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Indian Mosques in Contexts: The Experience of an Architect

A. Mohammed Haris

School of Architecture and Planning, Anna University

Chennai, India

Abstract: India is on the world tourism map mainly because of the Islamic architectural monuments that have been left behind mainly in the South. Most of the mosques in those early periods were designed and built by Master Builders, because the profession of architecture was not organized.
The objective of this paper is explained under different contexts namely: urban, campus and small towns. Details about mosques designed by the author are presented in the paper in connection with the contexts mentioned above.
Finally the paper concluded with salient points in planning and design of mosques within these contexts, which may be beneficial to other Architects.

Introduction

India is on the world tourism map mainly because of the Islamic architectural monuments that have been left behind by various dynasties flourished in the glorious period of Moghul dynastyThe most predominant architecture in these periods are mosque Architecture.[1] In the presentcontext, various mosques have been designed throughout India orienting them to the "Kaaba" in Makkah.

Architectural profession was not a formal and organised profession in India, more particularly in Southern India for a very long period until a few decades ago. There were no organized education in this discipline to produce professional architects. Master builders with their available professional talents have been designing mosques. These builders and designers, during the various dynastic periods like qutb khuli dynasty, nizam period etc., have done commendable and lasting monumental works in southern India, even today these are looked up for inspiration.

Most of the Mosques built in those early periods were mainly of stone walls burnt clay brick walls bonded with lime mortar, Stone & brick arches, Masonry domes coated with special lime plaster and lime wash for the interior and exterior of the mosques were used. Most of the mosques had ablution pond (Houz) and toilets without modern facilities. With the advent of concrete with its mouldability characteristic the designers a great deal flexibility and a lot of advantages. Cement is freely available, and replaced lime mortar to a large extent. Architect largely used materials which are easily available with least problems. Lately the predominately used materials are kilns burnt bricks with cement mortar, concrete arches, vaults, shells, domes and stone purings. For interior and exterior furnishing many lasting materials have invaded the market. Super finishes among these materials which are normally chosen for mosques.

Apart from some of these works, southern India, cannot boast of Mosques of Architectural perfection, until over three decades back, when qualified architects were involved in designing Mosques. The profession has become a formal and organized one and as per the dictum of a statutory body like council of architecture, only qualified architects have to be commissioned for designing any project. Alhamdu - lillah, many new mosques and Islamic centres have come up in Southern India.

Objectives and Problems

The objectives of this paper is to present the peculiarities of designing mosques and Moslems' public religious buildings under different locational contexts in India.

There are varying factors to be considered based on the environmental factors in these locations. It is detailed subsequently, how in urban context an architect is faced with many problems and how they are solved.[2] In a town context, one may find in Southern India, existence of some of the urban problems. Apart from these some other problems are to be encountered. Campuses are largely sprawling ones and are mainly designed to youthful congregation. Alhamdu - Lillah, the author is involved in designing most of the present mosques in all these contexts.

Analysis

The chief characteristics of Islamic Architecture are:[3]

- A bold approach to Architectural and Engineering problems.
- Adoption of geometric forms and symmetrical planning.
- Close integration of the building with landscape, use of water, formal gardens.
- Dexterous handling of scale in building.
- Adoption of interesting structural systems and forms like domes of different shapes and arches etc.
- Surface decoration using symmetrical patterns, calligraphy and foliations.

The above impressive characteristics of Islamic Architecture can be found in most of the buildings the author designed which are detailed below.

The essence of Islam is congregation, which promotes brotherhood amongst the community and is done at various levels particularly in Mosques. The first level is the locality mosque where Muslims meet five times a day. The second level at Juma Masjid on Fridays where people from various localities congregate. The third level of congregation is Eidgah where Muslims congregate twice in a year. Last level is during the Haj when Muslims from all over the world congregate. In all these places, the place of congregation is the MOSQUE. The mosque is not only for offering prayers but it is also a place of social gathering where many religious activities take place including marriages.

Vitruvious said centuries ago "Architecture, irrespective of its style has a triple basis convenience, lasting strength and beauty". Islamic Architecture personifies this statement. Various aspects of architecture are grouped under these main three headings.

The author has been given the opportunity to get involved in the designing of mosques in the southern part of the country. Some of them are in the urban context, some of them are in the religious and educational campuses and most of them are at important small towns in Tamil Nadu.[4] In this paper the author attempts to explain the mosques which he designed under these three headings viz. Urban Context, Campus Context and Small Town Context.

Mosques In Urban Context

The urban areas in India are most challenging areas for an Architect to undertake any designing redesigning or enlargement of mosques etc. The problems being, the increased congestion of both vehicular and human traffics, narrow roads, vendors on the streets, ineffective sewerage systems and storm water drainage systems, clumsy overhead electrical distribution systems, non-availability of sufficient land for expansion, paucity of planning in expansion projects because of the limitation of land and the problems of tenureship of land and buildings. An architect has to solve most of the problems mentioned in order to get a viable project to design or may sometimes compromise with these problems.

In urban context sometimes one comes across a situation when he has to expand the mosques for increasing congregation or may have to redesign a Mosque. These, congested conditions of the urban area, pose challenges to the Architect. A deep study has to be undertaken to study their effects without disturbing the normal prayers.

With these in mind the author has chosen some of the mosques which he designed at congested localities of the urban areas viz. Mosque at Ice House Area, Chennai, Mosque at Periamet, Chennai for discussion.

Ice House Mosque, Chennai

This Mosque is located in the heart of the city in a very congested area and the existing mosque was very small one for ever-growing congregation. The Jamaath felt that the Mosque has to be redesigned in two levels for larger congregation and this is to be done without affecting the prayers. The right half of the existing mosque was subjected to demolishing and the work on the right half was commenced while congregation is held on the left part of the existing mosque. After completing the right part of the mosque for the ground and first floor, congregation was shifted to the newly constructed area and after bringing down the old mosque, the left part of the mosque was then completed and the final mosque is finished as shown in the (Fig. 1).

This mosque has got two towering minarets with a helical stairs going up to the first floor. The imposing entrance way is also under construction. There is a sahan, a houz and a toilet complex, attached to the mosque. From the terrace and the top of the minarets one can see enchanting view of the city of Madras with Bay of Bengal on the eastern side of the mosque. This mosque can hold a total congregation of about 1500 persons. The main prayer hall which measures around 12 m x 25 m with another hall of the same dimension above this with a verandah measuring about 25 m x 5 m on the eastern side. The hall is spanned with T-beams of 12 m span spaced at 5 m centers. The upper hall has also been structurally designed in the same manner. The two towering minarets are supported with RCC column on raft foundation and brick panel filling to a height of nearly 30 m culminating into a balcony at the top.

Climatically, deep arches on the northern, southern and eastern sides protect the mosque from scorching heat and torrential rains during the monsoon (Fig. 2).

