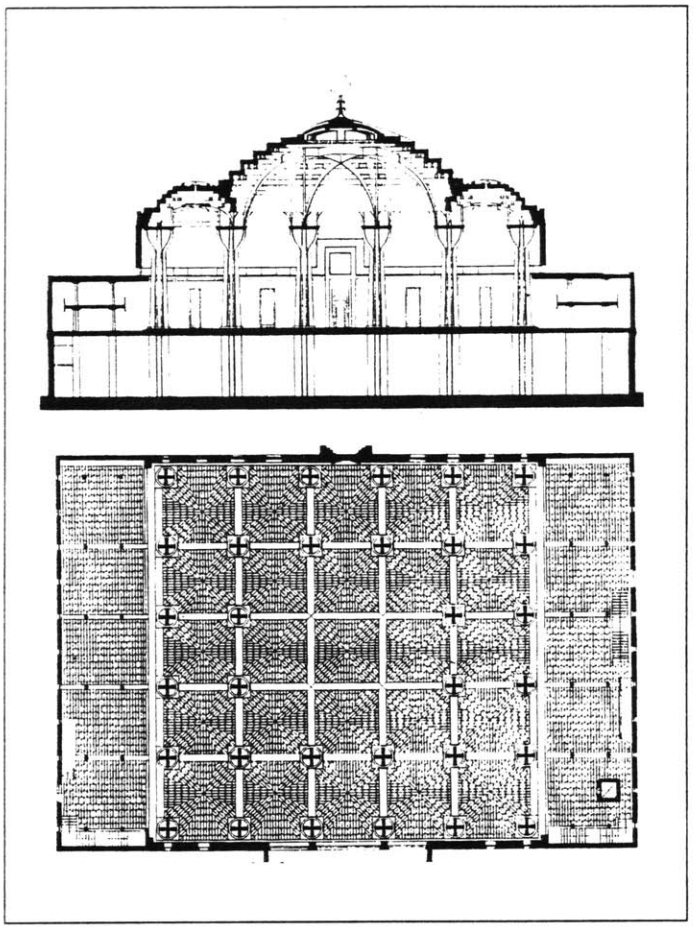


Fig. 4.59 Plan and Section of the Prayer hall.

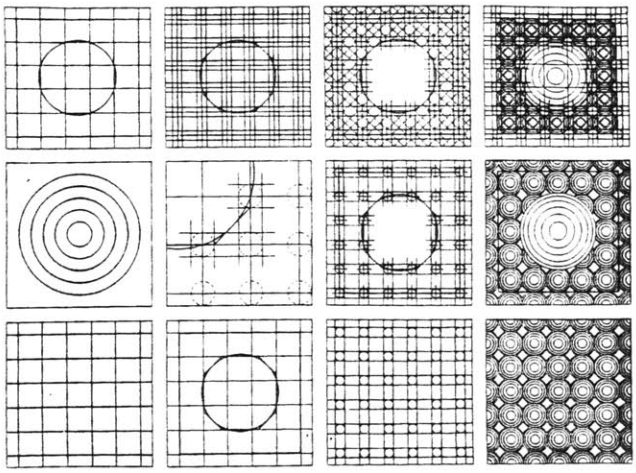
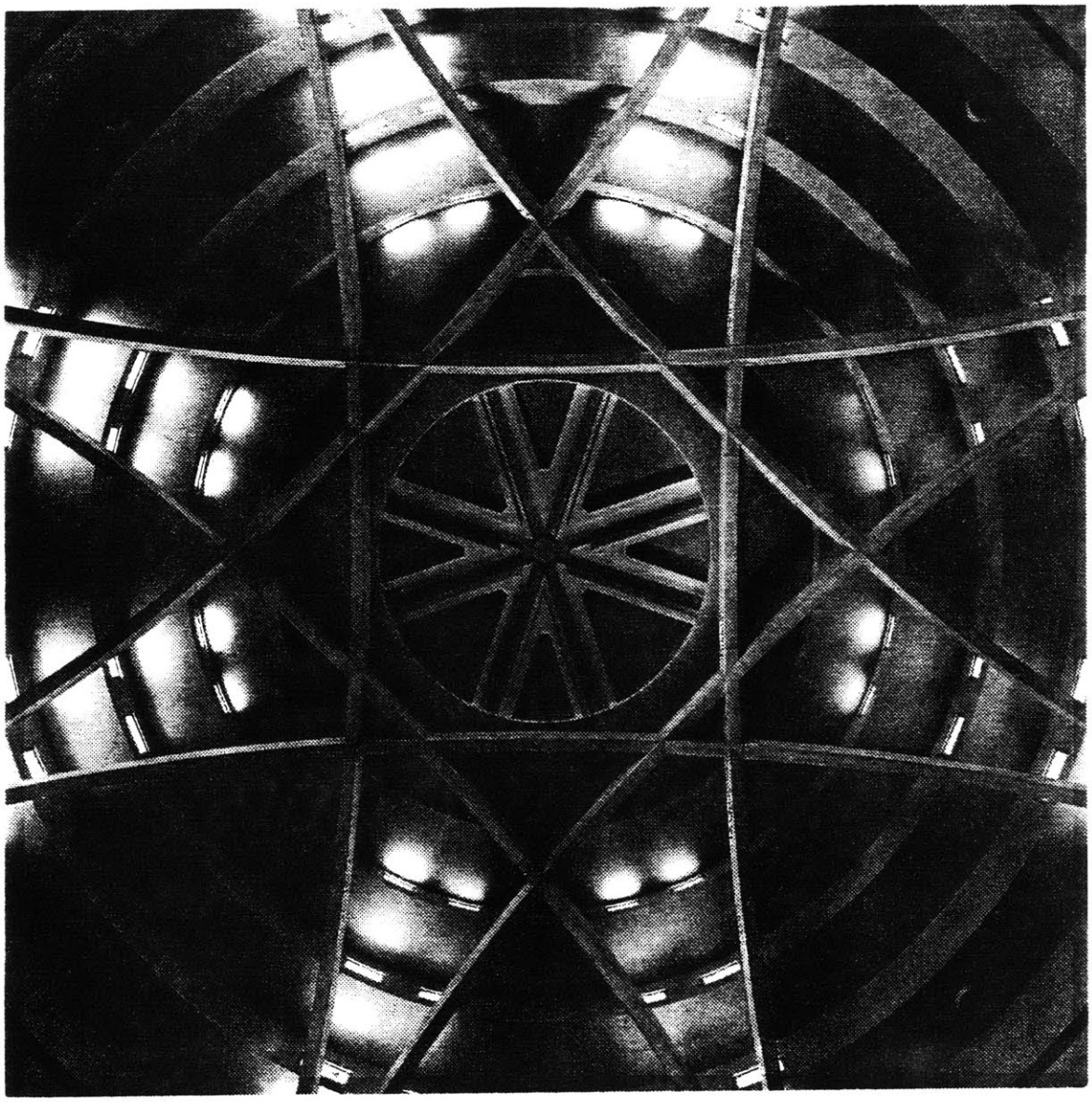


Fig. 4.60 Geometric parti of the Prayer hall.

Fig. 4.61 The central dome viewed from below.



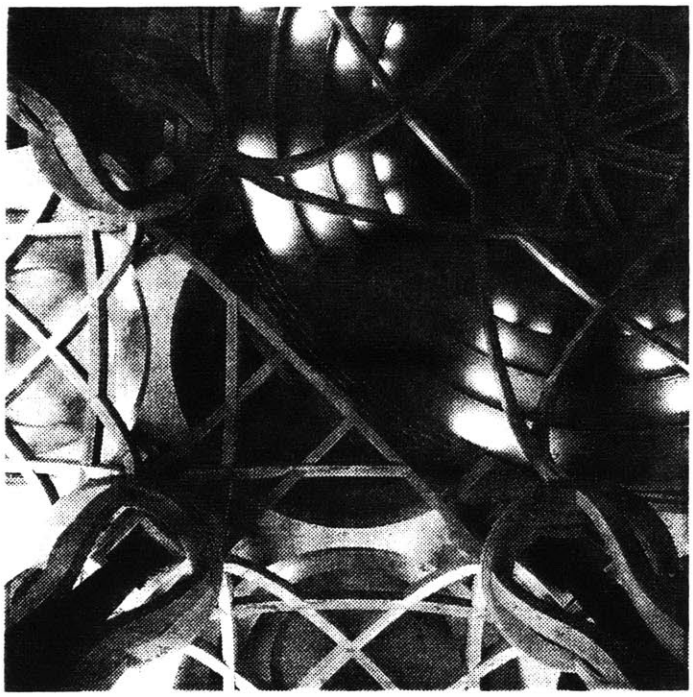


Fig. 4.62 Detail of the intersection of the central dome with the perimeter domes.

Fig. 4.63 View of the lateral zones towards the central dome.

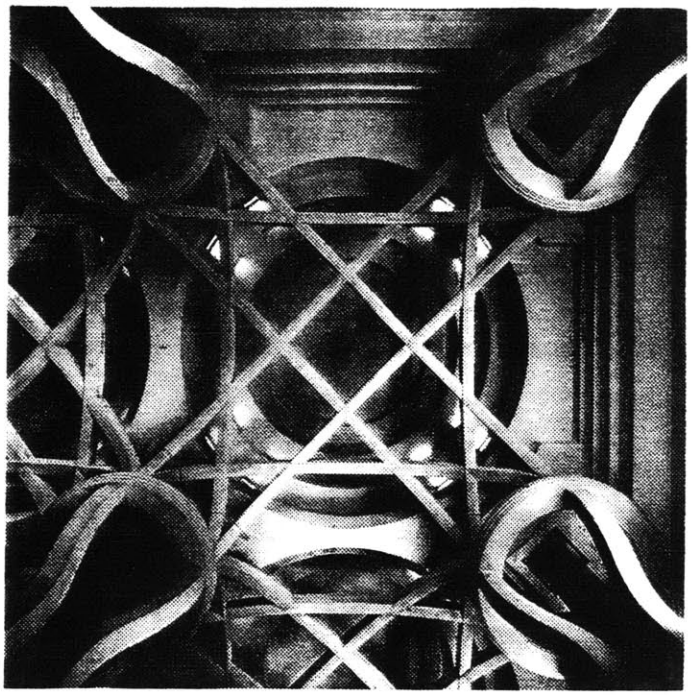
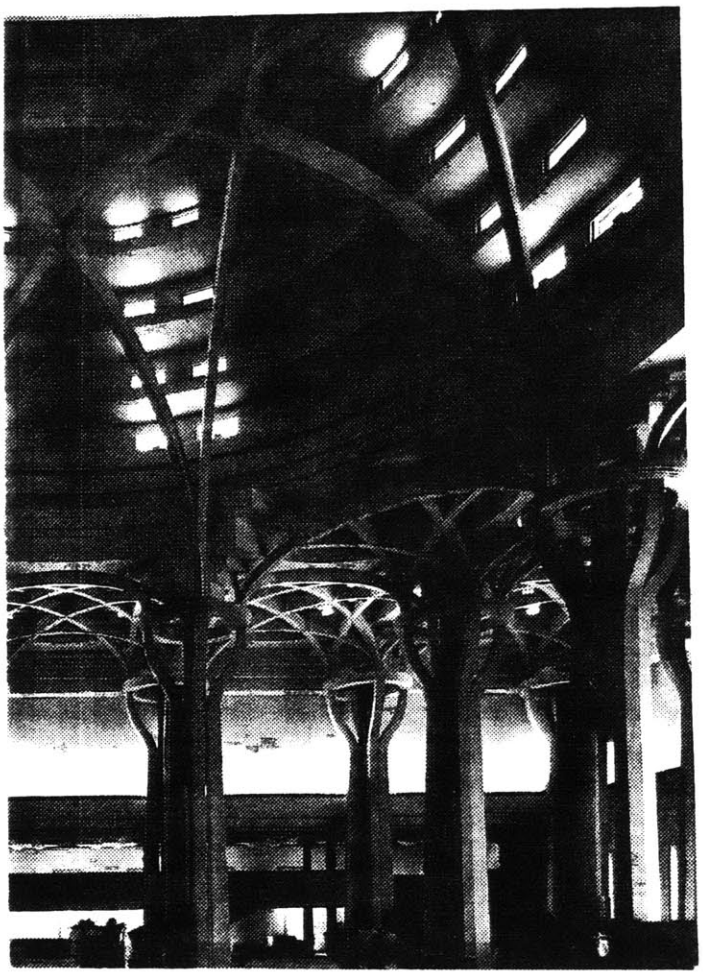


Fig. 4.64 One of the sixteen perimeter domes viewed from below.

Fig. 4.65 View across the perimeter domes.



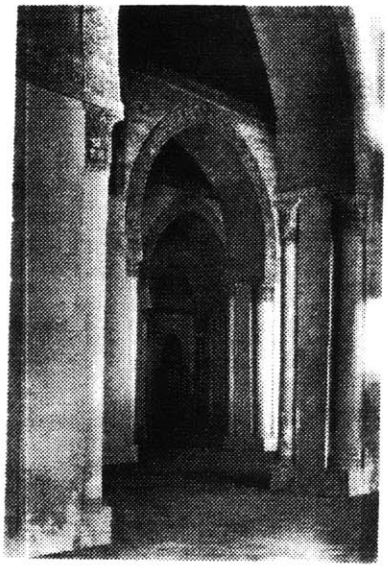


Fig. 4.67 The precedent; the classical hypostyle mosques. Ibn Tulun, Cairo.

Fig. 4.66 View of the prayer hall, with the women's gallery in the background.

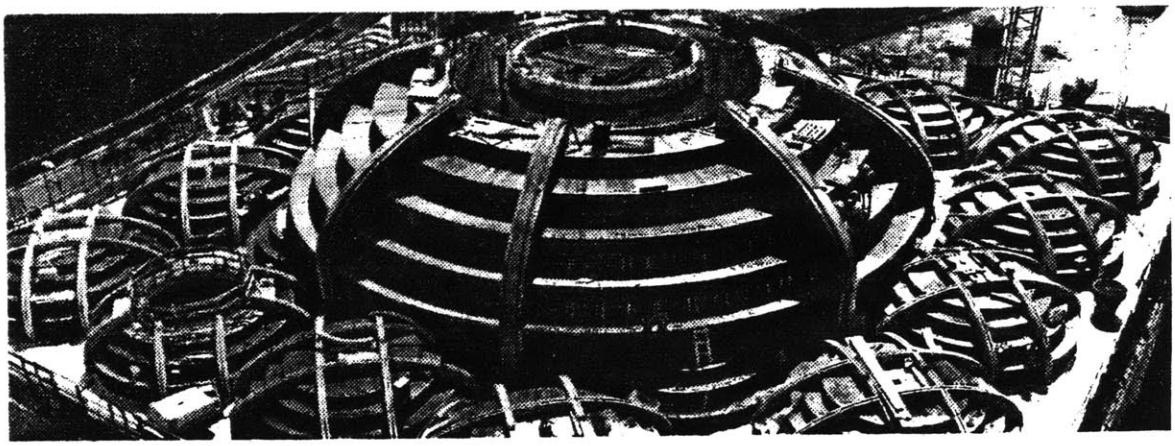


Fig. 4.68 Exterior view of the stepped domes.

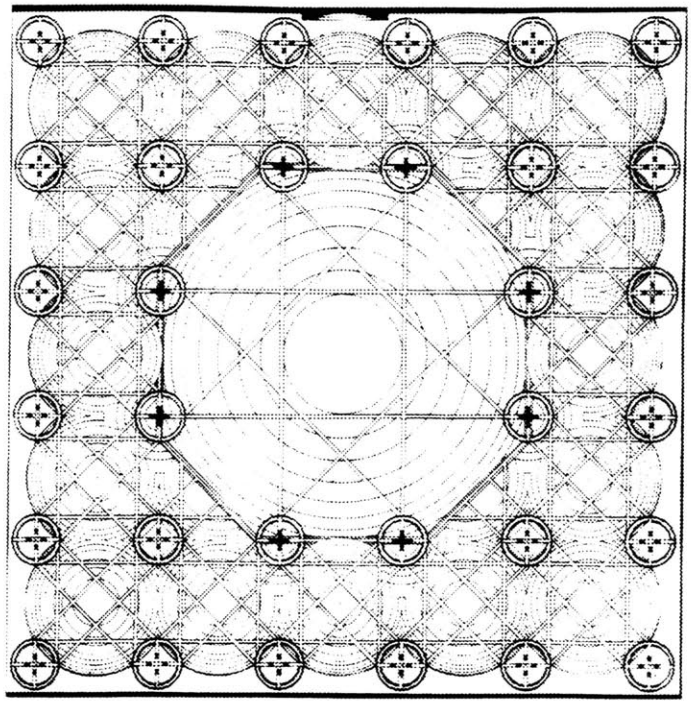


Fig. 4.69 Reflected Ceiling Plan of the Prayer hall.

square or rectangle hall preceded by a courtyard and is subdivided by a system of columns which carry the roof."[62] The flying and vibrant intersecting arches of the columns and the stepped domes dominate the space. The unique bearing elements are polystyle pillars made by the coupling of four square-section units that widen at the top. The shaft and the capital are unified into one element in these prefabricated bearing units. The widening was intended to "reproduce the gesture of hands opened for prayer or the symbolic form of the palm."[63]

Balconies for women are housed under a flat ceiling on either side of the square drum. The mihrab niche is characterized by its slender proportions, with a number stepped niches inserted within the outside band. These stepped niches are also carried over on to the exterior facade of the building.

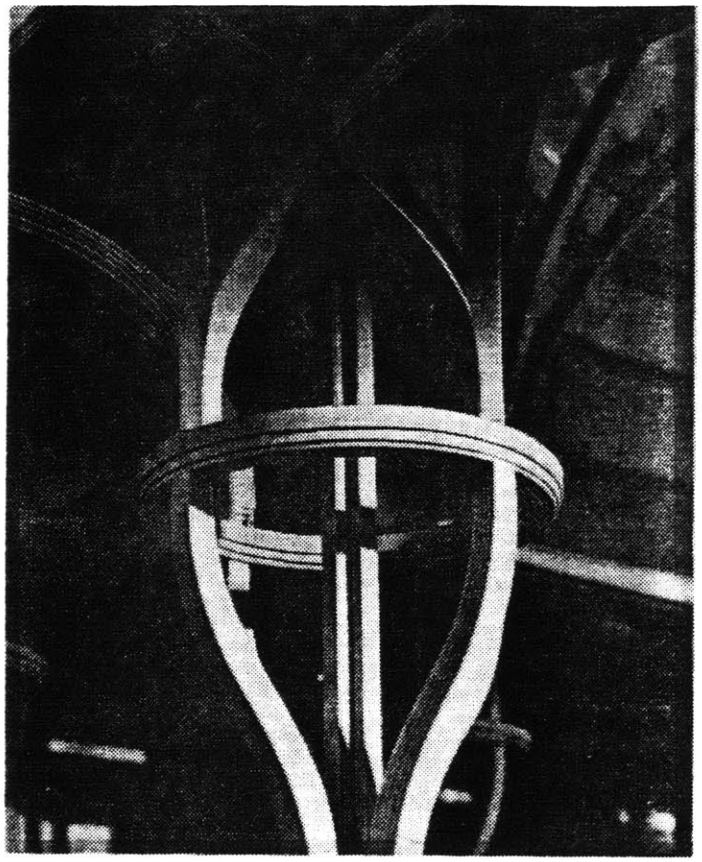


Fig. 4.70 Portoghesi's praying hands

Fig. 4.71 Human praying hands.

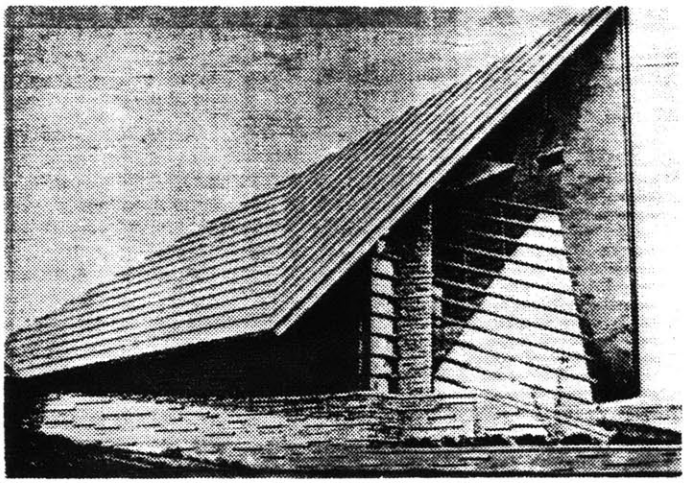


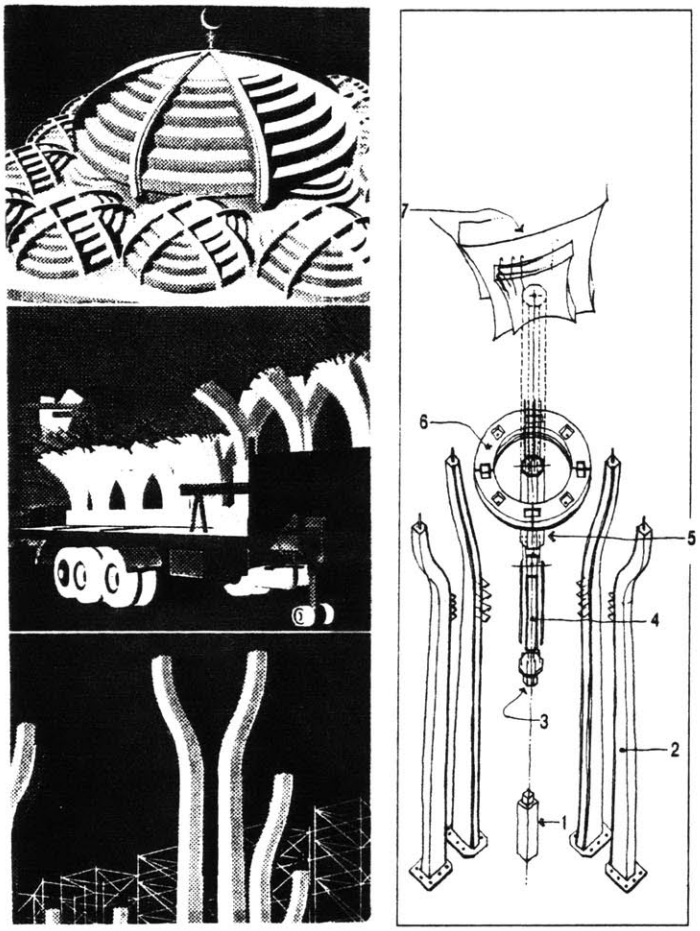
Fig. 4.72 Frank Lloyd Wright's praying hands, in a church at Madison, Wisconsin.

The stepped domes are supported by interpenetrating arches, with a half moon profile to reduce the lateral thrust. They are clear references to many Islamic monuments but their interweaving and organic quality is more in tune with the Gothic and Baroque architecture of Europe. The contour of the exterior of the domes is formed with precast frames rising from the slab to the apex and the stepped concentric rings, and is intended to emulate the profile of a four centered Persian arch. However, the height of the domes, which are considerably lower than that of St. Peter's, a condition imposed by the Vatican, gives them a more horizontal and compressed appearance.

Rectangular clearstory windows are set into the stepping rings forming the domes, letting defused light into the prayer hall. Light also enters through the over-scaled windows on the side walls of the prayer hall. A horizontal strip of windows separates the horizontal ceiling of the balcony area from the vertical face of the square drum, consisting of the central and sixteen perimeter domes. Light filtering through this continuous band of windows gives almost a floating feeling to the square drum. Purini poetically attempts to capture the feeling of light filtering into the prayer hall by writing;
"The solid wall is lifted into two halves and cut by the light, which gradually moves closer to the marble paving until it acquires a perceptible, shadowy weight, almost as if its liquid and volatile substance in the 'open hands' of the big, abstract capitals drawn by solemn curves."[64]

Reinforced concrete is the primary structural material for the building. The pillars and arches are prefabricated in white concrete, formed of a special aggregate of white cement, crushed stones and white marble sand from Carrara. Straw-colored bricks treated with a process called

"opus testaceum" have been used for the exterior facades. In this process, in order to minimize the thickness of the mortar joint (almost 1 mm), bricks are polished on the two sides and the outside surface. Travertine has also been extensively used on the facade in the form of parapets, water gargoyles and framing band around the windows. The rings of the cupolas are clad in lead, obviously inspired by the Renaissance and Baroque traditions of Rome. The interior roofing of the prayer hall has been finished with an application of encaustic plaster. Except in the case of precast concrete members, Portoghesi refers to the historical use of each of these materials in the context of Italy. He claims that it was in the choice of materials that the "relation with the urban surroundings was most closely defined."[65]



1. *Lower central component*
2. *Double inflected member*
3. *Plug*
4. *Containing Elements*
5. *Octagonal Hollow Component*
6. *Toroidal Element*
7. *Secondary Capital*

Fig. 4. 73 Components of the columns and computer rendering of the construction process.

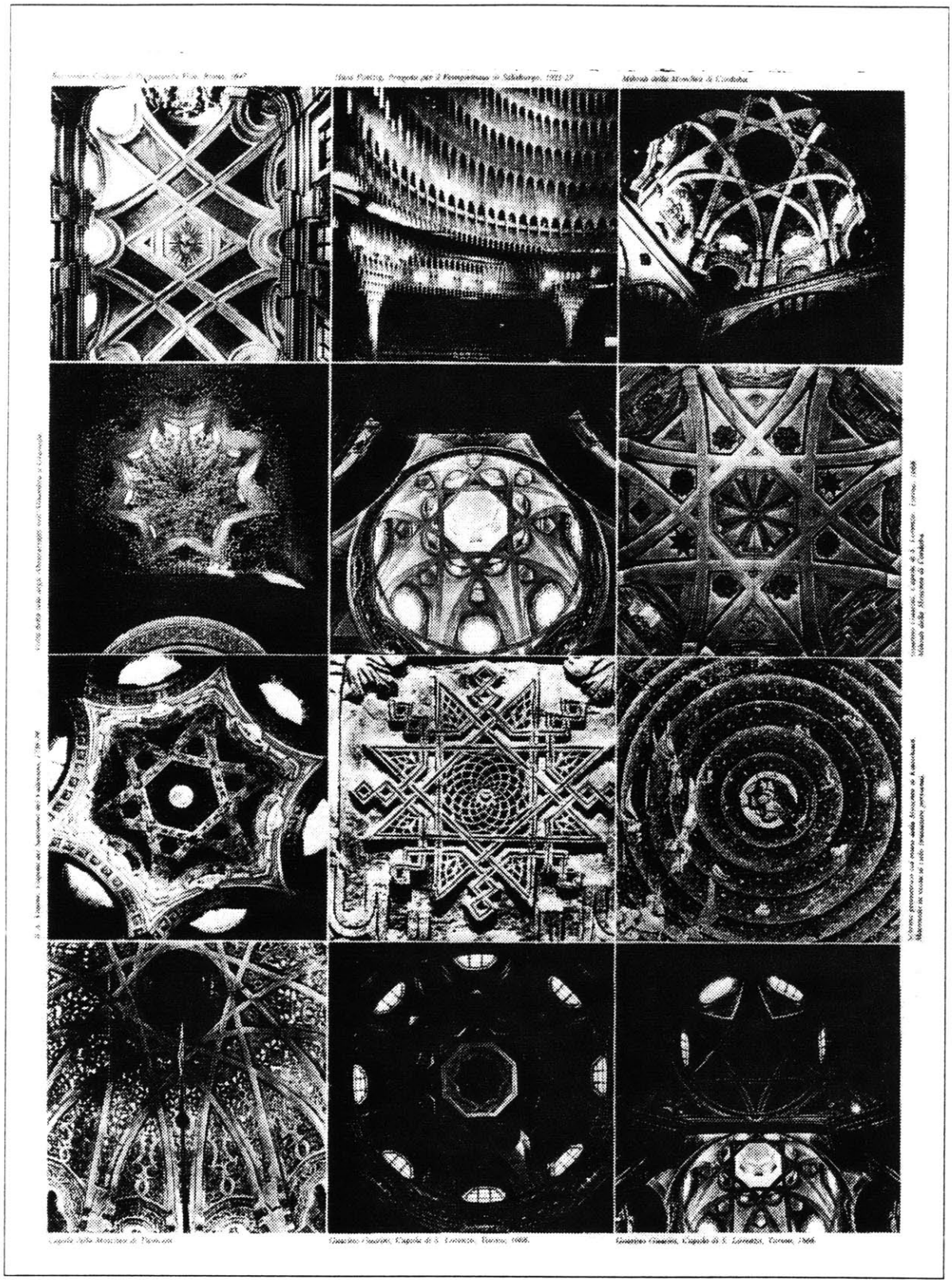


Fig. 4.74 Self-proclaimed historical references.

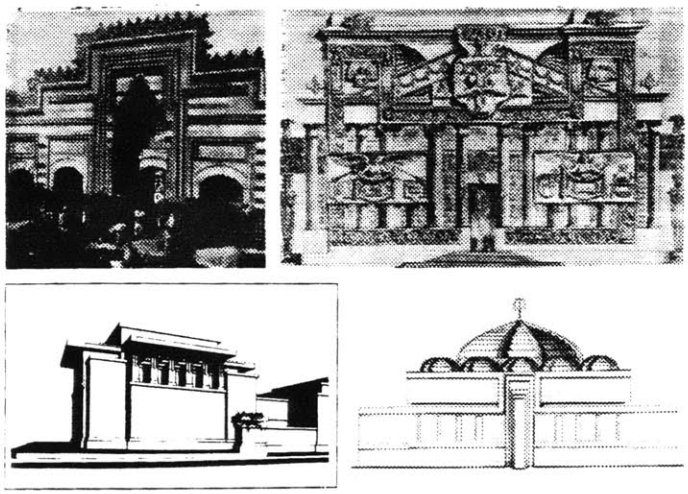


Fig.4.75 Self-proclaimed historical and contemporary references;. The Bab-es-Safa portal in Mecca, a side of the Unity Church by Frank Lloyd Wright, and an engraving from "Opinion on Architecture" by Giambattista Piranesi, compared with the facade with the facade of the Rome Mosque.

