بسم الله الرحمن الرحيم

IN THE NAME OF GOD,
THE BENEFICENT, THE MERCIFUL

The Evolution of the Spatial Patterns of Traditional Islamic Cities

1990

by
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Dedicated
to the First and Last Ladies in my life,
to my Mother and my Wife

ABSTRACT

The purpose of this study is that if cities are to be accounted as Islamic they should be considered in the context of Islamic urban frameworks. Subsequently their spatial patterns should be conceived as the resultant of the application of these frameworks within a built environment. Implicit in undertaking this research was the conviction that spatial pattern in Traditional Islamic Cities evolved within certain urban frameworks and not, per se, space concepts and it is within that context that variety of spatial arrangements were developed, utilized to serve a prevailing religious, societal, commercial, political-administrative aspects.

To achieve this purpose five main issues are addressed and later answered what Islam (1) as a religion, precepts, conducts contributed to the emergence, formation and evolution of the traditional Islamic urban system, (2) how these systems and frameworks have evolved within the changing strategies and conditions, Muslims and Islam underwent, (3) how such evolving frameworks were reflected and interpreted into built physical environment, (4) what other influencing non-human, static factors that shape these environments, (5) what underlying spatial frameworks that have governed the resultant structure, fabric, texture and the infilling of these built environments.

Number of Islamic cities are used as models of analysis in this research. Closely and chronologically dealt with they assisted us to perceive the evolving pattern and to follow the various processes of formations and transformations that occurred in these cities. Further and closer investigation in surviving traditional built environment, has enabled us to highlight the underlying spatial correlations and expressions.

Within these two stages, part one and two trace the evolution of the city level and show clearly that many original Islamic cities had clear organized arrangements and frameworks, but that these have been lost or neglected over time. Part three is based on two case studies of Aleppo and Cairo in order to discover the manner by which the spatial pattern

worked in the "classical Islamic city". This part offer an explanation as to how the apparent chaotic pattern of the urban grain which today characterises the Islamic city, comes about and concludes that it is not random but obeys a recognisable set of systems based on reasonable spatial idiom.

The work concludes by considering the relevance of these findings to the problems of urban structuring in todays context in the belief that considered evolution from the past will prove a more relevant method than the rupture apparent in most of the development of the last few decades.

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Finally to those who I left behind and sorely missed and to those who accompanied me and shared the frustrations and joys of my study, my debt and love will always be acknowledged.

SYSTEM OF TRANSLITERATION

The system of transliteration from Arabic used here does not fully abide with one of the systems used by the different literatures. However in the attempt to chose the simplest way and the best way possible to convey the nearest audible pronunciation, several systems were referred to but the transliteration system described in Bulletin 49 (Nov. 1958) issued by the Cataloguing service of the Library of Congress, U.S.A was the main reference in constructing the following system.

Initial	=	Value	Initial	=	Value
ا	(Consonantal sound)	a	ف		f
ب		b	ق		q
ت		t	ك		k
ث		th	ل		l
ج		j	م		m
ح		h	ن		n
خ		kh	ه		h
د		d	و	(consonant)	w
ذ		dh	ى	(consonant)	y
ر		r	ء	(hamza when occurs in the middle or the end of the word)	'
ز		z			
س		s			
ع	(superscript c)	ʿ			
غ		gh	ة	(when the t is not pronounced)	a
ش		(sh			
ص		s	ة	(when the t is pronounced)	at
ض		d			
ط		t			
ظ		z			

Vowels and diphthongs

ـَ	(fatha)	a	ـّ	(shadda double English letter such as مّ = mm)	
ـُ	(damma)	u			
ـِ	(kasra)	i			
			ـِي	(long vowel)	ee

English quotation or names of authors or books are left the way they are, even if they do not abide by the above system.

French and Dutch names and words are written without punctuation. Names of traditional cities which do not have contemporary names in english were written in their Arabic-English pronunciation. Others which do have contemporary English name, first they are written in their Arabic-English pronunciation and there after in their english contemporary name.

Plural Arabic names are in general used within their Arabic-English pluralism. However, in cases, in an attempt not to interrupt the sequence of the text the english plural(s) is used with the single Arabic-English pronunciation such as Hammam for single, Hammams instead of Hammamat for plural.

DATES AND PERIODS

Both the Hijra (the Prophet migration) date used by Muslims and the Cirica date are used. The Hijra date is written first, followed by the Cirica date with a slash in between. Also for centuries the Hijra century is written first, followed by the Cirica century with a slash in between.

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INTRODUCTION

The aim of this thesis is to contribute to an understanding of the environment of the traditional Islamic city by analyzing its fundamental physical and spiritual characteristics. It is hoped too that by exposing the underlying religious, and social aspects which motivated these distinguishing urbanistic traits, we may be able to expose the underlying norms which generated a wide but cohesive spectrum of the Islamic city's essence.

Within the Islamic city a certain tradition of spatial arrangements and buildings developed and came to be accepted by the contemporary inhabitants of the cities. However although these traditions persisted for centuries they were first challenged by the colonial apartheid introduced by France, Britain and other European countries and later, by the trends of spatial modernization known in the Muslim world as the westernized concepts which, to some extent, perpetuate those of the colonial situation.

In a time when the Muslim world and its various cultures, civilization and cities succumbed to a full stagnation, western colonization was introduced as an attempt to modernize what they considered as backward living conditions.

> "It is a tragic irony that just as the west is beginning to move from some of its past errors (the grid iron plan of undifferentiated blocks cut by roadways; the over dependence upon city wide regulations at the expense of neighbourhood autonomy and responsibility; the anonymity of unbounded and "unprotected" residential quarters; the rigidity of single "bundle" property rights). These kind of errors are committed "in the name of progress" throughout the newly built areas of cities all over the Arab [Muslim] world"[1].

Due to the unprecedented speed of development there was no chance to revive the evolutionary process of the traditional Islamic city. the fast pace of modernity and development in the physical environment of newly built areas did not coincide with a change or updating or even

evolution of the old fabric. Dichotomy has probably become most evident[2].

A complete rupture between the structure of the traditional fabric and the western-style environment, synchronized with a break in the equilibrium held for long a time between the sense of the individual, the family, the neighbour and the community. Individualism superseded communal sense and exclusiveness ousted inclusiveness.

A new challenge has arisen but this time of western modernity and the many new urban concepts and ideology. What has been seen as the present triumph of modernity becomes the burden of the future. Many of the questions which have been raised remain without answers. One of them is where the Islamic city lies and what contribution it can offer to that challenge. RAPOPORT[3] affirmed that in order to synthesise a conceptual understanding of that argument, it is essential that we change the way we look at the Islamic city's physical form. That can be achieved by considering the relationship between spaces, the urban texture, the relation of vernacular to monumental buildings' spatial frameworks, range of spaces, interior and exterior aspects and the spatial continuum.

Objectives

The topics of this thesis will be presented in a sequential process. It attempts to trace the religious, social, commercial, administrative and spatial aspects of the Islamic city. It aims to examine and to analyze the resulting spatial pattern and fabric generated by these aspects in both their formative and transformative evolution. At the end it will attempt to highlight the underlying spatial idiom and modes that governed the urban structures, patterns and fabrics.

Organization and Implementation

Having thus stated the aim and target of this study - the position of the Islamic city and its contribution to the contemporary question and challenge - this study will be addressed in five main issues; the influence of Islamic precepts on the Muslim conduct, relationships and values and in turn their effect on the urban pattern; the emergence of

the traditional physical environment; the evolution of the traditional Islamic city in the context of the formation and transformation processes of its physical environment and urban framework; the concepts of Islamic cities' spatial structure and the various static factors affecting these structures; concepts of urban fabric, texture and spatial domains and the underlying correlative and expressive dimensions in these concepts.

These issues will be organized into three major parts. The first will include the first two issues; each will be organized in one chapter. The second part will include the third issues organized into five phases with each phase in one chapter. The third part will include the last three issues organized over three chapters; and a final conclusion with parallel synthesis and guideline for relevant application. Each part while partly independent will provide the foundation for its successor.

In explaining the change in the processes of the Islamic city's evolution in the third part, a number of cities, some from those genuinely founded by Muslims and some pre-Islamic cities, that is cities dating from the period before Islam, will be selected and presented in chronological order of foundation or occupation.

In certain stages of the Islamic city's evolution, namely the third phase, many urban centres were founded in association with an existing one. Thus some cases will be dealt with chronologically according to the time of their foundation on the level of the one city or region rather than as stated above on the overall dates of the various cities' foundation (see Fig. 154).

Pre-Islamic cities will be presented as one group yet such organization should not imply a specific type or city classification but is rather an approach intending to follow the successive transformations which brought these cities to a state similar to those cities originally founded by Muslims. In an attempt to present as many significant cases and in order to sustain our argument, various examples will be selected from various Islamic regions. Incomplete information and a long period of transformation does not in some cases allow us to provide a full picture

of these cities' original layout or structure. Thus a proposed reconstruction based on the available information will be presented as pilot models of such cities, but it is not intended as a record of their actual or original arrangement. Existing cities dating to before Islam will be directly tackled under their transformation processes, while newly founded ones will be tackled under their formation process. Therefore cities founded in one phase, will be dealt with in later phases under the transformation process. However minor formation may not keep within this general framework.

In the last fifth phase and later on, when many traditional Islamic cities achieved a large number of similarities, we will deal mainly with two Islamic city models. The choice of these two models depended on the availability of information; easy accessibility which allowed us to implement a site or empirical observation; the degree to which these models have retained part of their traditional milieu. The two Islamic models will present both a city of pre-Islamic origin and of genuine Islamic origin, namely Aleppo and Cairo.

Part One

Part one serves as an introductory stage. It attempts to show:- the gradual transposition of religious precepts in Islam; how these precepts are first reflected in Muslim conduct, social rules, relationships and patterns of behaviour; eventually how such precepts materialized in related spatial frameworks and expressions which in their turn supported and confirmed the Muslim attitudes and values. The extent of such precepts will be first interpreted into a hypothetical concept, presented in diagrammatic schemes based on the earthly dimensions of time and space. Second, these schemes will be examined when the first urban physical environment was developed by the Muslims and the way in which it was applied in an actual urban context in Madina (the city of the Prophet).

In the context of Madina we should be able to construct an initial picture of:- the early process of urban formation which took place there; the various early components and frameworks that constituted that environment; the Muslim attitude towards urbanization.

Our main hypothesis in this part is that within the Islamic precepts, five levels of conduct have developed:- the communal (that is the actions and behaviour which gives everybody a mutual interest); the public (that is the acts that also include everybody but in a variety of interests); the semi-public acts and relationships that connect people in neighbourly ties; the semi-private relations in extended families; and the private relations and ties between near relatives and the family.

Corresponding to the societal levels described above, we will investigate their implications to the spatial arrangements, also in five related levels.

