

# MAN-ENVIRONMENT INTERACTION: A REVIEW OF MODERN ARCHITECTURE OF LIBYA IN TRANSITION

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## INTRODUCTION

Modern Architecture in Libya is a reflection of a Society in Transition, in Search, in Flux, in Evolution which, at this very juncture of change has, often, been led astray to believe that any severance with the past is progress, beauty and significance.

The oil production has influenced evolution of housing types and a variety of civic and commercial buildings that has never been present in the simple market place of the old town such as: municipality, library, police station, cultural club, health centres, schools, hotels, banks, etc and each of these expressing political and social aspiration of the country in developing.

A lot of buildings are erected in the recent past. The New Architecture became more sanitary in comparison with the old one, but it is mainly formless. This is not difficult to dispel but requires hard work to combat, if Libya wishes to avoid looking like any other modern building group anywhere in the world and to keep the Arab character of the architecture.

The significant and worthwhile architecture was possible in this country, where the modeling of only climate was so marked and the amounts of money spent so significant. That the Libyan should have deviated not only from organic precedent but from the compulsions of Geography, Climate, Economy and Sociology as well, can only be explainable by the fact that forms and fetishes, so easily being embraced today, have been forced on them willingly or unwillingly by a group of some practitioners, mainly geometers.

If the designers operating in Libya from practically every country, derived inspiration from the dynamics of the Geography and Heritage of the country, -INSTEAD OF COPYING SUPERFICIALLY FROM VARIOUS MAGAZINES, they would certainly have produced on this area of the desert a unique type of architecture (as the Fezzan-Ghadames "SAHARN STYLE" arose over the sand in its original form despite limited materials). Fig. 1

Thus, one of the greatest art deviations that have befallen Libyan towns during the past decade of boom and urban aggradizement is

the breakup with the significant aspects of the Arab Tradition and Heritage in buildings and building towns. I do not mean to imply that the deviation consists of a departure from tradition and heritage merely because of this fact, per se. By no means. WHAT I stress IS THAT



Fig.1.



Fig.2

FACTS, FORMS AND FEATURES EXISTED IN THE STRUCTURE OF THE TRADITIONAL LIBYAN BUILDING, which are considered germane, even to the essential and basic structures of towns and buildings in contemporary thought. Fig. 2

The following pages explore architectural examples of this Transitory Phase showing functional, structural and aesthetical evolution from the Old patterns to a New Architecture. Characteristic progress and deviations as well as new lessons are shown through a set of the new introduced housing types, new mosques, commercial establishments, public buildings, together with health and educational facilities.

### "HAUSH" - TRADITIONAL POPULAR

#### HOUSE TODAY

"HAUSH" IN CITIES, built privately began to open more space on the street, sacrificing the advantages of the courtyard, which has now been reduced in size and lost its predominant importance as the core of domestic life. The main rooms are accessible through a corridor, the auxiliary rooms are located in the rear, and the courtyard serves mainly utility functions.

The stone masonry walls or concrete blocks are load bearing walls supporting mainly concrete or travetti roofs.

AESTHETICALLY, it is an unimaginative and uniform design made by geometers, (see an example from Tripoli) where environmental factors are neglected due to the designer's

limited knowledge, experience and feeling for a specific local habitat. Fig. 3

### THE VILLA

- **FUNCTION.** As a recent type of accommodation in this country replacing the old "MANSION" house, it is a detached building surrounded by gardens. Quite frequently, though, villas are also surrounded by high masonry walls to ensure privacy.

Design patterns—generally reflects the models found in Western Europe, or those of single family houses in the United States. There is no central "patio" as a nucleus of the domestic life. The building has openings to the exit into a garden or street. The main rooms are accessible through an entrance hall from which a small corridor leads to utility rooms. Bed rooms are usually arranged upstairs.

- **STRUCTURE.** The stone masonry walls, reinforced structure frame or concrete blocks are load bearing walls supporting mainly concrete or travetti roofs.

- **SHAPING.** As far as modeling is concerned there are three main trends today: Cosmopolitan, Neo-Classical, and a modern version of the Traditional "Saharan Style".