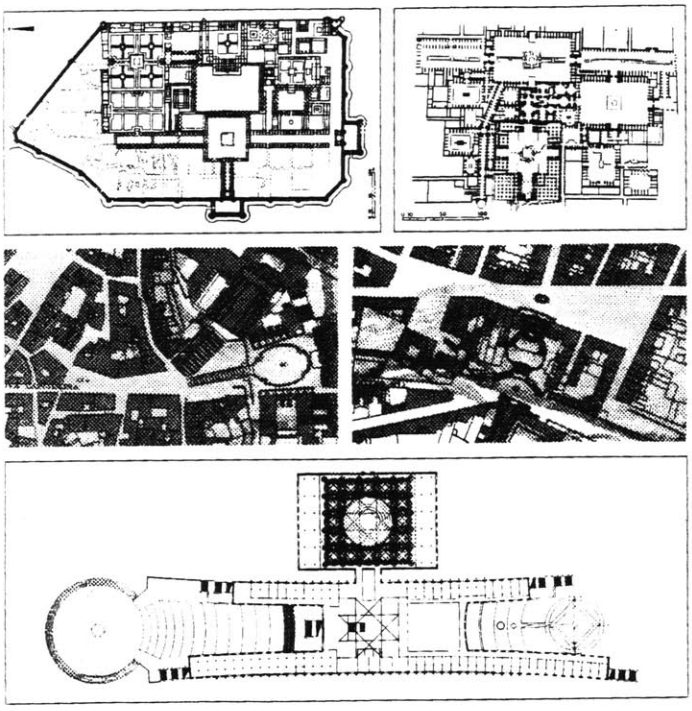


Fig 4.76 Self-proclaimed historical and contemporary references; The Delhi citadel, the mosque of Gawhar Sad-e-Mashed, and the bow-shaped widening of the ancient sqaure of the Capitol and Piazza di Spagna in Rome, compared with the plan of the Rome mosque.

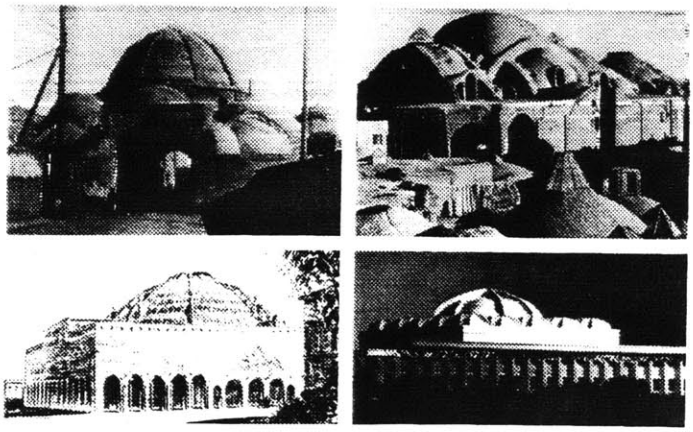


Fig. 4.77 Self-proclaimed contemporary and historical references; Entrance with ribbed domes in Kashan, Bruno Taut's plan for the House of Friendship in Constantinople, and roof of a large space in Kashan, compared with the dome of the Rome Mosque.

Fig. 4.78 Self-proclaimed historical and contemporary references; Vault of the mihrab in Cordoba Mosque, vault of the Chapel of the Propaganda Fide College, details of Saint Mary of the Seven Sorrows, compared to the Prayer hall of the Rome Mosque.

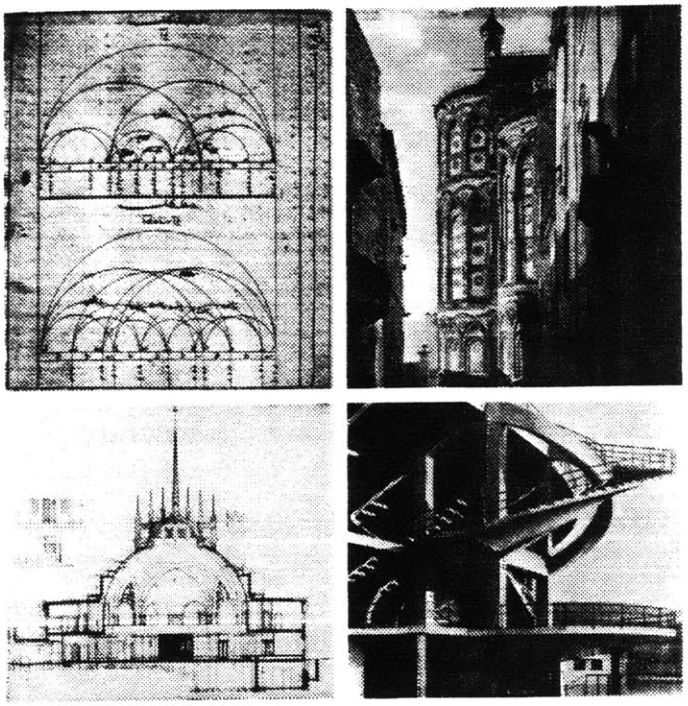


Fig 4.79 Self-proclaimed historical and contemporary references. Musical notation from a Persian code, section of a chapel design by W. Burley Griffin, apse of the basilica of Montreal, and staircase of the G. Berta stadium of Florence by Nervi, compared with the interweaving arches of the Rome Mosque.

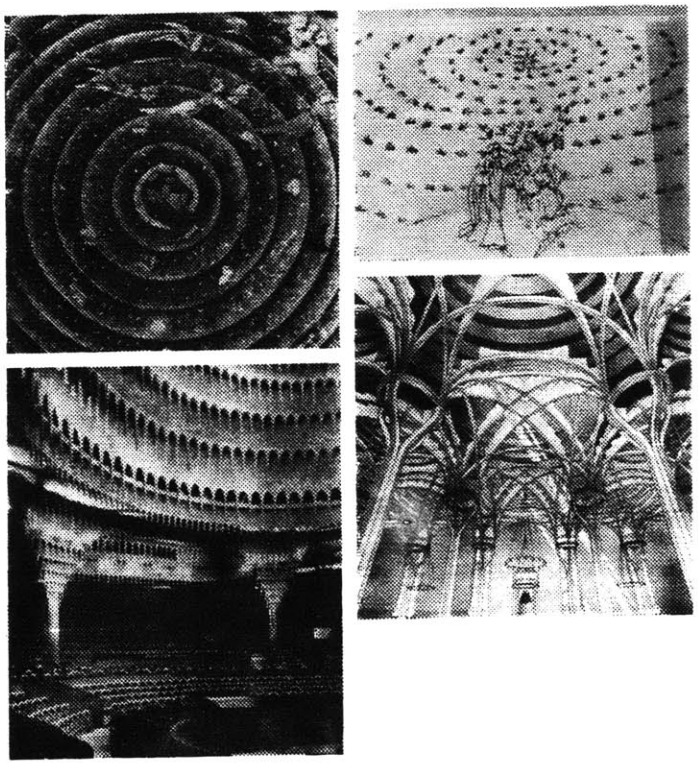


Fig. 4.80 Self-proclaimed historical and contmeporary references; Mohammed on a visit to heaven, from a Persian miniature, hall of the Festspielehaus by H. Poelzig, illustartion by Botticelli for Dante's "Paradise", compared with the concenteric rings of the Prayer hall.

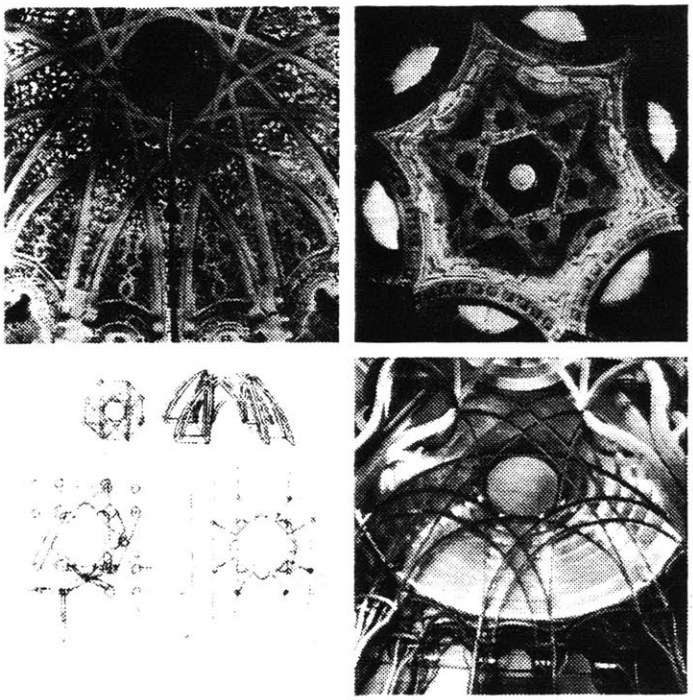


Fig. 4.81 Self-proclaimed historical and contemporary references; Dome of the mosque Tlemcen (Maghreb), drawing by Leonardo da Vinci, dome of the Vallinotto sanctuary, compared with the central dome of the Rome Mosque.

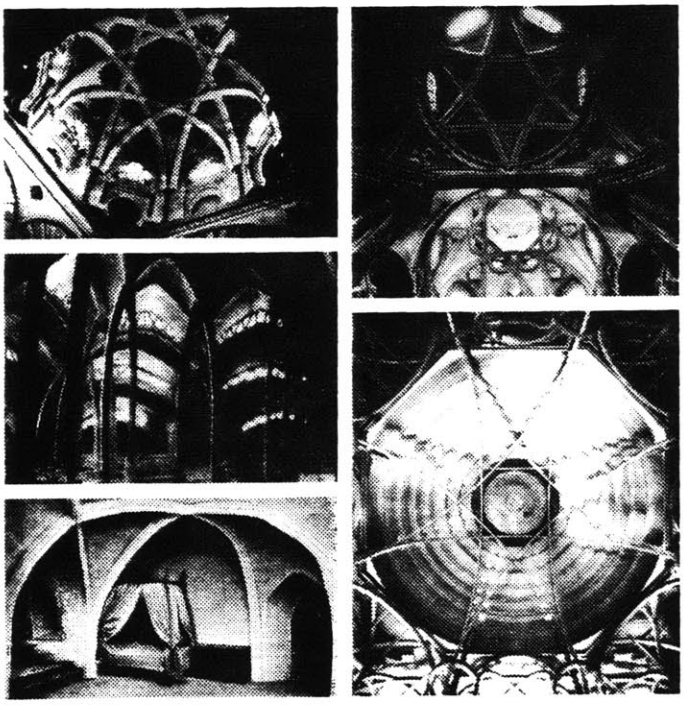


Fig. 4.82 Self-proclaimed historical and contemporary references; Mihrab of the Mosque of Cordoba, plan of the church by O. Bartning, H. Poelzig's setting for "Golem," domes of the Church of San Lorenzo in Turin by G. Guriani, compared with the vaults of the Rome Mosque.

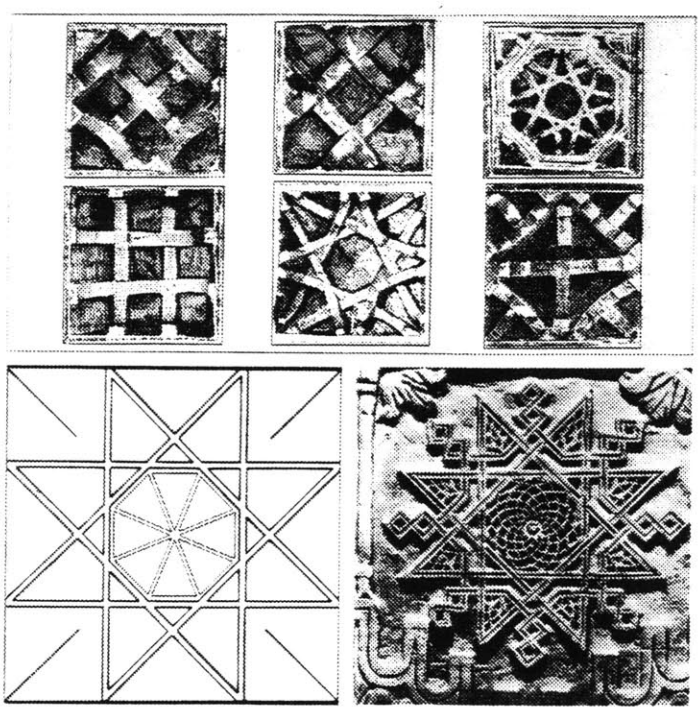


Fig. 4.83 Self-proclaimed historical and contemporary references; the theme of the "mandala" in the domes of the mosque of Toledo, transformed in the Church of Cristo de la Luz, geometric diagram of the mosque of Kairohuan, compared with the pattern in the Rome mosque.

Analysis and Criticism

Obviously, in the case of this mosque the architectural team did not refer to a single model for inspiration. The written statements, self proclaimed historical comparisons and diagrammatic illustrations bear testimony to this reshuffling of the past. Portoghesi argues that architects have a responsibility to communicate with the public through popularly established and easily understood codes and conventions. The symbolic and aesthetic enrichment is sought by him as a replacement for the abstract and unadorned aesthetic. The central issue is whether this imaginative collage from such distant sources into a new unity carries any substantive conviction and evokes coherent meanings? Has his search for imagery far superseded the functional resolutions in the building?

The answers to these queries can be addressed by focusing

on several aspects of the building. From an overall planning perspective, the massing of the building suggests a separation of the sacred from the profane. This is apparent by the detachment of the prayer hall from the H-type wings and further by raising the prayer hall above the ground level. The H-type wings are the shopping streets for culture, where each activity is accommodated in a shop. Is this a valid symbolic and functional layout for a community who wants to be united under one roof, sharing their unique experiences? The long corridors, connecting the various activities to the central square under the courtyard, are the only communication link between these different parts.

The centrality of the raised square volume in the prayer hall clearly contradicts Portoghesi's claim that the space evokes the feeling of a hypostyle plan. The floor slab under the symmetrically placed women's balconies is lower than the central area, further accentuating the separation between the square volume and the attached rectangular spaces. The whole energy of the prayer is focused in the center, an epitome of the High Renaissance rather than of Classical Islamic Architecture. Portoghesi asserts that earlier mosques of Islam were characterized by "a spacious enclosure partly covered by roofs or vaults resting on a 'forest' of columns".[66] An ambiance of simplicity characterized traditional mosques, where each believer could focus his thoughts on prayer, but in the case of Baroque interiors of the Rome mosque that simplicity has been replaced with complexity and a sense of "giddiness and incomprehensibility".[67] The columns seen in isolation are no doubt a structural wonder of prestressed and prefabricated concrete but aesthetically they appear like "a Nervi structure on a holiday."[68] I worry about their scale in relation to the prayer hall height. Portoghesi's placement

of the horizontal band of windows around the square drum was intended to give a floating feeling to the volume, which was in turn supported by the intersecting columns. In order to achieve this floating the placing perimeter columns were placed right up against the vertical face of the exterior wall, resulting in an awkward relationship between the two tectonic elements. Needless to say that the separation between the exterior wall and the supporting column is a completely modern syntax.

The facade, characterized by the industrial style windows, is simple and austere with horizontal bands layered vertically. The Baroque feeling of the interior of the prayer hall is denied on the exterior. The windows adorning the side walls of the prayer hall reverse and distort the traditional idea of a narrow opening on the top as a sun-shading device. They are Islamicized with the addition of intersecting Persian arch motifs and the narrow segment is further stretched vertically, giving a T-profile to the window.

Portoghesi's attempts at synthesizing two traditions, namely Islamic and European, which have an immense plurality within themselves, combined with the fact that the building is constructed with modern means, is in my mind, a central issue. On one hand, the purity of the cubical volume is steeped in modernism, yet the columns which support it with their vibrant quality are a reference to the architecture of Borromini. The domes adorning the exterior take the profile of the smooth brick textures or of glazed Persian tiles, yet they are Europeanized with their stepped rings of lead sheathing. The raised covered walkways are extensions of the building into the landscape. reminding one of the colonnades of St. Peter's. But what do they lead to or are their abrupt ends meant to signify a political rivalry?

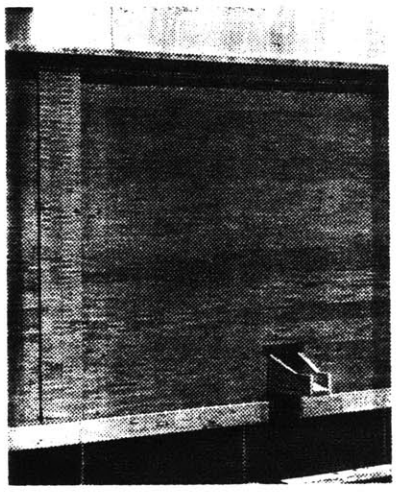


Fig 4.84 The horizontal band of windows on the exterior.

Unlike other Post Modernists, Portoghesi's impulse in the design of the mosque has not only been scenographic but also tectonic. But there is a total schism between the inner substance and the outer form. The Islamic and European quotations tend to interpenetrate like the ribs of the columns but nevertheless disconcertingly. These collages are then rendered as unfocussed images, mixed with the more abstract, almost cubist forms. The functional needs of a calm and meditative place for prayer are secondary to the metaphoric illusions of Portoghesi. His attempt at "dematerialization" of the form has resulted in the deconstruction of styles and symbols.

Synthesis

There are tremendous political implications in building a large scale Friday mosque in a Western city and in both instances cited the immigrant communities had long battles with local neighborhoods, government official and planning officials. In addition, the national and regional diversity within the leadership of the community makes the building of these Institutions a highly politicized event. The precedents of these buildings in the Islamic world are structures which usually impose an urban order and the surrounding fabric is subservient to them; the regulations of the waqf system and the fear of hampering with the propagation of religion are the two primary reasons for this complaisant response. While, Islamic Institutions built in the West are subservient to the general planning regulations and in addition have also to abide by the ones which are imposed with political undertones.

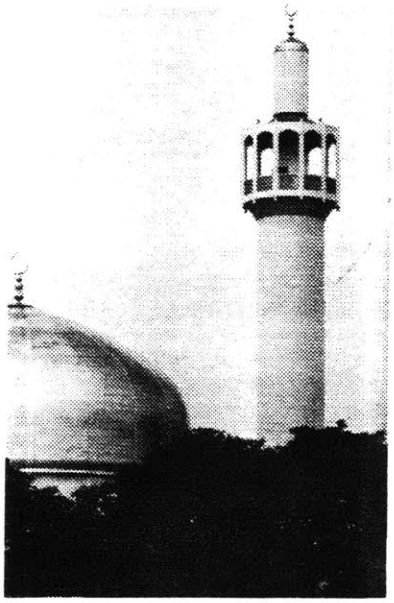


Fig. 4.85 The London Central Mosque

The are several interpretations among the Islamic *Ummah* of the various archetypal elements of the mosque. In the case of London, the clients objected on the protrusion of the mihrab niche and its expression was denied on the exterior,

except by the controversial star shaped window. The free-standing minaret was also unacceptable which was then incorporated within the mass of the building. However, in the case of the Rome mosque, Portoghesi expressed the mihrab niche on the exterior in the form of over-scaled blind portal and the minaret was also a free standing object, like an obelisk.

The inner substance of the London Mosque is the International style of design which is vehemently contradicted by the pastiche forms of Persian arches. Gibberd's design is not even sensitive to the liturgical needs of the mosque. In the case of Rome, Portoghesi's order is dominated by, often conflicting, European and Islamic building traditions. Each view or detail is charged with multiple images of the past and mixed with "recollections of Art Nouveau writings dissolving into Kahnian phrasing; traces of a Corbusian archeology surrounding legacies of Gaudi, distant avant-gardist etyms such as the ribbon-shaped windows intercepting isolated intermittent Wrightian emissions."[69]

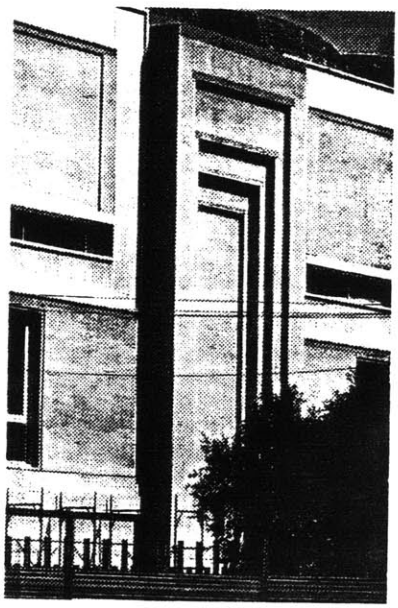


Fig. 4.86 The Rome Mosque

Notes

[1] John Lawton, "Muslims in Europe: The Mosques"; *ARAMCO World Magazine* Vol 30, No. 1, Jan-Feb 1979, p 11
[2] "London Central Mosque"; *RIBA Journal* Vol 162, No. 967, Sept 1977, p 228
[3] John Lawton, "Muslims in Europe: The Mosques"; *ARAMCO World Magazine* Vol 30, No. 1, Jan-Feb 1979, p 12
[4] Quoted in Ronald Lewcock, "London Central Mosque"; *Architect's Journal* Vol 166, No. 32, 10 August 1977, p 266
[5] Ibid, p 266
[6] Ibid, p 259
[7] Ibid, p 259
[8] "Just What Nash would have liked? Mosque competition results"; *Architects' Journal* Vol 150, No. 43, 22 October 1969, p 990
[9] Ibid, p 990
[10] Ibid, pp 988-990
[11] *Heating and Ventilating Engineer* Vol 51, No 601, Septem-

ber 1977, p 22
[12] *Architect* Vol 125, August 1977, pp 27-30
[13] William Curtis, *Modern Architecture since 1900*, NJ: Prentice Hall Inc., 1983, p 357
[14] Ibid, p 357
[15] Phil Windsor, "Islam Comes West. The London Central Mosque in Regent's Park."; *Architect* Vol 125, August 1977, p 28
[16] Ronald Lewcock, "London Central Mosque"; *Architect's Journal* Vol 166, No. 32, 10 August 1977, p 259
[17] "Just What Nash would have liked? Mosque competition results"; *Architects' Journal* Vol 150, No. 43, 22 October 1969, p 990
[18] "The London Central Mosque"; *Architectural Review* Vol 162, No. 967, September 1977, p 145
[19] Quoted as seven million US dollars in some sources
[20] Nikolaus Pevsner, *An Outline of European Architecture*, London: Pelican Books, 1943, p 378
[21] Ibid, p 378
[22] "London Central Mosque"; *RIBA Journal* Vol 83, No. 6, June 1976, p 228
[23] Ronald Lewcock, "London Central Mosque"; *Architect's Journal* Vol 166, No. 32, 10 August 1977, p 259
[24] Ibid, p 266
[25] "London Central Mosque"; *RIBA Journal* Vol 83, No. 6, June 1976, p 228
[26] Ronald Lewcock, "London Central Mosque"; *Architect's Journal* Vol 166, No. 32, 10 August 1977, p 269
[27] Ibid, 269
[28] Quoted in Phil Windsor, "Meeting the brief: Islam Comes West"; *Architects* Vol 125, August 1977, pp 27
[29] "Proposed Mosque for Rome"; *Progressive Architecture* Vol 60, No. 2, February 1979, p 30
[30] Peter Buchanan, "Roman Mosque"; *Architectural Review* Vol 168, No. 1005, November 1980, p 266
[31] Quoted in David S. Noss & John B. Noss, *Man's Religions*,, NY: Macmillan, 1984, p 486
[32] "Proposed Mosque for Rome"; *Progressive Architecture* Vol 60, No. 2, February 1979, p 30
[33] "Architect's Report"; *Domus* No. 720, October 1990, p 45
[34] Ibid, p 45
[35] Manferdo Tafuri, *History of Italian Architecture, 1944-1985*, Cambridge: MIT Press, 1989, p 190
[36] "Proposed Mosque for Rome"; *Progressive Architecture* Vol 60, No. 2, February 1979, p 30
[37] "Architect's Report"; *Domus* No. 720, October 1990, p 45
[38] "Proposed Mosque for Rome"; *Progressive Architecture* Vol 60, No. 2, February 1979, p 30
[39] Franco Purini, *"Paolo Portoghesi, Vittorio Gigliotti: Mosque and Islamic Center in Rome"*; *Domus* No. 720, October 1990, p 42

[40] After a through search in the library through every possible means for original entries of the competition, I discovered that only Paolo Portoghesi's entry had been published at the time of the declaration of winners, in an obscure French Journal by the title of *'Architecture'*. However, I managed to access the Journal and ironically it designates Portoghesi as the winner of the competition with the title of the article as; *"1er prix: Paolo Portoghesi."* Maybe local Italian journals had published all the entries and unfortunately, I had no means of accessing them. His original entry was also later published in a number of books featuring his complete works.

[41] Paolo Portoghesi, *After Modern Architecture*, NY: Rizzoli, 1982, p 27

[42] Francesco Moschini (Ed.), *Paolo Portoghesi: Projects and drawings 1949-1979*, NY: Rizzoli, 1980 p 15-16

[43] Ibid, p 15

[44] Ibid, p 15

[45] Manferdo Tafuri, *History of Italian Architecture, 1944-1985*, Cambridge: MIT Press, 1989, p 190

[46] Paolo Portoghesi, *Postmodern: The Architecture of the Postindustrial Society*, NY: Rizzoli, 1982, pp 7

[47] Ibid, p 7

[48] Paolo Portoghesi, *After Modern Architecture*, NY: Rizzoli, 1982, p 33

[49] Ibid, p 29

[50] Ibid, p 29

[51] Stanford Anderson, "Types and Conventions in Time: Towards a History for the Duration and Change of Artifacts"; *Perspecta* 18, 1982, pp 108-117

[52] Stanford Anderson, "Critical Conventionalism: The History of Architecture", *Midgard* Vol 1, No 1, p 42

[53] Manferdo Tafuri, *History of Italian Architecture, 1944-1985*, Cambridge: MIT Press, 1989, p 190

[54] Ibid, p 191

[55] "Proposed Mosque for Rome"; *Progressive Architecture* Vol 60, No. 2, February 1979, p 30

[56] Paolo Portoghesi, "Architect's Report: Islamic Cultural Center of Italy and the Roman Mosque"; *Architectural Design* Vol 50, No. 1-2, p 25

[57] Ibid, p 25

[58] Ibid, p 25

[59] Ibid, p 25

[60] Ibid, p 25

[61] Ibid, p 30

[62] Ibid, p 29

[63] "Architect's Report"; *Domus* No. 720, October 1990, p 45

[64] Franco Purini, "Paolo Portoghesi, Vittorio Gigliotti: Mosque and Islamic Center in Rome"; *Domus* No. 720, October 1990, p 45

[65] "Architect's Report"; *Domus* No. 720, October 1990, p 45

[66] Paolo Portoghesi, "Architect's Report: Islamic Cultural

Center of Italy and the Roman Mosque"; *Architectural Design* Vol 50, No. 1-2, p 25

[67] Charles Jencks, "Post-Modern Mosque"; *Architectural Design* Vol 50, No 1-2, 1980, p 24

[68] Ibid, p 24

[69] Franco Purini, "Paolo Portoghesi, Vittorio Gigliotti: Mosque and Islamic Center in Rome"; *Domus* No. 720, October 1990, p XXII

5. Case Studies: The two Jamatkhanas

A brief background of the Ismaili Community

At present, the Ismaili *tariqáh* is a small minority among the various sects constituting the Islamic *Umma*. Nevertheless during their fourteen hundred years of history, the Ismaili sect has contributed significantly to the development of cultural and intellectual traditions of Islam. After Prophet Muhammed's death in the seventh century, there was a conceptual split over the theological structure of the faith among the believers, which gave rise to the division of the *Umma* among Sunni and Shi'a groups. The Ismailis subscribe to the Shi'a thought, a group which gave loyalty to the Prophet's son-in-law and cousin, Hazrat 'Ali. While the Sunnis appropriated the rule of the Caliphate which began with the Hazrat Abu Bakr, the Shi'as believed that before his death the Prophet had designated Hazrat Ali as his successor and this succession should continue through his and Fatima, the Prophet's daughter's offspring. Thus the Institution of Imamat began immediately after the demise of the Prophet and is generally believed by the Shi'a group that it will continue till the day of judgement. According to the Shi'te thought the Imams, the successors of Hazrat Ali, are endowed with spiritual knowledge and are able to interpret the message of the book and give appropriate guidance with changing times and circumstances on spiritual and worldly matters to the followers.

Throughout the course of history, the Imam has been the central figure of the Shi'te doctrine and a number of splits have taken place on the issue of succession to his position.

One of the major divisions came with the death of Hazrat Jáfar al-Sadiq in the eight century when the group following his son, Ismail came to be known as Ismailis and those who accepted the word of his younger son were called 'Ithna Ashari', a group which accounts for the majority of Shi'tes today. A later split in the medieval times among the Ismailis was again caused by the disagreement on the succession of Imamat and gave rise to 'Nizari Ismailis' and 'Mustali Ismailis'. Regardless of this fragmentation, the Ismailis during the course of history have created significant monuments such as the Al-Azhar in Cairo and also established cities like Mahdiya in Tunisia. This brief introduction is meant to historically orient the reader and is by no means illustrative of the rich and varied history of Nizari Ismailis as they settled in several locations form Northern Africa to China and even established empires such as the Fatimid dynasty.