Periamet Mosque, Chennai

Periamet is the activity hub of Muslim community and most of the tanners and exporters have their offices located in this area and is a place where many philanthropists stay. The mosque is patronized

by people from the locality and also from various other parts of the city and is regarded as an Islamic centre (Fig. 3~5). This is also located in a congested urban area and the mosque had to be subjected to expansion many a times because of the ever increasing congregation.

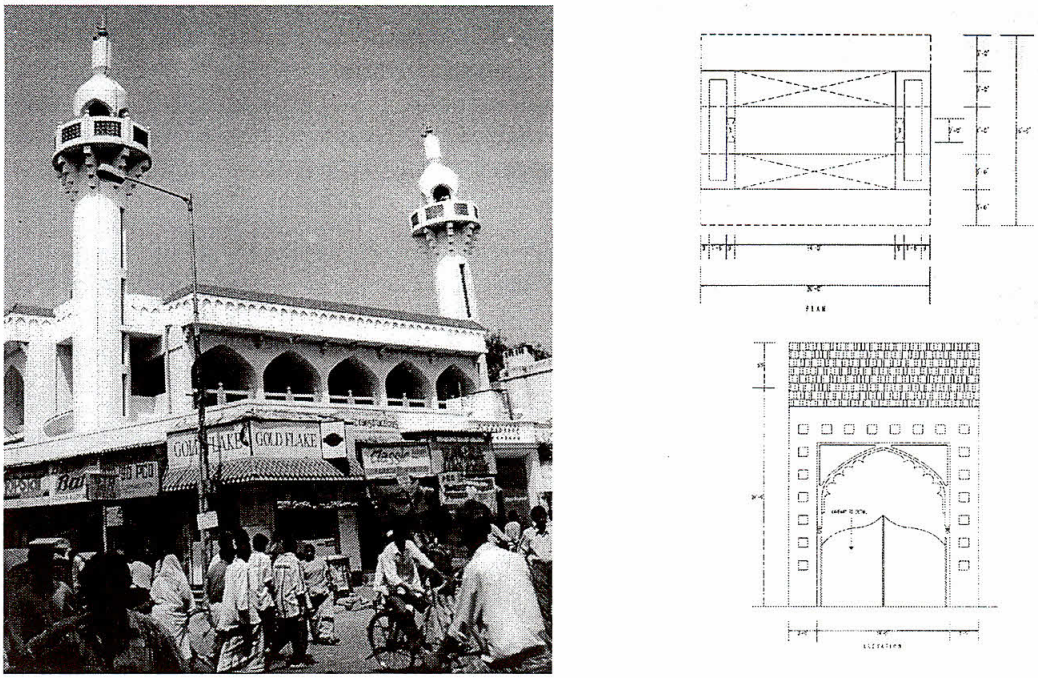


Fig. 1: Ice – House Mosque (Urban problems).



Fig. 4: Ice – House Mosque (Climatic responses).

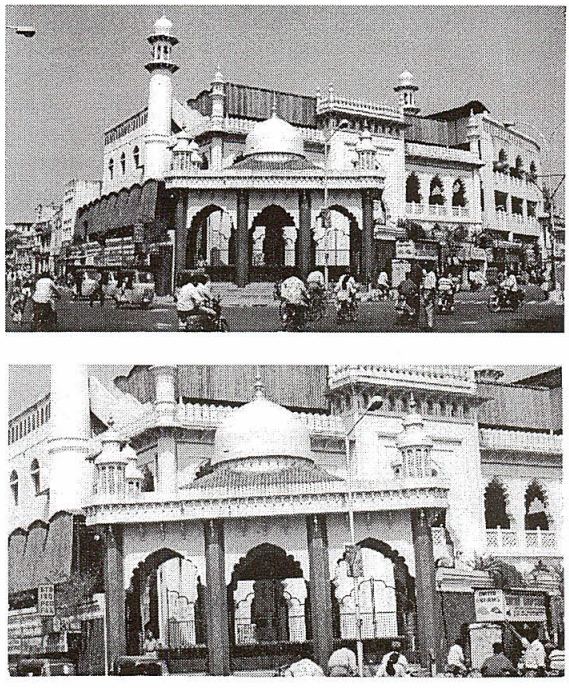


Fig. 5: Periamet Mosque, Chennai.

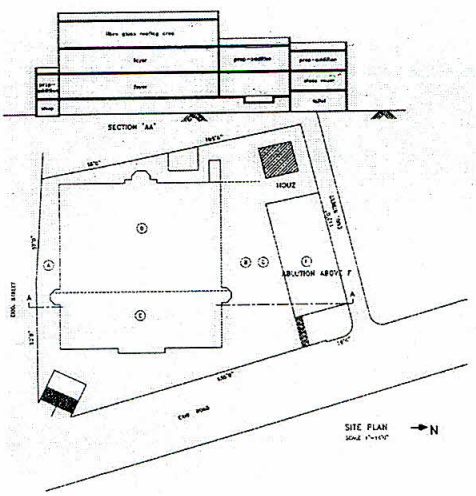


Fig. 4: Additions to Periamet Mosque, Chennai.

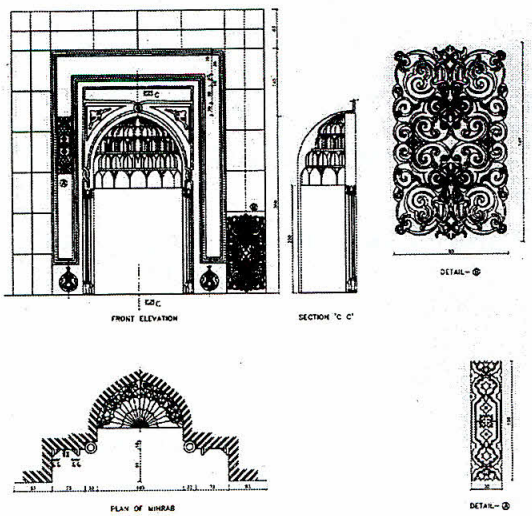


Fig. 5: Renovation of Mihrab to Periamet Mosque, Chennai.

The author was involved in the final expansion of the mosque which had to be completely replanned with respect to the toilets, baths, houz, ablution taps. One more entire floor was added at the second floor apart from the above mentioned areas. Planning was done such that the congregation was not affected. An imposing entrance way was also planned at the southeast corner of the mosque which was widened to about 11 m compared to the original 3 m which facilitates the smooth movement of the people after congregation.

For the addition of the top most floor the foundation of the existing building had to be checked and tested and it was found to be just adequate for the addition of one more floor. It is a vast hall which measures 15 m x 30 m and is roofed with T-beams spaced at 5 m centers. The eastern part of the mosque that was the open terrace has a foundation insufficient to take further load. It was roofed with fiberglass sheets on steel framework. The old toilet blocks along with the madarasa on the northern side of the mosque had to be brought down completely and toilets, baths, urinals and ablution taps had to be redesigned in two levels with the terrace of these merging with an open terrace of first floor which again is used for congregation. A side staircase from the street on the northern side is also located. This had to be planned for the increased congregation. The houz which was located on the northeast corner of the sahan had to be shifted to the northwest corner in order to increase the capacity of the congregation. At present the mosque is enlarged to its maximum level and further addition in this mosque is not possible.