THE COSMOPOLITAN Villa Style covers the majority of the villa environment. These villas very often achieved their aesthetic measure from the "copy-paste method" of so called "modern" trend, or by trickery or contorted structural gymnastics. On the other hand in some examples there is an aesthetic quality, scale, even a reasonable adjustment to the climate requirements, but there is lack of a domestic flavor to stamp them as distinctly local design. Above is one example among many that has been "sown" on the Soil of Libya. Fig. 4

THE NEO - CLASSICAL STYLE - (see Fig. 5) done in an almost literal form, though demonstrating the strong reaction being evidenced against the bizarre architecture of the Cosmopolitan Villa; perhaps to point to and accentuate two dangers and thus alert architects to the correct course:

FIRSTLY, from a scientific point of view, this style is not suitable for the harsh habitat of Libya as environmental factors are not used consciously in shaping of the building. Neither is culturally affiliated with the richness of Arab Architecture, nor is it artistically related to the capacity of the State being able to afford giving birth to a significant domestic architecture adapted to the contemporary need of People as well as to the modern technology of building. Hence applying sentimental copyism is not the answer and therefore a literal return to classical style is not the course to be followed.

SECONDLY, it is a break to the evolution and progress of the architectural thought. For



Fig.3

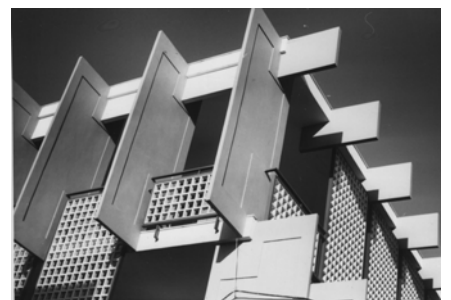


Fig.4



Fig.5



Fig.6

designers belonging to an old school of architecture, be they Arabs or foreign, who are more versed with, and romantically and sentimentally attached to former styles of architecture perhaps because of the lack of knowledge in philosophy, science and art of contemporary architecture, potentially they are just as much a block in the path of realizing a great and new Domestic Expression in Architecture as the soulless, mechanical, uninspired practitioners of "modern" architecture who are devoid of any romance and sentimentality in creative architectural design.

GENERALLY, this construction is not so familiar to the majority of Libyans. Today very few citizens - mainly rich people can afford this costly type of building where surface

decoration of walls call for high experienced craftsmen and these artisans are disappearing like in other countries.

### THE MODERN VERSION OF THE "SAHARAN STYLE" -

It seems to be a sign that encourages one to believe that the Libyans are, finally, awakening to the fact that if they must copy original and fine "SAHARAN STYLE" introducing effects of contemporary materials - it has far deeper roots to borrow from, bore into or buy from.

While some cosmopolitan villas have been adjusted to the climatic requirements but lack a feeling of local expression, in these cases of Modern version of the "Saharan Style" is reversed: more attention should be paid to the



Fig.7

environmental factors as far as living under burning sun and sand-storm conditions is concerned. Fig. 6

Local elements, imagination and more shade and shadow - and new style results.

### THE APARTMENT BUILDINGS

As a more recent type of accommodation - similar to those found in European countries this type has about 120 sq.m. of floor space per family unit and a very high percentage of ground coverage. In many examples the blocks share party walls.

FUNCTIONALLY, the central courtyard loses its original importance and it begins to function as a light well. The living areas of the dwelling are, therefore, found to open outside onto the street.

These types of buildings have two to four storeys. Access to the dwellings is by a staircase. Every dwelling is equipped with a loggia or balcony. The dwelling consists of one living room of about 30 sq.m.; two bed rooms, one dining room, kitchen and bath - altogether arranged around one entry hall or corridor. Very often, there are two corridors, one connecting the main rooms and another linking utility rooms or bath with bed rooms (see Fig. 7).

STRUCTURE The reinforced concrete is used in structural frames, floor and roof slabs. The filling walls are of stone or concrete blocks. Often in two-storey dwellings the reinforced concrete structural frame is replaced by concrete block bearing walls.

SHAPING The buildings are more a cosmopolitan creation than an Arab expression of the architecture. This is true particularly when the privacy of living is concerned. Where the designer has forgotten such a fact the people corrected him by adding wooden "musharabiah" or other typical Arab element of the architecture.

However, there are endeavors to keep privacy and to give an Arab character to the exterior architecture of the apartment buildings. One of the best endeavors is the performance of the contemporary materials incorporating the traditional - Arab architectural elements into a modern fashion. The results achieved in some

buildings show a correct course to be followed in further searching of a new Libyan architecture.