Part Two

Part Two will comprise, as mentioned, five chapters, each based on a hypothetical phase of the traditional Islamic city's evolution. Here these phases are by no means an attempt to classify Islamic cities, which this thesis will attempt to refute, but rather a framework which will be employed to mark the change in the various aspects of Islamic urbanization, and the role of these aspects in shaping related physical environments.

The five phases are determined in relation to the Islamic civilization's formation, rise, maturation, specialization and self manifestation. Within each we will deal with a two-fold process, the first concerned with the trends of formation and the second with the trends of transformation.

Concerning the first phase, the formation of the Islamic civilization, Muslims followed a certain strategy intended to spread and to strengthen Islam. Thus this phase will be called Islamicization. This occurred in the new lands annexed to the centre of the Muslim territory in Arabia and involved the non-Muslims and also the Muslims the bulk of whom were recently introduced to Islam. Social diversity between the Muslims and the non-Muslims and cultural variety in both will be interpreted into two spatial modes. The first was intended to congregate the new Muslims and the Muslim-Arab tribes in new urban centres and to encourage others from both Arabia and the new territories to emigrate to these centres. But at the same time, the first mode was spatially organized in a way that it would not disturb the

long established organic social structure of these groups. The second mode was spatially arranged to introduce Islam to the indigenous population but at the same time to prevent the out-numbered Muslims from being assimilated. Thus Muslims and non-Muslims were brought together but in a segregated arrangement.

In reconstructing the second phase, our hypothesis was that when Islam became secure in its new territories, Muslims changed their strategy and attitude. They utilized and transformed what remained in these territories to their own pattern and thus this phase will be tackled as an assimilation process and phase. The extent of further transformation or change in the Muslim attitude will be examined as it is demonstrated in the Muslim changing societal structure, which also reflect the changes in approach towards the urban structure.

Progressive change from the second to the third phase will be seen to be marked by the considerable number of urban centres founded by the Muslims within a vast move towards urbanization that pervaded most Islamic regions. This was also marked by the formation of multi-centred cities and an innovatory trend which the Muslims introduced into many new cities' establishments and institutions or sciences. A trend toward elaborating what reached them from previous phases or other civilizations is also apparent. Further, the third phase will be seen to be marked by further changes in the urban societal structure.

Reconstructing the topic of the Fourth phase, it will be seen to be signalled by:- a process of decline in the Muslim civilization; a change in the leading position from Arab Muslim aristocrats to non-Arab Muslims; an interchange between the formation and transformation processes, that is instead of founding new urban centres more attention was paid to standardize and consolidate the existing centres by including in them similar urban components or institutions. Thus this stage will be called the standardization phase. Furthermore this phase is marked by the few new cities founded in it which themselves were rather a promotion of an existing settlement, fortress or citadel into a town or a town into a city. Also it is here that many earlier foundations were institutionalized and doctrines were constitutionalized.

The Fifth phase will be seen to be marked by the spatial and institutional similarities later associated with many Islamic cities, thus this stage will be called the manifestation phase. Our main hypothesis regarding this phase is that it is the long formation and transformation that led these cities into sharing distinctive spatial similarities and it is the result of these processes that the spatial pattern of many cities took their final shape. And, as it will be concluded, that that shape, which usually associated with or labelled as the Islamic city, is rather a natural consequence of the arrangement of the various religious, societal, structural, and spatial correlations than to any preconceived arrangement.

Here in this last phase we will summarize those processes and frameworks with which the Muslim experimented in all five phases in a series of concluding schemes. These schemes will present the various phases and frameworks, in an evolutionary cycle and in a subsequent spatial interpretation.

As it will be demonstrated, in cases some cities which were founded in later phases resemble the condition of earlier settlements at the time of their foundation in previous phases. Also cases overlap, so our assumption is, that the cycle is a continuum spiral evolution.

Part Three

Part three will comprise three chapters. The first will introduce other "non-human" factors that influenced the shape and evolution of Islamic cities. They will thus be called static factors. They include settlement hierarchy and the concept of the routes of communication, orientation, site localities and physiography. Since these natural and static factors vary from city to city, we will explore their implication on some examples of cities which we have discussed before.

As the human and static factors that influenced the Islamic city's emergence have been examined, also the evolution of its various urban frameworks, which governed the formation and transformation of its prevailing urban components, composition and models have been treated, we will proceed to tackle its eventual or resulted structure, fabric and

texture. The assumption here is that by basing the next topic on the previous findings, and by applying them to both models, Aleppo and Cairo, we may be able to expose the underlying idioms and modes or dimensions that shaped the spatial pattern in the traditional Islamic city. Further, by making these dimensions manifest we may, in the context of the contemporary question presented before be able, to construct guidelines that would if applied, spatially speaking, revive the Islamic city's evolutionary cycle.

In order to advance this target into reality, the second and third chapters of the third part will be conducted by means of observation analysis applied to real and existing cases. It must be kept in mind that many existing traditional cities are not totally preserved in their original traditional milieu, so many parts of these cities do not present the true image of a traditional trait. For this reason, a set of criteria will be referred to in choosing a sector from Aleppo and Cairo so that these sectors can convey our study as near as possible to the traditional condition.

The two sectors will be first analyzed as two-dimensional space schema. This exercise will be conducted in the way that we would explore the correlation between space or spaces to the whole and to each other. In other words this exercise intends to explore the correlative dimension in the traditional Islamic city. Further analysis of such spatial modes will be analyzed under the spatial domain such as spaces between markets and residential quarters and open spaces inside the buildings. Having analyzed the two sectors, the resulting data will be further examined under the space morphology and its true images, that is, its expressive three dimensions.

After exposing the spatial modes and the underlying idioms that governed the spatial pattern of the two models, finally one remaining issue will be dealt with. Within an itemized conclusion we will summarise our findings, first in their traditional context, second in the context of contemporary relevance spatial requirements and directly after each concluding item, we will deal with what contribution such

findings can offer as guideline to revive the evolutionary cycle of the Islamic city.

Foot Notes: Introduction

1. ABU LUGHOD, J., "Contemporary Relevance of Islamic Urban Principles" in **Islamic Architecture and Urbanism**, King Faisal; University, Damman (1983), 68

2. BIANCA, S., "Traditional Muslim Cities and Western Planning Ideology, an Outline Structural Conflicts" in **The Arab City**, Symposium, I. Serageldin and S. Sadek (eds.), Medina (1982), 36

3. RAPOPORT, A., "The Architecture of Isfahan" in **Landscape** XIV, ii (1964/65), 4

PART ONE: PRECEPTS OF ISLAMIC URBANIZATION

I. THE INFLUENCE OF ISLAM AS A RELIGION ON MUSLIM CONDUCT

Islamic Precepts

Introduction

A glance at the meandering pattern of streets and dead-end alleys in plans of traditional Islamic cities seems to show that these cities are, to some extent, different from those of other cultures. Have religious beliefs and conducts influenced the shape of the Islamic city?

> "It is customary to separate secular and Religious impulses in the formation and development of an Art. It is often said that separation is not entirely meaningful in Islam, which did not make distinction between the realm of God and of Caesar[1]."

If religious beliefs have affected the shape of Islamic cities we may be able to identify how by examining religious beliefs in Islam and the way in which these beliefs affected Muslims conduct and in turn affected the traditional* form of the city.

Islamic Beliefs

Islamic beliefs hold that man's existence was not caused in vain but to serve God on earth[2]. Thus, mankind would leave nothing exempt from the authority of the Divine Constitution. In simple words, no institution is possible or applicable other than the religious one or derived from it. The Muslim should adapt himself to his fellows and to society and ensure that his conduct conforms to Islamic precepts of ideology (ʿaqida), worship ʿibadat), law (shariʿa) and codes of affairs (muʿamalat) as prescribed and outlined in the Qur'an and interpreted in the Sunna (see Fig.1).

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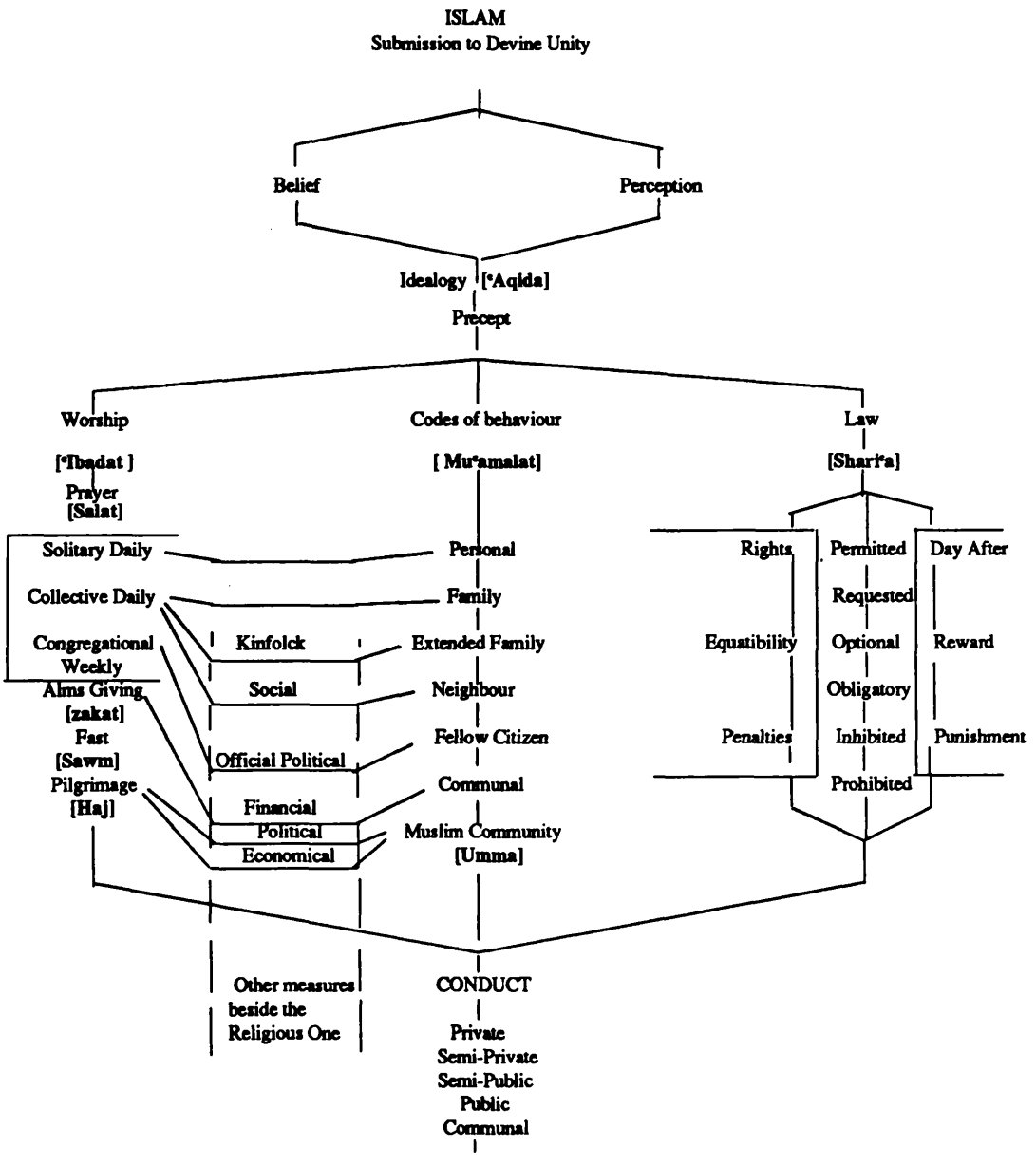
* The term traditional is used here to define cities of previous eras before the arrival of modern colonization and the spread of nationalism in the Muslim world.