Apart from these two examples of mosques in urban context, a few other mosques are under construction and also in planning stage viz. Mosques at Adyar, Maroof Sahib Street, Triplicane and Royapettah.

Campus Context

There is a vast awareness among the Muslims about the importance of religious education in the southern part of the Indian sub-continents viz. in the States of Tamil Nadu, Karnataka, Andhra Pradesh and Kerala. There are famous religious and educational campuses in Tamil Nadu, the author involved in some of these campuses right from its initial planning stage. Campus includes religious campus and

educational campus. The Mosques at Melvisharam, North Arcot District and at Oomerabad belong to religious campus context and the addition at existing mosque at New College, Chennai is in educational campus context.

Jamia Darus-Salam Mosque, Oomerabad, North Arcot District

Jamia Darus-salam is located at the sprawling campus located about 8 km from Ambur in North Arcot District (Fig. 6&7). The nucleus of the campus is the Mosque with its towering minaret confronting you as you enter the campus. The site of the mosque slopes down from west to east by about 3 m. Advantage was taken by locating the toilets on the eastern end of the mosque. The sahan for this mosque , which is about 2.5 m high, is reached by three imposing stairways. There is a houz located on the eastern end of the mosque through which the minaret emanates. The domed colonnade connects the houz to the main mosque on the northern, southern and eastern side. The entire sahan is marbled and the main prayer hall is on the western side of the sahan and is columnless with grid roofing system. The Mimber and Miharab are artistically designed.[5] The eastern passage of the main prayer hall is marble in-laid at the top with interesting geometrical patterns. The minaret soars up into the sky of about 40 m with triple balconies at different stages. The radiating heat from the surrounding hills is obviated climatically by interesting deep arches, R.C.C. jalli etc.

The **Jamia Darus-salam** Campus also has main administrative block, a college building, Institute for Nau-muslims, ITI and a large hostel for students and quarters for staff. Across the campus a large hospital with in-patient and out-patient modern facilities, is designed and located for the benefit of the people of the area and the surrounding area.

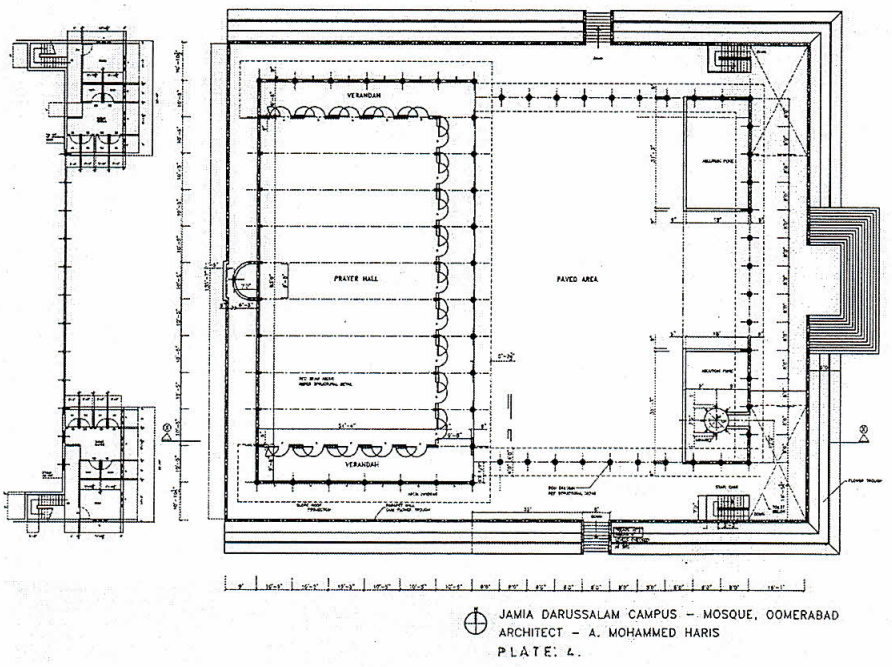


Fig. 6: Jamia Darussalam Campus – Mosque, Oomerabad.