The Jamatkhanas under study are the religious buildings of the 'Nizari Ismailis', who today give their allegiance to their 49th Imam, H.H. the Aga Khan IV Shah Karim al-Hussein, a direct descendent from Hazrat Ali and Prophet Muhammed. By the middle of the nineteenth century, the seat of Imamat of Ismailis had moved from Iran to the Indian sub-continent and according to the guidance of the Imam of the time, migration had started from economically deprived parts of colonial controlled India to East Africa. While the Ismailis were establishing themselves economically and socially in the Sub-Continent and were also converting Hindu people to the faith of Islam, the Ismaili communities in East Africa were also growing in number and settling in cities such as Zanzibar. Owing to the Indian background of Ismailis, they had adopted several traditional elements of the Hindu practice and according to the guidance of the Imam, great efforts were made to

eliminate those practices and create one unified framework for the practice of the faith. Sultan Mohammed Shah, Aga Khan II, the grandfather of the present Aga Khan assumed the leadership of the community in 1885 and greatly transformed the material and social organization of the community. Under his leadership and philanthropic gestures, the community flourished in East Africa and the Sub-continent and many institutions were built to enhance this development. Both in the Sub-Continent and East Africa the Ismailis were considered minorities and thought by the Muslims in general, to be tainted by the Hindu and Iranian influences. Particularly in East Africa, the Nizari Ismaili's became economically privileged and were perceived as a threat to the local black population. Little effort was made to assimilate with the local population and most families strongly held on to the traditions of the east. However, during the reign of Aga Khan III who died in 1957, great progress was made by the Ismailis in establishing a strong base for institutions, both economic and social, in East Africa and the Sub-Continent for the material progress of the community.

The present Imam, Aga Khan IV, continues the programs laid out by his grandfather, building on them and introducing new ones to lay down a path for the upward mobility of the community. Education, health, social welfare and housing have been among the top priorities and rigorous campaigns have been laid out under his imámat to felicitate this growth. Until 1960s the size of the community in North America and Europe was fairly moderate, with small concentrations spread out over several cities and towns. With the advent of the seventies and the political and racial unrest in Africa and above all with the expulsion of Asians from Uganda, there was an exodus of refugees to the Western world. Apart from this rapid migration of

Ismailis from Africa, the number of families arriving from the Sub-Continent and other developing nations was also slowly increasing due to the harsh economic realities in the area. The number of Ismaili settlements grew in major urban centers such as New York, Vancouver, Toronto, Edmonton in North America and London and Paris in Europe. Though majority of the Ismailis in North America and Europe trace their origins back to the Sub-Continent or Iran but there are small number of members which come also from Afghanistan and Central Asia. In summary, the present community in Europe and North America both consists of immigrants from many parts of the world. Moreover, most of the immigrant groups were racial and religious minorities within there originating areas such as East Africa, while others were a minority due to their association with the Ismaili sect living in a predominantly Islamic state consisting of Sunnis and Shi'tes, such as Pakistan. But the unifying force among them is the leadership of the Imam of the time and the Institutions created through his guidance which help them participate in the unique community spirit of being an Ismaili.

The Jamatkhana

The focal point for the community and the place of religious worship is a building called the 'Jamatkhana'. The word *'Jamat'* refers to a collection of people and *'Khana'* implies a physical place or a building; hence the term *'Jamatkhana'* is associated with a gathering place or a house of assembly for a community. Today, the Jamatkhana plays a similar role to the traditional mosque used by other Muslims, but with some unique differences, in particular that its use is restricted to the members affiliated with the *'Shi'a Ismaili Nizari'* practice. It is not incumbent for the Ismailis to pray in a congregation except for the Friday

prayers as is the case with other Muslims but unlike many sects, which consider five time prayer as obligatory, the Ismailis are required to pray only three times a day. Dawn, sunset and evenings are three standard times for prayer. However, like some other sects the sunset and evening prayers are performed consecutively with a small break between them. An hour of meditation, commonly known as *'dhikr'* also takes place before the morning prayer. Its practice is not obligatory but solely depends on personal choice. Apart from the daily prayer three times a day and the morning meditation, the community congregates for many festive occasions for special prayers, such as on the Eid Day and Imámat Day, the day on which the present Imám assumes the throne of the Imamat.

The traditional payment of moneys as almsgiving and *zakat* also takes place in the Jamatkhana. They are submitted to the Imám of the time, who in turn spends them as he wishes on the community, institutions, welfare programs and the needy individuals. Another tradition which has been carried over many years is the bringing items of food to the Jamatkhana. They are auctioned off or distributed among members of the congregation. The Imám of the time appoints voluntary officials for each congregation which organize community activities and are responsible for each Jamatkhana. The whole building is maintained by volunteer organizations which not only maintain order, cleanliness and decorum but also help felicitate the proper observance of religious practice. The act of voluntary participation in these organizations ensures good communication among members of the congregation and reinforces a sense of community.

The Jamatkhana also serves as an important place for educating the younger generation about the teachings of

the Quran and other religious traditions and history. The teachers are volunteers and motivated individuals giving up their spare time in the evenings and week ends to teach the children about the glorious traditions of Islam and to help them cope with the conflicts experienced in adopting the Western way of life. A system of councils and boards is also another major feature of the organizational set up of the Ismaili communities across the whole world. Four levels of councils, local, regional, national and international, are set up to efficiently convey the message and the guidance of the Imám to the followers and also solve the day to day problems of administrating a community. Apart from these local councils, there are organizations such as the Health Board, Education Board, Economic and Planning Board, Housing Board, and Reconciliation and Arbitration Board. These boards also serve on various levels for the community and some of their programs and campaigns are not only directed towards benefiting the community but also to aiding people from outside the community. The organizations and councils are also the communication bridge to other organization which are under the umbrella of the Aga Khan organization such as the Aga Khan Foundation, Aga Khan Rural Support Program, Aga Khan Hospital System, Aga Khan Awards for Architecture and Aga Khan Program for Islamic Architecture, but are not directly run by the community. Community leaders, who provide voluntary service, are appointed by the Imám of the time and their tenure of service is also determined according to his wishes. These organizations thus act as extensions of Imam's authority over the followers and are a vital component for implementing programs which affect the social, educational, health, economic and cultural life of each member of the community.

Traditionally, up until the present day, the *waqf* system

assumes some of the responsibilities carried out by these organizations and uses similar office space as them within the premises of the mosque. Though the conceptual use of a space and the very act of prayer and prostrating in front of the qibla wall are similar in a mosque or a Jamatkhana, however, there are some differences which make them unique structures and have to be illustrated. The most glaring difference is the omission of a minaret in the Jamatkhana, where the formal call to the prayer was abolished towards the later part of the Ismaili history. In a Jamatkhana there is no visual or physical segregation between the males and the females except in the prayer hall area, where an invisible line with a role of carpet or some other device divides the females on the left and males on the right or vice versa. There are no ablution fountains, such as commonly found in mosques, as the believer is expected to be clean before arriving to the Jamatkhana. The act of cleansing oneself was more esoterically interpreted by the Ismaili tradition, however cleanliness and healthy habits are instructed to the congregation on regular basis through quotations of the imám and public lectures. The younger generation is instructed through religious classes about maintaining cleanliness before entering the Jamatkhana premisses.

The exact orientation towards Mecca has not been as important in recently developed Jamatkhanas, as it is in the case of mosques. The modern Jamatkhana buildings usually follow the general orientation towards Mecca and the exact direction has not been as meticulously precise down to the exact degrees and minutes of deviation, as it would have been in most mosques. Therefore, the prayer hall is aligned generally with the cardinal directions or the grid of the site or the surrounding area. The *mihrab* niche for the Imám has been abolished in the Jamatkhana, however the

qibla wall still remains the most decorative and sculptured plane in the prayer hall. The person reciting and leading the prayers sits in front of a small stand fixed with a microphone, facing the congregation. The leaders of the community sit with their backs against the qibla wall also facing the congregation. The use of *mimbar* commonly found in Friday mosques for *'Khutba'* has been also avoided and replaced with a simple lecture stand and a microphone. A piece of furniture called the *paát* is a uniquely Ismaili addition to the Jamatkhana; this is a long and low table used for various ceremonies held during the services. The food offerings, mentioned earlier, are kept on these paáts which are equally spread near the perimeter walls and in the central area of the prayer hall. Apart form these differences, the traditional Jamatkhana has maintained the use of architectural elements such as the dome, pointed arches, courtyards and covered walkways and the hypostyle type. The concept of universal space with no hierarchy has also remained an integral part of the building.

In conclusion, there are several overlapping ideas and rituals shared between the Ismaili community and the rest of Muslim *Umma*. However, there are some unique differences which are also manifested in the religious structure, the Jamatkhana. Like the institutions of any immigrant community, the earlier Jamatkhana facilities were housed in rented or leased temporary structures but in the recent years there have been efforts on the part of the imám and also the community to built permanent structures to give a social and political identity to the community in an alien environment. The Jamatkhana not only plays an important role in the religious life of the community but is equally important for social aspects too. It is this institution which helps a new immigrant, Ismaili family through various

organizations to adapt to the new environment and culture. Most community members in some form or another are involved in the organizational matrix of its institutions and are proud of their heritage in providing service for the betterment of the lives of their own members and also people from outside the community. One constitution binds Ismailis all over the world into a community under the leadership of the living Imam. His leadership and advice guides the followers in formulating their material and spiritual lives according to the principals laid out by Islam. He takes keen interest in the forming new institutions and providing the community with the new structures for felicitating several activities carried out by them. Two such structures, one in London and the other in Burnaby, are the two case studies of this thesis, and through their architectural analysis and criticism I will attempt to identify their characteristic features.

The London Ismaili Center, by the Casson Conder Partnership

Plans for establishing a permanent Jamatkhana in London go back to 1971, when the community identified a site at the Albany street in the London Borough of Camden. A design proposal was presented to the planning department by the architects Casson Conder Partnership but the submission was later withdrawn when agreement with the municipality could not reached over certain design and planning issues. Meanwhile, tenders were invited by the Greater London Council (GLC) for a site, originally a car park, in Kensington. The community was able to lease the site on long term basis from the GLC and the same architects were commissioned to design a Jamatkhana for the new site. Speaking at the foundation laying ceremony for the project in 1979, Lord Soames, the then President of the Council,

expected the building to add to the existing diversity to architecture of the area and reflect "....an Islamic mood - which will remind Londoners that not all architecture sprang from the Greek or Italian roots...".[1]

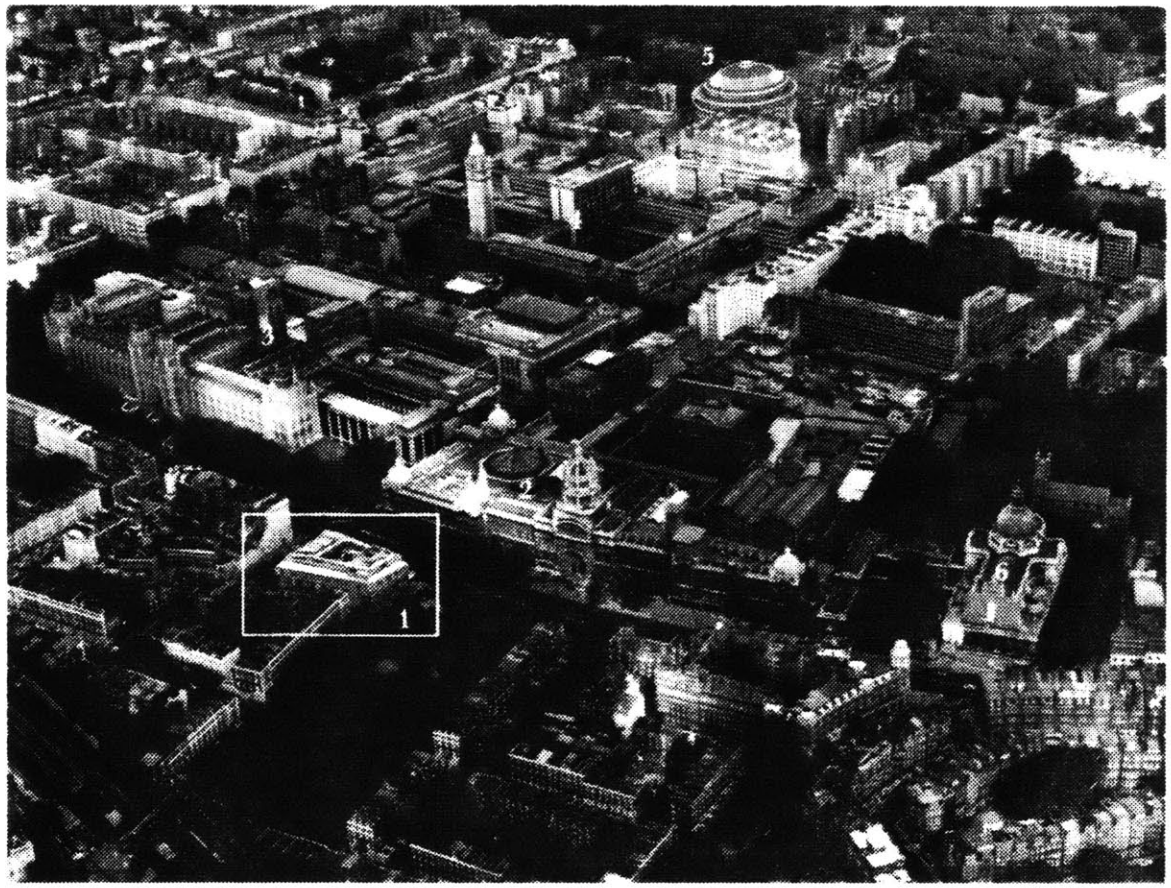
Initially scheduled for completion in 1982, construction began on the site, among high expectations and often skepticism by the residents of Kensington, authorities and local architectural media of the building's contextual appropriateness in a dense Victorian area of London. This uncertainty among the locals was not only fueled by the fact that an immigrant institution was occupying an imposing and prestigious site in a historical area, but also by the disappointing and imposing 'Oriental' structure of the London Mosque, which had become a landmark for Muslims in the city. Today, almost eight years after completion, my analysis of the building, which has been defined by one architectural critic as, "An Architectural no Man's Land"[2], will attempt to identify two catalytic forces, often contradictory, which shaped the interior and exterior form of the building. The site, with the four sides equally important, and the building regulations and the applicable codes of the municipality, such as appropriate sun angles for the surrounding residential structures, which were among the major determining factors. The second major influence emanated from the diffusion of concomitant forces of pure functionalism as a design approach by the architects and, in contrast, the consistent embellishment of the floors, walls, partitions and ceilings with so called 'Islamic' motifs by interior designer Karl Schlamminger, which have dominated the interiors of the building.

The Site

The controversial site was once occupied by a French Lycée

and was also proposed for the National Theater. The island form of the site eased the design strategy for the architects in establishing a relationship with the neighboring facades, however its pivotal position between the residential structures in the western and southern perimeters, the institutional character in the north and a park in the east, challenged the designers to produce a solution mediating between these varying scales. The Cromwell Road, a major throughway of the city and leading to London Airport, hugs the Northern boundary of the site. The imposing scale of the Victoria and Albert Museum, with elaborately modelled facade in terra cotta, brick and stone, and Cormwell gardens with large, lush trees completely overshadow the Cromwell Road on the opposing side. A quick glance at the aerial view of the site, clearly distinguishes the

Fig. 5.1 An aerial view of the site and adjacent buildings of the city.
1. *Ismaili Center*
2. *Victoria and Albert Museum*
3. *Natural History Museum*
4. *Imperial College*
5. *Royal Albert Hall*
6. *Brompton Oratory*



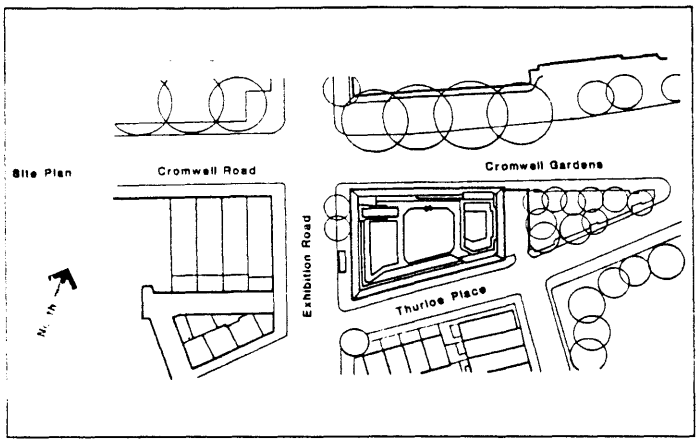


Fig. 5.2 Site Plan

Cormwel Road as the dividing line between the northern institutional texture of the city with the Gothic style Natural History Museum, Baroque structure of the Oratory and the rotunda of the Royal Albert Hall, collectively overshadowing their southern neighbors with their overwhelming scale and architectural legacies.

Row houses face the site on the West and are Italianate in character, stuccoed and painted. Pillared porches and a cornice line surmounted by parapets, dormers and chimney stacks give fairly over scaled facades to these old residential structures which have been standing for over a century. To the south the Jamatkhana faces more of a broken skyline of flue stacks and slate roofs. The buildings have a domestic scale and are built in brick and enriched with stucco details. However, their roofs are high enough to be in line with the parapet of the museum building in the north. The designers were in a difficult position of designing on site with no single style dominating the tissue and a range of articulated facades impinging on the perimeter; it was clearly a no-win situation, where "no solution could be buried in Kensington without comment."[3] Among the milieu of these influences from Western traditions and building styles, an intervention with undertones of Islamic traditions was called for by the clients and further the

structure was expected to incorporate efficiently the multitude of functions which a Jamatkhana serves, in a tight urban site. After the unveiling of the initial plans and models for the project by the architects, one critic joyfully claimed by writing, "....[it] is far from some exotic statement on London..".[4] That the critic, in his/her view had obviously expected the so called Islamic influences to taint the building with pointed arches and domes with an exotic and seductive mood, not realizing that Orientalism had been dead for a long time and seeking a true essence of the iconography of Islamic architecture was professed by the clients.

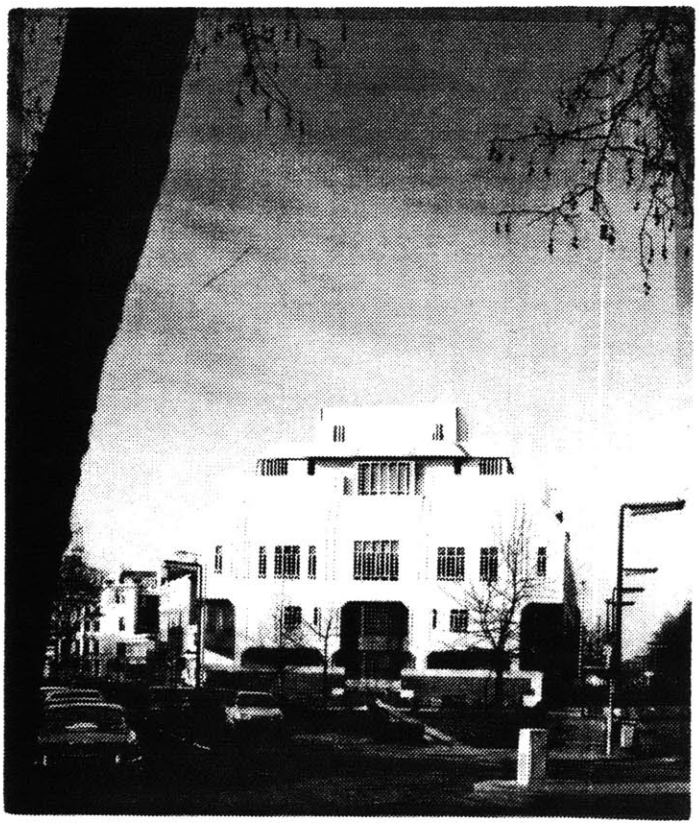


Fig 5.3 The facade facing the green plaza and viewed from the approach from London's West End.

The architect's design approach

"While any building should clearly be considered in relation to its neighbors, it is not helpful to "line through with" or "tone in with" one selected adjoining building when those neighbors are as different as those in this case. Here a more empirical approach was adopted: we proposed a simple but strong form which responds to the different qualities in the different views to be had of it."[5]

The empirical approach claimed by the architects of the building lead them to design a building with a 'simple' and 'strong' form. But to my mind, this simplicity and strength is derived from an attitude in the form of the building which is clearly noncommittal and low key and bound to be hailed by skeptics, as minimally intruding upon the great Western traditional architecture surrounding the complex At a first glance, the building reads as a form which has a strong horizontal mass tapered on the top, with some additional set back masses peeping from the roof top, and this ensemble is clearly supported with a rhythm of vertical members which have wooden bay windows inserted between them. The vertical members

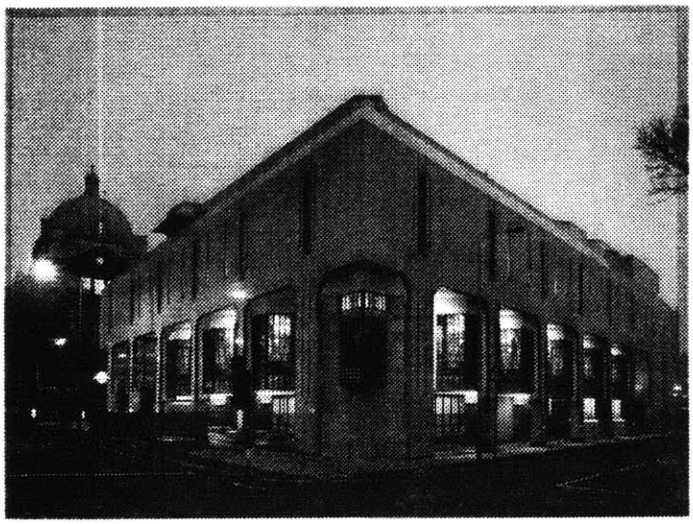
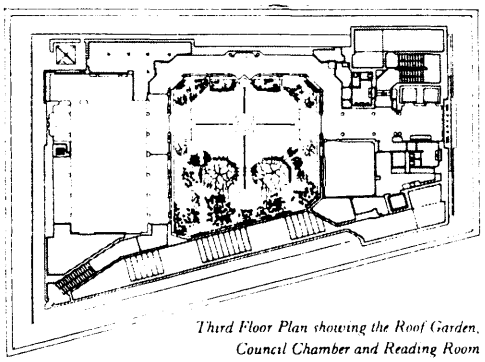
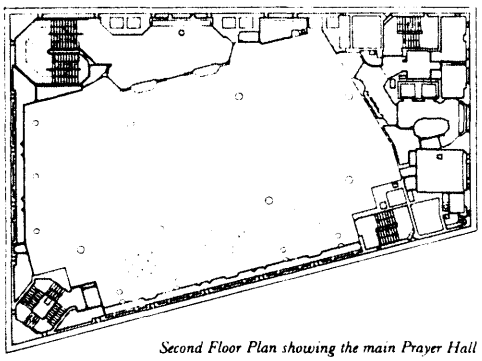


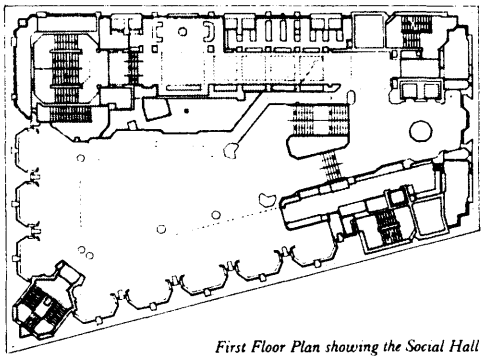
Fig. 5.4 A night view of the building; the main entrance.



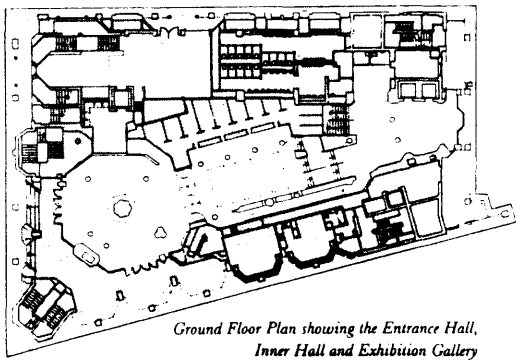
Third Floor Plan showing the Roof Garden, Council Chamber and Reading Room



Second Floor Plan showing the main Prayer Hall



First Floor Plan showing the Social Hall



Ground Floor Plan showing the Entrance Hall, Inner Hall and Exhibition Gallery

Fig. 5.5 Floor Plans

closely follow the rhythm of the residential pillared porches on the Cormwell road and from far way give an ambiance of a shallow colonnade with some deep recesses on the entrance level. Before proceeding further into the analysis of the exterior form of the building, it will be fruitful to understand the four functionalist criteria suggested by the architects as conditioning it.

The first factor relates to the decision of placing the prayer hall on the third floor of the building, giving plenty of room for circulation on the first and second floors for thee over twelve hundred people who were intended to gather in the building at any one time. The daylighting angle requirement for houses in Thurloe place was the second critical limitation posed to the architects of the institution. The sloped roof of the mass on the third floor which was repeated on all sides for consistancy, a height restriction on the prayer hall and the set back of the roof garden were all an outcome of this limitation. The third design requirement which affected the form significantly was the placement of escape stairs at the four corners of the building. The large number of people attending the building at on one time and the fire hazard code made this an absolute necessity. Finally, the structural independence of the top floor from the general structural grid of the building below which resulted in the deep structural slab supporting a

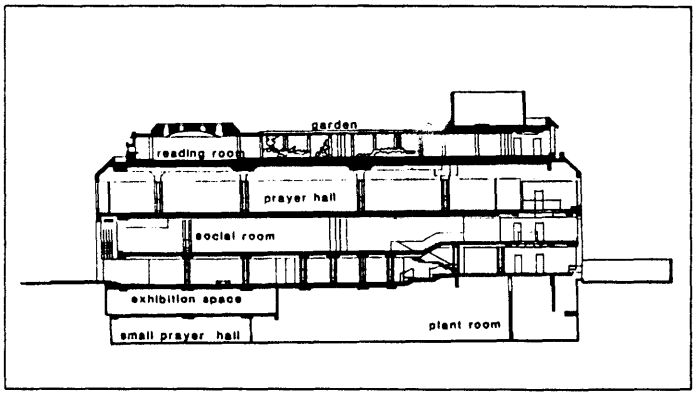


Fig. 5.6 Section

light steel frame of pavilion type rooms on the top and a roof garden. It is interesting to note here that while other architects designing such buildings, try their utmost to philosophize on how their building are re-presentation and representation of Islamic ideals of design but in this case, in the four principles discussed by the architects, there are no attempts made to incorporate such interpretations. However, they proudly claim that, "In detailing of the outer faces of the building there has been no direct reference to the Islamic architecture of other countries, no use of copy books for form or pattern....".[6] Although their claim is not strongly upheld on the exterior with the introduction of certain detailing aspects, such as the color accented lines of granite, however if they avoided to open any pattern books for the exterior, the interior designer made no attempts do so and borrowed patterns and ideas from a wide range of sources from the Islamic world. This dialectical oppositions is what makes the building contradictory and gives rise to a conceptual duality for the users and non user alike. A description of the spatial experience of the journey from the streets of Kensignton, through the building and culminating in the garden on the top floor, will further clarify this point.

Spatial Sequence

In addition to the functional requirements of a typical Jamatkhana, discussed earlier the chapter, the program also called for a Exhibition Gallery which would display exhibitions for the public, focusing on Islamic art. A gallery, named the 'Zamana Gallery', was intended to act as a communication link with the residents of London, through the language of the arts. In the words of Aga Khan, the patron of the building, "This building and the prominence of the place it has been given indicate the seriousness

and the respect the West is beginning to accord Muslim civilization, of which the Ismaili Community, though relatively small, is fully representative."[7] Two separate entrances and a service access which is opens off the front plaza, were placed to accommodate the two distinct functions of the building. The entrance on the north side of the building, predominantly for the general public, leads to the Gallery and a small basement prayer facility for morning meditation. The placing of the gallery on the Cormwell Road side of the building was obviously intentional, to make a small presence of an immigrant community, among the gala of museum and institutional buildings. Like the entrance to the gallery, the western and southern entrances to the Jamatkhana building are not articulated with any grand architectural gesture of a portal or a gateway and so forth, but by just placing the doors further back from the line of the facade. The western entrance, off the Exhibition road, is placed in proximity with the steps to an underground tunnel leading to the museum building and the local transit system and people entering the building on this side have to take a few steps down before arriving at the main doors. The idea of stepping down into an Institution, with more of an ambiguous and meagre entry way, further confirms an attitude adopted by the designers of shying away from attempting to propose any bold gestures on the facade. The residential structures on Cormwell street assert more of a presence on the street with the their pillared porches in comparison to the Ismaili center. The notion of respecting the surroundings of the site was stretched to a limit, were the views of the museum spires from even the western site of the building were regarded as an important visual connection by the designers, but an architectural statement articulating the gateway to the sacred realm of the Jamatkhana was considerably underplayed.