A characteristic motif in this light is the combination of "clay-musharabiah" with the reinforced concrete frame, often, cantilevered and altogether forming a modern version of the traditional verandah, keeping privacy - a typical feature of Libyan living (see Fig. 8).

MULTISTOREY DWELLINGS (over four storeys) are very rarely used in Libya. The only examples of this kind of accommodation can be seen in Tripoli and Benghazi in a very small extent, in private and Government possession.

In the current implementation of the Government's Housing Programme the types of



Fig.9

eight-storeys building are designed in a cosmopolitan fashion, where an economic and visual preoccupation prevailed over the domestic pattern of living. The lack of privacy is a characteristic disadvantage of these designs. Fig. 9

## MOSQUES TODAY

- Although in the majority of Settlements the Mosque has kept alive its traditional importance as dominance in the general sense; however its character and style have changed greatly under the influence of the universal forces now operating in the country. The Oil potentials influenced, like in

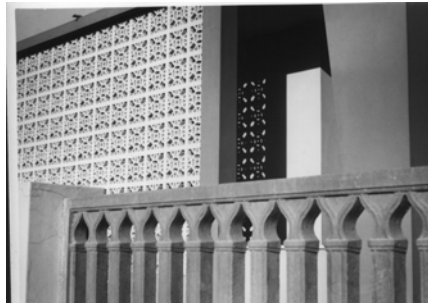


Fig.8

other fields of the development, recruitment of architects from abroad. A mass construction started writing a new story about Libya. And similarly, as direction of winds from the sea and the desert - penetrating and mixing one another, the imported architects brought ideas and styles from their own countries expressing their own experience, knowledge and feeling.

The new forms have been introduced into the shaping of this religious architecture. Changes are in three realms: volumetric, stylistic and functional.

- Generally as a result, the Mosque today is bigger in size; new materials are used, together with the new method of construction; increased economic potentials of the country, but also the role of Islam which cannot be underestimated when new aspiration of the country is concerned.
- The deliberate combination of religious and shopping activities under one and same roof, became a manner in modeling, a sign of an unlimited creative possibilities for architects dealing in this country.
- For a further exploration of the achievements in this field it can be noted that three characteristic types exist today on the soil of the Country: TRADITIONAL, NEO-CLASSIC, and MODERN STYLE. There are also examples of the mixture of these styles.

### a) The traditional version

Keeping its simple function the Mosque of this group consists of prayer's hall, minaret and washing basins as well as entrance portico.

Structure is a combination of reinforced concrete and stone mainly in the Coastal Area, while mud bricks are still used in the desert, although the use of concrete and stone is partial.

It should be stressed that due to the absence of rain in the desert area, mud material is considered quite permanent, and therefore some successful efforts have been made to combine mud with cement. Fig.10

Roofing also differs from area to area. In Tripolitania, and Cyrenaica roofing of the prayer's hall is usually one domed structure while in the Fezzan it is flat and made of palm wood beams with mud topic.

The aesthetic results are variable depending on the designer's experience in manipulation with new materials, and his knowledge of the local flavor, as well as local environmental factors.

### b) Neo-classic style mosques

The Mosques of this group - are a true expression of the old school. Although designed in contemporary materials, the Mosque is a show piece of former styles to which its designer is more versed and sentimentally attached.

Depending on the extent to which the designer was conservative and romantically preoccupied by the old styles - the achievements show variations from literally old expression to the attempts to bring a piece of new together with old into the fashion of the Mosque. Below is one characteristic example from Tripoli:



Fig. 10



## "GIAMA" ATTUGAR

This is an orthodox - old approach to the fashion of the Mosque as far as style is concerned. However, in its overall concept there is something new: incorporation of shops into the building. The shops influenced size of the building both in its horizontal and vertical directions as well as its functional treatment distinguishing religious function from that of commercial use. Environmental factors as far as heat is concerned have been used consciously by providing shade and shadow. The entrance to the prayer's hall is differed from those going to shops. The building is square in its basis.

- The STRUCTURE of the Mosque is a combination of reinforced concrete and local limestone. Structural elements are columns, bearing walls, beams, slabs, one domed roofing and minaret. The minaret is to a certain extent square in its basis and then octagonal with two cantilevered rings for the Imam addressing prayers (now only a formal element keeping tradition as this physical activity disappeared).
- The location of the Mosque near Central Market as well as its co-location being accessible from a Ring Road on one side, and forming a Square with commercial establishments on the other side, is a masterpiece of getting, keeping the role of the Mosque as a focal point not only for congregation of People but also for the orientation of citizens within the City of Tripoli.