FIGURE 1
ISLAMIC PRECEPTS



TRADITIONAL ISLAMIC CITY PATTERN

The Qur'an (God's scriptural revelation)[3] was revealed to the Prophet Muhammad over a period of twenty two years and recited by him to the Muslim community. It contains in its 114 chapters all the essential elements of the ʿaqida, shariʿa, muʿamalat and ʿibadat. The sunna comprises the acts, practices sayings (hadith) or precedents and decisions (taqrir) associated with the Prophet Muhammad, which were later interpreted as the Sunna or Prophetic Tradition[4].

Worship (ʿibadat)

The five pillars of Islam are the attestation of faith (shahada), prayer (salat), alms-giving (zakat), fasting (sawm) and pilgrimage (haj). The attestation of faith consists of two statements, the unity of God "there is no God other than God the One and Only God" and the prophetic mission of Muhammad. "Muhammad is the messenger of God". The utterance of the shahada confers on every man and woman of right intent the status of a Muslim ("one who submits to God"). This attestation of faith has been taken to represent the apex of a four - sided pyramid[5]. The first side is prayer (salat) to be performed five times a day (enhanced) collectively (but can be) performed individually, and obligatory congregationally at midday zuhr prayers on Fridays. The second is obligatory alms-giving (zakat and sadaqa):- the giving of alms is intended to help the poor, to arm Muslim fighters, to provide for the traveller, to free slaves[6], to redeem captives, and to assist in the upkeep of numerous religious and public institutions. The third is obligatory fasting (Sawm) involve in abstaining from food and drink and observing self-restraint. The fasting is undertaken during the month of Ramadan, culminating in a communal celebration feast (ʿid al-fitr). The fourth side of the pyramid is pilgrimage (Haj) to Mekka, the place of the first house built to worship God, which was built by Prophet Abraham. The pilgrimage is an act of devotion which lasts four days and also ends with a feast (ʿid al-Adha).

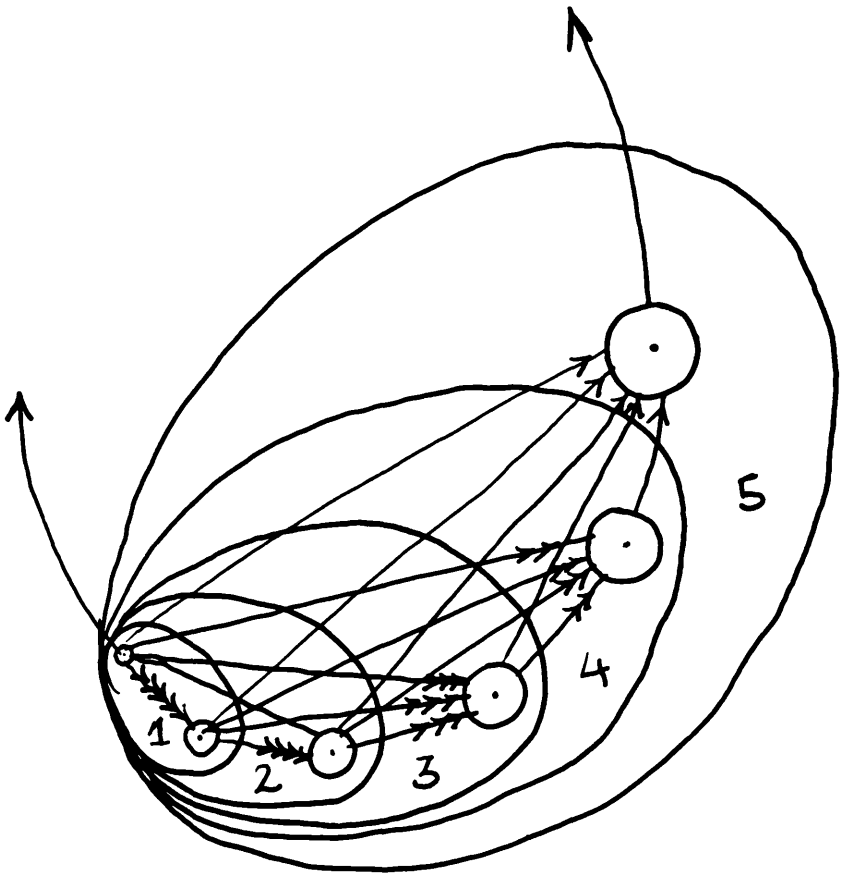
The pillars of faith are ordered by the (two earthly) dimensions of time and space; the first is represented in hierarchical time limits which mean that the Muslim is constantly reminded of his devotion to God, regularly by giving alms, daily by the five prayers, weekly by the Friday congregational prayer, annually by fasting the month of Ramadan

and by making the pilgrimage to Mekka at least once in a lifetime. The space is represented in a hierarchical pattern and will be explained later when we deal with the influence of Islam on city form.

Islamic Law (Shari'a)

As the Muslim conceived the Qur'an and the Sunna as the prime and complementary sources of Islamic law[7], the context of the two sources were exhaustively interpreted and elaborated. With the expansion of the Islamic community to include people of varying tradition and practices, certain variations of legal interpretation arose, which led to the evolution of the shari'a in stages throughout history[8].

The shari'a was formed during the life of the Prophet, in which the answers and rules as revealed by the Qur'an were interpreted and implemented by the Prophet. The first stage was evolved and marked by the time of the Prophet's first four successors (**al-Khulafa' al-Rashidin**) "the rightly-guided Caliphs"; Muslims at this stage used to refer to the Qur'an as the prime source in search for a legal solution. If a suitable answer could not be found they then turned to the Sunna. If a decision was still not reached they began an effort of legal research (**ijtihad**). Legal research comprises analyses of analogical reasoning (**qiyas**), personal opinion (**ra'y**) and finally, if the case is of crucial interest to the community, legal experts are asked to reach a consensus (**ijma'**)[9]. The second stage came about when the efforts of research became the outcome of various deductive and inductive methods of reasoning which have accumulated to the point where they can be written and codified. Codifying the shari'a produced a code of jurisprudence or substantive law (**fiqh**)[10] which evolved in the second half of the first century of Islam (seventh century A.D.). As Fiqh became a formal legal institution, the third stage evolved, which culminated in the formulation of the four legal schools of thought named after their founders; the Hanafi school (**Abu Hanifa**, died 150/766), the Maliki school (**Malik ibn Anas**, died 174/796), the Shafi'i school (**Imam Shafi'i**, died 204/819], and Hanbali school (**Ahmed ibn Hanbal**, died 241/855][11]. By the end of the third century of Islam/ninth century A.D., when many political entities in the Islamic Community had emerged, jurisprudence entered its fourth stage, which was distinguished by the



BEHAVIOURAL LEVELS	TIES	
1 FAMILY BEHAVIOUR	➳	INTIMATE
2 kINFOLK BEHVIOUR	➳	TIGHT
3 NEIGHBOURS BEHAVIOUR	➳	V. STRONG
4 CITIZEN BEHAVIOUR	→	STRONG
5 COMMUNAL BEHAVIOUR	→	STRONGLY MOTIVATED

FIGURE 2

LEVELS OF BEHAVIOURAL AND TIES HIERARCHY IN THE DIFFERENT MUSLIMS RELATIONSHIP

institutionalization of the schools (**Mazhab**) and the adoption of one of these schools as the official jurisprudence. This stage ended with the fall of the ᶜ**Abbasid** Dynasty 656/1258[12]. The fifth stage called the absolute imitation (**al-Taqlid al-Mahd**), which was distinguished by no evolutions and continues to the present day.

Shariᶜa principles were laid out in (i) abstaining from causing embarrassment (ᶜ**adm al-Haraj**), [ii] minimizing discomfort (**Taqlil al-Taklif**), and [iii] gradually implementing the law (**al-Tadaruj fi al-Tashriᶜ**). In the implementation of the shariᶜah there is a hierarchical series of prescriptions; things that can be done (permitted); things that should not be done (requisited); things that may not done (optional); things that must be done (obligatory); things that ought not to be done (inhibited); and things that must not be done (prohibited). Shariᶜa implementation is based on the pious assumption that God wishes his subjects to conduct their affairs in a way that is easy to follow, not difficult (**yurid bikum al-Yusr wa la yurid bikum al-ᶜUsr**). Within this formula it is the responsibility of legal experts under God's egalitarian divinity to endeavour to ensure that people obey the law and that they are treated fairly and their rights respected.

In the shariᶜa evolution, several legal entities emerged as experts (ᶜ**ulama**) in various aspects of the Islamic constitution; religious, legal and temporal institutions, such as the religious leader (**Imam**), judge of the shariᶜa (**Qadi**), jurisprudence experts (**Faqih**) and (**Mufti**), witnesses (**Shuhud**), as Qadi's assistance. In the temporal institution, there is the regional governor (**Wali**) provincial governor (ᶜ**Amil**) generally assisted by the police (**Shurtah**), the supervisor of the market (**Muhtasib**) or (**Sahib al-suq**) who is in turn assisted by heads of various professions (ᶜ**Arif**) and district representatives (**Amin**).

Codes of Behaviour (Muᶜamalat)

Muᶜamalat in Islam deal mainly with community affairs or civil law. These affairs are introduced in accordance with the levels of behaviour, which are based on certain hierarchical patterns. These patterns may be represented in the form of ties and different levels of relationships [see Fig.2], such as those between the individual and his family, his

relatives, his neighbours, his fellow citizens and the whole Muslim community. Other ties developed, such as group interests among professions, institutions, schools, minorities, etc.