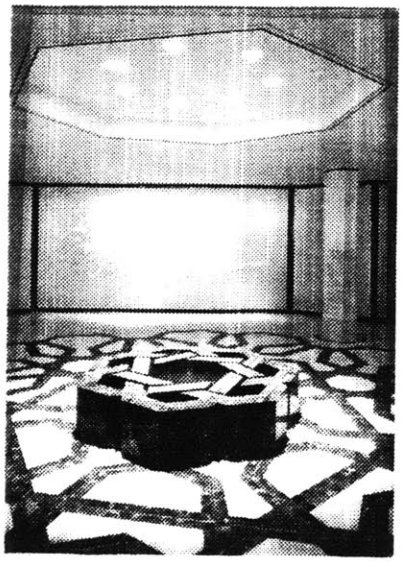


Fig. 5.7 Entrance Hall

The transition from the street life and noise of the city is quite abrupt and sudden. A believer arrives at the threshold under the floor slab of the projecting bay windows of the social hall, and passes through the awkwardly glazed doors and into an octagonal shaped entrance lobby. The serene and quite white walls and the floor articulated with interlaced patterns and a fountain in the middle, purely Islamic, welcome the believer, setting an initial mood and rhythm for the successive experience of the building. The northern wall of the octagon, is adorned with a cursive calligraphic inscription in Arabic of a Quranic verse, "*Bismillah Ar-Rahman Ar-Rahim*" which translates as, "In the name of Allah, the compassionate, the merciful", another element suggesting the beginning of a journey, almost ritualistic, towards the ultimate destination, the prayer hall. The strength of the scheme, in my mind, and where the doctrine of functionalism as professed by the architects has been most successful, is in the carving of this circulation path through a maze of subsidiary spaces on the perimeter. The clarity in this path not only accommodates the liturgical matrix of a Jamatkhana but also accommo-

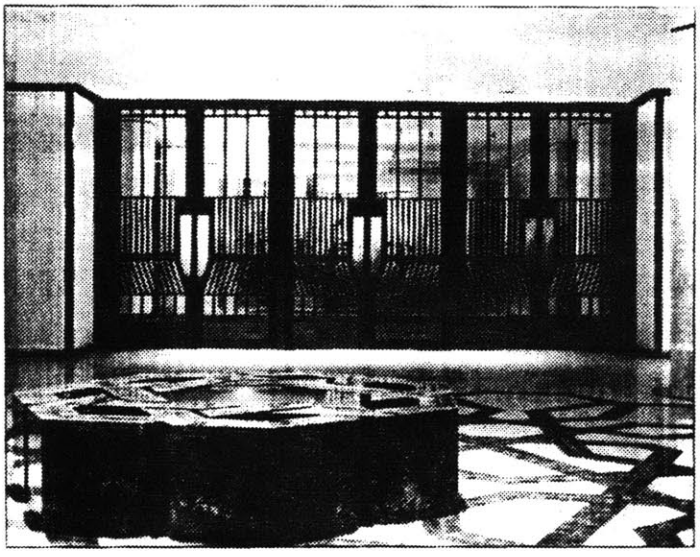


Fig. 5.8 View of the Entrance doors from the Hall.

dates the practical necessity of maintaining a regular flow of large crowds entering or leaving the building for services. Though the path is non axial, but clearly a directional one with intermediatery breaks signalling a turn or indicating for the believer an attainment of a higher level of esoteric achievement, in the journey towards the final destiny.

After passing through the entrance lobby, one arrives in the inner hall where the coat counters on the left fulfill a practical necessity, in the frequently wet climate of London. After taking a series of steps or accessing through the handicap ramp, a believer arrives at the elevator lobby and visually confronts a spacious staircase, offering the believer a choice in the passage to the prayer hall. The visual connection between the first floor and the floors above is reinforced with a series of balconies or a vertical light shaft in elevator lobby. After climbing the stairs, one arrives at the social hall with its windows overlooking the streets of Kensignton. The path continues with a one hundred and eighty degree turn into the shoe lobby were every believer takes off his/ her shoes and proceeds towards another spacious stair case which leads towards the hallway, an overflow space for the prayer hall. A set of wooden doors with small glazing panels, are the final barriers to be penetrated before arriving at the culmination of the visual experience, the prayer hall. The top floor, which not only work independently of the structural grid below but also in the formal vocabulary of massing, is accessed through the elevators and a simple stair case tucked away on the northern side of the elevator shaft. The council chambers and the reading room are housed in a pavilion type structures with a symmetrically laid out, roof garden in the center.

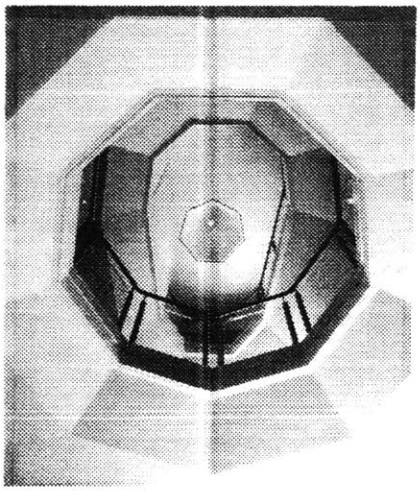


Fig. 5.9 View of the balconies rising above the elevator lobby.

Fig. 5.10 The Stairs leading to the floors above.

Fig. 5.11 The Social Lobby

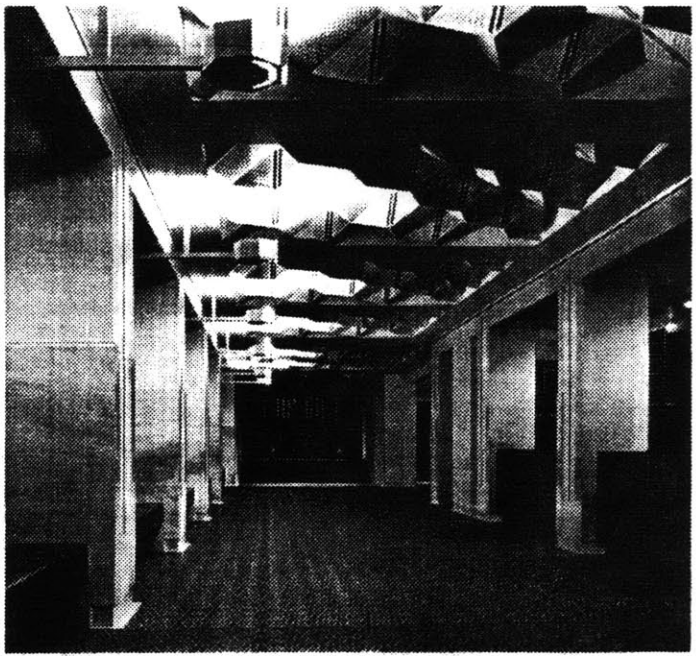


Fig. 5.12 The shoe area

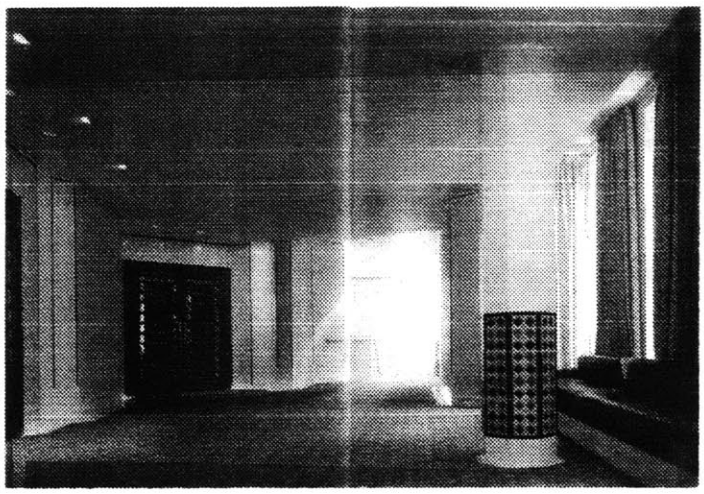


Fig. 5.13 The Hallway leading to the Prayer Hall

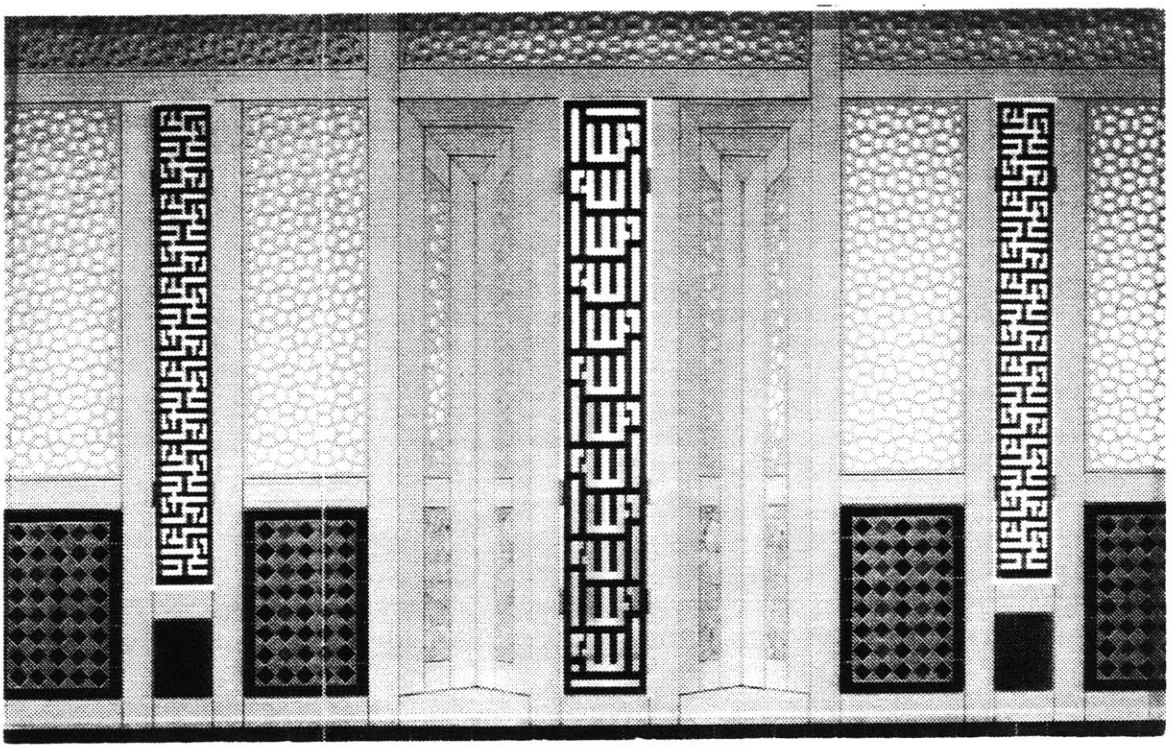


Fig. 5.14 Panelling on the West wall of the Prayer Hall

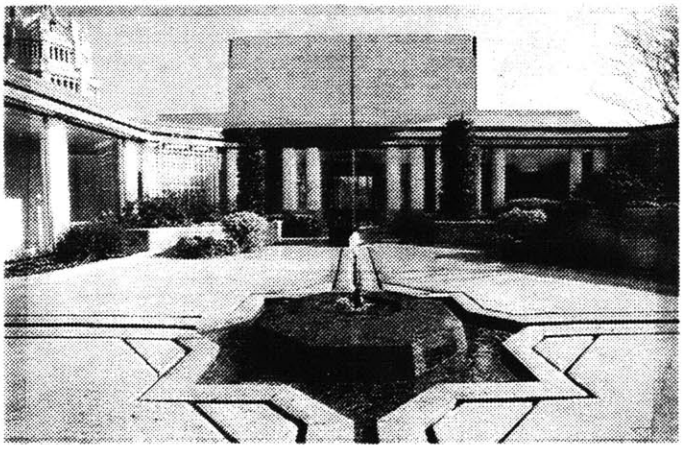


Fig. 5.15 The roof garden

Analysis and Criticism

The spatial sequence in the building, described above, was a direct result of the careful placing of different functions within the non-orthogonal geometry of the site. The exterior walls of the trapezoidal form were pushed to the edge of the street on three sides, with the fourth side abutting the plaza. The precious value of urban land and its maximum utilization, and the notion of continuing the urban wall in affinity with the surrounding texture of Kensington, were probably the two driving forces for this design decision.

Traditionally, if a mosque was placed in a area with no formal arrangement or order, its intervention and the orientation of the qibla wall towards Mecca were significant forces in establishing the order for the area. However, beginning with Al-Aqmar Mosque in Egypt which was built in the twelfth century, there have been innumerable instances when a preexisting urban order was imposed on the religious structure; then the orthogonal lines emanating from precisely orienting the qibla walls towards Mecca were resolved within the plan of the building. The architects of the Jamatkhana, as quoted earlier, claim that they made no attempts to look at any architectural history books on Islamic buildings for inspiration. However, if one compares the plans of mosques or madrasas such as Al-Aqmar mosque or Sultan Hassan Madrasa in Cairo there are some similarities in the way spaces are carved out from the collision of geometries. In these earlier buildings every effort was directed towards placing geometricized shapes such as squares, circles, octagons, golden section rectangles in an orderly manner and in a precise relationship with each other, to create order within chaos. A search for geometric order within the building was both to serve a practical necessity and, probably to counteract and symbolically differentiate the place of prayer from the organic

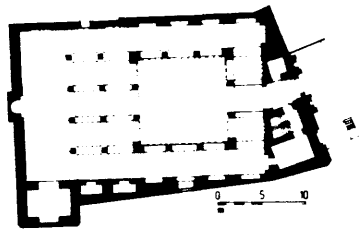


Fig. 5.16 Plan of Al Aqmar Mosque, Cairo; twelfth century

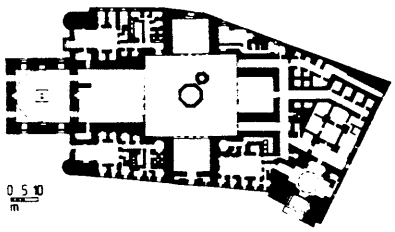


Fig. 5.17 Plan of Mosque-Madrasa of Sultan Hasan, Cairo, fourteenth century

growth characteristic of the mundane life of the city. In the case of the London Center, by placing the qibla wall oriented towards the general direction of Mecca, south east, and extending the building to the limits of the site, the architects were challenged with the problem of finding some possible resolution within the boundaries of the trapezoid. In the Jamatkhana plans, like those of the traditional mosques, the subsidiary spaces were used to resolve the colliding geometries. However unlike the examples of the traditional plans, major spaces such as the social hall, the prayer hall and the garden were also planned to resolve the converging or diverging angles. Due to the sheer width and length of the social hall and the prayer hall, and the carefully placed architectural elements such as columns, recess and so forth, the spatial feeling of non orthogonal planes is reduced. But in the case of the roof garden and the pavilions, which are structurally independent from the floor below and could accommodate with more freedom the placement of columns, walls etc, the plan follows the orthogonal lines which correspond with the northern side of the building and thus fails to resolve the angle of the southern side. The awkward left over space is accommodated within the landscape area, while the plan of the rectangular paved court with fountains and thin canals corresponds with the northern side of the building.

The architects claim that the fire codes made it imperative to situate escape stairs in the four corners of the building. Although the expression of these stairs on the facade was not a code requirement, every effort was made to make them prominent elements in the exterior of the building. The idea of situating four corner elements in a building has existed in many periods of architecture in the Islamic world, particularly in the case of Ottoman and Moghul

architecture. The four elements were usually minarets or balconies with enclosed stair cases. The conceptual similarity to the archetypal idea is striking.

Design is such a complex phenomenon, a creation of the mind, that it is impossible in some instances to make claims on the architect's precise model for inspiration, unless the reference is obvious and direct. The purpose of the above comparisons is not by any means to claim that the architects made a conscious attempt to look at Al-Aqmar mosque or Ottoman architecture before designing the building. The reason for these comparative analysis is to seek out the ideas and types which persist and have been a vital source of inspiration for architects. One might come over the impulse to copy the past indiscriminately but some inspirations which are sources of repository in the memory persist, but with new meanings and accommodating new functions.

I have deliberately avoided any detailed description of the materials, textures or interior details in the spatial sequence because my analysis of this building is based on a hypothesis which centers around the notion, that in achieving this building many design approaches through different sources have been collaged. Though these approaches may have been unanimously agreed among the consultants and the clients, and manifested themselves in the process of achieving one built form, if one attempts to read into the interrelationships among its parts often contradictory. Therefore, each of these endeavors have to be first seen in their own entirety, and then in relation to other elements or parts. Can a building in London which was designed for a migrant community with their roots predominantly in East Africa and the Sub-continent, under the leadership of an imám whose interest in Islamic architec-

ture has no bounds, conceived and built by designers with an architectural practice predominantly in European contexts, an interior designer and an artist with a German-Muslim background, landscaped by the firm of Sasaki associates, with a Japanese-American owner and a Britain based international construction company, can it anyway be considered one homogeneous entity, with each part conforming to the principle of 'Gestalt'?.

Focusing the discussion again on the exterior of the building, one finds the use of granite as a skin material, carefully and deliberately detailed to express the thinness of the veneer. The windows on the eastern facade facing the green plaza, with louvered slots are an example of such detail and according to the architect's statement they are "evocative of the flat and thin facings in much of Islamic architecture."[8] A cautious reminder that thin surfaces and lines have been used in many architectural periods in the world, from Imperial Roman times to the pre modern era but in all instances their delicacy was an outcome of the technique and precession in the hands of the craftsmen, rather than in the sharpness of the blades of a machine or in the accuracy of a laser cutting device. The light grayish tone of the stone was used for a "freshness of feel"[9] and "to be conducive to a sense of serenity"[10] A variety of surface treatments have been used on the stone. It is rough and textured where the walls meets the ground, fully polished at high levels of the building and on the sloping mass and flame stripped on the main vertical faces of the wall. Great efforts in detailing the stone veneer were directed towards breaking down the appearance of the massive horizontal form of the prayer hall, on the facade. The structural grid of reinforced concrete columns and walls is graphically represented on the facade, by the blue Bahia inset strips of stone.

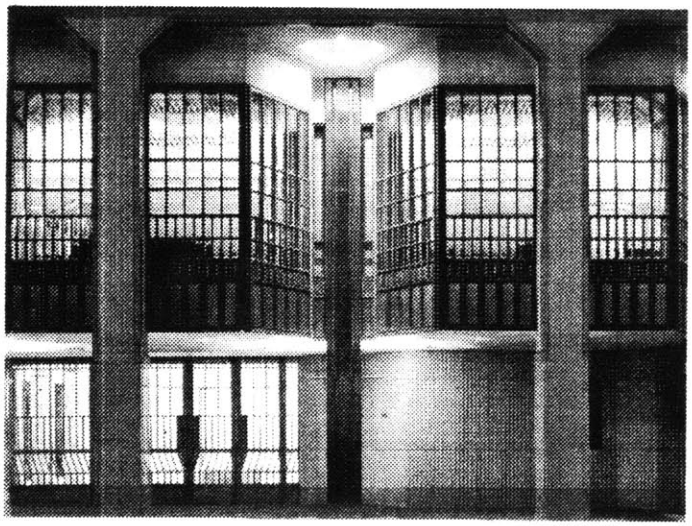


Fig. 5.18 The bay windows on the facade. Instead of projecting out from the vertcial plane, they are carvered out from the mass of the building.

The bay windows placed between the apparently colonnaded areas of the facade are a unique feature in the building. These have teak wood frames, with thick bevelled glass in panes gradually becoming larger towards the top of the window. The small faceted glass at the bottom are used to minimize the visual connection between the street and the social hall. The narrow slits of windows in the prayer hall again provide light but are meant to shield the activities inside from the gaze of a pedestrian on the street or a traveler on double decker bus route.

The structural independence of the top floor of the building from the mass below, is further reinforced on the exterior by the volumetric uniqueness of the forms surrounding the garden. It is set back from the sloping mass of the second floor structural slab. The formal language of the sloped canopies protruding from the mass are a clear response to the climatic condition of excessive rains, however their domestic scale and jaggered plan makes them inconsistent elements within the language of the over all massing.

A building with all its four sides facing important streets and placed in a manner so that it is clearly meant to be appreciated in the round, has an obvious problem of clearly defining the hierarchical notions of front and back. The low brick wall surrounding the service compound and abutting the green triangular space left over from the island site, makes this visual relationship even more ambiguous. The obvious place for an entry to this building, in my mind, would have been off the landscaped plaza on the intersection of Cormwell Road and Thurloe Place, however this was not professed by the clients or the architects and the low wall, hiding the service entrance clearly signals to a passer by of the inaccessibility of the building by the nonbelievers. Therefore, the duality of the front and the back in the building is fueled by placing the main entrance off a residential street and by creating a barrier on the street level but with a well articulated facade imposing on the plaza.

The Interior Design

"For interiors, a more direct reference to Islamic principles of design was requested"[11], and consequently Karl Schlamminger, an artist by profession, was hired to adorn the spaces, within the limitations of the frame work established by the architects. The clean white washed or marble clad walls, inside the building, were now ready to receive the Islamic touch, after the doctrine of functionalism had determined their position in space. The architects had completed their job by providing a mass which was 'simple' yet 'strong', but clearly one which made every effort in its physical manifestation to avoid any kind of visual intrusion upon its neighbors. But at the end of the design process when that simplicity turned the mass into a "bland and rather blind surface at the prayer hall level"[12], every

effort was directed towards animating the facade. Whether it was the fussy details of the wooden windows and the main doors contrasting with the exquisite clean cut details of the granite, or it was the addition of flame stripped stone lines and chamfering the corners of the colonnaded facade with forty five degree angles, the rescue efforts to the facade are evident. These articulations could have also been directed in an effort to keep some correlation between the highly ornamented interiors and the skin of the building.

A high budget of ten million British pounds seems to have left no space or corner in the building which is not carefully and meticulously detailed and adorned. A striking paradox is that the rich materials, the expensive structural slab supporting the top floor, the the high cost and problems associated with digging a deep trench for basement and servicing an island site during construction, all added up to a form a building which was intended to make a presence in Kensington, but with simplicity and internal strength. Schlamminger along with his partner Thomas Weil, also made full use of this extravagant budget, but in comparison to the architects, attempted to see the project more in light of esoteric and symbolic gestures, manifested through the material interventions. In his writings he stresses,".... that design like language, demands a coherence and continuity of spoken word, syntax and semantics."[13] However, in the published literature, he is silent on the completely incongruous, if not opposed philosophies of the architects in comparison to his own approach. If coherence has to be achieved, there has to be some connection or overlap between the notion of functionalism to a complete allusion to esoteric interpretations of past idioms. While the architects were proud of their "empirical approach" in designing the building, Schlamminger's

triumph was in materializing the spiritual aspect of Islam for ".... a patron and a community who perhaps understand so prominent and powerful a mystery better than anyone else."[14]

Schlamminger firmly believes that "..Islamic architecture developed, like Islamic culture in general, under the sign of the omnipresence of God's Word."[15] According to him, the relationship between God and man is through the message, or the word, of the book - and that is manifested through calligraphy more strongly than through any other expression. However, while designing today, "....we must use traditional design-vocabulary which has been filtered through contemporary modes of expression."[16] He further emphasizes the pitfalls in copying the past directly, by claiming that today in designing such a building, one must try and approach it "with the filtering of essential Gestalt-elements of Islamic culture and their transformation into technical, social and religious realities of the present."[17] There is a difficulty that he avoids describing what those essential elements of Islamic culture are and their universal significance for Muslims living across the world.

In the interior, Schlamminger consistently used a series of painted blue vertical and horizontal lines, occasionally accentuated by squares at the corners, in an attempt to unify all the spaces. These thematic elements were employed to accentuate and animate the cool, white marble or painted walls with the warmth of the cobalt blue color. Patterns for the carpet and grills all seemed to be a derived from a variety of periods from Islamic architectural history. However the use of blues, greens, brick and natural wood color gives the interiors particularly a Persian feeling, juxtaposed as they are against the sheer clean and sleek, egg shell white colored walls.

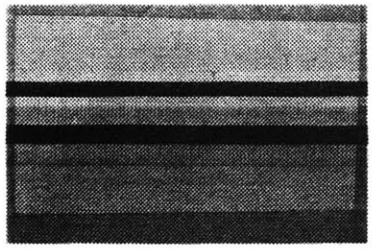


Fig. 5.19 The blue lines

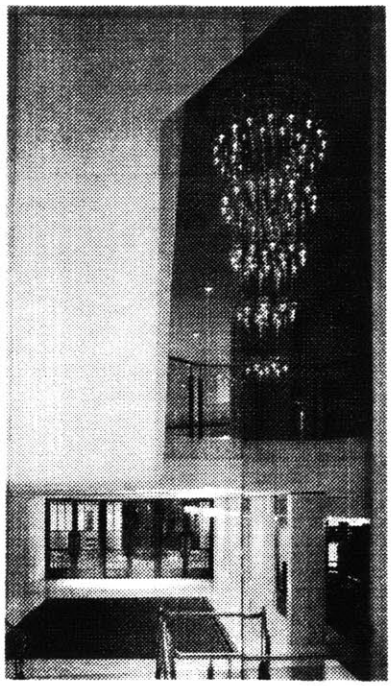


Fig. 5.20 The "London Lamp"

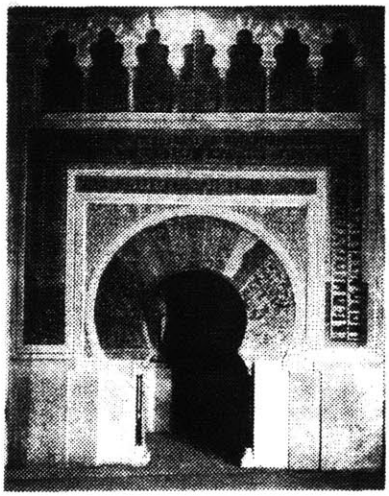


Fig. 5.21 Great Mosque of Cordova, mihrab niche; 10th century

The chandeliers in the social hall and the prayer hall were designed by him to remind the believers of the conical glass lamps which hung from the ceilings of the ancient mosques, however he attaches deep philosophical meanings to their forms. He attributes the Quranic verse (Surrah XXIV, 35) on the Niche of Lamps, as one source of inspiration, which translates as;

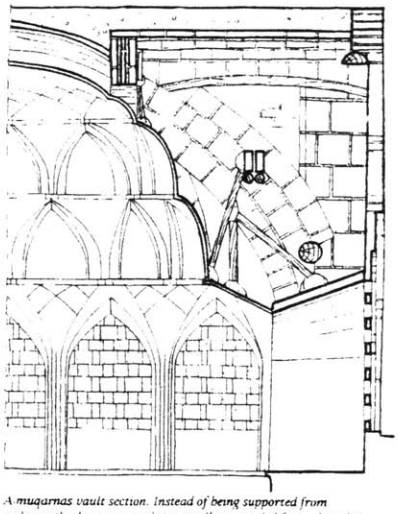
"Allah is the light of heavens and the earth; a likeness of His light is a niche in which there is a lamp, the lamp is in a glass and the glass is as it were a brightly shining star lit form a blessed olive tree."[18]

His metaphorical illusions and allegories are stretched to a limit when he alludes to describing the glass sphere at the bottom of the conical lamp as not purely a decorative but an element which "magnified the light of the burning oil downwards, thus reversing the behavior of fire in its natural state, which radiates upwards. Thus, on the practical level the lamps caused the body of the oil to blossom downwards onto the pages of the worshippers Qur'an; while on the symbolic level they recapitulated the very origin of the Qur'an itself, a "downward radiation" of the Divine Word, the Divine Light."[19] Aesthetic judgements are especially difficult when the author of objects gives them spiritual and metaphysical connotations. This was also illustrated in the second chapter, when it was difficult to to arrive at a uniform and non-contradictory synthesis of mystical explanations put forward by Muslim theoreticians. However, great pieces of architecture designs in the Islamic world, such as the mihrab of the Cordova Mosque, with an unusual shaped room and considerable depth, evoked a feeling of a, "darkened opening into another world or if a light was put into it, of a beacon for the Faithful."[20] But in the case of the London lamp, if one visually confronts the chandelier in the stairway, slapped

against a pristine white ceiling and spatially centered between the cold stainless steel, brass and plate glass handrails of the staircase, that sense of mystery and metaphor seems to be far fetched and difficult to relate to. Here Muhsin Mahdi's assessment of some designer's work in the Islamic world seems appropriate, when he says, "that some architects are trying to attach dead branches to these [Islamic Architectural] roots with rubber bands."[21]

The muqarnas vault, a uniquely Islamic invention, initiated in Persia and Egypt, has been used in many architectural contexts over the centuries. In the case of Alhambra palace, its use in the cupola was understood as symbolizing the dome of heavens. However, it was successively used over the centuries in portals gave them more of a decorative and ornamental connotations. The section of the muqarnas vault clearly illustrates how the formal emphasis was usually on the planar expressions of the facade, behind which the structural elements of the building were concealed. The carving of the form from a mass, gives an organic texture and an almost endless repetition symbolizing the eternal permanence of the divine. The distance from which they are viewed gives them a delicate feeling. Schlamminger has also attempted to emulate the same feeling with his "look-alike" suspended muqarnas panels, made with painted and patterned panels, and assembled within the grid of dry-wall bulkheads in the ceiling. Nevertheless, their bulky proportions, their placement within the rigid orthogonal bulkheads and the low height of the ceilings imparts to them a different, almost agitated character, which contrasts with the otherwise simple and cold ambiance of the interiors.

The prayer hall, the most important space of the building, with its three entrances, two for the believers and the



A muqarnas vault section. Instead of being supported from underneath, the stucco vault is actually suspended from above by means of a complicated system of timber hangers attached with lumps of gypsum mortar to the brick or stone structural arches – and to each other. (8)

Fig. 5.22 A traditional muqarnas vault section.