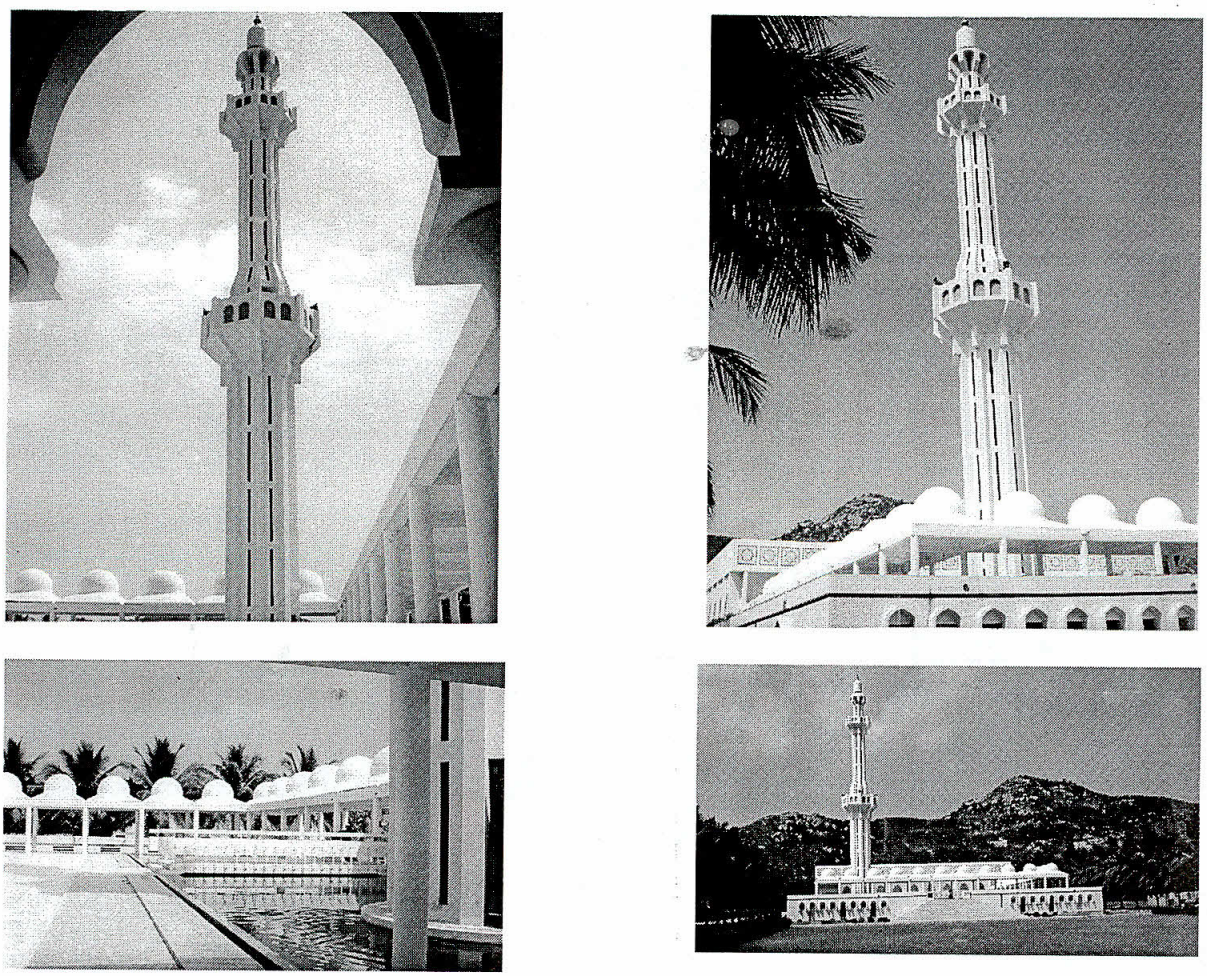


Fig. 7: Jamia Darussalam Campus Oomerabad Mosque.

Mosque of Miftahul Uloom Campus

This is a religious campus promoted by K.H. Educational foundation under the leadership of Janab Haji M.Md.Hashim. This campus is located on the meandering bye-pass of Melvisharam, North Arcot District and can be seen as you approach through the bye-pass. There is a mosque Madarasa, Hostel, Nursery and Primary School, Higher Secondary School for Girls and Higher Secondary School for Boys. There is also residential flats designed for the staff members. Mosque under Campus Context is a very imposing structure (Fig. 8&9) with a 50m towering minaret through which the main entrance way leads one to the marbled sahan. On the eastern side of the sahan is the toilet complex and houz located adjoining it.

The main mosque has four large segmental arches inscribed with small 4-centred arches. The main hall has grid roofing system at a height of about 7 m and is columnless with a clear span of 15 m and a verandah in continuation on the eastern side. This hall has a large 13 m diameter dome in the center. Structurally the dome is very innovatively placed on the grid roofing. The lighting and sound system was conceived very innovatively by concealing them in the wall system.

The surrounding hill radiate high degree thermal activity and special care is taken in the construction of the wall which has a captured air space of about 1.25 m which to a considerable extent thermally insulate the interior. The presence of large houz considerably cools the breeze and reduce the ambient temperature.

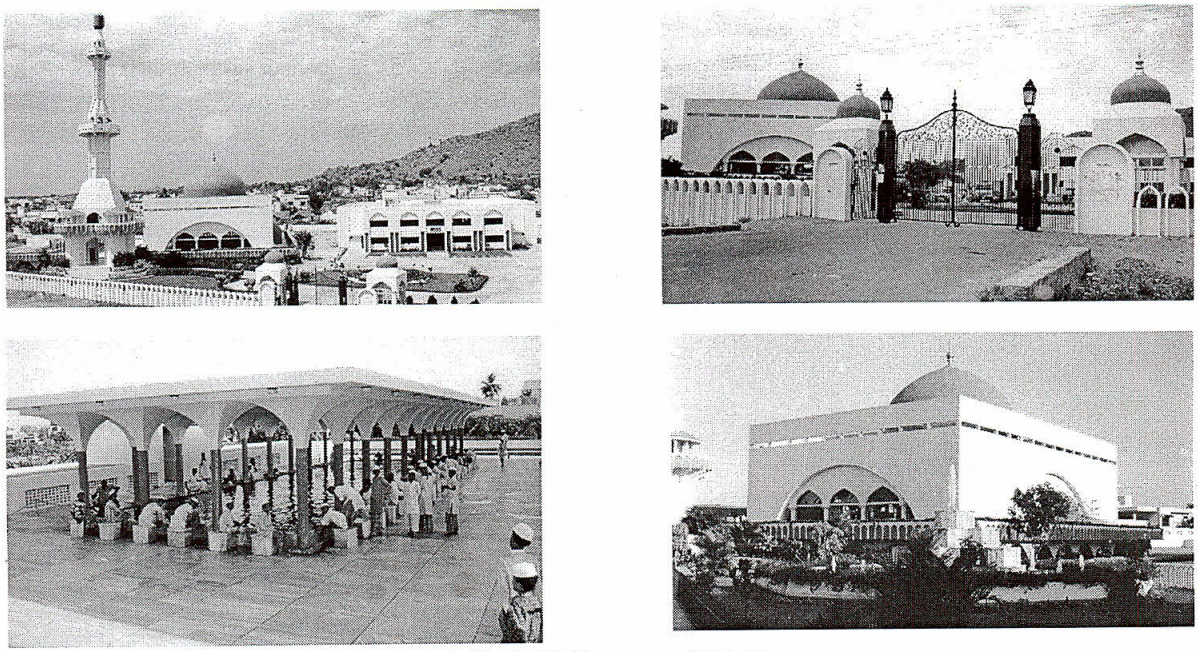


Fig. 8: Miftah-Ul Campus – Melvisharam.