At the personal level one's behaviour should be sustained and enhanced as one stands alone before God to answer for one's personal conduct on the Day of Judgement and will be asked how he fulfilled his duties, obligations and responsibilities to his fellows. Thus one depends largely on the fulfilment of these duties for one's salvation. Also one has been given a **will of action** to promote himself within the different patterns of the religious, legal, and temporal frameworks. The first level deals with behaviour in houses (**adab al-buyut**), concerning the private conduct between family members. The second level encompasses one's behaviour in the context of the extended family (in the form of restrictions, permissions and enhancements) which involves what may be classified as semi-private behaviour among relatives (**adab al-qurba**). The third level governs relations among neighbours (**adab al-jiwar**) and so may be classed as semi-public behaviour. The fourth level refers to one's behaviour as a citizen and deals with civic affairs (**adab ʿammah**) including trades and commerce, which may be classed as public behaviour. The fifth level refers to one's behaviour within a muslim community, and deals with mutual interests in the communal affairs, hence classed as communal behaviour.

The integration of Islamic beliefs, worship, law and codes of behaviour, discussed above, has produced what we have classified as Muslim conduct. The following paragraph will attempt to investigate what influences have arisen from this conduct and in turn how these have affected city form.

Islam as a Conduct:
The Influence of Muslim Conduct on City Form

> "The Islamic city layout has a quite clear hierarchical structure that organises the city form, the most public to the most private spaces. The level of privacy is physically expressed by the width of the street, its uses and its general

> atmosphere, for which a multitude of factors are responsible. To read the nature of the space, to extract the organization principle is done naturally by the Islamic visitor, but it has to be learned by the uninitiated. This example illustrates that the imageability of a place is culture specific[13]."

The way finding in the Islamic city as observed by RAMEDI PASSINI depended on a clear hierarchy. To understand these hierarchical spatial arrangements let us first focus upon the level of conduct and later evaluate the influence of these conducts on the first city developed in an Islamic context, Madina, the city of the Prophet Muhammad.

The Communal Level

The communal level of conduct is formed by the week to week communal prayer. Beside the ritual prayers and the summons, the ceremony involves a measure of official, political and other non-religious events. The congregational prayers are attended by the whole urban community and that of villages in the vicinity. The prayers are led by the religious head and his community, both of whom need to integrate this weekly ceremony with their routine affairs. "O ye Believers when you are summoned to Friday prayers hasten to the remembrance of God and cease your trading... When the prayers are ended disperse and go in quest of God's bounty" [LXII, 10]. The congregational prayers have certain communal spatial implications. The place of worship must be large enough to accommodate the Muslim community in prayer and associated practices, including a place for funerary prayer. The place of worship is always oriented towards Mekka (the Qibla direction) and has to be easily accessible to all Muslims, including new arrivals and visitors. It should also be easily approachable from other places of collective gathering such as the sites of feast celebrations, cemeteries and market. This place of worship emerged as an expression of the mutual interest of the whole community as they participate in its activities and prayers, and is considered a strategic space, where all major events and circumstances take place. In turn this communal space affects the overall spatial form of the city.

The Public Level

This level of conduct is associated mainly with public affairs (mu'amalat 'amma) and is differentiated from communal religious conduct, but at the same time is associated with it. "Yet no sooner do they see some trading or merriment than they flock to it eagerly, leaving you standing (preaching) all alone. Say that which God has in store is far better than any trading or merriment" [LXII, 11]. Public conduct is fully subjected to the law and organized by the formula of, "the right of the way" according to a saying of the Prophet. He urged Muslims to avoid sitting in the street, and when they explained that these streets were their gathering places, the Prophet said: "If you insist then you should respect the right of the way", which he explained as, avoiding staring preventing harm, not causing harm, saluting back and biding to honour and forbidding dishonour[14]. The Prophet also said "If you disagree about the width of a street, make it seven cubits"[15].

The Neighbour Level

Prayer five times a day is enhanced by being performed collectively with members of one's local community and so the place allocated for these prayers should be able to accommodate the whole neighbourhood. This place also is oriented towards Mekka and should be accessible to the local community but not necessarily exclusively to it. The neighbour level of conduct follows certain organizational principles, including the rights of neighbours. These rights include a requirement not to obstruct fresh air and light unless permitted[16], not to prevent a neighbour from using an adjoining structure to support his[17], and not to prevent services like water supply or drainage from passing through one's property[18]. According to a saying of the Prophet, a neighbour has pre emptive rights over his neighbour's property. If they share common access, also the neighbour has rights of priority[19]. Change of use of properties is not permissible without the approval of one's neighbours. Neighbours should be regarded as sharing a mutual interest and concern, "Show kindness...unto the neighbour who is of kin (to you) and the neighbour who is not of kin... " [IV, 36]. One should endeavour to avoid harming one's neighbour interests "not to create harm and not to benefit of harm"[20]. Harm would include noise, unpleasant smells, intrusion of privacy and improper behaviour. The

mutual interest of neighbours would evolve in the form of grouping houses in clusters and creating semi-public spaces.

The Extended Family Level

Conduct within the extended family evolved as forms of priorities in relationships and obligations; "And those who accept faith in your company, they are of you. But kindred by blood are nearer to one another." [VIII, 75] These priorities were extended to cover wills and inheritance "To (benefit) every one we have appointed shares and heirs to property left " [IV, 7] (conduct between Kinsfolk)[21] gave rise to the semi-private spaces within the extended family properties.

The Family Level

This level of conduct deals with responsibilities within the family; "O ye who believe, save yourselves and your family from the Fire ..." [LXVI, 6]. Several Qur'anic verses and sayings by the Prophet[22] refer to these responsibilities which are discharged at the domestic level; "It is no virtue of ye to enter your houses from the back, it is virtue if ye fear God. Enter your houses through the proper way" [XXIV,]; "Who have not come of age, ask your permission {before coming to your presence} "[XXIV, 58, 59][23]. Family conduct is contained within the privacy of the house; "O ye who believe, enter not houses other than your own until ye have asked permission and saluted those in these... if ye are asked to go back, go back" [XXIV, 27, 28]; "... and when ye ask {Ladies} for anything, ask then from behind a screen; that makes for greater purity for your hearts and for theirs" [XXXIII, 53]. This conduct evolved in the form of a high level of privacy requiring certain spatial arrangements which emerged as private spaces within the house and the access to it.

Conclusion

Islam beyond the ritual submission to the one and only God, works in a way that brings one's beliefs into harmony with one's conduct. Islam regulates this conduct within the levels of behaviour (mu'amalat), worships ('Ibadat) and the law (shari'a), its aim being to unify the Muslim community (Umma) and to enhance the religious, legal, and civic conduct within the urban community. In worship, the law and

behaviour, certain hierarchies developed, in which conduct evolved at different levels; private, semi-private, semi-public, public and communal (see Fig.3). In turn these different levels of conduct led to different forms of spatial expression. At the level of the family, private conduct emerged in the form of the inward-looking house, with a high level of privacy. At the level of the extended family, semi-private conduct led to the grouping of a family dwelling, either by dividing the existing dwellings or by extending it. In this way semi-private spaces were generated within them. At the neighbour level, ties and relations have affected the neighbourhood groupings and led to the creation of spatial clusters with semi-public spaces. At the level of public conduct, spaces were mainly associated with trade and commerce. At the communal level, conduct is associated with congregational practices, celebrations and community interests. These different forms of spatial expression may be addressed as a concentric composition, with a hierarchical pattern ordered by the levels of conduct (see Fig.4), with the Qibla ordering its centre.

Foot Notes: Part One, I

1. GRABAR, O., **The Formation of Islamic Art**, Yale University Press, New Haven and London (1973), 104

2. QUR'AN, [VII, 172], "Am I not your Lord (who cherishes and sustain you)? - They said: "Yea! We do testify!". [II, 30], Behold, thy Lord said to the angels: "I will create a vicegerent on earth". Translated by Abdullah Yusuf Ali, Nadim & Co. London (1976)

3. HUSAINI, S., **Islamic Environmental Systems Engineering**, MacMillan Press, London and Basingstoke (1980), 2

4. HUSAINI (1980), 17, 24

5. MICHON, J., "The Religious Institution" in: The Islamic City, colloquium, Cambridge and Paris (1980), 24

6. Revelation of Islam occurred when slavery was a popular traffic. Islam contributed many pious practices that would encourage freeing slaves, one of which is the Zakat.

7. HUSAINI (1980), 24

8. Al-KHADARI, M., **Tarikh al Tashri^{c} al-Islami** (History of Islamic Law) Dar al-Kutub al-^{c}Ilmiya Beirut (1985), 6

9. HUSAINI (1980), 25-7

10. HUSAINI (1980), 16, 17

11. HUSAINI (1980), 18, 19

12. HUSAINI (1980), 20

13. PASSINI, R., **Way Finding in Architecture**, Van Nostrand Reinhold Co, New York (1984), 122

14. HADITH, no.5, Traditional saying of the Prophet, cited by HAKIM (1986), 147

15. HADITH, no.4, Traditional saying of the Prophet, cited by HAKIM (1986), 146

16. HADITH, no.44, Traditional saying of the Prophet, cited by HAKIM (1986), 154

17. HADITH, no.45, Traditional saying of the Prophet, cited by HAKIM (1986), 154

18. SAMHUDI, N., **Wafa^{c} al-Wafa bi-Akhbar al-Mustafa** (in Arabic) Dar Ihya' al-Turath al-^{c}Arabi, Beirut (1984), II, 1079

19. HADITH, no.46, Traditional saying of the Prophet, cited by HAKIM (1986), 154

20. HADITH, no.34, Traditional saying of the Prophet, cited by HAKIM (1986), 152

21. QUR'AN, [XXIX, 61], [XXXIII, 6], [II, 83]

22. HADITH Saying of the Prophet, "Every one of you is a protector and guardian of his immediate charge and is responsible for the actions of those people who committed to his charge. A ruler is also a steward and is accountable for those who are put under his charge. A man is a steward in respect to the family members of his house. A woman is a steward in respect to her husband's house and his children. In short every one of you is a steward and is accountable for those who are placed under your care."
Note: To be a "steward" means to be responsible for. Al-FAHIM, A., **The 200 Hadith**, (Translation) Printing and Publishing Co. Abu Dhabi (1988), 125