The geometry of the building is one of the characteristics of the VOLUME.

The applied proportioning of the Mosque itself as well as its composition with the surrounding shopping area is a quality of SCALE which achieved its aesthetic measure from juxtaposition between large-open square, its horizontally arranged shops and the monumentality of the Mosque, its vertical minaret and the dome.

The TEXTURE of the Mosque evolved from a combination of climate requirement (by providing shade and shadow), from paraphrasing of material used and from stylistic details determined to be seen



Fig.11

(edged roofs by a low-wall crenellation). Catching color is not used as an element for surface treatment. (See Fig. 11).

## THE SIDI BINLIMAN MOSQUE

Representing a modern architectural Idiom and approach in its overall structure, form and style, and so giving something new in this environment, - the Mosque is a visual relief to the beholder after being sick by seeing so much copyism before it. Keeping the traditional simplicity and sincerity now expressed through new materials and building technique as well as contemporary aesthetic measure, the Mosque is an example of the course to be followed.

Not only is the architecture itself improved but also its surrounding is synchronized into oppositional balance. The contrast of old and new is vivified by visual know-how. Functional and esthetic space are reconciled at one side and on the other, the Mosque is so disposed in space that the visibility of form is maximized from internal and external view points in accordance with optical dictates. For static and kinetic conditions of viewing, a richness of silhouette, skyline and vertical texture is achieved through spatial simplicity and clarity arresting attention and commanding an aesthetic by sheer weight. A slow, almost

imperceptible movement of urban envelope and forms is brought out by the location of this long-lasting dominance seeing from the sea.

Although simple in its floor-design, the Mosque is a show-piece of a NEW FUNCTIONAL ORGANIZATION where separation of the minaret and washing basins from the main building is the major characteristic. The main building is only for praying. But here, a new approach is also achieved, unusual in practice in this country: the praying activity is organized in two levels. The building is a two-storey one, thus contributing on its increased capacity. The two main entrances are designed in such a way that one is leading to the ground floor directly, and the other is leading through a staircase to the first floor. On the left and right side of these two-centrally located entrances, are smaller doors, one on each side.

The Washing Basins and WC are designed in a separate-small building, at the level of the ground floor, located just in front of the main entrances, so that the communication between these two activities is easy.

THE MINARET is relatively tall and circle in its basis. The entrance door is oriented towards the prayer's hall and is easy accessible from the courtyard leading to the both site entrances.

Like in other Mosques recently erected, this Minaret also keeps the traditional function of the Imam in its physical term although this activity is replaced by the modern - radio system of communication between the Imam and the prayer's.

ENVIRONMENTAL FACTORS as far as heat, sand-storm and ventilation are concerned, are used consciously in the Design. The windows of the ground floor are small in size. Excluding the entrance side, on each of the remaining three sides of the main building is designed six windows to meet day-light requirements. Small openings just under the projected first floor are designed purposely for ventilation.

The both day-lighting and ventilation of the first floor is composed into one whole of horizontally set windows immediately under the roof slab. This provides a reasonable illumination and suitable ventilation as well as a protection from the desert wind. To all this should be added the role of openings of the dome.

THE STRUCTURE OF THE MOSQUE is a true expression of its simplified functional concept. The main bearing element, not seen in the majority of the built mosques, is the reinforced concrete FRAME - rendering new materials and modern technology of building as well as new designer's possibility in the manipulation with the structural elements satisfying functional, environmental and aesthetic requirements of the PERIOD. Designed as a dual frame it provided the necessary rigidity of the structure as a whole and at the same time an unobstructed visibility of the interior. There are four FRAMES of this kind: two parallel set in each direction. Vertically crossing one another, they form a horizontal frame at the roof level bearing the dome.