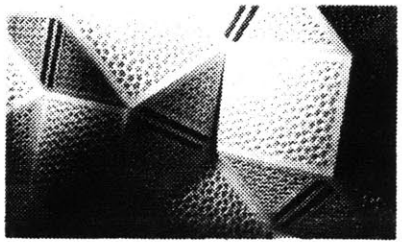


Fig. 5.23 Ceiling surfaces

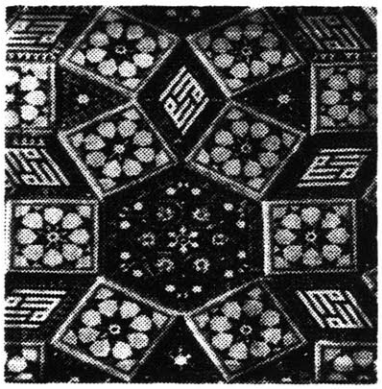


Fig. 5.24 Tile Decoration in Persia; Gazar Gah, Imamzadah-Abdullah Ansari. Schlamminger's ceiling surfaces seem to emulate the tile work rather than the muqarnas vault.

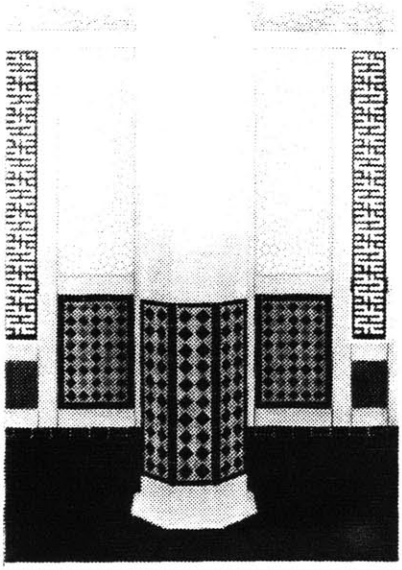


Fig. 5.25 Panelling in the Prayer hall with calligarphic and geometric patterns.

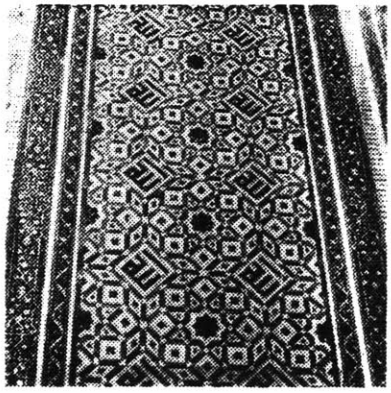


Fig. 5.26 Tile work with calligraphic inlays at Madrasa in Khargird; fifteenth century.

central one opened only for the Imam or on special occasions, was also elaborately decorated with geometric and calligraphic patterns. The western and southern walls of the prayer hall abut the exterior facades and consequently the panelling on them is pushed inwards to deny any visual connection from the outside. Ceramics tiles, plaster lattice work, marble inlays and teak calligraphic panels form the vertical faces, contrast with the deep blue carpet on the floor. The calligraphic panels which read 'Allah', 'Ali' and 'Muhammed' in Kufic form, are obvious references to the writing style in brick tiles of sacred names in Timurid or even earlier styles of Islamic architecture. In this case the light space between the wood members implies the name , while in the case of Timurid monuments such as the Madrasa at Khargird, built in fifteenth century, the contrasts of color in the glazed brick tiles were used to clarify the calligraphy.

The visual similarity between the highly ornate interior elements, some of which were discussed above, juxtaposed against the white walls, and traditional ornamental motifs in the architecture of the Islamic world, especially in the region of Persia, is quite striking. Whether this similarity is the result of deliberate choice by Schlamminger, due to his past teaching experience in Tehran, or to remind the Ismailis of their glorious past in the Iranian region, or because Persian architecture with it vigorous use of warm and eye pleasing colors could be only appropriately used as a salvage paradigm for the 'simple' and 'strong' form created by the architects, still remains to be disclosed by him or the architects. To my mind, probably it was a combination of all these factors which resulted in the selection of Persian architecture as the model for the interiors of the building.

This Islamization of the interiors was also carried over into, and clearly influenced, the design of the roof top garden by Sasaki Associates, the landscape architects. A paved court with a star shaped fountain in the center, with water channels connecting it the four side small pools, is the focus of surrounding pavilions type buildings. One cannot deny the contemplative nature of the space, but the impositions of the symmetrical geometry of a rectangular court on the trapezoidal perimeter seems to be unresolved. Another apparent contradiction in the garden results from the use of the traditional formal, geometry of the court and the stone paving, set against the perimeter rhythm of vertical members glazed with sheer planes of glass, a completely modern idiom.

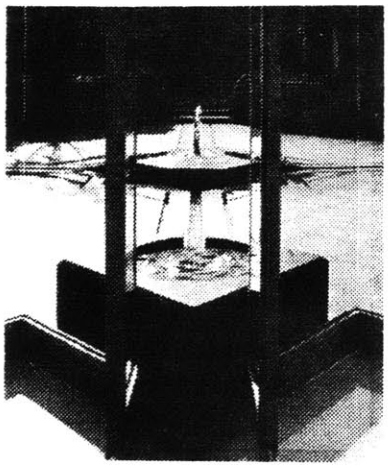


Fig. 5.27 Sheer planes of glass on the perimeter of the symmetrical paved court.

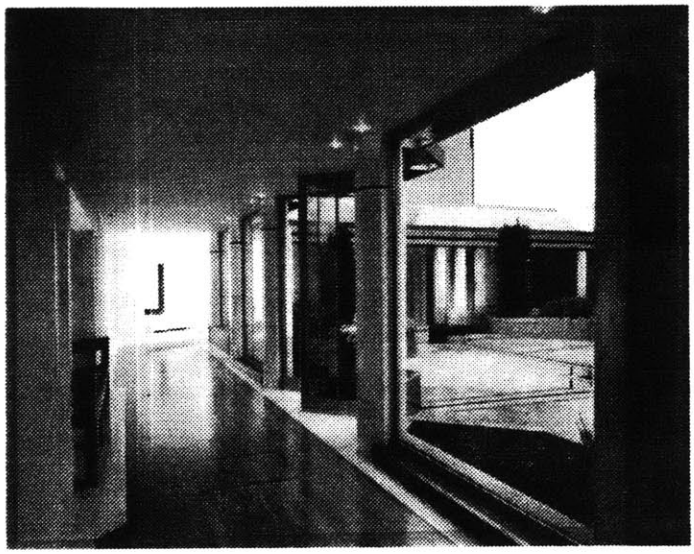


Fig. 5.28 Glazed corridor passing the garden on the North side.

The Burnaby Ismaili Jamatkhana and Center by Bruno Freschi Architects

The site for a Jamatkhana in Burnaby, a residential suburb of Vancouver, was acquired in 1979 by the Ismaili community, in line with the guidance of the Imám, who wished to establish religious facilities for the increasing community size in the Western world. The site was chosen because of its proximity with the residential clusters of Ismailis, and also due to its isolated nature from the city of Vancouver, so that pragmatic requirements of parking could be easily resolved and the act of prayer could be performed without the disturbance and noise of the city life. The three and a half acre site of the Jamatkhana is surrounded by residential development on its western and southern boundaries, with the eastern edge occupied by an office building. The Canada way, a major road hugs its northern perimeter and offers the passing by motorist a unique vantage point to view the building. Wood and stucco are the two dominant materials making up the residential character of Burnaby,

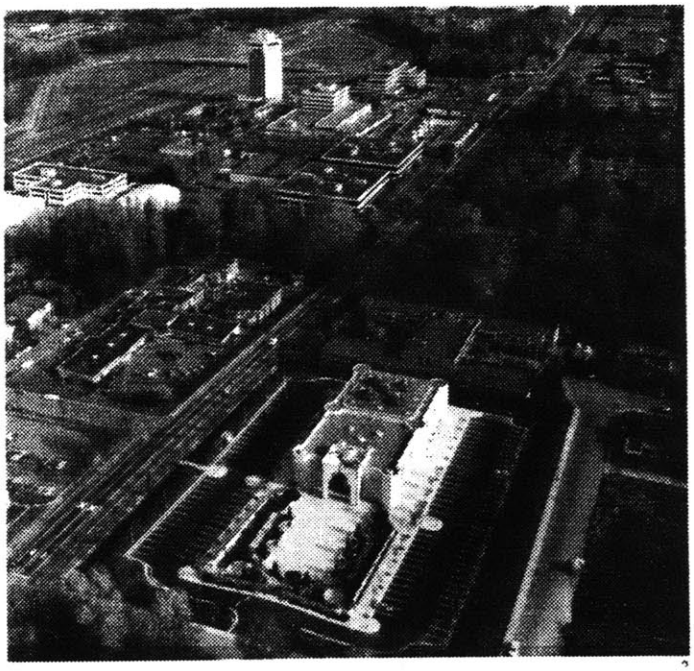


Fig. 5.29 Aerial view of the site from West to East.

with tall evergreen plantations giving it an uncompact and loose texture. Buildings in the area, like in any suburban sector in the Western world today, have to formulate a language of their own, responding only to the landscape and adding isolated forms to the ever growing urban sprawl. The Jamatkhana building can be considered in line with the same attitude but with an "Ethnic Eloquence"[22] illustrating for the residents of the city, a modern version of an 'Islamic' language of forms.

Bruno Freschi, a Canadian architect, was commissioned by the community to design the building. His appointment as the chief architect for EXPO 86 in Vancouver had gained enough prestige for his firm. The community leadership, as in the case of the London Jamatkhana, wanted a well known architectural firm to design their first permanent center. In addition to the design team led by Freschi, the community leaders wanted expert input from other sources also and consequently appointed experts such as Mozhan Khadem of Payette Associates, Oleg Grabar, an art historian and William Porter, then Dean of the School of Architecture and Planning at MIT, as special consultants. The published sources do not discuss the precise role of these consultants except naming them as special architectural

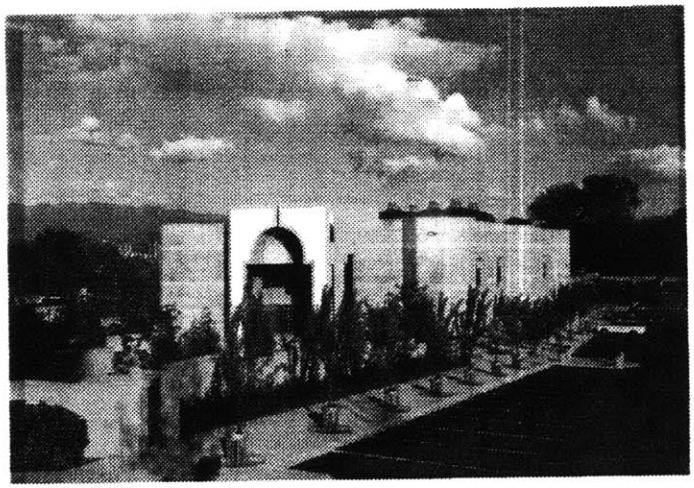


Fig. 5.30 View of the building from the parking lot.

consultants or special calligraphy consultant and so forth. Through discussions with the community members involved in the construction of the building, I found out that Freschi was primarily responsible for the overall scheme of the building, however with some design critique by these experts, especially in the area of calligraphic inlays in the interior, which were designed by Mozhan Khadem. The same firm was also responsible for the interior design, and therefore it is difficult to find exactly how much coordination actually occurred between the special consultants and the architects. In addition, the firm of Garr Campbell Associates were appointed as the Landscape Concept Consultants. In published statements Bruno Freschi is so much lucid in his description of the each aspect of the building, that I am convinced of his command over the whole design process and execution. Therefore, I will direct all my criticism and analysis of the building towards him only. In engaging so many consultants and critics, the leaders of the community obviously did not want to leave any stone unturned in achieving a building of the highest design quality.

The Burnaby planning department had placed a height restriction on the site so as not to obtrude upon the low rise scale of the surrounding residential neighborhood. Consequently, the grade of the main floor had to be depressed about three meters from the road level, in order to accommodate all the functions. Driving along the main highway, one catches the first glimpse of the building. It is a horizontal mass draped in warm beige sand stone (Italian Pietra Etrusa Dorata) with an attached vertical monumental portal. It as an isolated monument surrounded by green belts of landscape and strips of parking. The main entrance to the site, which is off the main road, is implied by a strong central axis created by the portal and the symmetrical

layout of the garden in front of the building mass.

While The Aga Khan, the imám of the community, hoped the building will "become a symbol of a growing understanding in the West of a very deep and real meaning of Islam"[23], Freschi, the architect of the institution, anticipated the representation of his symbolic and esoteric gestures in building, as an enhancement of that meaning.

Bruno Freschi's esoteric concepts

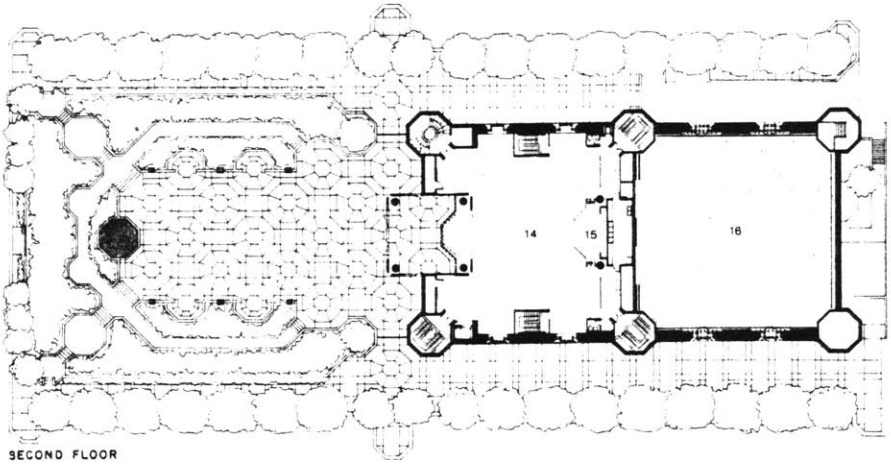
"Ismailis and prominent Islamic scholars helped Freschi sort through a wealth of historical phenomena to identify perennial themes in the Muslim heritage that could translate into currently available materials and technology."[24]

The above quote published in an architectural journal indicates that there were attempts on part of the architect and the clients, from the start, to approach the building from an intellectual and scholarly perspective. The architect was expected to assimilate this body of architectural knowledge from the past, over the short period of time during the design process and attempt to translate it into built form, while also incorporating the various functions of the Jamatkhana. Freschi did not seem to consider this fact a limitation and went to great lengths in his published statement on the building, to identify simple geometry and symmetry as the unifying theme in all of Islamic Architecture. He writes;

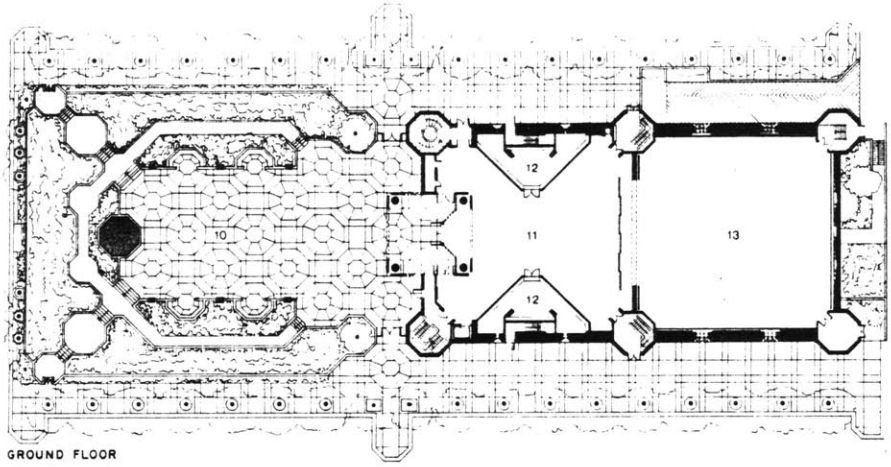
"A relentless pursuit of geometry, enclosure, symmetry, mass and the layering of symbolic decoration have generated the architectural concept. These Islamic architectural principles, together with the walls of sandstone, have structured and informed the building. Both the principles and materials are timeless metaphors of each other."[25]

Geometry and materials have been "timeless metaphors" in almost all monumental buildings, going back to the beginnings of architectural history. He makes no attempt to define the kind of geometric formulations which can be uniquely attributed to Islamic traditions. However, he adds that for this building he has resorted to the use of the octagon which is, "emblematic of the square and circle, is expressed relentlessly through the structure, decoration and paving. It is the idiom of the building and its iconic form."[26]

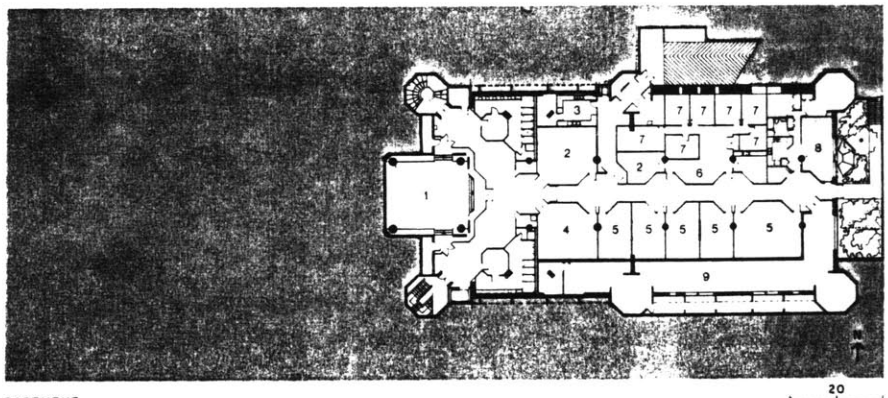
Freschi's attempts at intellectualizing the traditions in Islamic Architecture continue with the same emphasis on geometry and its symbolic meaning. Although in his philosophical rhetoric, he does not attempt to illustrate any clues on the translation of this language of timeless geometry into forms and above all archetypal forms Geometry is the vehicle or the tool for establishing meaning in architecture. "Light, pattern, mass and enclosure center the person in the room, yet the symmetrical room does not have a center. The center is in each person within the room." This preoccupation with the poetic aspects in architecture, in my mind, has led Freschi to design a building which mediates between the two, often opposing tendencies. First, the semantic dimension of the building which attempts to use history as a repository of ideas and elements, which have an inherent quality to communicate and signify the presence of an Islamic Institution. The portal, the inverted ziggurat type windows, the five domes, the patterns, the seven geometrically organized water bodies and so on, all add up to formulate this collage. The use of five and seven attributed to cosmological and religious significance. Five being the pillars of Islam and five important figures for the Ismaili tariqah, while the number seven symbolizing the days in a week, and number of levels in the



SECOND FLOOR



GROUND FLOOR



BASEMENT

1. *Council chamber*
2. *Meeting room*
3. *Kitchen*
4. *Library*
5. *Classroom*
6. *Reception*
7. *Office*
8. *Caretaker*
9. *Mechanical*
10. *Courtyard*
11. *Loggia*
12. *Coat and shoe room*
13. *Prayer hall*
14. *Social hall*
15. *Stage*
16. *Open to below*

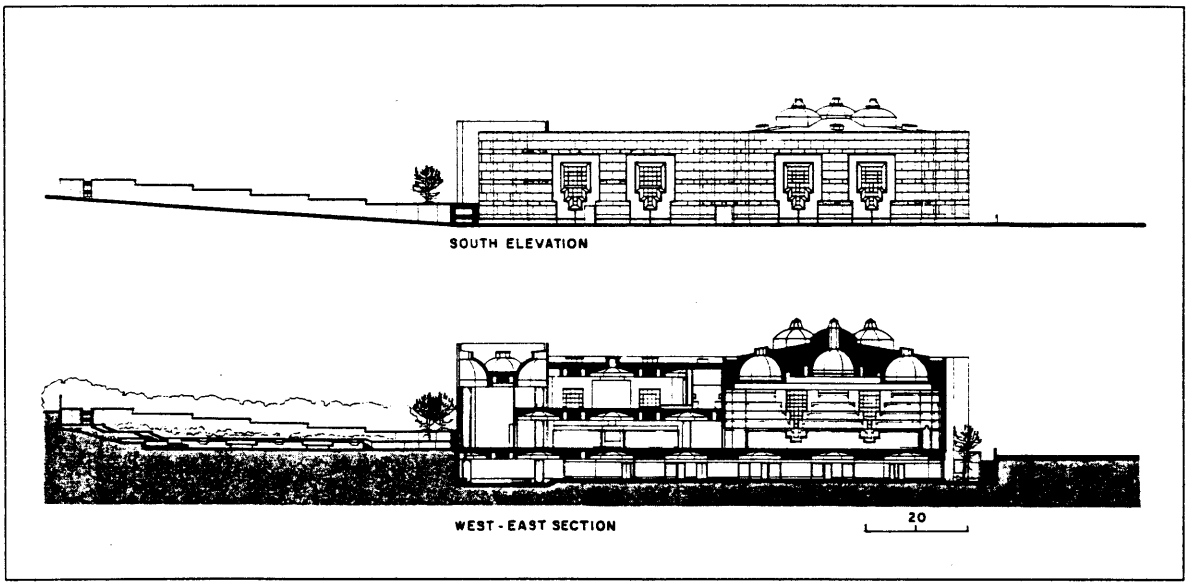
Fig. 5.31 Floor Plans

sky and the sea. The second aspects deals with his pursuit of "relentless" geometry, which gives the form a syntactic dimension. This relates to a dialectical relationship between reading the form, on one hand, i.e the square, the octagon and the circle, and on the the other hand, establishing implicit or explicit, internal relationships in the abstracted mass through the medium of design and the careful placement of elements. This internal dialogue gives the building a complete feeling, however on reading the form one cannot deny the overpowering presence of the semantic dimension in the building.

Spatial Sequence

The building appears visually independent of its context, nevertheless Freschi sees this separation as intentional, whereby layers of landscaped spaces have to be penetrated before arriving at the Portal and this sequential drama continuing, as the believer experiences the building. "The first "wall" consists of the sentinel trees surrounding the site. The second layer, the building trees of cherry punctuated by magnolia at the cross axis, enclose building and

Fig. 5.32 Section and Elevation



courtyard."[27] Obviously, he does not consider the experience of the parking lot as a layer of space.

The rhythm of the complex suggests a four square pattern, whereby the first two squares on the western side form the courtyard while the eastern half forms the building mass with the portal's square plan connecting the solid to the void. The double square plan of the building with six corner octagons forms consisting of stairs and services, form the basic parti for the Institution. The square with the domes houses the double height prayer hall, while the square facing the garden houses the entrance lobby to the building on the first floor and the social activities of the center on the second floor. The basement comprises of the council hall, library, care taker's suit, offices, classrooms and mechanical services which are planned along the central axes of the building.

The design can be seen in the light of a goal which Bruno Freschi set out to achieve and the principles through which that goal was translated into the actual form of the building. The goal was to achieve a clear, spatial definition of the series of rituals that the Jamatkhana accommodates This is clearly evident in the sequence of spaces which correspond to the liturgical matrix of the Jamatkhana, starting from the gates leading from the mundane world of the parking lot to the spiritual realm of the prayer hall. The repetitive geometric formulations were used in order to accommodate the goal and further to metaphorically relate to the many monuments of Islam which, according to him, embody the notion of simple geometric shapes as space and form generators.

After penetrating the two layers of landscape, as iterated by Freschi, the spatial sequence continues from the four

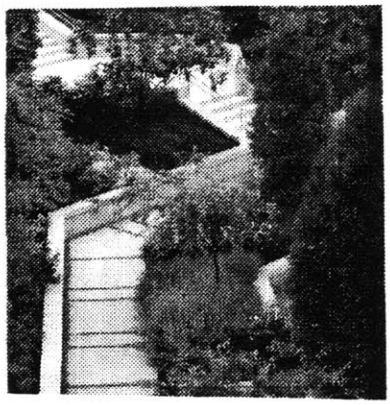


Fig. 5.34 Perimeter path of the garden

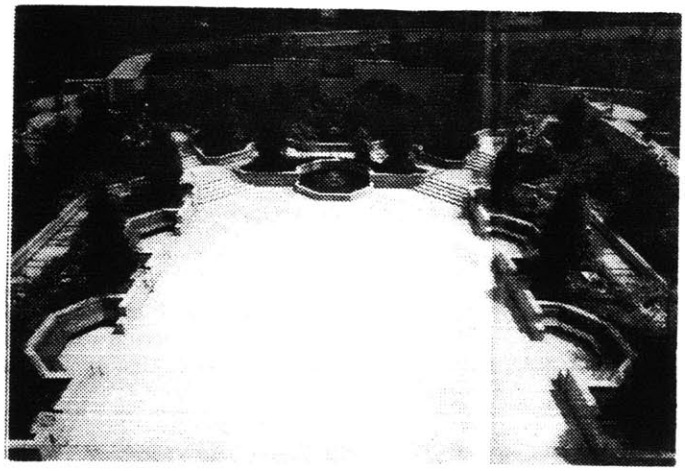


Fig. 5.33 View of the courtyard from above.

Fig. 5.35 Path through the landscape.

major entry points connecting the walled courtyard to the parking lots. These entrances are marked with iron gates patterned with geometric lattice work, which clearly act as transitional elements between the outside secular world and the sacred and peaceful world of the Jamatkhana. The garden is symmetrically planned with flowering and aromatic shrubbery formally laid out at the perimeter, with the central area paved with a repetitive module in the floor pattern. A u-shaped path through the green landscaped area on the perimeter, connecting also the two far entrances, adds another layer of space to the court. The nature of this corridor of space through the landscape gives almost a ritualistic and contemplative approach to the Portal. "Water, the symbol of life, plays in seven discrete fountains surrounding the sitting areas."[28] The pool, fountains, and wooden benches for contemplation are mere extensions in plan of the payment pattern, which consists of a series of octagons and squares placed within the boundary of the two larger squares of the courtyard. Within the court, the careful and judicial placement of these traditional landscape elements within the garden are a clear reference to the Muslim ideal of a manmade earthly paradise. However, if we look at it in relationship to the building's mass and the way it sits surrounded by parking, it is closer to a Western style forecourt to the complex. As in traditional gardens, the building is not a pavilion in the walled garden, which makes no attempt to surround or enclose it.

Fig. 5.36 Entrance to the courtyard

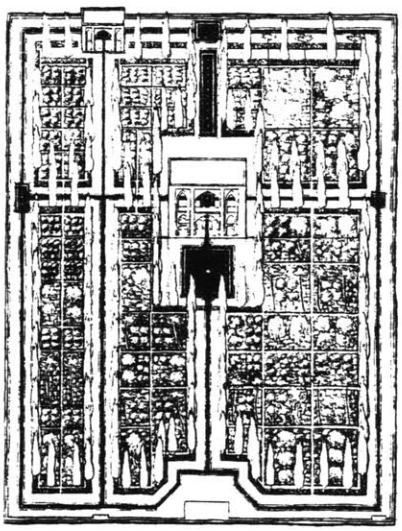


Fig. 5. 37 Bagh-i-Fin, Kashan; courtyard plan. The model for inspiration.

The soaring portal, faced with an ivory colored, Italian marble and overlooking the courtyard, signifies the entrance to the Jamatkhana building. A visitor after passing through the courtyard and the portal deposits his/ her shoes at the shoe counter in the loggia before proceeding on towards the prayer hall. A set of wooden screens

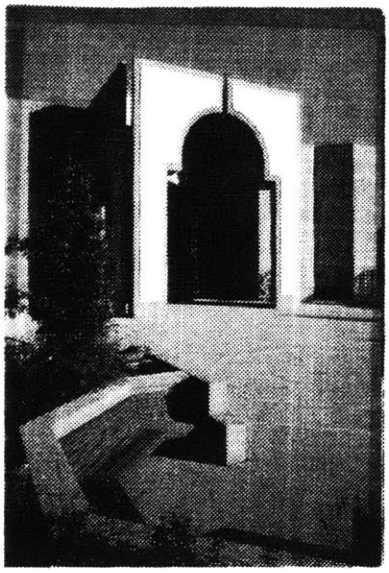


Fig. 5.38 The Portal

patterned with geometrical calligraphy are placed as transitional elements and also as visual screens before the believer enters the heart of the building; the double height square prayer hall with elaborate stepped windows. The qibla wall at the end of the prayer hall adorned with delicately patterned marble panels, visually orients the believer towards the general direction of the Mecca. It then becomes the focus and culmination of the visual experience of the visitor.

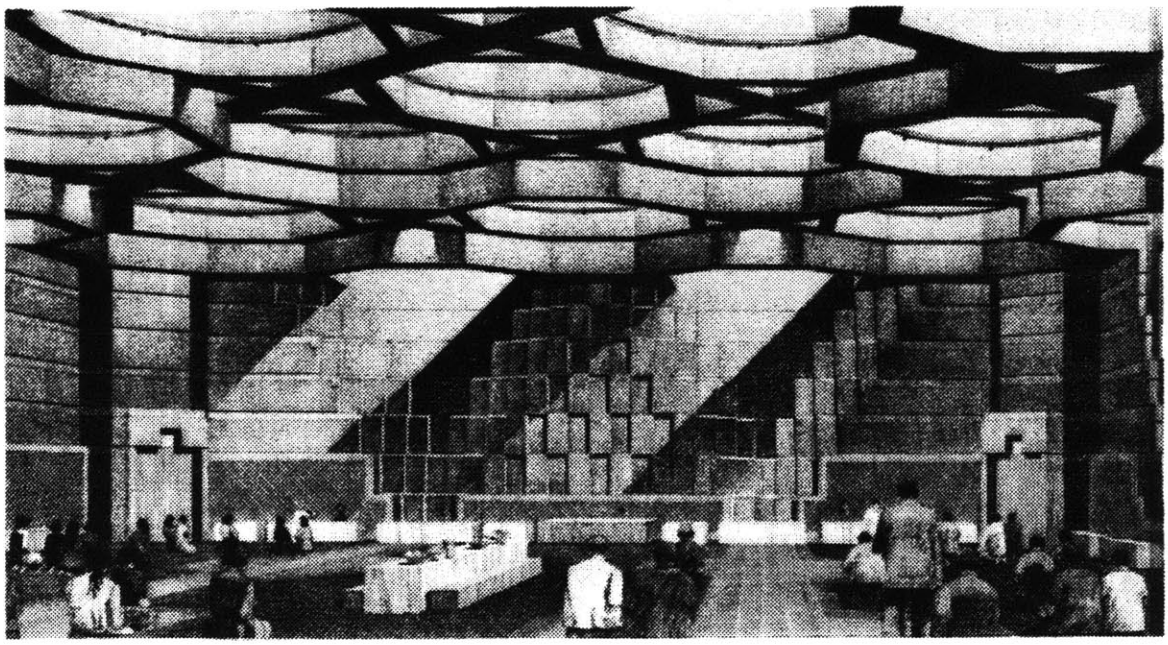


Fig. 5.39 Rendering of the Prayer hall

Structure and Materials

An integrated system of perimeter bearing walls and reinforced concrete columns are used to support the building and are laid out in accordance with the geometrical framework, which consists of a series of octagons overlaid with a square grid. The six corner octagon forms are structurally independent units with their perimeter bearing wall carrying their weight. The four reinforced concrete, circular columns define the spatial boundary of the portal on all the floors, while a pair of these columns act as transitional elements on the first floor before entry to the prayer hall. The prayer hall roof is supported by a series of precast rising octagons in a stepped fashion towards the center and cross members connecting them in them in tension. The roof of the social hall and the floor slabs are also supported with the same principle but are at a constant height floor height. While the spaces on the first and second floor seem to give birth to the geometric and structural order, the basement spaces seem to have been imposed with this order and preconceived structural grid. A series of dry walls defining the individual classrooms and offices meet at the grid lines of the columns, which are over-scaled in terms of height to diameter ratio for such small rooms.