23. QUR'AN, Translation by Abdullah Yusuf Ali.

FIGURE 3
THE ROLE OF TIME AND SPACE IN TRANSFERING THE ISLAMIC PRECEPTS INTO CONDUCT

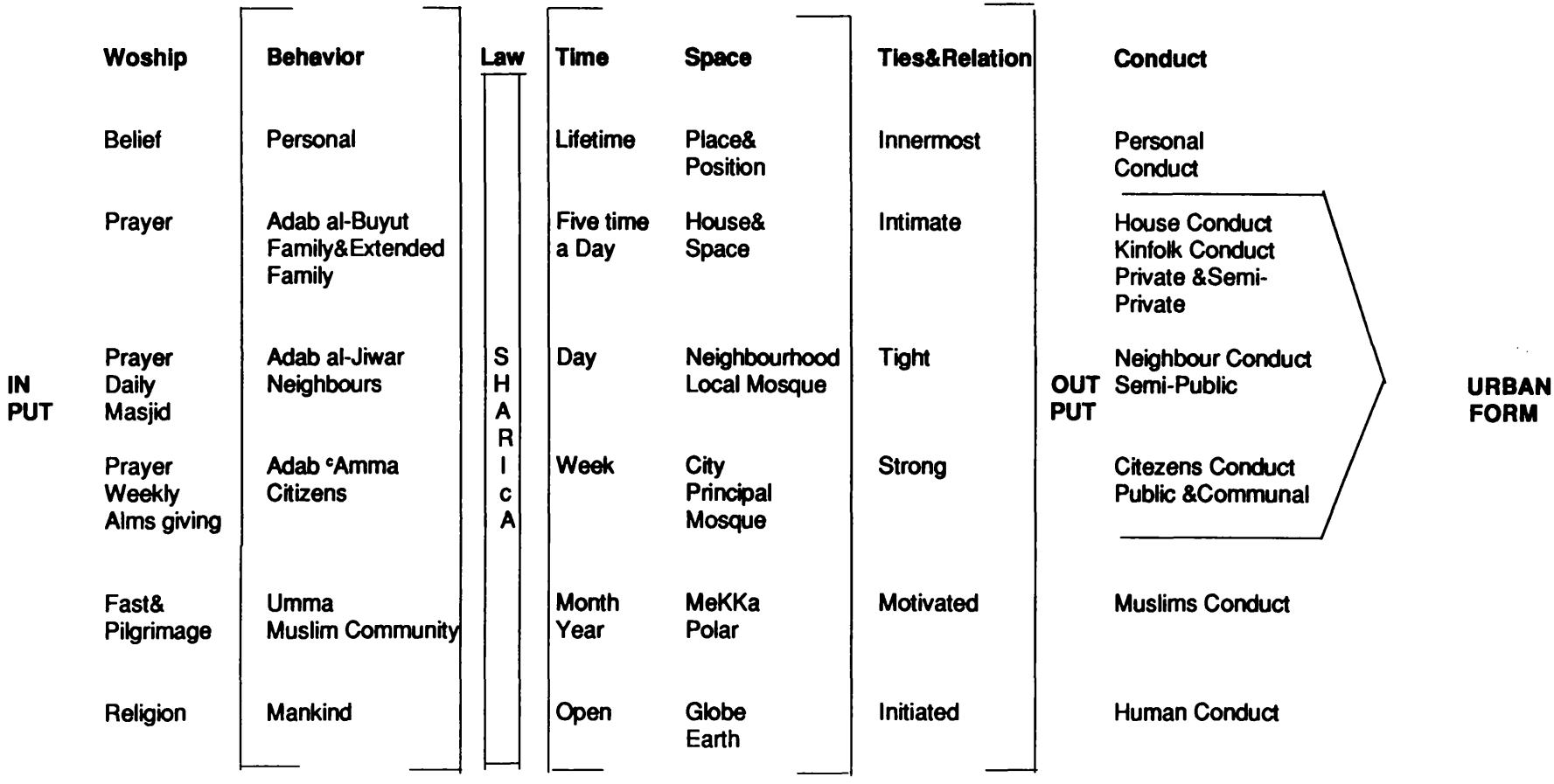
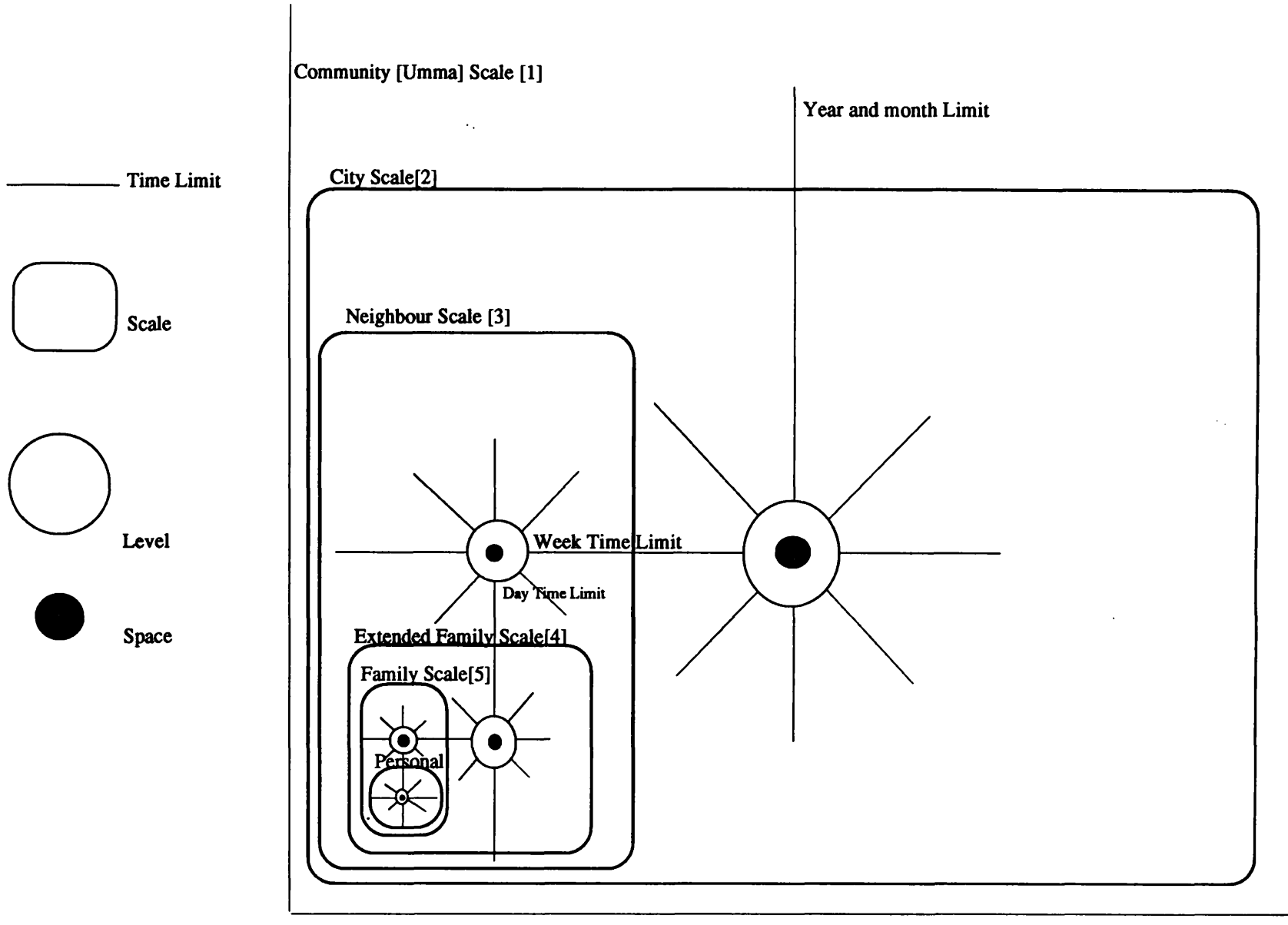


FIGURE 4
SCHEMA OF THE SPATIAL-TEMPORAL PATTERN
IN THE TRADITIONAL ISLAMIC CITY



II. THE EMERGENCE OF THE TRADITIONAL ISLAMIC CITY

Madina: The City of the Prophet

> "Madina was - and to a large extent has never ceased to be - the model Islamic city, whose example inspired the founders of the first [Islamic] cities ... Just as it has never ceased to serve as a point of reference down the centuries for the reflection and modes of action of Muslim law makers and rulers"[1].

Madina before Islam was known as Yathrib. It seems to have consisted of scattered groups of tribal settlements with few houses. There were several market places on the edge of each tribal settlement, where local festivals were celebrated[2]. The people included settled and nomadic societies, some living in simple mud-brick dwellings or, in the case of the nomads, in temporary camps. They made their living by selling crops and local fruits to caravans passing through the town. Some like Aws and the Khazraj tribes, had emigrated there from southern Arabia after Ma'rib Dam burst in the mid second century B.C., destroying their farmlands[3]. Most of Yathrib's people were pagans, others practised Judaism or Christianity.

The Early Process of Urban Formation in Madina

Prophet Muhammad was born in Mekka, the main religious and urban centre of the Arabian peninsula, 200 miles south of Madina, where pagan rituals had been performed in the old sanctuary there, built in place of previous sanctuary by Abraham. He was forced to migrate in 622 A.D.[4], it was said that on his approach to Madina the prophet passed close by the settlement of every tribe, one of which was called Qiba', Banu ᶜAwf,

three miles from Madina. There he stayed for several days[5], where he and his companions and the original settlers erect a Mosque, the "Qiba' Mosque ". Although Muslim historians mentioned a number of prayer places in Madina before the Prophet's migration[6] it appears that the Qiba' Mosque was the first to be founded by the Prophet even before his mosque in Madina. On his way from Qiba' to Madina he and about forty of his companions performed the Friday prayer in the Banu Salem settlement.[7]

In Madina he followed a route to an area in which he erected his Mosque, his house and his companions' houses. On his way to that site he passed most of Yathrib's tribe, groupings. Each tribe repeatedly invited him to stay in the settlement[8], but the prophet said, "leave her [his camel], she is guided". SAMHUDI after IBN ZIBALA died in 199/814 comment[9].

> "Prophet Muhammad choose a place for his place of stay, from the areas he passed, in position in which he intended to be in the centre between the original settlers (al-Ansar)".

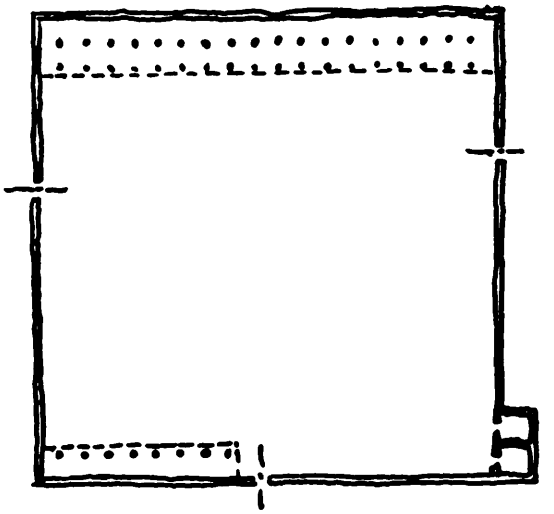
al-Matari[10] added that this did not conflict with what had been previously said, as, "God chose to him what he would chose to himself."