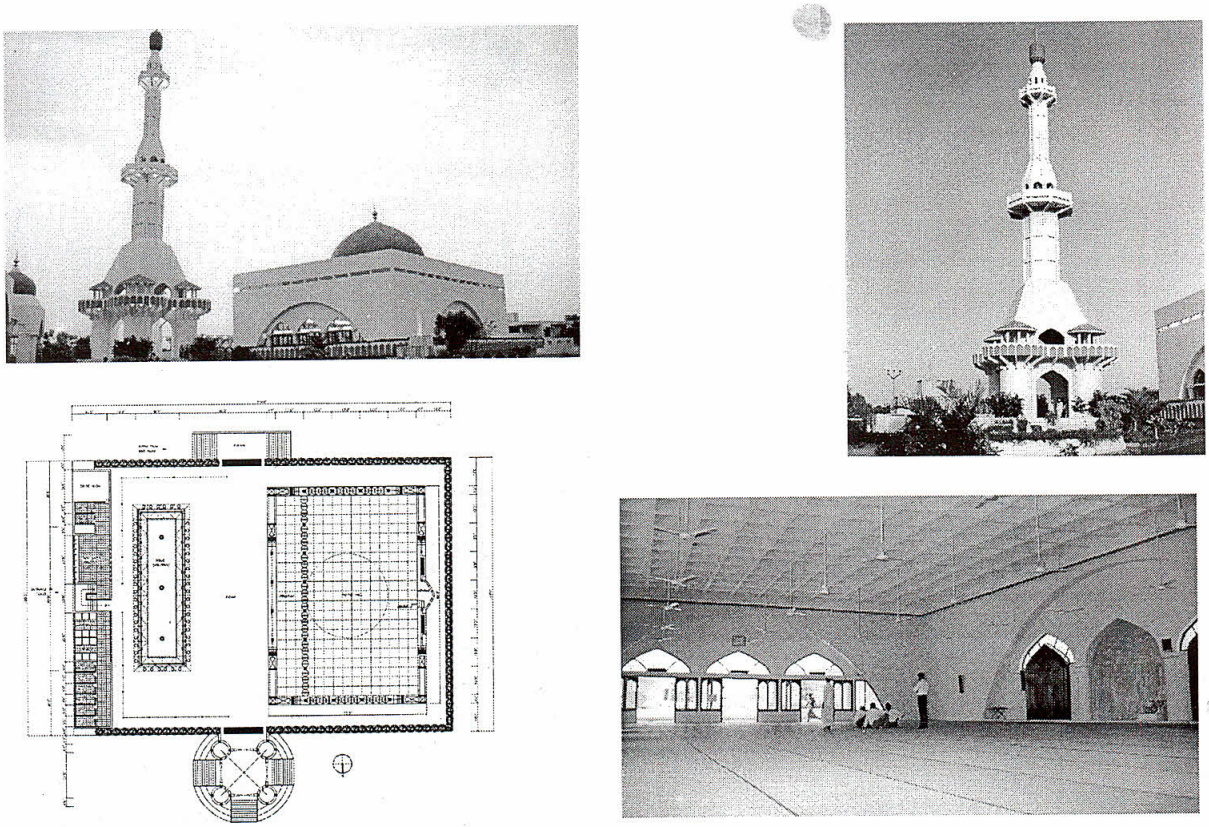


Fig. 9: Miftah-Ul-Uloom Campus Mosque, Melvisharam.

Mosque of New College Campus, Chennai

This campus is promoted by Muslim Educational Association of Southern India (MEASI).[6] Secular education under Islamic doctrines is being effectively imparted in this campus. The mosque, which was built about 30 years back, needed expansion in which the author was involved as an Architect. The sahan of the mosque was totally covered which were extended on the southern and northern sides to accommodate covered tap ablution (Fig. 10). The staircase is located so that the open terrace also could be used at times of thick congregation. The toilet complex was redesigned to accommodate the expanded congregation.



Fig. 10: New college campus Mosque.

Town Context

Tamil Nadu has many small towns, many of them thickly populated by Muslims. It is of paramount importance that these towns must have proper guidance and based on shariath through mosques in order to be a true Muslim. There has been a devout and philanthrophic Muslims in these areas to build mosques in small towns attached with madarasa and this is a very venerable job in which , by the grace of Allah I have been associated very deeply and I have designed many mosques in small towns. A few of them are being mentioned in this paper viz. Jamia Mosque at Ambur, Ahale-Hadees Mosque at Vaniyambadi, mosques at Adhinapattinam two mosques under construction at Keelakarai in Ramnad District.

Jamia Mosque, Ambur

This is a redesigned mosque after demolishing the existing small mosque. This is located very close to the Ambur Central Bazaar and most of the marriages are being solemnised in this mosque in Ambur (Fig. 11&12). The main hall has two mezzanines on the northern and southern sides and the centre portion is of two stories high and supported on all sides by mushroom columns. The span of the main hall is 12 m and is roofed with T-beams supported on R.C.C. columns. The gap between the top of the mushroom column and the main roof span has been utilised by concealed lighting of the mosques. Interesting feature is the arch form by two mushroom columns which forms an imposing façade. A very large marble sahan and houz was designed. This also has a very tall towering minaret about 40 m tall and is reached by a flight of steps from the sahan. There is a madarasa , store , and toilet block specially designed for this mosque. All sloping edges of the roof are ceramic tiled.

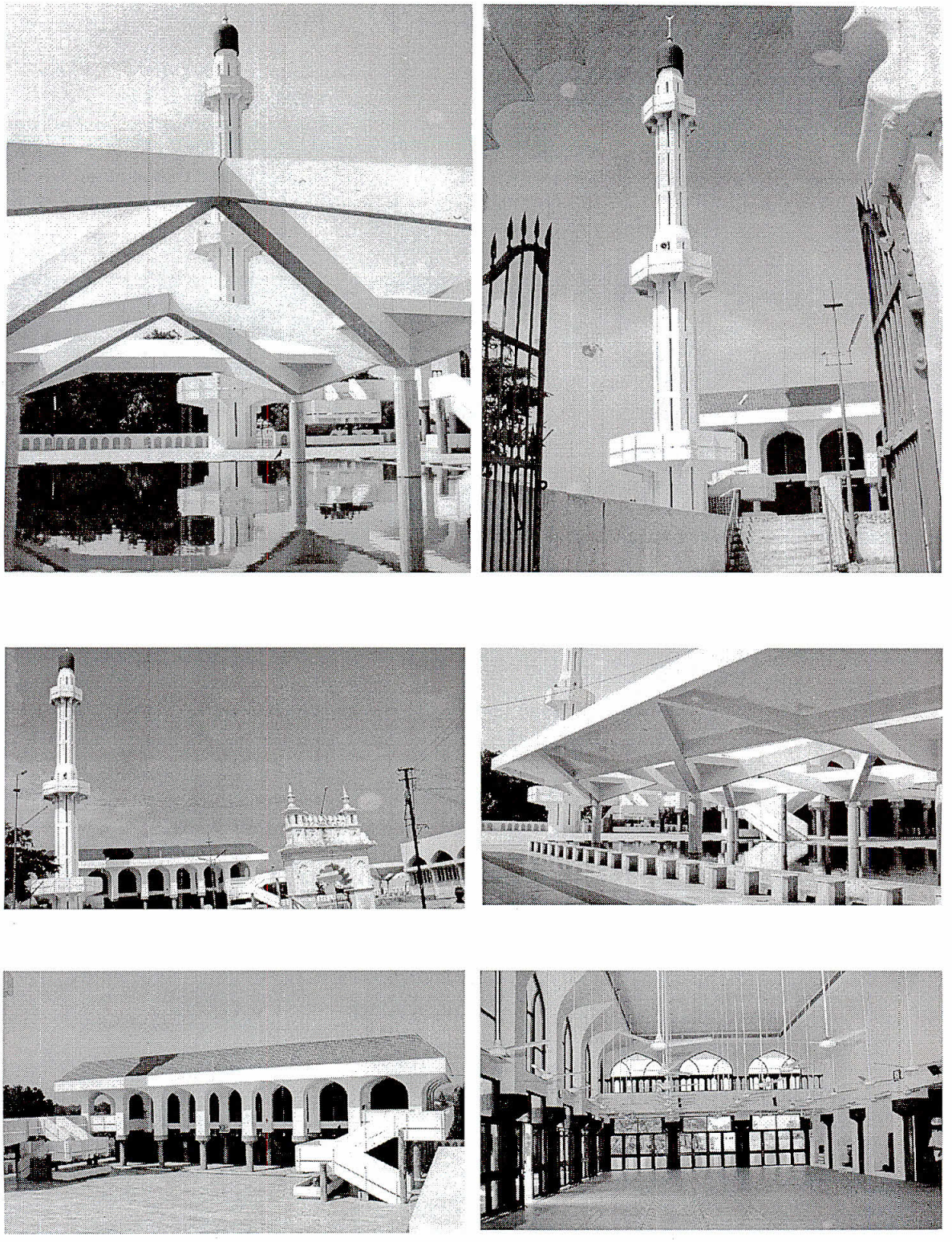


Fig. 11: Jamia Mosque – Ambur.