Reinforced concrete is uniformly expressed as the primary building material with stone, marble and wood used as veneer elements which are then applied on to this primary surface. A continuous concrete band forms the base for the facade on top of which the Italian sand stone cladding rests, with a deep groove separating the two materials. On the facade of the building, there is an attempt to establish a base, shaft and head relationship. The concrete band and the windows clearly form the base and the shaft but the meager stone detail on the parapet fails to provide a significant top for the building. A poured in place concrete

band also frames the elaborate stepped windows and in the absence of a stone lintel, the non structural qualities of the stone are further revealed. The portal's thin arch is also adorned with a skin of white Italian marble veneer. In the interior, concrete is even more forcefully expressed with the form work indents and horizontal bands, revealing the story of its making ; i.e concrete poured in plywood form-work and progressively rising form the ground in a series of horizontal bands. Wood and marble panels replace stone as the skin materials for the interior of the building. This clear distinction between the surface and the skin emphasizes the inherent layering concept of the building; i.e exposed concrete is used as a modern icon on to which traditional elements or materials are attached to give the building an associative qualities with the past. The color scheme in the building further emphasizes this distinction where the dullness and gray texture of concrete is overlaid with accents of warm color from teak wood, marble, brass and umber-brick color carpet with patterns reflecting the ceiling layout of octagons.

Analysis and Criticism

"Because Freschi's symbolic allusions are neither wholly abstract not precisely antiquarian, as befits a synthesis of modernity and tradition, the "meaning" of this particular Jamatkhana is as multilayered as its geometry."[29]

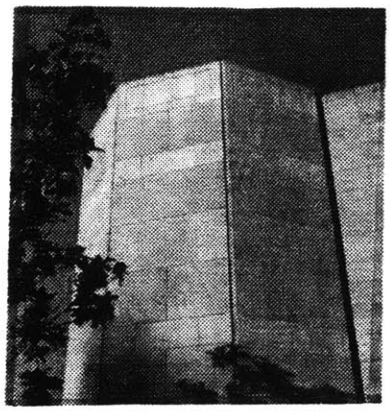


Fig.5.40 First Level of Geometry; the octagonal corner forms.

Freschi's frequent illustration of the dialectical relation-ship between the past vocabulary and the new idiom, the concrete shell, accentuates the semantic reading of the building. However, the three levels of the "relentless" geometric formulation introduces the syntactic aspect of the building. The first level of geometry is in the over all massing of the building, with the octagon forms attached

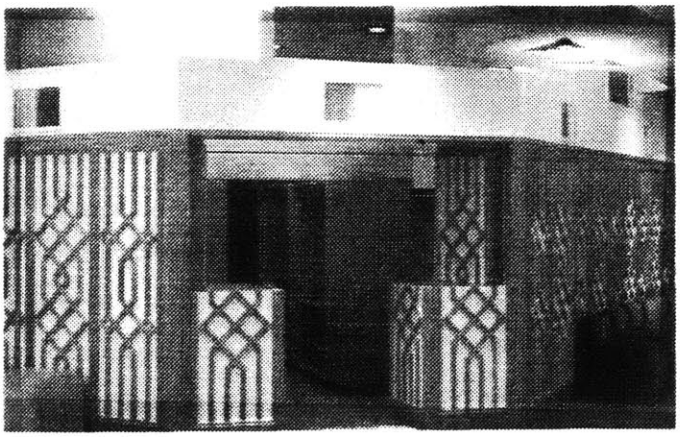


Fig. 5.41 The second level of geometry; the octagonal rhythm of the ceiling hovering over the shoe and coat counter.

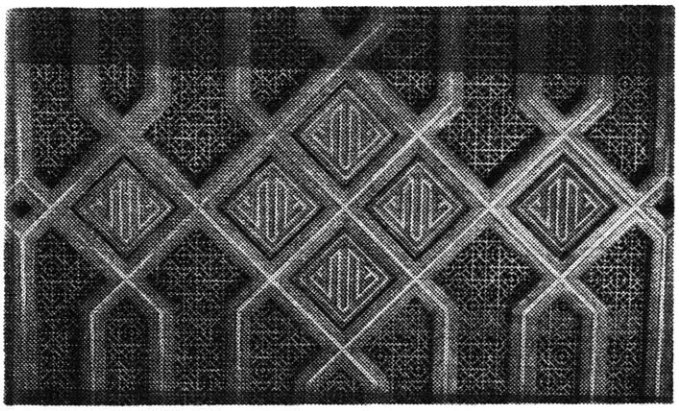


Fig. 5.42 The third level of geometry; interior ornaments and calligraphic panels.

to the two square plan volumes at the six corners, which resulted in the bulky longitudinal mass attached with a portal looming over the horizontal plane of the garden. The second level of its manifestation was in the repetitive module of the octagon, inserted in a grid of squares within the mass of the building and boundary of the garden. Consequently, this network essentially became a space modulating device, setting up a rhythm for the floor, ceiling and wall partitions. The walls of the shoe and coat counters in the entrance lobby do not rise up to the full height, giving them a kiosk type appearance. This was obviously done to accentuate the insertion of the second level of geometry into the first. The third level of this geometrical ideal is manifested at a micro level, in the form

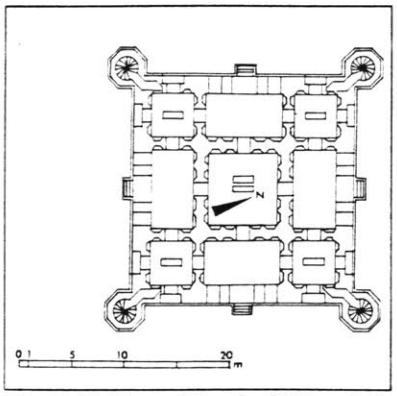


Fig. 5.43 Plan of Tomb of Ittimad al-Daula; 17th century

of ornament and decoration which are a significant part of the whole scheme. The window glass panels, wood lattice work and screens adorned with symbolic calligraphy are some examples of this level of meticulous detail.

The archetypal idea in the first level of geometry discussed above, has a strong precedence in the Islamic building tradition. The four minarets or a series of balconies placed at the corners with octagonal bases, have been extensively used among others in Ottoman and Moghul architecture. The plan of the Tomb of Ittimad al-Daula, built during the Moghul empire in the early part of seventeenth century AD is a good illustration of this concept. However, Freschi in the case of the Jamatkhana, mirror imaged the square plan in order to arrive at the double square longitudinal mass.

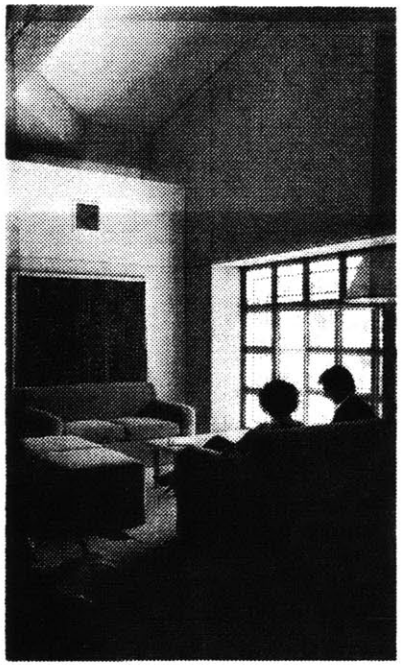


Fig. 5.44 Social Hall; the elaborate window in an awkward relationship with the interior wall.

On the exterior, the longitudinal form is more in tune with the characteristics of a long naved church rather than the oblong form of a hypostyle mosque or a centrally planned mosque. Traditionally, the prayer hall of the mosque was clearly distinguishable from the other functions and was expressed in the exterior form of the building. But Bruno Freschi chose to avoid this distinction in the massing and the elevations, however five domes which can be only perceived from far away, were placed on the prayer hall volume. The same stepped window was punched in the double height prayer hall and the western most square volume, although it is divided vertically between the shoe storage area on the first floor, and the social hall on the second floor. This resulted in a thin strip of concrete within the window on the exterior, where the floor slab dividing the two floors meets the vertical plane of the glass, disturbing the beautiful rhythm of patterned glass panels. While on the inside, it is apparent with the awkward height at which the window sits in the wall elevation of the social

hall.

The height restrictions placed on the site by the municipality understandably played a vital role in the over all scheme of the building. The notion of stepping down into a place for prayer and putting educational rooms and council offices in the basement were a direct outcome of this limitation. But in my mind, Freschi could have avoided the placement of the Institutional part of the building in a basement by probing into other design alternatives. He was so preoccupied with the relentless pursuit of geometry, that the Institutional aspect of the Jamatkhana was considerably suppressed. Educating the younger generation about their religion and traditions holds a high priority among many immigrant parents. In such institutions, the social and educational needs are equally important as the religious functions in order to sustain the community spirit. An immigrant child is asked by his parents to give up the several materialistic attractions from the West, and study about the religion and fourteen hundred years of glorious traditions of their forefathers which created beautiful artifacts and great madrasas. An unresponsive and neutral environment of a basement, without a ray of natural light, might be an inappropriate place for that solicitation. The library, which is meant to educate the community, and the boardroom, which is placed right under the portal's square plan and is a place where the leaders make crucial decisions on community matters are also part of the basement floor. They both suffer from the same predicament and have no expression in the morphology of the building.

The form of the portal is detached from the mass of the building and further, the rectangular walls enclosing it are also detached form each other. The circular columns

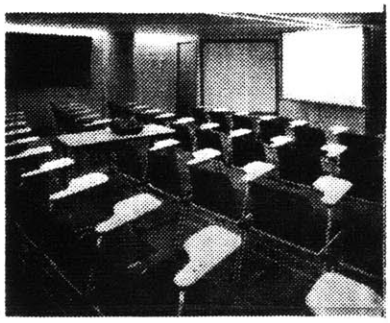
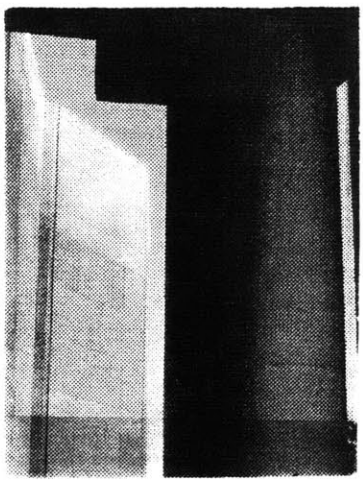


Fig. 5.45 View of the classrooms in the basement floor.



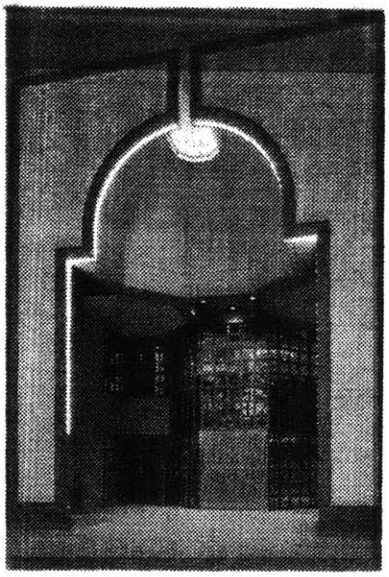


Fig. 5.46 View of the Portal and detail of the circular columns supporting it.

supporting the four precast half domes with skylights are further detached from the vertical planes. The tension between these separate tectonic elements gives the form a deconstructed and cardboardish look. Its precedents, in the urban fabric of many Islamic cities were massive and forceful statements and above all symbolized the grandeur and importance of the building which lay behind them. The notion of mystery and the portal's aedicular space as a signifier of a threshold before a person enters a special place, was an important spatial quality of this archetype. But with the collage of a bay window idea with the form of the portal, the sense of mystery has been totally lost, as the viewer can see through the store front glass panels. The main door intended to be opened only on ceremonial occasions projects out into the spatial boundary of the portal and its role as a threshold before entering the building is completely disturbed by this gesture.

Traditionally, the adjoining courtyards and loggias, which were also used as overflow spaces, provided indirect light to the prayer hall and the windows were secondary sources of light. But in the Jamatkhana, the entrance loggia separates the prayer hall from the courtyard and Freschi had to resort to the use of roof lanterns and windows for natural light. There are two overriding reasons for the introduction of the entrance loggia. First, its use as covered interior place for overflow on special occasions and also its use as a place where shoes are taken off, before entering the prayer hall. The second reason was due to the client's insistence on a complete visual privacy of the prayer hall. Freschi initially did insist on maintaining the visual connection between the place where one prays for a paradise in the after life, and the man made paradise. However on clients request, the patterned panels in the entrance lobby were used as an after thought to diminish that relationship.

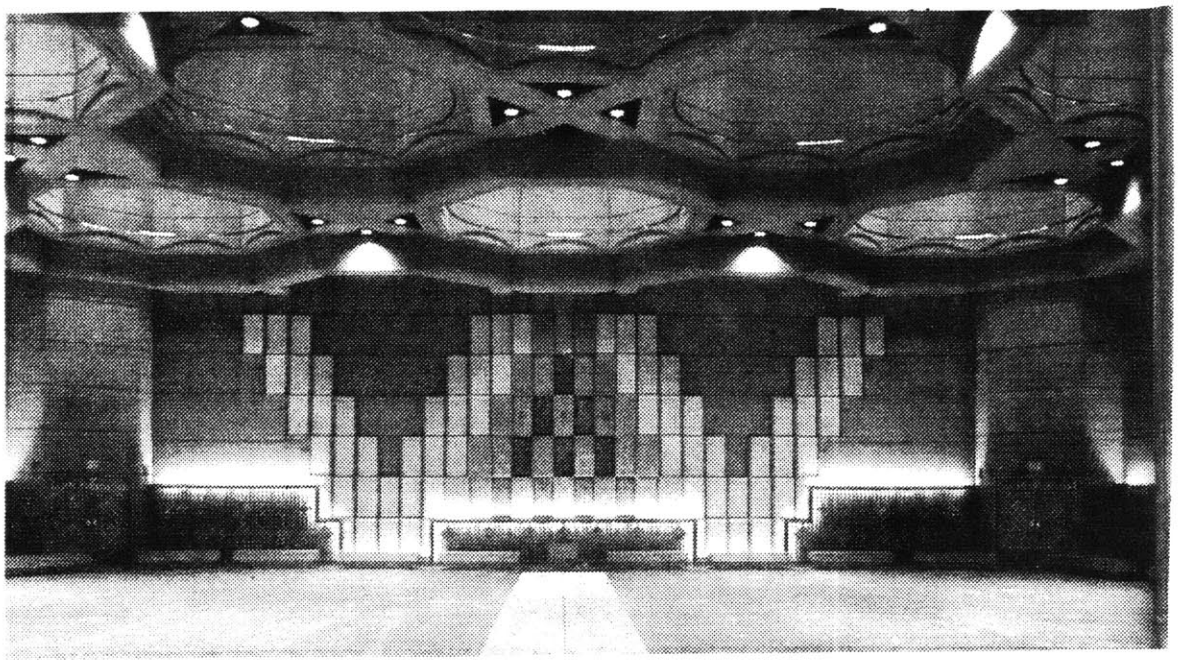


Fig. 5.47 View of the Prayer hall; where man prays for Paradise in after life.

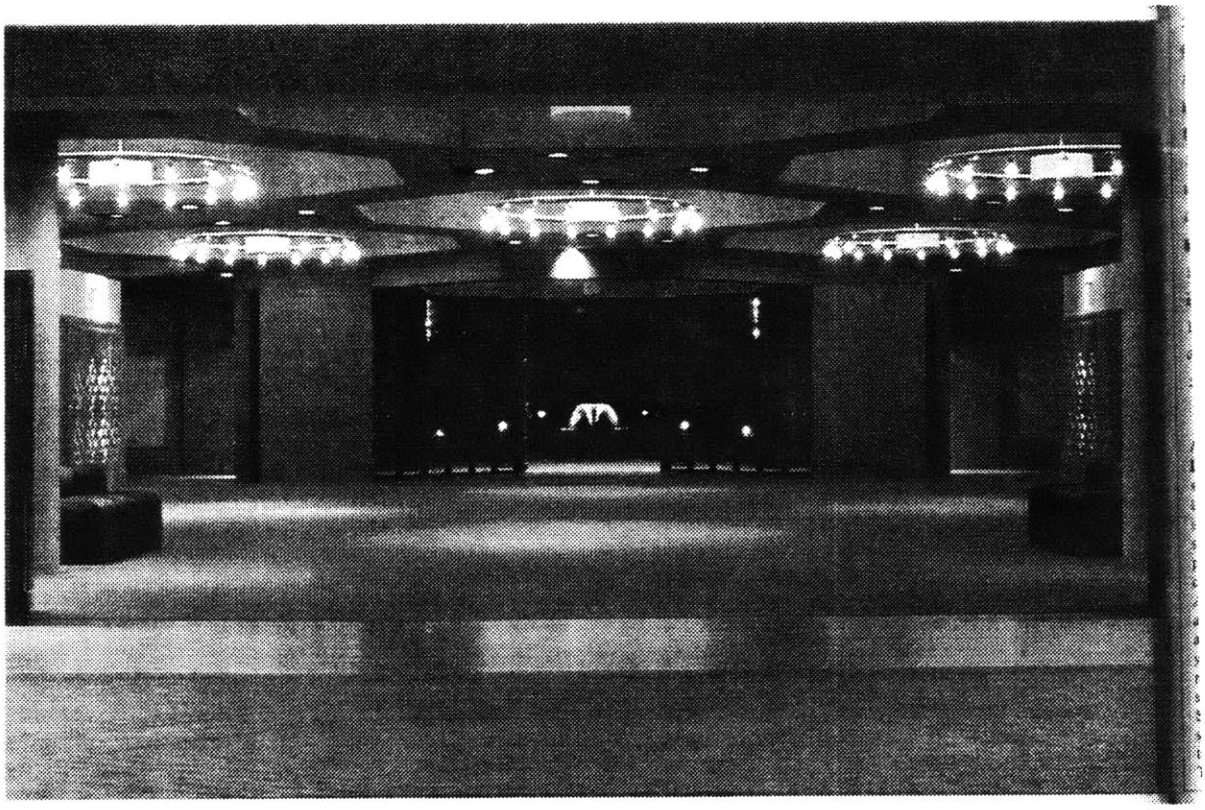


Fig. 5.48 View of the courtyrad from the Prayer; man-made Paradise.

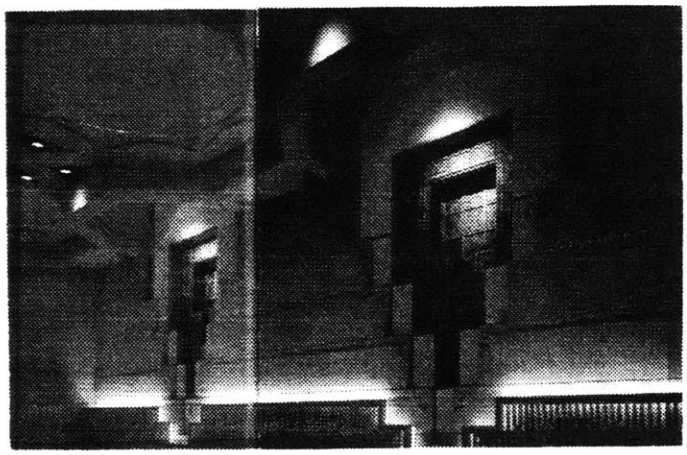


Fig. 5.49 View of the side walls in the Prayer hall.

Freschi chose to orient the prayer hall towards the east, the general direction of Mecca and in line with the orthogonal grid of the site and the city. The plan of the prayer hall is almost a perfect square with small chamfered corners of the octagonal forms. Overwhelmed by the pure geometry of his scheme, Freschi completely ignored the workability of a square plan for the prayer hall. Traditionally, the side walls are shorter in length than the qibla wall, emphasizing its importance and setting up a rhythm for the long lines of believers performing the ritual of prayer. However, there have been many instances in history when small prayer halls have been housed in square enclosures. For example masjids, madrasas and shrines following the four- iwan plan typology have cubical volumes for prayer. Nevertheless, in the case of Burnaby, there is an apparent tension between the two visually dominating elements in the prayer hall, the over scaled windows on its northern and southern walls and the qibla wall adorned with marble panels. Instead of symbolic ornamentation focusing the visual field on to a singular plane, Freschi chose to overwhelm the viewer with the a wall filled with rectangular panels, arranged in a similar fashion to the inverted ziggurat pattern of the window. The panels arranged in a three dimensional stepped pattern further accentuate the textural quality of the qibla wall., however with the small

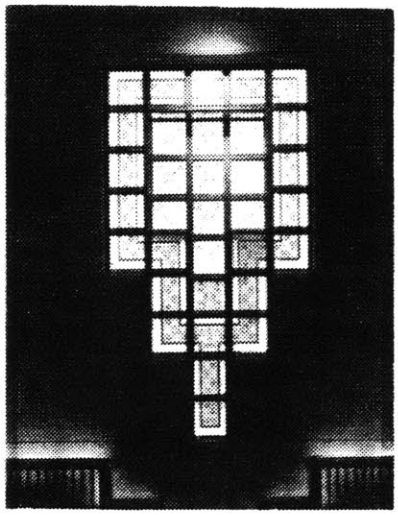


Fig. 5. 50 View of the stepped window.

calligraphic inscriptions of 'Allah', 'Ali' and 'Muhammed' attempting to focus the energies of this animation.

The sea of stepping, precast octagonal domes, each adorned with a circular brass ring, floating above the prayer hall, are consistent with the geometrical rhythm of the building. But the lack of transition between the vertical face of the wall and the outer edge of these forms is inconsistent with the formal vocabulary of domes. Traditionally, a transitional area such as the pendentive zone or the muqarnas vault expressed the translations of loads from the roof to a drum and onto the load bearing vertical walls and visually enhanced the feeling of stability. However, in the absence of these transitional elements, the domes appear to be relentlessly hovering above the prayer hall. From the outside, the low profile and the shape of the five central domes has been derived form the Turkish mosques but they are westernized by the addition of the skylights. Freschi describes them as, "....sheathed in copper and emerging in green patina, are an echo of Islamic form and a Vancouver architectural tradition symbolic of the surrounding mountains. They are the roofscape."[30] The rest of the domes have skylights also for consistency but are not expressed on the exterior, including the half domes which hug the perimeter of the prayer hall.

The elaborate windows, with umber colored mullions and inset with cast opalescent glass, are a unique feature of the building from the exterior and also within the prayer hall. One inch thick panes, etched on both sides with calligraphic motifs in Kufic style, tint the light entering the prayer hall and also provide visual privacy from outside. In the hot and dry climates of many Islamic settlements, the pattern of openings is narrowed at the top as a sun shading device, but in the Jamatkhana Bruno Freschi reversed this

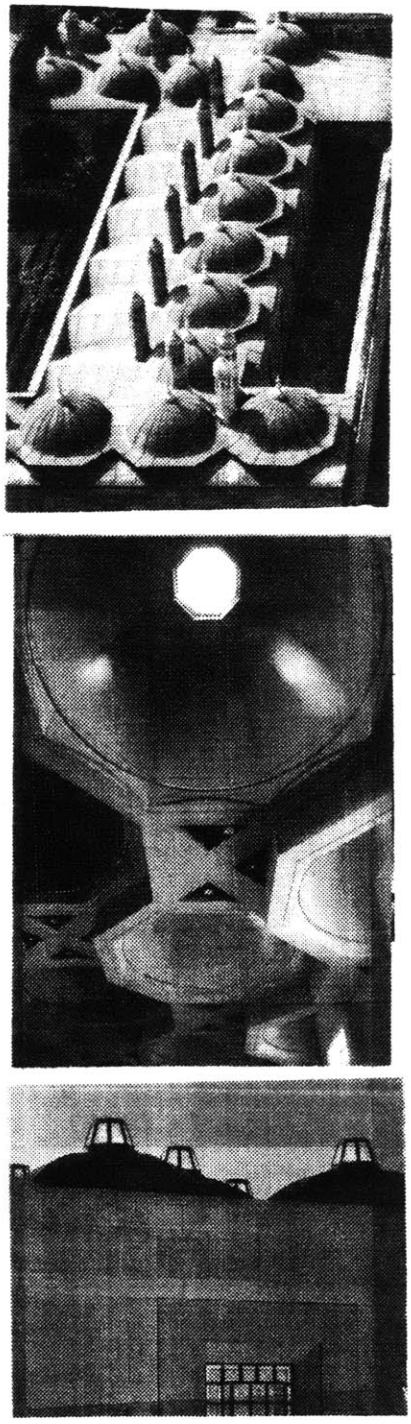


Fig. 5.51 The interior and exterior view of the dome and their precedent in Ottoman architecture; the twin madrasas next to the Suleyman mosque, Istanbul.

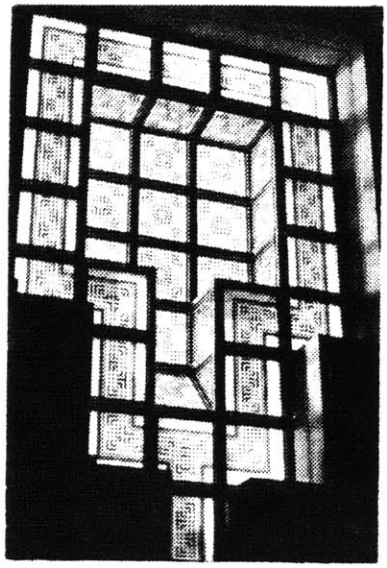


Fig. 5.52 View of the window

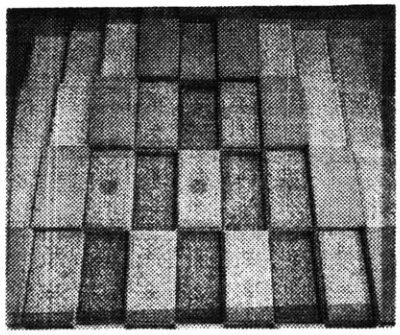
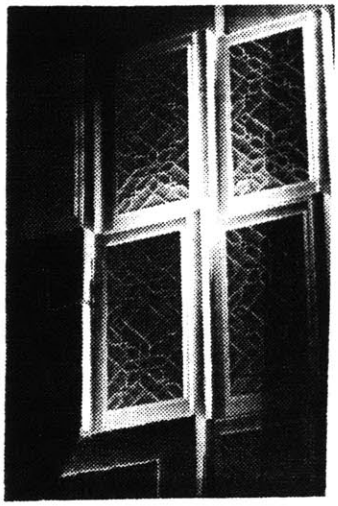


Fig. 5.53 Panels adorning the Qibla wall.

pattern to arrive at an inverted ziggurat, with the central mullions pushed outwards, casting a deep shadow. Freschi describes the window as a "lantern" and as a "three dimensional structure, an expression of light".[31]

The light from the windows and the skylights in the prayer hall is diffused over the bareness of the concrete, the warmth of the wooden elements and the dusty rose color carpet, and the matt and shiny finish of the panels. The modulation of light through different sources, creates almost a spiritual ambiance within the prayer hall. As Freschi writes, " The materials are few and each are related through light."[32]

A highly budgeted project, left no space in the the interiors of the building and especially the prayer hall without ornament in the form of patterned panels, wooden screens, wooden doors inlaid with brass strips, brass rings with suspended lamps and so on. "Complex, yet simple layered patterns are the decoration used in screens, structure and color. Consistency in idiom and simplicity in materials are emblematic and referential to the timeless architectural tradition."[33] It is apparent form the type of patterns used in the building, that Freschi's notion of "timelessness" also



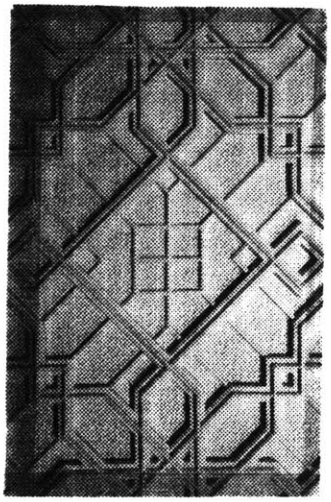


Fig 5.54 Detail of the panels adorning the Qibla wall.