The site was an open space which belonged to two orphans. The Prophet bought the land from their guardian As'ad ibn Azara[11]. Based on the description of Muslim historians and geographers, several attempt have been made to reconstruct the spatial arrangement of the original mosque, built by the Prophet and enlarged by the Caliphs who

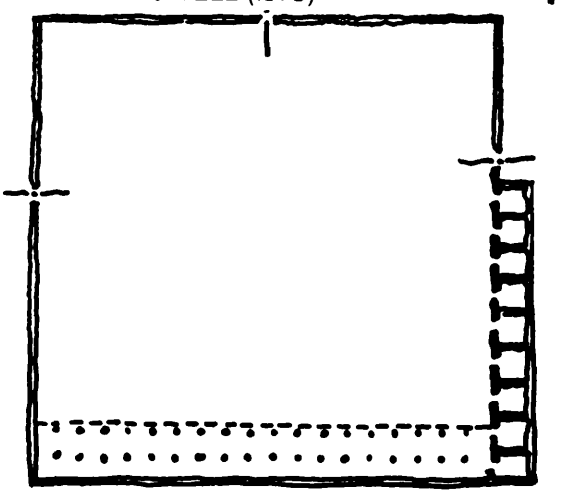
succeeded him, (see Fig.5). In spite of several contradictions in the details of the structure[12], it is generally agreed that the mosque comprised a large rectangular open space, surrounded by a sun-dried brick wall, with one opening on each side, except the Qibla side (prayer direction side). The mosque's square shape (31x36 m. approx.) was originally orientated north towards Jerusalem. Its north side, the Qibla side, was covered with two or three rows of palm-trunk porticoes with six or seven bays wide[13]. The mosque was enlarged by the Prophet in the year 8/630 to (52x52 m. approx.),[14] and its porticoes to ten or twelve bays. On the south [rear] side was another portico, called the Sufa. The Sufa extended from the west side for nearly half the length of the south wall. On this south side and on the east side were a number of rooms and houses, built mainly of sun-dried brick[15]. No definite description or later deduction has allowed us to reconstruct the original arrangement of these rooms of the Prophet or his companions' houses[16].

When the Qibla direction was altered from north towards Jerusalem to south towards Mekka (17th or 18th month A.H - 624 A.D), (see Fig.5), the two light porticoes were exchanged in position[17]. The mud brick houses remained where they were with their doorways now opening on to the prayer porticoes. The Prophet ordered that these openings be closed except those of the houses of **Abu Bakr** his first successor and of ᶜAli his fourth successor[18]. The three main entrances to the mosque were located, one in each of the east, west and south sides. The latter

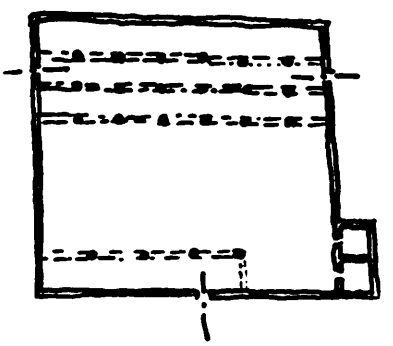
5.1 The Prophet Mosque,
Qibla direction towards Jerusalem,
after CRESWELL (1979)



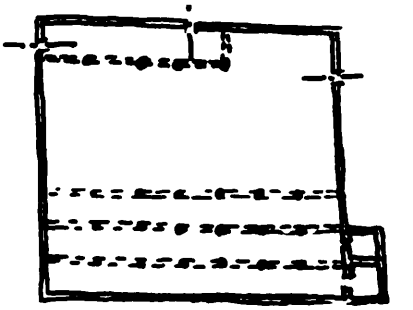
5.2 The Prophet Mosque,
Qibla direction towards Mekka,
arter CRESWELL (I979)



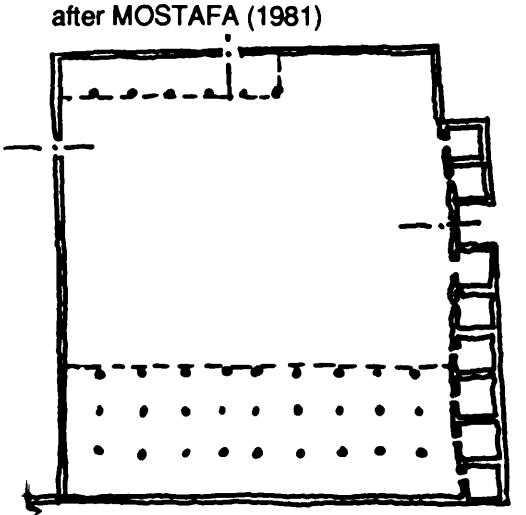
5.3 The Prophet Mosque,
before the first enlargement,
Qibla direction towards Jerusalem,
after MOSTAFA (1981)



5.4 The Prophet Mosqoue,
before first enlargement ,
Qibla direction towards Mekka,
after MOSTAFA (1981)



5.6 The Prophet Mosque,
after first enlargement,
after MOSTAFA (1981)



5.5 The Prophet Mosque,
after AKKOUCH (1940)

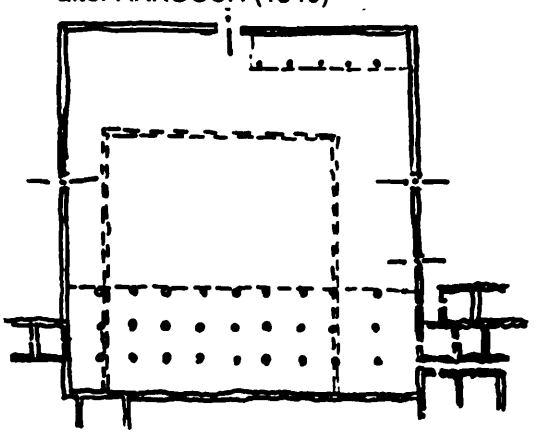


FIGURE 5
CONFIGURATION OF THE EARLY SPATIAL ARRANGEMENT
OF THE PROPHET MOSQUE

was moved from the south to the north side after the change of Qibla direction[19].

Madina after the Prophet's Migration

The process of Islamization began in Madina some time before the Prophet's migration to it. Historians mentioned that a reasonable number of Muslim believers had moved from Mekka to Madina before the Prophet[20]. It was said that a Mosque had been built by As'ad ibn Azara and that it was used by the Prophet and his companions before his mosque was built near to it[21]. Other mosques were located in the tribal settlement[22].

While no radical changes appear to have been made by the Prophet to the original spatial setting of Yathrib, the setting of his mosque in the centre influenced the later urban development of Madina and turned it into a concentric composition. To verify this influence, one must examine other evidence such as the role of the mosque as a communal centre for urban development, the internal layout of the mosque, the interrelationship between the mosque and other communal and collective spaces, such as the Feast Prayer Place (Musalla al-'Id), the Market (Suq), cemeteries and residential areas and their influence on the urban form.

The Mosque as a Communal Place

The Prophet's mosque could be considered as a communal religious place having an important influence on the urban form, for Medina's Muslims

were to attend and perform the Friday prayer in unity there. It is reported that a group of settlers living on the edge of Madina asked the Prophet to permit them not to attend the Friday prayer because sometimes flash floods prevented them from coming to the Prophet's mosque and they asked if they could perform the Friday prayer in their local mosque instead. The Prophet responded by asking them if they would change their houses and to come to live in Madina.[23] Thus the ritual of Friday prayer in turn would influenced the urban and transformed the scattered discrete entities of the tribe's houses into a new urban grouping, centred on the congregational mosque.

The report cited above implies that each urban centre should have only one congregational mosque, the location of which should be within easy reach of all members of the urban community. This mosque should be large enough to accommodate them all.

The Position of the Mosque in the Urban Framework

An interpretation may be deduced from the physical layout of the mosque's open-court, the prayer porticoes, the Sufa, the houses of the Prophet and of his companions, which would lead to an understanding of the Muslim's early established attitude to the urban framework. At the architectural level, the mosque was meant to be a simple modest structure[24]; neither the Prophet nor his first four successors left any attempt to build a major monument of Islamic architecture[25]. Oleg GRABAR wrote that :

> "One may wonder why the Prophet did not develop a uniquely Muslim sanctuary beyond the Mystical haram in Mecca?...[26]

The mosque was regarded by Muslims as an urban sanctuary in which the law was implemented and obeyed by both the community and the representatives of Divine authority; thus affirming the fundamental interrelationship between religious and temporal conduct and emphasizing the relationship between the Muslim and his society.

However, one may question to what extent the modest spatial arrangements of the Prophet's Mosque would justify the above statement concerning its role in the urban framework, and ask how these relationships cope with urban complexes that evolved later within the Islamic Empire. (The second part of this thesis will deal with the evolution of the Islamic city and its spatial composition, and will attempt with the aid of diagrams to present and explain the developed urban framework).

Starting with the Prophet's Mosque, these relationships may be represented by a four-sided frame containing (as its Kernel) a communal open space where practical, religious official and other communal activities took place, and where the members of the community would witness and participate in these activities[27]. The first of the frame sides is that facing Mekka, the Qibla, on which focused such religious activities as daily and Friday prayers, as well as the announcement of religious and secular events. This Qibla side and the side right of it (when facing towards the Qibla), where the houses of the Prophet and his companions were located, representing religious, political and temporal authority. On the third, left side the spatial framework goes

beyond the mosque boundary to another space where public activities and implementation of the law took place[28]. On the fourth, rear, side opposite the Qibla was a refuge for new comers and homeless or poor members of the community (see Fig.6). The time cycle in the mosque is punctuated by the call to prayer five times a day. As the days lengthen and contract gradually through the year, Muslims used to calculate the times of prayer by the length of the shadow of a stick stuck in the ground in the open space and by daily variations in the time of sunset and sunrise. The five prayer times inevitably established the pattern of daily life (see Fig.7). Thus the layout of the mosque encompassed and regulates religious, legal, political, and charitable activities, forming the basic framework of communal conduct.

In the collective prayer the participants stand in upright stances behind the Imam (the religious and temporal leader), this act orders and ties the participants in a sort of unity between themselves and the religious and temporal authority. As all prayers are made facing the Kaʿba in Mekka, so the whole Muslim community is brought into a sort of concentric spatial uniformity (see Fig.8).

The Size of Mosque in Relation to the Size of the Early Setting of Madina

> "The Friday Mosque [Masjid al- Jumʿa] became not only the centre of religious activities, but also the assembly place of all the inhabitants of the city, a clearing house, a place of contact for everyone, a kind of Forum or Agora "[29].