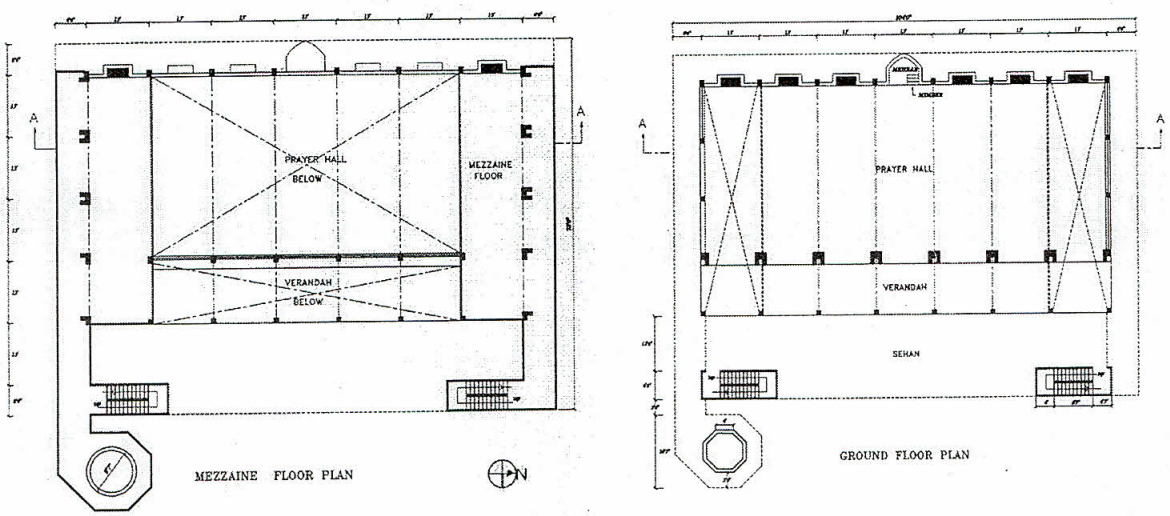


Fig. 12: Jamia Mosque at Ambur.

Ahale-Hadees Mosque, Vaniambadi, North Arcot District

This mosque is located in a fairly congested area of Vaniambadi in North Arcot District and has limited land area (Fig. 13). The existing mosque had to be subjected to demolishion and the new mosque is to be redesigned and built for the increased congregation and utilising the limited land area to its maximum benefit. There are two main halls in the ground and the first floor reached by two staircases. This also has been designed with R.C.C. T-beams rested on R.C.C. columns. The part of the first floor is exclusively for ladies with exclusive staircase access and toilet and houz facilities. A minaret with a height of 30m is located in the entrance in the sahan. This is an Islamic centre in Vaniambadi for Ahale-Hadees. An interestingly designed houz was existing which was not disturbed and retained for a new mosque. Additional tap ablution, toilet facilities for the increased congregation are provided.

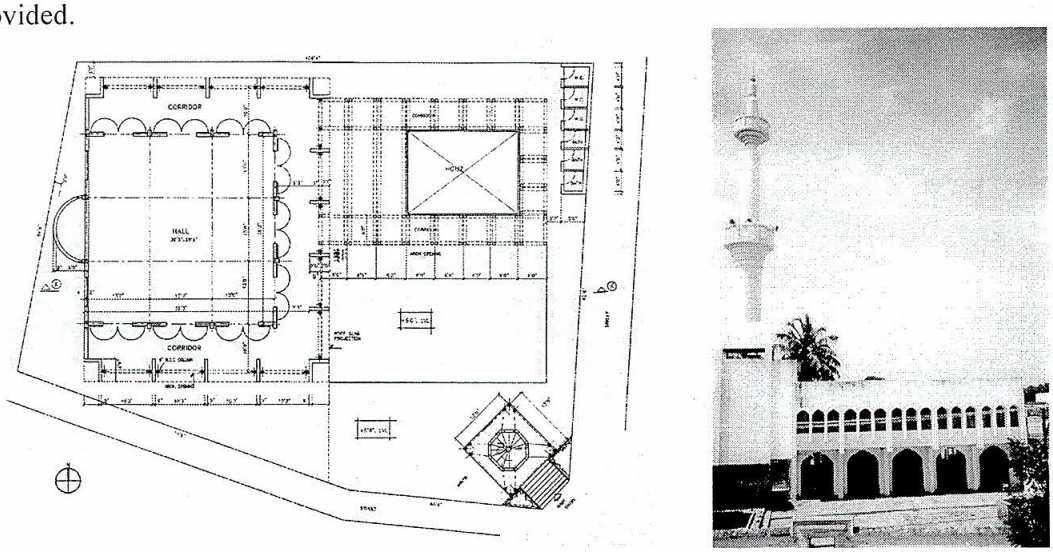


Fig. 13: Ahle hadees Mosque at Vaniyambadi.

Adiramapattinam Mosque I

This is located in the busy locality of the Adiramapattinam, which is a town at almost lower tip of Tamil Nadu (Fig. 14). Most of the mosques in this part of the Tamil Nadu have two covered areas one for the main prayer and the other one for sermons, Janaza prayers etc. This mosque also is designed with two covered areas. The houz is located at the eastern side of the main hall and it is on a small open sahan. The outer verandah of the halls is roofed with small domes and a towering minaret about 35 m tall is located at the southern entry of the mosque.

Adiramapattinam Mosque II

This is a mosque under construction on a narrow plot of land in small Town Context. The direction of `Kaaba' is slightly tilted as such, the prayer Hall has to be planned with slight stagger to be oriented to `Kaaba' as shown in the (Fig. 15). The main feature of the mosque is the dominant Minaret emanating from the ablution pond. A verandah runs all-round the mosque which climatically cools the interior. It is a R.C.C. structure supported on four centred arches.

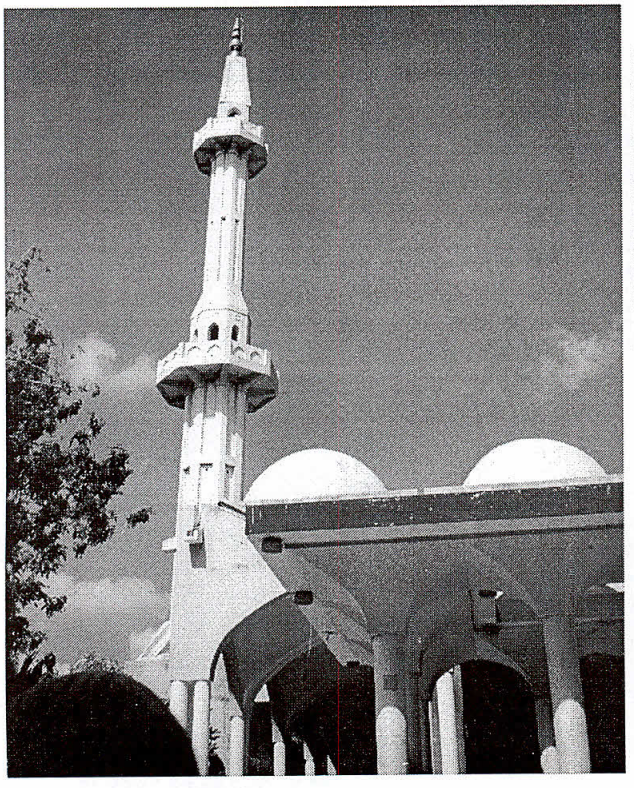


Fig. 14: Mosque 1 at Adhiram pattinam.