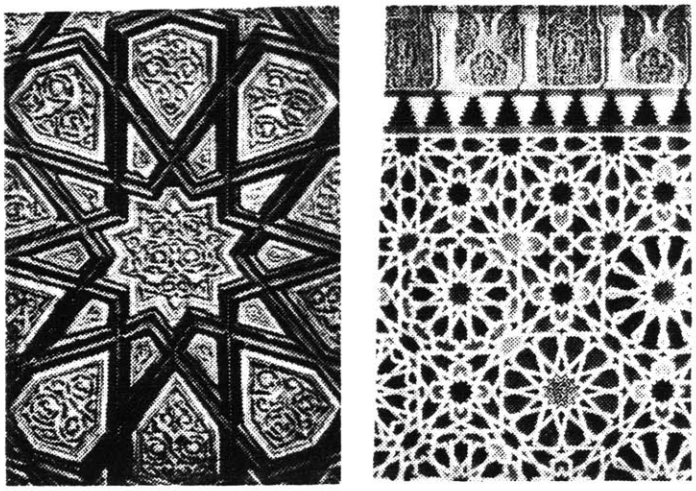


Fig 5.55 Traditional Patterns; Inlaid panel from a door in Cairo, Egypt, 14th century and, tile work in the Hall of Ambassadors at the Alhambra, 14th century.

comes form his observance of the geometry of the pattern's persistent use in many Islamic regions form North Africa to the Sub-Continent. Freschi, seems to have referred to many pattern books before designing the character of these ornaments. No matter what the sources of these decorations are, they all are expressed as icons, enhancing their semantic dimension against the modern idiom of the concrete shell.

Synthesis

Any conclusive comparison between the two Jamatkhanas might be limited in value because of their unique programs and contexts. However, from the above discussion some general trends which have come to light and need to be reiterated. In both instances the clients, the Imám and the leaders of the Ismaili community, demanded a building with a private, quiet and contemplative environment. Visual privacy of the Prayer hall area was of prime importance. The use of Islamic patterns and ornament was encouraged in both the cases, nevertheless with their minimum use on the exterior facade. Height regulations on both the sites had a major impact on their form and

Fig. 5.56 The London Ismaili Center

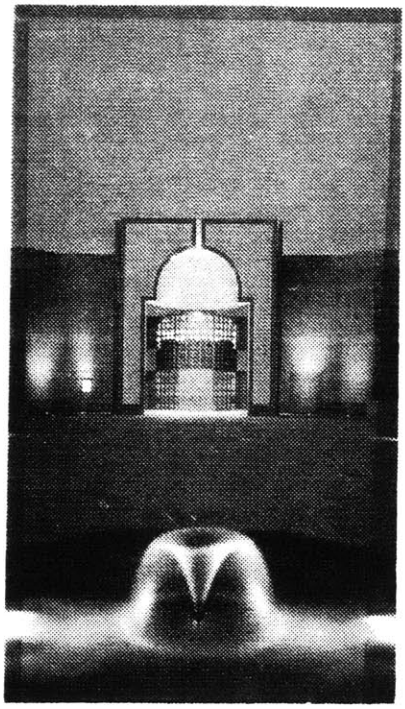


Fig 5.57 The Ismaili Jamatkhana and Center, Burnaby

layout.

The contextual limitations as a result of building in a historic area and the functional aspects of the Institution, were the overriding concern for the Casson Conder Partnership, the designers of the London Jamatkhana. In Burnaby, Freschi was attempting to express more esoteric meanings in the building and the functional aspects were subservient to his geometric order. On one hand, the "simple" and "strong" form in London was relentlessly attempting to respect the surrounding architecture, on the other hand, the form in Burnaby was relentlessly establishing an internal geometric order, but clearly in dialogue with itself.

Schlamminger's mystical approach in designing the interiors motifs in the London Jamatkhana were meant to impart symbolic meanings to the ornamentation of the pristine walls and partitions designed by the architects. No clear attempt was made to bridge the gap between functionalism as a doctrine and his mystical approach. Each design endeavor was seen in isolation. In the case of Burnaby, Freschi emphasized the distinction between the concrete shell and the skin. On the exterior stone cladding was used as a a skin, while in the interiors calligraphic and pattered panels adorned the bare walls of concrete. The play of modern verses with the traditional was quite deliberate. However, in both instances, no attempt was made to introduce any kind of new geometric patterns for ornament. Traditional patterns and calligraphic forms were repeated but with different proportions and new methods of assemblage. The fine quality in the ornaments was a result of the precision of cutting machines of wood and stone, rather than of the skills in the hands of craftsmen.

Notes

[01] *The Ismaili Center, London,* (Photographic Brochure), UK: Islamic Publications Ltd, 1985
[02] Sutherland Lyall, "Ismaili Center - An Architectural no Man's Land; Architects Casson Conder Partnership"; *Building* Vol 245, No. 7316, Nov 4, 1983, p 11
[03] Martin Pawley, "Cross Cultural Center; Architects: Casson Conder Partnership"; *The Architect's Journal* Vol 178, No. 48, Nov 30, 1983,p 34
[04] Martin Spring, "Islamic Architecture turns into modern and traditional designs; Architects Casson Conder Partnership"; *Building* Vol 237, No. 7105, September 14, 1979, p 16
[05] 'Architect's Report', in Anthony Williams and Partners "Ismaili Center; Architects: Casson Conder Partnership; Engineers: Jekins & Potter, and H.D. Lockwood & Partners; Landscape Architects: Sasaki Associates"; *Building* Vol 246, No. 7331, Feb 24, 1984, p 37
[06] Ibid, p 38
[07] *The Ismaili Center, London,* (Photographic Brochure), UK: Islamic Publications Ltd, 1985
[08] 'Architect's Report', in Anthony Williams and Partners "Ismaili Center; Architects: Cassson Conder Partnership; Engineers: Jekins & Potter, and H.D. Lockwood & Partners; Landscape Architects: Sasaki Associates"; *Building* Vol 246, No. 7331, Feb 24, 1984, p 38
[9] Ibid, 38
[10] Ibid, 39
[11] Ibid, p 39
[12] Ibid, p 39
[13] Karl Schlamminger, *Arts & The Islamic World* Vol 3, No. 3, Autumn 1985, p 24
[14] Ibid, p 28
[15] Ibid, p 23
[16] Ibid, p 24
[17] Ibid, p 25
[18] Quoted in "London Central Mosque"; (Ronald Lewcock), *Architect's Journal* Vol 166, No 32, August 10, 1977, p 261
[19] Karl Schlamminger, *Arts & The Islamic World* Vol 3, No. 3 Autumn 1985, p 27
[20] Richard Ettinghausen & Oleg Grabar, *The Art & Architecture of Islam: 650-1250,* London: Penguin Books, 1987, p 137
[21] Muhsin Mahdi, "Islamic Philosophy and the Fine Arts"; *Architecture and Community: Building in the Islamic World Today,* The Aga Khan Award for Architecture, Geneva: Aperture/ Islamic Publications Ltd., 1983, p 24
[22] Title of an article published in an architectural journal; Bruno Freschi, "Ethnic Eloquence (Burnaby Jamatkhana, Burnaby, BC)"; *The Canadian Architect* Vol 30, June 1985, p 12-15
[23] *The Ismaili Jamatkhana and Center, Burnaby, BC, Canada,*

(Photographic Brochure, UK: Islamic Publications Ltd., 1985

[24] Bernner Douglas, "Ismaili Jamatkhana and Center, Burnaby, BC"; *Architectural Record* Vol 174, Aug 86, p 90

[25] Bruno Freschi, "Burnaby Jamatkhana"; *Architecture and Urbanism (A+ U)*, No. 190, July 1986, p 51

[26] Ibid, p 52

[27] Ibid, p 51

[28] Ibid, p 52

[29] Bernner Douglas, "Ismaili Jamatkhana and Center, Burnaby, BC"; *Architectural Record* Vol 174, Aug 86, p 90

[30] Bruno Freschi, "Burnaby Jamatkhana"; *Architecture and Urbanism (A+ U)*, No. 190, July 1986, p 51

[31] Ibid, p 51

[32] Ibid, p 52

[33] Ibid, p 52

Epilogue

In writing this thesis, I have avoided presenting the reader with any strong epistemological proposition or position, for two reasons. The first is due to the fact that I see this work as a detailed sketch for a further inquiry. Nevertheless, the line of questioning and inquiry followed here began with my undergraduate education and continued through my work experience. Second, when one is confronted with complex issues such as memory, perception, visual literacy and above all meaning in architecture, a number of models can be referred to, but those are often replete with contradictions and value judgements. Nevertheless, I have also tried to avoid falling into the trap of pure relativism, where anything goes. In this thesis the reader has been offered with the expression of my thoughts, ideas and queries, which I have attempted to put together in some logical order, to formulate a piece of reasoned critical writing.

The buildings under study are designed for Muslims living in non-Muslim countries and facing the day-to-day conflicts of living a religious life, in a secular world of capitalism. Most Muslims survive this conflict and are increasingly becoming naturalized citizens of their newly adopted lands, yet that duality between their allegiance to Islam as a way of life and the social, moral, and above all cultural forces, in their new homes persists. These immigrants are living in countries were the media knows absolutely no bounds in presenting a distorted image of Islam and of the people following the path laid down by it. In this century, the militant image of Islam has taken over the exotic

portrayal of the Orientalist artists. Despite these key issues facing Muslims in the West, their integration professionally and economically seems to be fairly progressive. Only time will reveal how as Islam in the West will be expressed, appropriated and lived, as Muslims continue to search and discover ways to be true to the faith in its universal manifestation. In the meanwhile the architects of their Institutions are walking the tight rope between pastiche and an abstracted recreation of the glorious building traditions of Islam.

In their new-found economic prosperity or professional achievement, the immigrants cannot now be divorced from the capitalist and secular world in which they are immersed. Yet they have immigrated from countries where Islam was professed as an ideology in determining religious and state matters. If we turn to Tafuri's assessment in his book, Architecture and Utopia, he paints a hopeless picture of the destiny of architectural production under capitalism. However, he defines the aim of critical analysis of the basic principles of contemporary architectural ideology to be, "the precise identifications of of those tasks which capitalist development has taken from architecture."[1] Venturi on other hand, commenting on the present state of architecture in a mass-media oriented society says that, "the iconography and mixed media of roadside commercial architecture will point the way, if we look."[2] Obviously, the designers of these Institutions are caught between these two extreme positions.

It would be interesting to speculate, with how much relative ease some of the buildings discussed could be shipped to sites in an Islamic country and whether they would be hailed there for embodying the principles of Islamic design. Is the mass culture of Islam looking for symbols on

just a pragmatic and obvious level, rather than abstractly through spatial manifestations? Alan Colquhoun attempts to answer this question when he claims that the primitive arts had essentially a representational quality to them, and argues that we have to continue this today through the 'iconic values' in the products of technology. He writes; "There seems to be a close parallel between such systems and the way modern man still approaches the world. And what was true of primitive man in all the ramifications of his practical and emotional life - namely, the need to *represent* the phenomenal world in such a way that it becomes a coherent whole and logical system - persists in our organizations and more particularly in our attitudes towards the man-made objects of our environment."[3] He further suggests that in our search for the iconic quality of artifacts, we must look for "not so much an inherent property, but to sort of availability or redundancy in them in relation to human feeling."[4]

Apart from the issues pertaining to the referential aspect of these buildings, the client's willingness in accepting innovative ideas is very crucial in the development of the formal language. There is an apparent problem if the architect's role is seen as just as a bricoleur and not an innovator of forms. In all the four case studies, I attempted to illustrate how the collage of forms from various traditions can result in incoherence and incongruity within the building as a whole.

The generally cold climatic conditions in the Western world require a prayer space which is fully indoors; for this reason the classical typology of the mosque, the hypostyle type cannot usually be used. Except in the case of the Rome mosque, the continuity of the prayer space with the courtyard was denied. The architect's eventually have to fall

back on a combination of types, mixing the centrally planned with the rectangular type and so forth.

The relationship between interior design and architectural endeavor is another major issue in these buildings. The clients often see them as distinct endeavors. But the traditional types they wish to emulate did not make that distinction; shell, and interiors and exterior layers of skin were all consistently conceived and designed. With the specialization in the present century, this distinction often leaves the building semantically incoherent. The mechanistic way of producing ornament today results in a lack of the textural quality which the traditional crafts created. For instance, if one looks at traditional tile work, each tile has the same design yet each one is different than other. Each one is telling the story of its making by its craftsmen and creator. While if one looks at the ornaments used in the buildings today, there is a sense of deliberateness in the creation, reminding us of something which existed in the past. But their precise clean cut lines remind us not of the toil and love of their creator, but of the sharpness and accuracy of modern laser cutting machines.

Finally, an important issue in the building of these institutions is the tension which emanates by the collision of the assertion of the Muslim community to create an identity for themselves in an alien environment, with a resistance by the remainder of local community, resulting in an attempt to make that assertion psychically and audibly minimal within their environment. The architect is caught in the cross fire, where he is asked by the clients to adorn the building with a dome, yet he is told to compress its form and lower the height to respect the local concerns.

To conclude: in each instance, I have attempted to illustrate

how tradition is viewed and rethought within each designer's mind. Often individual vocabulary joins forces with many faces of tradition and a process of re-thinking takes place. The dialectical course that this dialogue takes is crucial, for there is a doubt that in today's world the realm of tradition will be to the level of meaningless symbolism.

Notes

[1] Manferdo Tafuri, *Architecture and Utopia*, Cambridge: MIT Press, 1976, p ix
[2] Robert Venturi, *Learning from Las Vegas*, Cambridge: MIT Press, 1972, p 131
[3] Alan Colquhoun, "Typology and Design Method"; *Essays in Architectural Criticism*, Cambridge: MIT Press, 1981, p 44
[4] Ibid, 46

Bibliography

General References

Abu-Lughod, Janet. "The Islamic city - Historic Myth, Islamic Essence, and Contemporary Relevance"; *International Journal of Middle East Studies* Vol 19, No 2, May 1987, pp 155-176

The Aga Khan Program for Islamic Architecture. *Theories and Principles of Design in the Architecture of Islamic Societies,* (A symposium held by the AKP at MIT, Nov 6-8, 1987), Cambridge: AKP, 1988

Agrest, Diana. "Design versus Non-Design"; *Oppositions* 6, Fall 1976, pp 45-68

Akbar, Jamel. *Crisis in the built environment: The case of the Muslim city,* Singapore: Concept Media (A Mimar book), 1988

Al-Faruqi, Ismail. *Tawhid: Its Implications for Thought and Life,* Kaula Lumpur: The International Institute of Islamic Thought, 1982

Allan, James W. and K.A.C. Creswell. *A Short Account of Early Muslim Architecture,* Cairo: American University Press, 1989

Allen, Terry. *Five Essays on Islamic Art,* USA: Solipsist Press, 1988

Anderson, Stanford. "Architectural design as a system of research programmes"; *Design Studies* Vol 5, No 3, July 1984, pp 146-150

Anderson, Stanford. "Architecture and Tradition that isn't 'Trad, Drad'"; *The History, Theory and Criticism of Architecture,* (Whiffen, Marcus Ed.), Cambridge: MIT Press, 1965, pp 71-89

Anderson, Stanford. "Critical Conventionalism in Architecture"; *Assemblage* 1, October 1986, pp 7-23

Anderson, Stanford. "Critical Conventionalism: The History of Architecture"; *Midgrad* Vol 1, No. 1, 1987, pp 33-47

Anderson, Stanford. "The Fiction of Function"; *Assemblage* 2, Feb 1987, pp 18-31

Anderson, Stanford. "Types and Conventions in Time: Towards a History for the Duration and Change of Artifacts"; *Perspecta* 18, 1982, pp 109-117

Ardalan, Nader & Bakhtiar, Laleh. *The Sense of Unity: The Sufi Tradition in Persian Architecture,* Chicago: University of Chicago Press, 1973

Ardalan, Nader. "Architects in America design for Islamic cultures."; *Arts and the Islamic World* Vol 3, No. 3, Autumn 1985, pp 46-50

Argan, Giulio Carlo. "On the typology of architecture"; (Translated by Joseph Rykwert), *Architectural Design* Vol 33, Dec 1963, pp 564-565

Bandini, Micha. "Typology as a form of Convention"; *AA Files* Vol 6, May 1984

Blakstad, Rolph. "A Niche of Light"; *Arts and the Islamic World* Vol 2, No. 3, Autumn 1984, pp 17-30

Bonta, Juan Pablo. *Architecture and its interpretation: A study of the expressive systems in architecture,* NY: Rizzoli, 1979

Broadbent, Geoffrey. *Emerging Concepts in Urban Space Design,* London & NY: Van Nostrand Reinhold International, 1990

Broadbent, Geoffrey; Bunt, Richard & Jencks, Charles (Eds.). *Signs, Symbols and Architecture,* Chicester: John Wiley & Sons Ltd., 1980

Brown, L. Carl, (Ed.). *From Medina to Metropolis: Heritage and Change in the Near Eastern City,* Princeton, NJ: Darwin Press, 1973

Burkhardt, Titus. *Art of Islam: Language and Meaning,* London: World of Islam Festival Publishing Company, 1976

Cantacuzino, Sherban, (Ed.). *Architecture in Continuity: Building in the Islamic World today,* (The Aga Khan Award for Architecture), Geneva: Aperture/ Islamic Publications Ltd., 1985

Caws, Peter. "Significant Structures"; *VIA* 2, (Title: Struc-

Bibliography

tures Implicit and Explicit; Journal of the Graduate School of Fine Arts, University of Pennsylvania), 1973, pp 40-45

Chadirji, Riffat. *Concepts and Influences: Towards a Regionalized International Architecture,* London, New York & Sydney: KPI Press, 1986

Chadirji, Riffat. "Regenerative Approaches to Mosque Design"; *Mimar* Vol 11, January-March 1984, pp 44-63

Cohen, Stuart. "Physical Context/ Cultural Context: Including it All"; *Oppositions* 2, January 1974, pp 1-39

Colquhoun, Alan. *Essays in Architectural Criticism: Modern Architecture and Historical Change,* Oppositions Books, Cambridge: MIT Press, 1985

Colquhoun, Alan. *Modernity and Classical Tradition: Architectural essays 1980-1987,* Cambridge: MIT Press, 1989

Critchlow, Keith. *Islamic Patterns: An Analytical and Cosmological Approach,* London: Schoken Books, 1976

Curtis, William J.R. *Modern Architecture since 1900,* New Jersey: Prentice Hall, Inc., 1983

Curtis, William J.R. "Modern Architecture, Monumentality, and the Meaning of Institutions: A Reflection on Authenticity"; *Harvard Architectural Review* Vol 4, (Title: Monumentality and the City; A Journal of the students of the GSD, Harvard University), Spring 1984, pp 86-97

Darby, Micheal. *The Islamic Perspective: An Aspect of British Architecture and Design in the 19th century,* UK: World of Islam Festival Trust Publication, 1983

De Quincy, Quatremére. "Type"; Introduction by Anthony Vidler, *Oppositions* 8, Spring 1977, pp 146-150

Eade, John. "Islam, Religious Buildings and Space in London"; *Unpublished Paper,* (Submitted in the Conference titled: Making Space for Islam: Spatial Expressions of Muslims in the West), November 1990

Eisenman, Peter. "The End of the Classical: the End of the Beginning, the End of the End"; *Perspecta* 21, (The Yale Architectural Journal), 1984, pp 154-173

El- Said, Issam & Parman, Ayse. *Geometric Concepts in Islamic Art,* London: World of Islam Festival Publishing Company Ltd., 1976

Ellis,William. "Type and Context in Urbanism: Colin Rowe's Contextualism"; *Oppositions* 18, Fall 1979, pp 2-27

Ettinghausen, Richard & Grabar, Oleg. *The Art and Architecture of Islam 650-1250,* UK: The Pelican History of Art, 1987

Ettinghausen, Richard. *Islamic Art and Archaeology: Collected Papers,* (Myriam Rosen-Ayalon, Ed.), Berlin: Gebr Mann Verlag, 1984

Evin, Ahmet, (Ed.). *Architectural Education in the Islamic World,* (Proceedings of Seminar ten in the series, Architectural Transformation in the Islamic World held in Granada, Spain, April 21-25, 1986), Singapore: Concept Media/ The Aga Khan Awards, 1986

Faruqi, Lois Lamyä al. "Appreciating Islamic Art"; *Arts and the Islamic World* Vol 3, No. 3, Autumn 1985

Frampton, Kenneth. *Modern Architecture: A critical history,* London: Thames and Hudson, 1990

Gandelsonas, Mario. "From Structure to Subject: The Formation of an Architectural Language"; *Oppositions* 17, Summer 1979, pp 6-29

Geerhold, W. "The mosque on Mass Ave."; *ARAMCO World Magazine* March-June 1965, pp 20-21

Geertz, Clifford. *Local Knowledge,* NY: Basic Books, 1983

Germen, Aydin (Ed.). *Islamic Architecture and Urbanism,* (Selected Papers from a symposium Organized by the College of Architecture and Planning, King Faisal University), Dammam: King Faisal University, 1983

Grabar, Oleg. "From the past into the future: On two designs for State Mosques"; *Architectural Record* Vol 172, No. 7, June 1984, pp 152-153

Grabar, Oleg. "Islamic Art and Archeology"; in *The Study of the Middle East,* (Leonard Binder Ed.), NY & Toronto: John Wiley & Sons, 1976

Grabar, Oleg. "Reflections on the Study of Islamic Art"; *Muqarnas* Vol 1, (An Annual on Islamic Art and Architecture), 1983, pp 1-14

Grabar, Oleg. *The Alhambra,* Cambridge: Harvard University Press, 1978

Bibliography

Grabar, Oleg. "The Architecture of the Middle Eastern City from the past to present: The case of the Mosque", *Middle Eastern Cities*, (Ira M. Lapidus, Ed.), Berkeley: California University Press, 1969, pp 26-46

Grabar, Oleg. *The Formation of Islamic Art*, New Haven and London: Yale University Press, 1973

Habermas, Jürgen. "Modernity - An Incomplete Project"; *The Anti-Aesthetic: Essays on Postmodern Culture*, (Hal Foster Ed.), Washington: Bay Press, 1983, pp 3-15

Habraken, John N. *The Appearance of the Form*, Cambridge: Awater Press, 1985

Haddad, Yvonne Y. *A Century of Islam in America*, (The Muslim World Today, Occasional Paper No. 4), Washington DC: American Institute for Islamic Affairs, 1986

Haddad, Yvonne.Y. & Lummis, Adair T. *Islamic Values in the United States*, New York & Oxford: Oxford University Press, 1987

Haider, Gulzar. 'Habitat and Values in Islam: a Conceptual Formulation of an Islamic City", *The Touch of Midas*, (Ziauddin Sardar, Ed.), Manchester: Manchester University Press, pp 170-208

Haider, Gulzar. "Brother in Islam, Please draw us a Mosque"; *Unpublished Paper*, (Submitted in the Conference titled: Making Space for Islam: Spatial Expressions of Muslims in the West), November 1990

Haider, Gulzar. "Islamic Architecture in Non-Islamic Environments: Plainsfield, Indiana Mosque", *Places of Public Gathering in Islam*, (Linda Safran, Ed., Proceedings of Seminar Five in the series Architectural Transformation in the Islamic World held in Amman, Jordan, May 4-7, 1980), Philadelphia: The Aga Khan Award, 1980, pp 123-125

Hakim, Besim S. & Rowe Peter G. "The Representation of Values in Traditional and Contemporary Islamic Cities"; *Journal of Architectural Education* Vol 36, No. 4, pp 22-28

Hakim, Besim S. "Recycling the Experience of Traditional Islamic Urbanism"; *Preservation of Islamic Architectural Heritage*, (Proceedings of the Conference organized by the Arab Urban Development Institute, held in Istanbul, Turkey, 22-26 April 1985), Riyadh: King Saud University Press, 1988, pp 305-317

Hall, Foster. "(Post) Modern Polemics"; *Perspecta* 21, (The

Yale Architectural Journal), 1984, pp 144-154

Hancock, John E. "Between History and Tradition: Notes Towards a Theory of Precedent"; *The Harvard Architectural Review* Vol 5, (Title: Precedent and Invention; Publication by students of the GSD, Harvard University), 1985, pp 64-77

Harries, Karsten. "On Truth and Lie in Architecture"; *VIA* 7, (Title: The Building of Architecture; The Architectural Journal of the Graduate School of Fine Arts, University of Pennsylvania), 1984, pp 47-58

Harries, Karsten. "Representation and Re-Presentation in Architecture"; *VIA* 9, (Title: Re-Presentation; The Architectural Journal of the Graduate School of Fine Arts, University of Pennsylvania), 1988, pp 13-26

Harsham, P. "Islam in Iowa"; *ARAMCO World Magazine*, November-December 1976, pp 30-36

Harvard Architectural Review. *Autonomous Architecture*, (A publication of the students at the GSD, Harvard University), Vol 3, Cambridge: MIT Press, Winter 1983

Harvard Architectural Review. *Beyond the Modern Movement*, (A publication of the students at the GSD, Harvard University), Vol 1, Cambridge; MIT Press, 1980

Hays, Michael K. "Critical Architecture: Between Culture and Form"; *Perspecta* 21, (The Yale Architectural Journal), 1984, pp 14-29

Hoag, John D. *Islamic Architecture*, New York: Rizzoli, 1987

Holod, Renata, (Ed.) & Rastorfer, Darl, (Associate Ed.). *Architecture and Community: Building in the Islamic World today*, (The Aga Khan Award for Architecture), Geneva: Aperture/ Islamic Publications Ltd., 1983

Holod, Renata, (Ed.). *Towards an Architecture in the Spirit of Islam*, (Proceedings of Seminar One in the series Architectural Transformations in the Islamic World held at Aiglemont, Gouvieux, France in April 1978), Philadelphia: The Aga Khan Awards, (2nd Edition), 1980

Holt, Jaan. "Architecture and the Wall Facing Mecca"; *VIA* 5, (Title: Determinants of Form; Architectural Journal of the Graduate School of Fine Arts, University of Pennsylvania), 1982, pp 24-27

Bibliography

Jameson, Conrad. "Modern Architecture as an Ideology"; *VIA* 4, (Title: Culture and the Social Vision; Architectural Journal of the Graduate School of Fine Arts, University of Pennsylvania), 1980, pp 19-25

Jencks, Charles & Baird George. *Meaning in Architecture,* Barrie & Radcliff(London): The Cresset Press, 1969

Katz, Jonathan G., (Ed.). *Architecture as Symbol and Self-Identity,* (Proceedings of Seminar four in the series, Architectural Transformations in the Islamic World held in Fez, Morocco, October 9-12, 1979), Philadelphia: The Aga Khan Awards, 1980

Kühnel, Ernst. *Islamic Art and Architecture,* (Translated by Katherine Watson), NY: Cornell University Press, 1966

Lapidus, Ira M (Ed.). *Middle Eastern Cities,* (A symposium on Ancient, Islamic, and Contemporary Middle Eastern Urbanism), Berkeley: University of California, 1969

Lynch, Kevin. *What Time is this Place?,* Cambridge; MIT Press 1972

Marlt, Carol H. "Washington's Islamic Center"; *Arts and the Islamic World* Vol 2, No. 4, Winter 1984/85, pp 33-36

Mary, McLeod. "Architecture and Politics in the Reagan Era: From Postmodernism to Deconstructivism"; *Assemblage* 8, February 1989, pp 23-59

Mitchell, George, (Ed.). *Architecture of the Islamic World,* NY: Thames and Hudson, 1984

Moneo, Rafael. "On Typology"; *Oppositions* 13, Cambridge: MIT Press, 1986, pp 22-45

"Muslims in Europe"; *ARAMCO World Magazine* Vol 30, No. 1, Jan-Feb 1979

Nochlin, Linda. "The Imaginary Orient"; in *The Politics of Vision,* NY: Harper & Row, 1989

Norberg-Schulz, Christian. *Architecture: Meaning and Place,* NY: Rizzoli International Publications, Inc.,1988

Noss, David S. & Noss, John B. *Man's Religions,* NY: Macmillan Publishing Company, 7th Edition, 1984

Oechslin, Werner. "Premises for the Resumption of the Discussion of Typology"; *Assemblage* 1, 1986, pp 37-53

Pevsner, Nikolaus. *An Outline of European Architecture,* UK: Penguin Books (Pelican Series), 1943

Pérez-Gomez, Alberto. "Abstraction in Modern Architecture"; *VIA* 9, (Title: Re-Presentation; Architectural Journal of the Graduate School of Fine Arts, University of Pennsylvania), 1988, pp 71-84

Pérez-Gomez, Alberto. *Architecture and the Crisis of Modern Science,* Cambridge: MIT Press, 1983

Popper, Sir Karl. *Conjectures and Refutations - The Growth of Scientific Knowledge,* NY: Harper Torchbooks, 1963

Prochazka, A.B. *Mosques,* Zürich: Muslim Architecture Research Program, 1986

Rahman, Fazlur. *Islam & Modernity, Transformation of an Intellectual Tradition,* Chicago: University of Chicago Press, 1982

Rahman, Fazlur. *Islam,* Second Edition, Chicago & London: The University of Chicago Press, 1979

Richards, J.M., Serageldin, Ismail & Rastorfer, Darl. *Hassan Fathy,* London: Concept Media (A Mimar Book), 1985

Richardson, Allen E. *Islamic Cultures in North America,* NY: The Pilgrim Press, 1981

Rosenthal, Donald A. *Orientalism: The Near east in French Painting, 1800-1880,* Rochester: U of Rochester, 1982

Rossi, Aldo. *A Scientific Autobiography,* Cambridge: MIT Press, 1981

Rossi, Aldo. *The Architecture of the City,* Cambridge: MIT Press, 1982

Rowe, Colin and Koetter, Fred. *Collage City,* Cambridge: MIT Press, 1978

Rowe, Colin. "The Present Urban Predicament"; *The Cornell Journal of Architecture* Vol 1. Fall 1981, pp 16-33

Rowe, Peter G. *Design Thinking,* Cambridge: MIT Press, 1987.