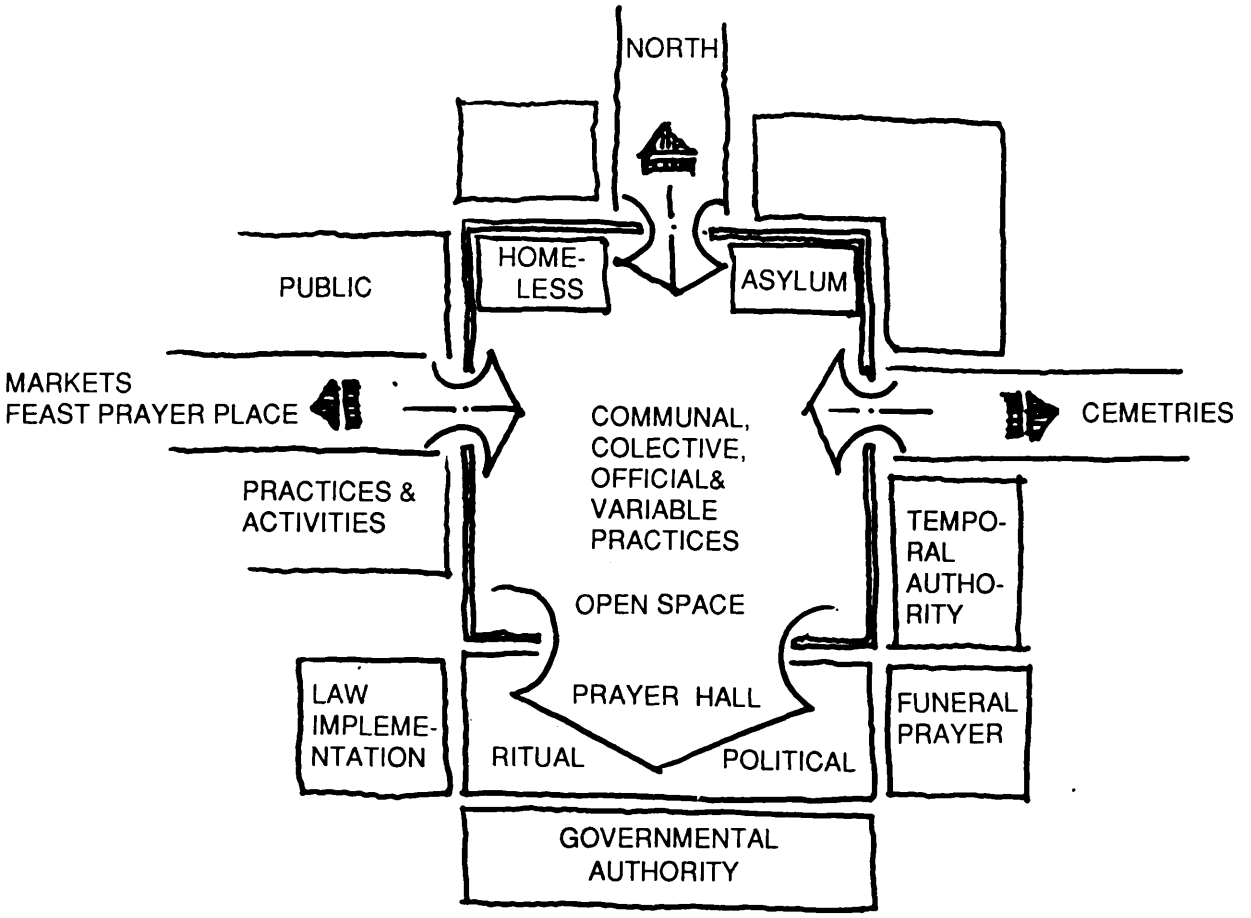


FIGURE 6
SPATIAL FRAMEWORKS AND ACTIVITIES
IN THE EARLY LAYOUT OF THE PROPHET MOSQUE

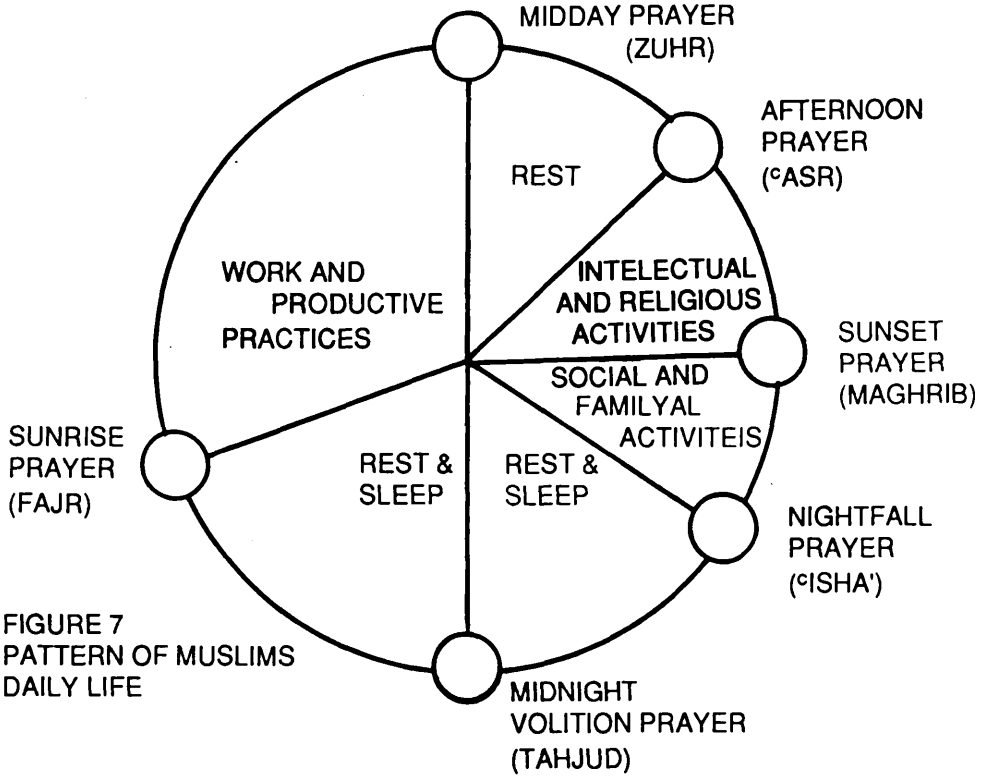


FIGURE 7
PATTERN OF MUSLIMS
DAILY LIFE

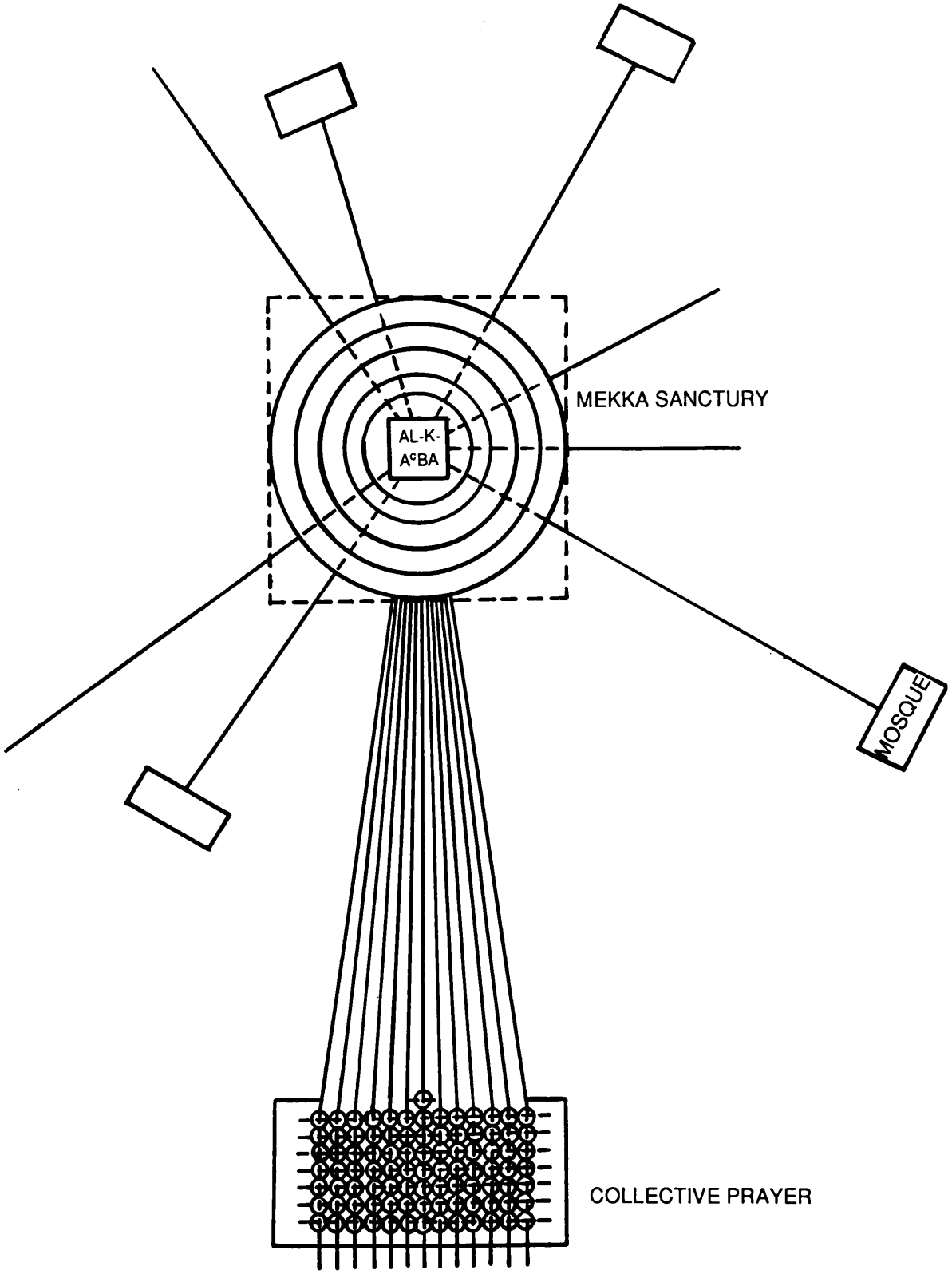


FIGURE 8
FACING TOWARD MEKKA AS A CONCENTRIC UNITY

In order to envisage the Mosque in the urban context we may refer to Madina's urban growth after the Prophet's migration and the first enlargement of the Mosque by the Prophet. The original Mosque area, built in the eighteenth month of the **Hijra** (the Prophet migration), [1110 sq.m approx] served two hundred and fifty to three hundred house holds. In the following six years the number of households grew rapidly to reach seven or eight hundred[30]. The Mosque was then enlarged in 8/629-630 to 2700 sq.m approx. To formulate a ratio between the size of the Mosque and the urban composition of Madina, we may consider an average 110 sq.m modest three rooms [3.5 x3.5] native house with an open yard[31]. Within this formula both the urban growth and the Mosque enlargement reached a ratio of nearly 1:30 (see Fig.9). As Figures 10 and 12 show the Mosque acquired an area equivalent to that of twenty to twenty five houses of the type described above. Also eighteen or twenty houses could be built against the walls of the mosque, almost five on each side (see Fig. 10,11). Thus the Mosque, size and role, in the urban context of Madina was comparable to the Agora's role in the urban context of the earlier, Greek town[32].