Roofing is by reinforced concrete one domed structure at the centre, and by reinforced concrete slab subdivided into eight parts. Standing as a single structural element and because of

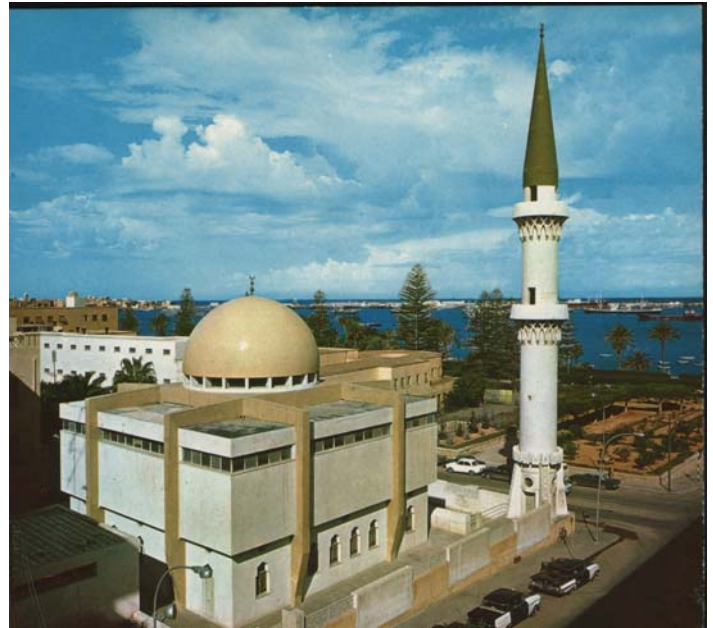


Fig.12

its height and stability requirements the minaret is enforced at the foot level.

Generally, THE BEAUTY of this Mosque evolved from the relationship of functions to form distinguished structural elements—it is composed and shaped in the spirit of these technological ages. It lies in its quality of scale where the geometrical and monumental volume of the prayer's hall is juxtaposed by the vertical and dynamic minaret.

In particular, rate of voids to solid in the shaping of the Mosque is one of the essential qualities achieved. The projected first floor to the ground floor, the subdivision of the main mass of the building by the vertical frames, the horizontal-continual windows to the remaining solid part, all of these elements of the composition lie in a pleasing relationship, balance, proportion, harmony. Color is used wisely: only to underline the design pattern as so to create a more plastic and lively scene. Thus the propriety of this architecture involves environmental factors and the true significance of the structural elements rather than a treatment of empty space.

The art of the minaret lies in its very delicately design treatment where structural and religious requirements are behavioral by being set out into a sincerely expression of the PERIOD: the shaped enforcement of supporting walls from the ground to the first ring level, and the very sharp top of the Minaret as well as its size,

altogether resembles the rocket-propelled capsule of an astronaut - a symbol of this ere. Fig. 12

## ADMINISTRATIVE BUILDINGS

Today, most of the settlements are adequately served by the various kind of the public buildings erected recently. The Government built many offices throughout the country, from small Mudiriyah buildings simple in its architectural concept to modern towns' halls, designed to meet present and future need.

The quality of this kind of Architecture PRIVATELY OWNED especially ones in company ownership seem to need to be noted and examined separately. Not only did the wealth of their owners influenced the richness of these buildings, but also the choice of the designer, exclusion of speed in designing, as well as a clear aim to attract the attention of beholder, and demonstration of the owner's power, all those factors contributed to the final appreciation. While the GOVERNMENT BUILDINGS are more a result of the sudden state aspiration, the PRIVATE OWNERS were preoccupied with both accommodation space and the exterior appearance with final guidance to the higher profit for them.

For these - business people, the location and co-location was of a paramount importance. To occupy a "magnetic" position within the Central Areas became a competition between the



developers. A rough investigation will reveal that almost all corners' premises are kept by rich men. They invested a lot of money into the modern styling of their emergent. But as the profit was behind scene, the utilization of land by the maximum of plot coverage, very often resulted in a scale clash from the aspect of a ratio between the height of the object and its distance from the beholder. The lack of building regulations in the term of the visual planning also contributed to this space - scale clash. For these reasons some well - shaped buildings cannot be perceived clearly and easily. Thus the proportioning of a single building by architectural devices giving variety forms of



Fig.13

expression is indivisible from considerations in town scale. Fig. 13

THE FUNCTIONAL ORGANIZATION of these buildings should be observed from two aspects: the user of the building and the public interest. The users (be it a tenant or the owner himself) are more or less satisfied that the interior of the buildings provide comfortable working conditions by adequate connections between rooms, enough day light, protection from solar heat, luxury finishes and so on. But, the maximum of plot coverage guided by profit influenced the design: the entrance doors in majority of new administrative buildings are designed just at the building line, thus immediately from the street foot-path. There is no canopy or portico providing shade and

shadow for the pedestrians, as an essential need for the external life under the burning sun and sand-storm condition in the country. The characteristic examples are new buildings in "24 December Street" where the traditional continual shaded passages are now disconnected, and so the public interest is disappointed.