Safdie, Moshe. "Collective Significance"; *Harvard Architectural Review* Vol 4, (Title: Monumentality and the City; A Journal of the students of the GSD, Harvard University),

Bibliography

Spring 1984, pp 98-105

Said, Edward. *Orientalism*, New York: Vintage Books, 1978

Saqqaf, Adulaziz Y., (Ed.). *The Middle East City, Ancient Traditions Confront a Modern World*, NY: Paragon House Publishers, 1987

Sardar, Ziauddin. "Towards an Islamic Theory of Environment"; *Arts and the Islamic World* Vol 3, No. 1, Spring 1985, pp 12-23

Schön, Donald A. "Designing: Rules,types and worlds"; *Design Studies* Vol 9, No 3, July 1988, pp 181-190

Serageldin, Ismail. *Space for Freedom: The search for architectural excellence in Muslim societies*, (The Aga Khan Award for Architecture), London: Butterworth Architecture, 1989

Silvetti, Jorge. "The Beauty of Shadows"; *Oppositions* 9, Summer 1977, pp 43-61

Soucek, Priscilla P.(Ed.). *Content and Context of Visual Arts in the Islamic World*, (A Colloquium in Memory of Richard Ettinghausen), Philadelphia: Pennsylvania State University Press, 1988

Sultan, A.A. "Notes on the Islamic Divine Proportions in Islamic Architecture"; *Process Architecture* No. 15, May 1980, pp 131-163

Tafuri, Manferdo. *Architecture and Utopia: Design and Capitalist Development*, (Translated by Barbara Luigia le Penta), Cambridge: MIT Press, 1976

Tafuri, Monferdo. *Theories and History of Architecture*, (Translated by Giorgio Verrecchia), London: Granada Publishing 1980

Thiis-Evensen, Thomas. *Archetypes in Architecture*, Oslo: Norwegian University Press, 1987

Venturi, Robert, Brown, Denise Scott & Izenour Steven. *Learning from Las Vegas*, Cambridge: MIT Press, 1972

Venturi, Robert. *Complexity and Contradiction in Architecture*, NY: Museum of Modern Art, 1966

Vidler, Anthony. "The idea of Type: The Transformation of the Academic Ideal, 1750-1830"; *Oppositions* 8, Spring 1977, pp 94-115

Vogt-Göknil, Ulya. "The Cube in Islamic Architecture"; *Daidalos* Vol 35, (Berlin Architectural Journal), 15 March 1990, pp 61-73

Waugh, Earle H., Abu Laban, Baha & Qursehi, Regula B. (Eds.). *The Muslim Community in North America*, Edmonton: The University of Alberta Press, 1983

Wines, James. "Architecture and the Crisis of Communication"; *VIA* 4, (Title: Culture and the Social Vision; Architectural Journal of the Graduate School of Fine Arts, University of Pennsylvania), 1980, pp 26-37

Wolin, Judith. "The Rhetorical Question"; *VIA* 8, (Title: Architecture and Literature; The Architectural Journal of the Graduate School of Fine Arts, University of Pennsylvania), 1986, pp 33-40

Zaknic, Ivan, (Ed.). *Journey to the East. Le Corbusier*, Cambridge: MIT Press, 1987

References to the two Friday Mosques

Buchanan, Peter. "Roman Mosque: Architects Sami Mousawi and Paolo Portoghesi, with Vittorio Gigliotti"; *Architectural Review* Vol 168, No 1005, November 1980, pp 265-266

"Centre Islamique de Rome, Italie. 1 er prix: Paolo Portoghesi"; *Architecture* No. 398, Sept 1978, p 13

Gibberd, Frederick. "East Meets West in Regent 's Park"; *Heating & Ventilating Engineer* Vol 51, No 601, September 1977, pp 22

Gibson, Helen. "A Mosque for Regent's Park"; *ARAMCO World Magazine* Vol 26, No. 3, May-June 1975, pp 2-3

Hawker, P.J. "London's Muslim Mosque"; *Concrete* Vol 10, No. 9, September 1976, pp 14-17

Heayes, Neil. "Dome Rounds Off Regent's Park Mosque"; *Contract Journal* Vol 270, No. 5038, 25 March 1976, pp 30-31

Hermanin, Guido. "Locating the Mosque and Islamic Center in Rome"; *Citta' e Societa* Vol 11, July-September 1980, pp 95-100

Bibliography

Jafarzadeh, Muhammed Hasan. "Mosque of Rome"; *Art and Architecture* Vol 11, No. 47/48, April-July 1979, pp 38-53

"Just what Nash would have liked? Mosque competition results"; *The Architects' Journal* Vol 150, No. 43, 22 October 1969, pp 988-990

Lawton, John. "Muslims in Europe: The Mosques"; *ARAMCO World Magazine* Vol 30, No. 1, January-February 1979, pp 9-13

Lewcock, Ronald. "London Central Mosque"; *Architect's Journal* Vol 166, No. 32, 10 August 1977, pp 255-269

Lewis, Roger. "To the Glory of Allah"; *Construction News Magazine* Vol 2, No 11, December 1976, pp 7-11

"London Central Mosque"; *Royal Institute of British Architects Journal* Vol 83, No. 6, June 1976, pp 228-233

"Looking East from London"; *Heating and Airconditioning Journal* Vol 47, No. 543, September 1977, pp 32-35

Mars-Jones, Tim. "Barefoot in the Park: The London Central Mosque in Regent's Park"; *Building* 233, No. 6994, 15 July 1977, pp 48-49

Moschini, Francesco. *Paolo Portoghesi: Projects and drawings 1949-1979*, New York: Rizzoli, 1979

"Mosque and Islamic Cultural Center in Rome"; *Architecture d' Aujourd'hui* No. 200, December 1978, XIX-XX

"Mosque in Regent's Park"; *Building Design* No 286, 20 February 1976, pp 20

Norman Vera. "A mosque for Rome"; *Consulting Engineer* Vol 43, No 11, November 1979, pp 35-36

Portoghesi, Paolo and Jencks, Charles. "Post-modern Mosque: Islamic Cultural Center of Italy and Roman Mosque"; *Architectural Design* Vol 50, No. 1-2, 1980, pp 24-29

Portoghesi, Paolo. *After Modern Architecture*, New York: Rizzoli, 1982

Portoghesi, Paolo. *Post Modern: The Architecture of the Post Industrial Society*, New York: Rizzoli, 1982

Portoghesi, Paolo. "Roma-Amor: Difference and

Repetition"; *VIA* 5, Architectural Journal of the Graduate School of Fine Arts, University of Pennsylvania (Determinants of Form), 1982, pp 36-43

Portoghesi, Paolo. "The End of Prohibitionism"; *The Presence of the Past. First International Exhibition of Architecture, Venice Biennale*, New York: Rizzoli,1980, pp 9-13

Priori, Giancarlo. *L' Architettura Ritrovata: Opere recenti di Paolo Portoghesi*, Rome: Edizioni Kappa, 1985

Priori, Giancarlo. *L'Architettura Ritrovata, Opere recenti di Paolo Portoghesi*, Rome: Kappa, 1985

Priori, Giancarlo. *Paolo Portoghesi; a cura di Giancarlo Priori*, (Serie di Architettura/ 18), Bologna: Zanichelli, 1985

Priori, Giancarlo. "Profiles: Paolo Portoghesi"; *Journal of the Islamic Environmental Design Research Center*, Maghreb: From Colonialism to a new Identity, 1/ 1984

"Proposed Mosque for Rome"; *Progressive Architecture* Vol 60, No. 2, February 1979, pp 30-31

Purini, Franco. "Paolo Portoghesi, Vittorio Gigliotti: Mosque and Islamic Center in Rome"; *Domus* No. 720, October 1990, pp 33-45

Rasmussen, Steen Eiler. *London: The Unique City*, (Revised Edition), Cambridge: MIT Press, 1982

Tafuri, Manferdo. *History of Italian Architecture, 1944-1985*, (Translated by Jessica Levine), Cambridge: MIT Press, 1989

"The London Central Mosque"; *Architectural Association Annual Review*, 1979, pp 81-86

"The London Mosque"; *Architectural Review* Vol 162, No. 967, September 1977, pp 144-147

Winsdor, Phil. "Meeting the brief: Islam Comes West"; *Architect* Vol 125, August 1977, pp 27-30

Bibliography

References to the two Jamatkhanas

Antoniou, James. "The 'inward looking' Ismaili Center in London"; *RIBA Journal* Vol 91, No. 1, January 1984, pp 13

Brenner, Douglas. "Ismaili Jamatkhana and Center, Burnaby, British Columbia, Canada"; *Architectural Record* Vol 174, August 1986, pp 90-95

"Burnaby: Jamatkhana in progress"(News); *Mimar* Vol 6, October-December 1982, pp 28-30

"East meets West in Kensington: the Ismaili Centre, South Kensington, London; Architects: Casson Conder Partnership"; *Concrete Quarterly* No 139, October/ December 1983, pp 2-7

Freschi, Bruno. Architects. "Burnaby Jamatkhana"; *Architecture and Urbanism(A+U)* Vol 90, July 1986, pp 46-52

Freschi, Bruno. Ethnic eloquence (Burnaby Jamatkhana, Burnaby, B.C.)" *The Canadian Architect* Vol 30, June 1985, pp 12-15

"Ismaili religious and cultural centre; Architects: Casson Conder & Partners"; *RIBA Journal* Vol 85, No. 4, April 1978, p 143

Kemble, Roger. "Critique (Burnaby Jamatkhana, Burnaby, B.C.)"; *The Canadian Architect* Vol 30, June 1985, pp 16-17

"London Islamic; Architects: Casson Conder Partnership"; *Middle East Construction* Vol 10, No 9, September 1985, pp 45-47

Lyall, Sutherland. "Ismaili Center - An Architectural no Man's Land; Architects Casson Conder Partnership"; *Building* Vol 245, No. 7316 (44), November 4, 1983, p 11

"More than religion; Architects: Casson Conder Partnership"; *Building Design* No 664, November 4, 1983, p 8

Nanji, Azim. *The Nizari Isma'ili tradition in the Indo-Pakistan Subcontinent*, Delmar, New York: Caravan Books, 1978

Nasr, Seyyed Hossein, (Ed.). *Isma'ili Contribution to Islamic Culture*, Tehran: Imperial Academy of Philosophy, 1977

Pawley, Martin. "Cross-Cultural Centre; Architects: Casson Conder Partnership"; *Architects' Journal* Vol 178, No. 48, November 30, 1983, pp 32-35

"Profile: Karl Schlamminger"; *Arts and the Islamic World* Vol 3, No. 3, Autumn 1985, pp 22-28

"Reflections of Islam in the Cromwell Road; Architects: Casson Conder Partnership, garden designers: Sasaki Associates"; *Landscape International* Vol 3, No. 1, January-February 1984, pp 14-17

Spring, Martin. "Islamic Architecture turns to modern and traditional designs; Architects: Casson Conder & Partners"; *Building* Vol 237, No. 7105 (37), September 14, 1979, p 16

The Ismaili Centre, London, (Photographic Brochure), London: Islamic Publications Limited, 1985

The Ismaili Jamatkhana and Center, Burnaby, B.C., Canada, (Photographic Brochure), UK: Islamic Publications Limited, 1985

Voticky, Robert. "Ismaili Center in London; Architects; Casson Conder Partnership'; *Baumeister* Vol 81, No. 5, May 1984, pp 46-50

Williams, Anthony & Partners. "Ismaili Centre; Architects: Casson Conder Partnership; Engineers: Jekins & Potter, and H. D. Lockwood & Partners; Landscape Architects: Sasaki Associates"; *Building* Vol 246, No. 7331 (8), February 24, 1984, pp 35-42

Source of Illustrations

Chapter 1

Fig. 1 Yvonne Y. Haddad, *A Century of Islam in America*, 1986
Fig. 2 "Muslims in Europe"; *ARAMCO World Magazine* Vol 30, No. 1, Jan-Feb 1979
Fig. 3 Ibid
Fig. 4 Yvonne Y. Haddad, *A Century of Islam in America*, 1986
Fig. 5 *Art & Architecture* Vol 11, No. 47/ 48 April-July 1979
Fig. 6 John Eade, "Islam, Religious Buildings and Space in London"; *Unpublished Paper*
Fig. 7 Yvonne Y, Haddad, *A Century of Islam in America*, 1986
Fig. 8 Nader Ardalan, "Architects in America design for Islamic cultures"; *Arts and Islamic World* Vol 2, No. 2, Autumn ,1984
Fig. 9 Allen E. Richardson, *Islamic Cultures in North America*, 1981
Fig. 10 Ibid
Fig. 11 "Muslims in Europe"; *ARAMCO World Magazine* Vol 30, No. 1, Jan-Feb 1979
Fig. 12 Phil Winsdor, "Meeting the brief: Islam comes West"; *Architect* Vol 124, Aug 77
Fig. 13 "Post-modern Mosque"; *Architectural Design* Vol 50, No 1-2, 1980
Fig. 14 Nader Ardalan, "Architects in America design for Islamic cultures"; *Arts and Islamic World* Vol 2, No. 2, Autumn ,1984
Fig. 15 Richards, Serageldin & Rastofer, *Hassan Fathy*, 1985
Fig. 16 Allen E. Richardson, *Islamic Cultures in North America*, 1981
Fig. 17 *The Ismaili Center, London*, (Photographic Brochure), 1985
Fig. 18 *The Ismaili Jamatkhana and Center*, Burnaby, BC, (Photographic Brochure), 1985
Fig. 19 Atlanta Jamatkhana and Center, provided by the designers of the project; Design Synthesis Inc., Vancouver.
Fig. 20 *The Aga KhanAward for Architecture 1989*, Winners Brochure
Fig. 21 Donald A. Rosenthal, *Orientalism: The Near East in French Painting 1800-1880*, 1982
Fig. 22 Michael Darby, *The Islamic Perspective*, 1983
Fig. 23 Ibid

Chapter 2

Fig. 1 Ismaili Serageldin, *Space for Freedom*, Aga Khan Awards, 1989
Fig. 2 The AKP, *Theories and Principles of Design of Islamic Societies*, 1988
Fig 3. George Mitchell (Ed.), *Architecture of the Islamic World*, 1984
Fig. 4 Titus Burkhardt, *Art of Islam: Language of Meaning*, 1976
Fig. 5 Ibid
Fig. 6 Richard Ettinghuasen, *Islamic Art and Archeology: Collected Papers*, 1984
Fig. 7 Oleg Grabar, *The Formation of Islamic Art*, 1973
Fig. 8 Nader Ardalan & Laleh Bakhtiar, *The Sense of Unity: The Sufi Tradition in Persian Architecture*, 1973
Fig. 9 A. A. Sultan, "Notes on the Islamic Divine Proportions in Islamic Architecture"; *Process Architecture* No. 15, May 1980
Fig. 10 Nader Ardalan & Laleh Bakhtiar, *The Sense of Unity: The Sufi Tradition in Persian Architecture*, 1973
Fig. 11 Michael Darby, *The Islamic Perspective*, 1983
Fig. 12 Oleg Grabar, *The Formation of Islamic Art*, 1973
Fig. 13 Oleg Grabar, *The Alhambra*, 1978
Fig. 14 Priscilla Soucek (Ed.), *Content and Context of Visual Arts in the Islamic World*, 1988
Fig. 15 The AKP, *Theories and Principles of Design of Islamic Societies*, 1988
Fig. 16 Ibid
Fig. 17 Ibid
Fig. 18 Richard Ettinghuasen, *Islamic Art and Archeology: Collected Papers*, 1984
Fig. 19 The AKP, *Theories and Principles of Design of Islamic Societies*, 1988

Chapter 3

Fig. 1 Ismaili Serageldin, *Space for Freedom*, Aga Khan Awards, 1989
Fig. 2 Ivan Zakin, *Journey to The East. Le Corbusier*, 1987
Fig. 3 Alan Colquhoun, *Essays in Architectural Criticism: Modern Architecture and Historical Change*, 1985
Fig. 4 Ahmet Evin, *Architectural Education In the Islamic World*, 1986
Fig. 5 Kenneth Frampton, *Modern Architecture : A critical history*, 1990
Fig. 6 Peter Rowe, *Design Thinking*, 1987

Chapter 4

Fig. 1 "Muslims in Europe"; *ARAMCO World Magazine* Vol 30, No. 1, Jan-Feb 1979
Fig. 2 Ronald Lewcock, "London Central Mosque"; *Architect's Journal* Vol 166, No. 32, 10 August 1977
Fig. 3 "Just What Nash would have liked? Mosque competition results"; *Architect's Journal* Vol 150, No. 43, 22 October 1969
Fig. 4 Ibid
Fig. 5 Ibid
Fig. 6 Ibid
Fig. 7 "Muslims in Europe"; *ARAMCO World Magazine* Vol 30, No. 1, Jan-Feb 1979
Fig. 8 Ronald Lewcock, "London Central Mosque"; *Architect's Journal* Vol 166, No. 32, 10 August 1977
Fig. 9 Steen Eiler Rasmussen, *London: The Unique City*, 1982
Fig. 10 "London Central Mosque"; *RIBA Journal* Vol 83, No. 6, June 1976
Fig. 11 Ibid
Fig. 12 "Muslims in Europe"; *ARAMCO World Magazine* Vol 30, No. 1, Jan-Feb 1979
Fig. 13 Ronald Lewcock, "London Central Mosque"; *Architect's Journal* Vol 166, No. 32, 10 August 1977
Fig. 14 Ibid
Fig. 15 Ibid
Fig. 16 Ibid
Fig. 17 Ibid
Fig. 18 Phil Winsdor, "Meeting the brief: Islam comes West"; *Architect* Vol 124, Aug 77
Fig. 19 Ronald Lewcock, "London Central Mosque"; *Architect's Journal* Vol 166, No. 32, 10 August 1977
Fig. 20 Phil Winsdor, "Meeting the brief: Islam comes West"; *Architect* Vol 124, Aug 77
Fig. 21 Ronald Lewcock, "London Central Mosque"; *Architect's Journal* Vol 166, No. 32, 10 August 1977
Fig. 22 Phil Winsdor, "Meeting the brief: Islam comes West"; *Architect* Vol 124, Aug 77
Fig. 23 Ronald Lewcock, "London Central Mosque"; *Architect's Journal* Vol 166, No. 32, 10 August 1977
Fig. 24 "Muslims in Europe"; *ARAMCO World Magazine* Vol 30, No. 1, Jan-Feb 1979
Fig. 25 Ronald Lewcock, "London Central Mosque"; *Architect's Journal* Vol 166, No. 32, 10 August 1977
Fig. 26 Ibid
Fig. 27 Ibid
Fig. 28 P. J. Hawker, "London's Muslim Mosque"; *Concrete* Vol 10, No. 9, September 1976
Fig. 29 Ronald Lewcock, "London Central Mosque"; *Architect's Journal* Vol 166, No. 32, 10 August 1977
Fig. 30 P. J. Hawker, "London's Muslim Mosque"; *Concrete* Vol 10, No. 9, September 1976
Fig. 31 "London Central Mosque"; *RIBA Journal* Vol 83,

No. 6, June 1976
Fig. 32 Richard Ettinghausen & Oleg Grabar, *The Art and Architecture of Islam 650-1250*, 1987
Fig. 33 Tim Mars-Jones, "Barefoot in the Park: The London Central Mosque"; *Building* 233, No. 6994, 15 July 1977
Fig. 34 Ronald Lewcock, "London Central Mosque"; *Architect's Journal* Vol 166, No. 32, 10 August 1977
Fig. 35 Phil Winsdor, "Meeting the brief: Islam comes West"; *Architect* Vol 124, Aug 77
Fig. 36 "London Central Mosque"; *RIBA Journal* Vol 83, No. 6, June 1976
Fig. 37 Ronald Lewcock, "London Central Mosque"; *Architect's Journal* Vol 166, No. 32, 10 August 1977
Fig. 38 Ibid
Fig. 39 George Mitchell (Ed.), *Architecture of the Islamic World*, 1984
Fig. 40 Giancarlo Priori, *L' Architettura Ritrovata, Opere recenti di Paolo Portoghesi*, 1985
Fig. 41 "Center Islamique de Rome, Italie. I er prix: Paolo Portoghesi"; *Architecture* No. 398, September 1977
Fig. 42 Ibid
Fig. 43 Giancarlo Priori, *Paolo Portoghesi; a cura di Giancarlo Priori*, 1985
Fig. 44 Ibid
Fig. 45 Paolo Portoghesi, *Post Modern: The Architecture of the Post Industrial Society*, 1982
Fig. 46 Paolo Portoghesi, *After Modern Architecture*, 1982
Fig. 47 Giancarlo Priori, *Paolo Portoghesi; a cura di Giancarlo Priori*, 1985
Fig. 48 Franco Purini, "Paolo Portoghesi, Vittorio Gigliotti: Mosque and Islamic Center in Rome"; *Domus* No. 720, October 1990
Fig 49. "Mosque and Islamic Cultural Center In Rome"; *Architecture d' Aujourd' hui* No. 200, December 1978
Fig. 50 Giancarlo Priori, *Paolo Portoghesi; a cura di Giancarlo Priori*, 1985
Fig. 51 Franco Purini, "Paolo Portoghesi, Vittorio Gigliotti: Mosque and Islamic Center in Rome"; *Domus* No. 720, October 1990
Fig. 52 Ibid
Fig. 53 Ibid
Fig. 54 Ibid
Fig. 55 Ibid
Fig. 56 Giancarlo Priori, *L' Architettura Ritrovata, Opere recenti di Paolo Portoghesi*, 1985
Fig. 57 Richard Ettinghausen & Oleg Grabar, *The Art and Architecture of Islam 650-1250*, 1987
Fig. 58 "Post-modern Mosque: Islamic Cultural Center of Italy and Roman Mosque"; *Architectural Design* Vol 50, No. 1-2, 1980
Fig. 59 Franco Purini, "Paolo Portoghesi, Vittorio Gigliotti: Mosque and Islamic Center in Rome"; *Domus* No. 720,

Source of Illustrations

October 1990
Fig. 60 Muhammed Hassan Jafarzadeh, "Mosque of Rome"; *Art and Architecture* Vol 11, No. 47/ 48, April- July 1979
Fig. 61 Franco Purini, "Paolo Portoghesi, Vittorio Gigliotti: Mosque and Islamic Center in Rome"; *Domus* No. 720, October 1990
Fig. 62 Ibid
Fig. 63 Ibid
Fig. 64 Ibid
Fig. 65 Ibid
Fig. 66 Ibid
Fig. 67 Richard Ettinghausen & Oleg Grabar, *The Art and Architecture of Islam 650-1250*, 1987
Fig. 68 Franco Purini, "Paolo Portoghesi, Vittorio Gigliotti: Mosque and Islamic Center in Rome"; *Domus* No. 720, October 1990
Fig. 69 Giancarlo Priori, *Paolo Portoghesi; a cura di Giancarlo Priori*, 1985
Fig. 70 "Post-modern Mosque: Islamic Cultural Center of Italy and Roman Mosque"; *Architectural Design* Vol 50, No. 1-2, 1980
Fig. 71 Geoffrey Broadbent, Richard Bunt & Charles Jencks (Eds.), *Signs, Symbols and Architecture*, 1980
Fig. 72 Ibid
Fig. 73 Franco Purini, "Paolo Portoghesi, Vittorio Gigliotti: Mosque and Islamic Center in Rome"; *Domus* No. 720, October 1990
Fig. 74 Ibid
Fig. 75 Giancarlo Priori, *L' Architettura Ritrovata, Opere recenti di Paolo Portoghesi*, 1985
Fig. 76 Ibid
Fig. 77 Ibid
Fig. 78 Ibid
Fig. 79 Ibid
Fig. 80 Ibid
Fig. 81 Ibid
Fig. 82 Ibid
Fig. 83 Ibid
Fig. 84 Franco Purini, "Paolo Portoghesi, Vittorio Gigliotti: Mosque and Islamic Center in Rome"; *Domus* No. 720, October 1990
Fig. 85 Ronald Lewcock, "London Central Mosque"; *Architect's Journal* Vol 166, No. 32, 10 August 1977
Fig. 86 Franco Purini, "Paolo Portoghesi, Vittorio Gigliotti: Mosque and Islamic Center in Rome"; *Domus* No. 720, October 1990

Chapter 5

Fig. 1 *The Ismaili Center, London,* (Photographic Brochure), 1985
Fig. 2 Williams, Anthony and Partners, "Ismaili Center; Architects: Casson Conder Partnership; Engineers: Jekins & Potter, and H.D Lockwood & Partners; Landscape Architects: Sasaki Associates"; *Building* Vol 246, 24 February, 1984
Fig. 2 *The Ismaili Center, London,* (Photographic Brochure), 1985
Fig. 3 Ibid
Fig. 4 Ibid
Fig. 5 Ibid
Fig. 6 Williams, Anthony and Partners, "Ismaili Center; Architects: Casson Conder Partnership; Engineers: Jekins & Potter, and H.D Lockwood & Partners; Landscape Architects: Sasaki Associates"; *Building* Vol 246, 24 February, 1984
Fig. 7 *The Ismaili Center, London,* (Photographic Brochure), 1985
Fig. 8 Ibid
Fig. 9 Ibid
Fig. 10 Ibid
Fig. 11 Ibid
Fig. 12 Pawley Martin; "Cross Cultural Center; Architects: Casson Conder Partnership"; *Architect's Journal* Vol 178, No. 48, 30 November 1983
Fig. 13 *The Ismaili Center, London,* (Photographic Brochure), 1985
Fig. 14 Ibid
Fig. 15 Ibid
Fig. 16 George Mitchell (Ed.), *Architecture of the Islamic World,* 1984
Fig. 17 Ibid
Fig. 18 *The Ismaili Center, London,* (Photographic Brochure), 1985
Fig. 19 Ibid
Fig. 20 Ibid
Fig. 21 Richard Ettinghausen & Oleg Grabar, *The Art and Architecture of Islam 650-1250,* 1987
Fig. 22 George Mitchell (Ed.), *Architecture of the Islamic World,* 1984
Fig. 23 *The Ismaili Center, London,* (Photographic Brochure), 1985
Fig. 24 Nader Ardalan & Laleh Bakhtiar, *The Sense of Unity: The Sufi Tradition in Persian Architecture,* 1973
Fig. 25 *The Ismaili Center, London,* (Photographic Brochure), 1985
Fig. 26 Nader Ardalan & Laleh Bakhtiar, *The Sense of Unity: The Sufi Tradition in Persian Architecture,* 1973
Fig. 27 *The Ismaili Center, London,* (Photographic Brochure), 1985

Source of Illustrations

Fig. 28 Ibid
Fig. 29 Bruno Freschi, Architect's, "Burnaby Jamatkhana"; *A+U* Vol 90, July 1986
Fig. 30 *The Ismaili Jamatkhana and Center Burnaby, B.C., Canada,* (Photographic Brochure), 1985
Fig. 31 Douglas Brenner, "Ismaili Jamatkhana and Center, Burnaby, British Columbia, Canada"; *Architectural Record* Vol 174, August 1986
Fig. 32 *The Ismaili Jamatkhana and Center Burnaby, B.C., Canada,* (Photographic Brochure), 1985
Fig. 33 Ibid
Fig. 34 Ibid
Fig. 35 Ibid
Fig. 36 Ibid
Fig. 37 Nader Ardalan & Laleh Bakhtiar, *The Sense of Unity: The Sufi Tradition in Persian Architecture,* 1973
Fig. 38 *The Ismaili Jamatkhana and Center Burnaby, B.C., Canada,* (Photographic Brochure), 1985
Fig. 39 "Burnaby Jamatkhana in progress" (News, *Mimar* Vol 6, Oct-Dec 1982
Fig. 40 *The Ismaili Jamatkhana and Center Burnaby, B.C., Canada,* (Photographic Brochure), 1985
Fig. 40 Ibid
Fig. 41 Bruno Freschi, Architect's, "Burnaby Jamatkhana"; *A+U* Vol 90, July 1986
Fig. 42 *The Ismaili Jamatkhana and Center Burnaby, B.C., Canada,* (Photographic Brochure), 1985
Fig. 42 Ibid
Fig. 43 John D. Hoag, *Islamic Architecture,* 1987
Fig. 44 *The Ismaili Jamatkhana and Center Burnaby, B.C., Canada,* (Photographic Brochure), 1985
Fig. 45 Ibid
Fig. 46 Ibid
Fig. 47 Bruno Freschi, Architect's, "Burnaby Jamatkhana"; *A+U* Vol 90, July 1986
Fig. 48 Ibid
Fig. 49 *The Ismaili Jamatkhana and Center Burnaby, B.C., Canada,* (Photographic Brochure), 1985
Fig. 50 Ibid
Fig. 51 Titus Burkhardt, *Art of Islam: Language and Meaning,* 1976 & *The Ismaili Jamatkhana and Center Burnaby, B.C., Canada,* (Photographic Brochure), 1985
Fig. 52 *The Ismaili Jamatkhana and Center Burnaby, B.C., Canada,* (Photographic Brochure), 1985
Fig. 53 Ibid
Fig. 54 Ibid
Fig. 55 Issam El-Said & Ayse Parman, *Geometric Concepts in Islamic Art,* 1976 & Oleg Grabar, *The Alhambra,* 1978
Fig. 56 *The Ismaili Center, London,* (Photographic Brochure), 1985
Fig. 57 *The Ismaili Jamatkhana and Center Burnaby, B.C., Canada,* (Photographic Brochure), 1985