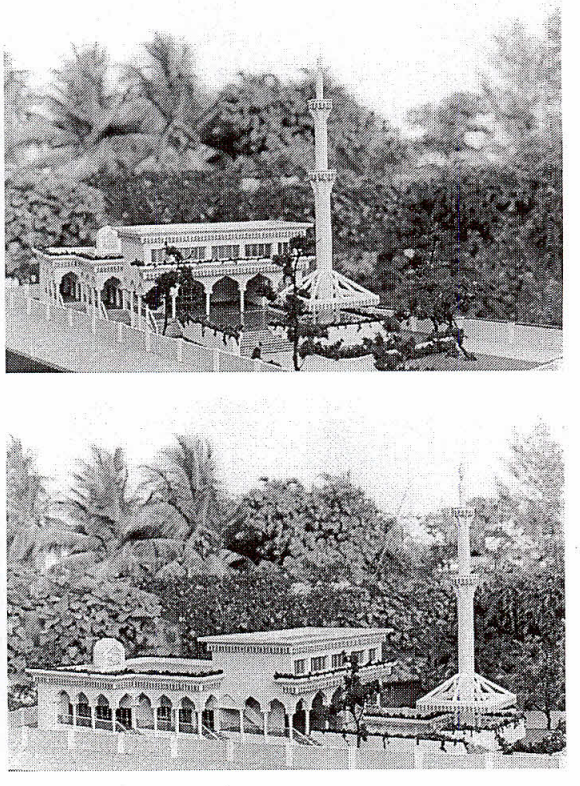


Fig. 15: Mosque 2 at Adhiram pattinam.

Kilakarai Mosques, Ramnad District

The two mosques are being currently constructed at Keelakarai in the southern part of Tamil Nadu. One of these has a limited space and the other in a sprawling open space. Both are located in dense residential areas.

The one in the limited area (Fig. 16) had to be designed with land constraints. As such the utility requirements like tap ablution, toilet, urinals, rooms for Pesh Imam, Store, space for Madarasa, had located in the ground floor and the main prayer hall had to be at the first floor level about 4 m from the ground level reached by grand steps. The main prayer hall is designed with columnless area with a span of about 12 m and all the four walls have large 4-centered monumental arches. The staircase colonnade into turrets and one towering minaret is located on the small sahan on the south-east corner.

The other mosque (Fig. 17) is at a large land area where the entire mosque is planned on the ground level itself with an imposing podium about 2 m high reached by flight of steps through imposing 4-centered arches which also is the main minaret of the mosque which is about 20 m tall. There is a domed colonnade around the houz on the eastern side of the sahan leading to the mosque on the western side. An interesting marble in-lay work is inscribed on all the facades of the building. The sahan is fully marbled. Both the mosques are in different stages of construction and 'Insha Allah' will be completed within the next twelve months.

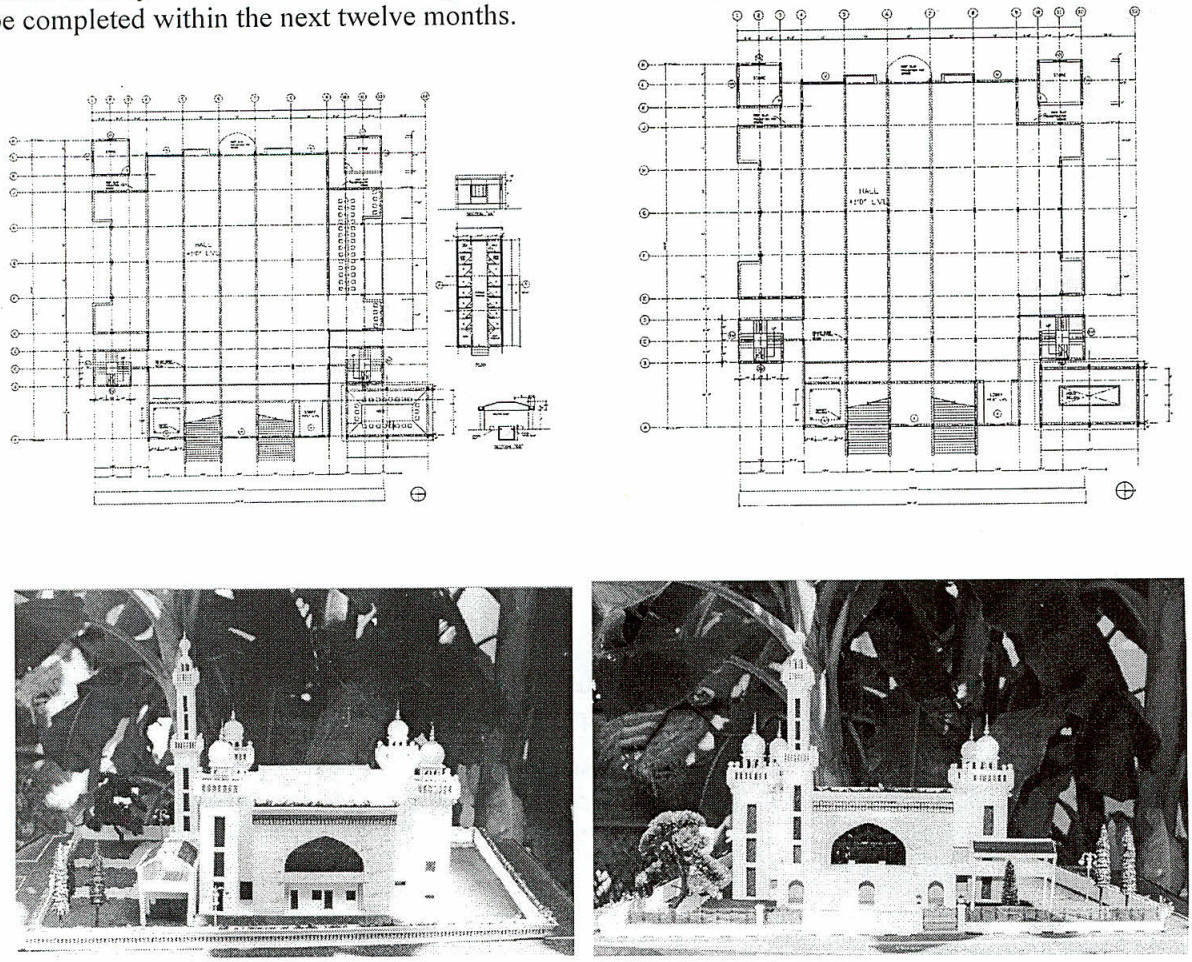


Fig. 16: Mosque 1 at Kilakarai.