These buildings are built by the modern method of construction where reinforced concrete skeleton is used as a common structural system. Many imported materials came into play to meet both the functional and environmental requirements, as well as a decorative aim. The buildings are equipped by lifts for purpose of easy vertical communication, and very often are centrally air conditioned. Windows and doors are mainly made of aluminum. As shading of walls is usually provided, the use of glass surfaces is intensified. The advantage of this combination depends on the architectural devices designed for shading purposes. If full shading is provided the enlarged use of glass is justified, but if not the inside condition of work is affected by the sun rays. The protection from sand-storms calls for a special architectural consideration of window details and its precise implementation. A small mistake can cause an uncomfortable life during the "Ghibli" wind coming with its red dust penetrating through a millimeter gap between windows elements.

An aesthetic appreciation of this architecture reveals a variety of the approaches and qualities, from an ultra-modern - cosmopolitan to a mixture of the modern shaping and an irrelevant decoration.

The Oasis Oil Building in Tripoli, for example, offers itself to be noted by its overall pleasant appearance showing something new although strange on the soil of Arab Libya. Functionally the building is a patio type one, where rooms are arranged on the both side of the corridors. The idea to bring a bit of exterior into the interior is a good one - resembling to the traditional

courtyard house. The orientation of the rooms on both sides of the corridor is also acceptable taking into account - that the rooms are air conditioned. However, as the horizontal balcony-shades don't provide a full shading or protection from the sun-rays and sandstorm, it seems that the conditions for work are more comfortable in the rooms oriented towards the courtyard. So the aesthetic measure is achieved by the intrinsic construction reflected on the intensified role of glass surfaces, the concrete pattern and the repetition of the invented balcony-shade patterns (see Fig. 14). Thus, the complete building volume is covered by these three elements creating the texture of the architecture-determined to be seen as a harmonious relationship of voids to solid, underlined by the white color of the balcony-shades /in order to distinguish their plastic qualities and so to provide a lively scene.

But, there are examples where the exterior architecture is characterized by the special emphasis on the treatment of the empty space (the Bank at Misratah, the Saharan Bank at Tripoli and some buildings in Cyrenaica). This surface - behavior resulted into decoration in which the true significance of the structure is camouflaged in irrelevant surface. Thus the decoration of these buildings is not made by paraphrasing functional motifs where the empty space could be brought to life, but it was done by the embellishment of the wall-surfaces in the form of the mural painting. It shows that, without the ingredient of sensuous enjoyment, the practice of architecture must inevitably degenerate into little more than a sordid routine.



Fig.14

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## CONCLUSION

If the designers operating in Libya from practically every country, derived inspiration from the dynamics of the Geography and Heritage of the country, - INSTEAD SUPERFICIALLY COPYING FROM VARIOUS MAGAZINES, they would certainly have produced on this area of the desert a unique type of architecture (as the Fezzan-Ghadames "SAHARN STYLE" arisen over the sand in its original form despite limited materials).

So, THE COSMOPOLITAN Villa Style covers the most of the villa environment. These villas achieved their aesthetic measure from the 'copy-paste method' of so called "modern" style going, very often, through trickery or contorted structural gymnastics. On the other hand THE NEO - CLASSICAL STYLE - done in an almost

literal form, though demonstrates the strong reaction being evidenced against the bizarre architecture of the Cosmopolitan Villa; may be to point that this style is not suitable to the harsh habitat of Libya as environmental factors are not used consciously in shaping of the building.

Also, it is a break to the evolution and progress of the architectural thought.

It seems to be a sign that encourages one to believe that the Libyans are, finally, awakening to the fact that copy if they must, origin and fine "SAHARAN STYLE" introducing effects of contemporary materials - has far deeper roots to borrow from, bore into or buy from.

Concerning apartment buildings, there are endeavors to keep privacy and to give an Arab

character to the exterior architecture of the apartment buildings.

In the current implementation of the Government's Housing Programme the types of eight-storeys building are designed in a cosmopolitan fashion, where an economic and visual preoccupation prevailed over the domestic pattern of living. The lack of privacy is a characteristic disadvantage of these designs.

Although the Mosque in the majority of the Settlements has kept alive its traditional importance as dominance in a general sense, however its character and style have changed greatly under the influence of the universal forces now operating in the country.