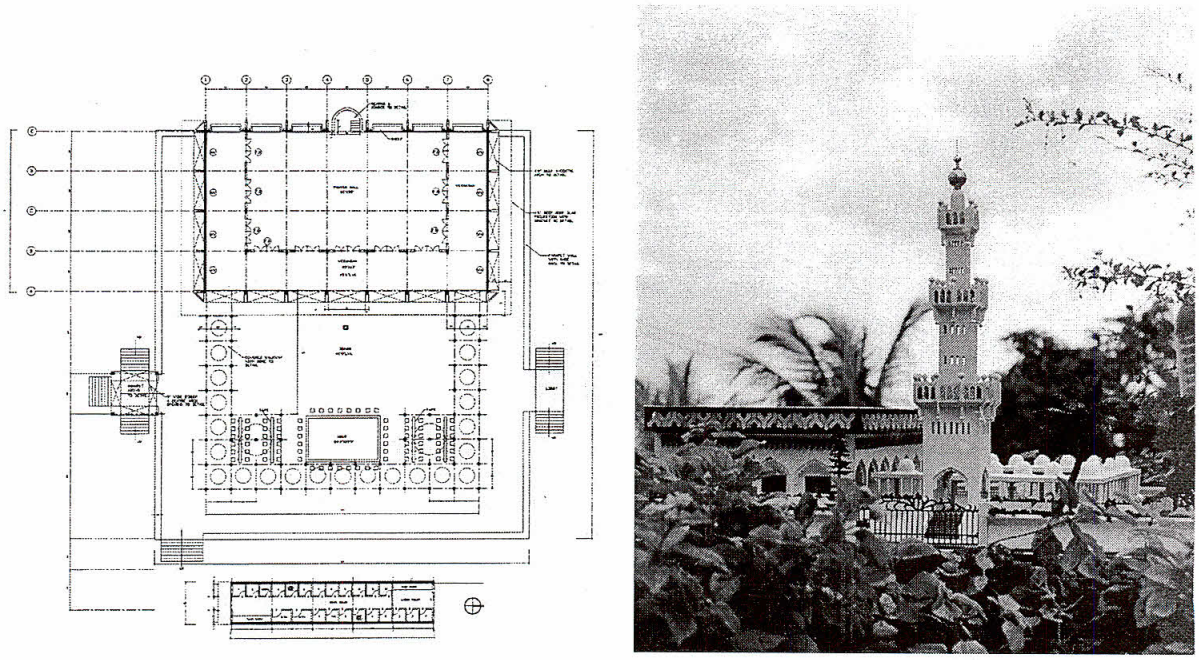


Fig. 17: Mosque 2 at Kilakarai.

Conclusion

During my involvement in the designing of the mosques mostly in the southern India in the past nearly four decades, I have learnt a few lessons, which may be useful to other architects.

Although the design elements of all the mosques viz. prayer main hall mimber, mihrab, Sahan, houz, structural elements like, arches, minaret, gumbaz are same they have to be planned based on the local requirements. The following guidelines are suggested in the design process of mosque:

1) Target group should be involved and consulted.
2) Largely use locally available materials.
3) Not to compromise on perfection and quality of construction.

It is found that there are innumerable problems in designing or redesigning the mosques in urban context.

First of all during the construction, the prayers should not be affected at all and it should be performed regularly. The construction activity should be well planned in advance.

The movement of the materials to the site is usually affected because of the urban problems like vehicular traffic congestion, human traffic, vendors on the platform, shopping activities, services like drains, overhead electrical wires etc. To overcome these, movement of materials should be planned during the nights when there is no traffic.

Entranceway to the mosque should be wide enough to smoothly manage the human traffic especially during Friday congregation.

Finishing material used should be easily maintainable especially in the toilets. Initial expenditure of these finishes may be high, but will help in the long run.

Building should be climate responsive. The southern part of India is warn & humid through-out the year, Deep arches, jallis, sun-shade should be aesthetically & abundantly used. During monsoon, heavy rains lash this part of the country.

Mosques in the campuses should be designed as the nucleus of the campus. They should be prestigious and the campus should feel proud of it. This enlivens their spiritual calibre and the social fabric of the campus gets perfected.

The participation of local people in the planning of a mosques is very important, specially in Town context, as their social background widely differs.

Locally available materials should be encouraged. In all these projects, orchestratid technical personal should be involved.

In this paper the author have given a brief description of some of the mosques he had designed in different contexts. Mosques in India faced towards Kaabatullah which is on the west of India in varying degrees. It is heartening to see that there is an awakening among the community and in every locality mosques are being built specially in the rural areas where people are illiterate.

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المساجد الهندية في محيطها العمراني: تجربة معماري

محمد حارس

كلية العمارة والتخطيط، جامعة أنا

تشناي، الهند

ملخص البحث: اكتسبت الهند مكانتها السياحية بشكل رئيسي لوجود معالم وآثار العمارة الإسلامية ، خاصة في الجنوب المزدحم بالسكان . وبالرغم من الشواهد العظيمة للعمارة والآثار الإسلامية إلا أن معظم المساجد كانت تصمم وتشيد بواسطة (معلمي البناء)، ذلك لأن مهنة العمارة لم تكن منتظمة و لم تكن هناك مدارس متخصصة. وأهم ما يميز مدن جنوب الهند المزدحمة ضيق الشوارع و بعثرة الخدمات وعدم و جود المواقع الصحية لأي بناء جديد, الشيء الذي يشكل تحديا للمعمار . ولتأكيد ذلك فقد قام الباحث بعرض بعض النماذج والتصاميم التي قام بها لبعض المساجد ، وقدم الحلول المناسبة لكل من الأطر التي حددت الهدف.

في الإطار الحضري صمم الباحث مسجد " أيس هاوس " ومسجد " بيرميث" في "شيبيني"، وفي إطار المراكز والمجمعات الإسلامية صمم الباحث مسجد " جامع دار السلام " في مجمع مفتاح العلوم في " ملغشهرام" ومجمع الكلية الجديدة في "شيبيني" ، وفي إطار المدن الصغيرة ذات الكثافة المسلمة قدم الباحث نماذجا لعدد من المساجد التي صممها " كمسجد الجمعة" في " أميار " ومسجد " أهل الحديث" ومساجد أخرى في أدهيرمابيتان و " كاليركاري".

وفي خاتمة البحث قدم الباحث بعضا من الدروس المستفادة من خبرته في مجال تصميم المساجد في الأطر المختلفة المذكورة أعلاه لكي يستفيد منها المعماريون والمهتمون بتصميم المساجد في العالم الإسلامي.