Other Collective Spaces in Madina

We may divide the other collective spaces into two categories. The first deals with the religious, communal, public and utility spaces (prayer places, cemeteries, markets, etc.). The second deals with the private and semi-private residential spaces.

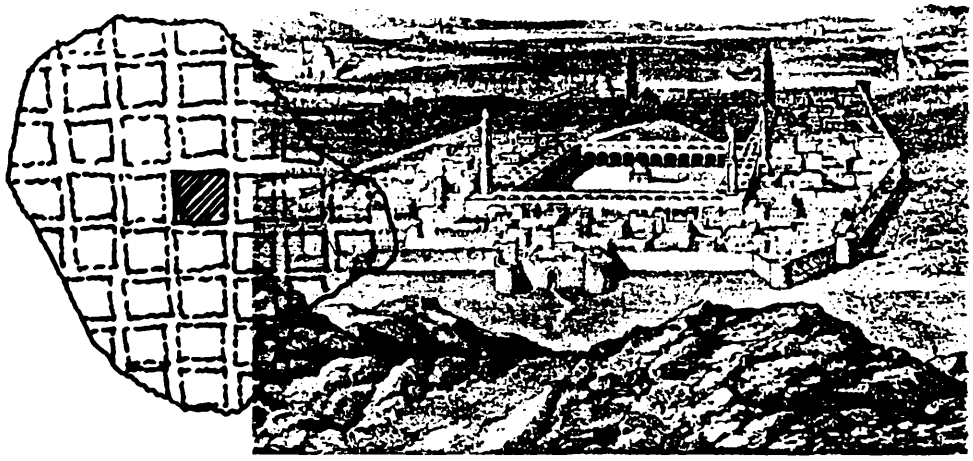


FIGURE 9
THE SIZE OF THE PROPHET MOSQUE
IN RELATION TO THE EARLY SETTING
OF MADINA, AT THE TIME OF THE
PROPHET

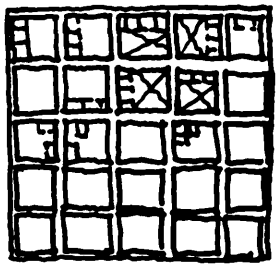


FIGURE 10
THE SIZE OF THE PROPHET MOSQUE
IN RELATION TO THE SIZE OF THE
DOMESTIC HOUSES OF MADINA, AT
THE TIME OF ITS EARLY FOUNDATION

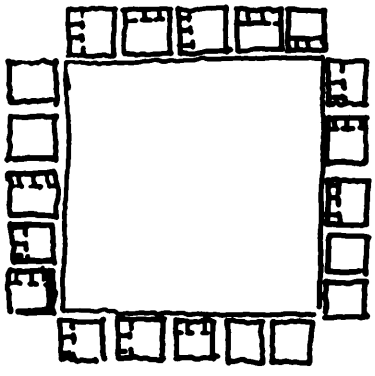


FIGURE 11
THE MOSQUE CIRCUMSCRIPTION
IN RELATION TO THE HOUSES SURROUNDING IT

Musalla al-ʿId [the Feast Prayer Place]

The Musalla al - ʿId was an open space where the **Fitr** and the **Adha** feasts were celebrated. These celebrations were performed by the whole community. It is likely that the Prophet allocated space on the west edge of Madina.[33] Historians reported that the Prophet used to go to and return from the musalla by two different routes[34] and in so doing generated more than one path way between the Mosque and the Musalla.

The Cemeteries

Before Islam, each tribe's cemetery was located near its settlement[35]. The Prophet contributed land for a single collective cemetery, where each tribe had its own area, on the east edge of the town, called Baqiʿ al-Gharqad. All later funeral processions headed from an open space associated with the mosque[36] by a pathway eastward to the cemetery. The cemetery was still known until recently, as well as the street connecting it with the mosque.

The Suq (Market-Place)

As mentioned above, it appears that before Islam there was no permanent market in Madina[37]. To create a permanent Market-place, the Prophet first examined a number of possible locations. One of these was the Banu Qunayqaʿ Market, in the Jewish settlement near Madina. SAMHUDI records that the Prophet allocated an open space near the west-side of the Mosque and said "This is your market-place, it should neither be built or its area reduced, nor **Khiraj** (taxes) should be levied in it"[38]. One of the landowners objected to this choice of site, and as

a result, the Prophet considered other sites. The original settlers afforded several alternatives. In the end the Prophet chose an open space near the Musalla[39] and said "This is your market-place ... ". It seems that later Muslims beheld the original choice of site as a result of an intimate relationship between the Friday Mosque and the Market-place. In the later development of the town, it appears that the Market grew in the direction of the Mosque until the two became closely related to each other[40]. Also, one may deduce from the site of the second Market place near the Musalla that there was no contradiction between religious communal activities and commercial practices, for Muslims must integrate their daily affairs with their religious activities.

Environment Preservation and Services

The preservation of the natural resources of Madina [hima al - Madina] was advocated by the Prophet. No tree could be cut down or otherwise damaged, if one was mistakably destroyed it should replaced by planting a new one. Wild life was also protected and a person was appointed specifically to look after the preservation of natural resources[41] This action preserved a green area around Madina, creating a sort of buffer zone, known as al-Manakhah, was used as a wholesale market and remaining an open space until recently (see Fig.12).

Services were distributed and shared by Muslims on the basis of equal rights for all. The Prophet said "Muslims are partners in water, fire (energy sources) and pasture." No one should prevent water from passing through his land[42], though it was permissible to hold water to

form a pool no deeper than the ankle-height. The Prophet inspected the market place and other public areas and was in effect the first inspector (**Muhtasib**) of the public affairs.

The Residential Setting in Madina

Very little can be said about the earlier residential character of Islamic Madina, but a particular event would help us to some extent to picture the configuration of houses and residential quarters. The Prophet established brotherly relations between immigrants and the original settlers[43]. Some of the latter endeavoured to donate their properties or land, either by subdividing part of it for their brothers in Islam, by giving, unoccupied space between their houses, or by donating a whole residential area and asking the Prophet to divide it between themselves and the immigrants[44].

The Prophet strove to allocate the land in quarters or districts (**Khitat** sing. **Khitta**) and plots (**Qata'i^{c}** sing. **Qati^{c}a**). The Khitta is a delineated plan bounded by lines (**Khutut** sing. **Khat**)[45]. It seems that the original settlers used natural landscape-features like cliffs, trees and paths to define their properties. The Prophet probably used such features in delineating these **Khitat**. Early historians refer to natural features in their descriptions of Madina, later on they started to use the line (**Khat**) street (**Tariq**), the square (**Muraba^{c}a** or **Rahba**) to describe the later development of the town.

While the quarters (Khitat) allocated by the Prophet were large areas, the plots (Qata'i^{c}) he allocated were small areas and were more or less regular in shape. According to the historians descriptions of land subdivision in Madina,[46] we may conclude that the plots were mainly near or contiguous to the mosque and were given to individuals, the companions of the Prophet, and the first converts. Quarters (Khitat) were situated some distance from the Mosque and were allocated to a group of families, tribes, or new Muslim arrivals. The internal subdivision of the quarters was left to the residents themselves.

Conclusion

To conclude, the original society of Madina lived in a more or less rural, nomadic setting with tribal encampments and houses scattered about in green open spaces. There was no permanent Market and usually each tribe held its Market on the edge of its settlement. After the Prophet's migration, he endeavoured to improve the local environment. He allocated particular sites for religious, communal and public activities and ensured the preservation and distribution of the natural resources. The Prophet's Mosque and the other collective spaces became the foundation of the public and communal structure of the town, roads and pathways came as a result of the general structure, which connect or extend between the Friday Mosque and the market, Musalla, cemetery and the routes out of the town. Since the Prophet chose different ways for going and returning from the Musalla, more than one street connected the Musalla with the mosque. The Prophet succeeded in distributing donated land and properties between settlers and new

immigrants, allocating land either as plots near the Mosque or as quarters some distance from it. Subdivision of quarters was left to the residents. We may conclude from this allocation and distribution of land that various categories of public and private space evolved. Houses were of course, private, the spaces between houses were semi-private, the spaces between, either gave access to different quarters or acted as boundaries and so were semi-public, and spaces between areas of collective activities (mosque, musalla, cemetery and destinations) were public, serving as collective and distribution spaces between these areas and the various quarters, and space enclosed by the mosque precinct acted as communal space where the whole muslim community assemble in prayer and other activities of mutual interest (see Fig.13).

Thus a diagram based on this evidence (see Fig.14) illustrates the early layout of Madina, which will serve as the basis for our investigation of the evolution of the traditional Islamic city.

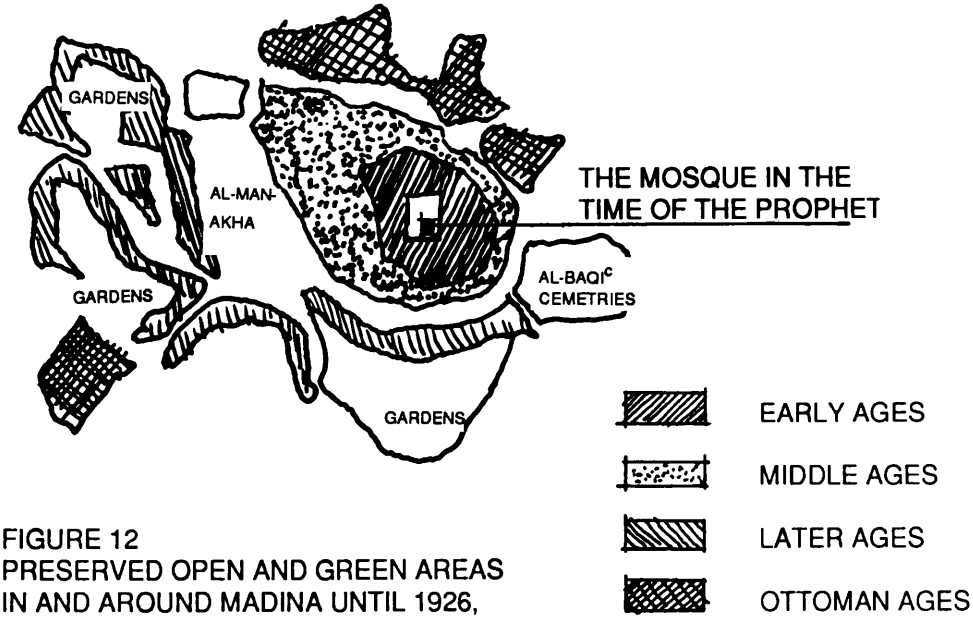


FIGURE 12
PRESERVED OPEN AND GREEN AREAS
IN AND AROUND MADINA UNTIL 1926,
after MOSTAFA (1981)

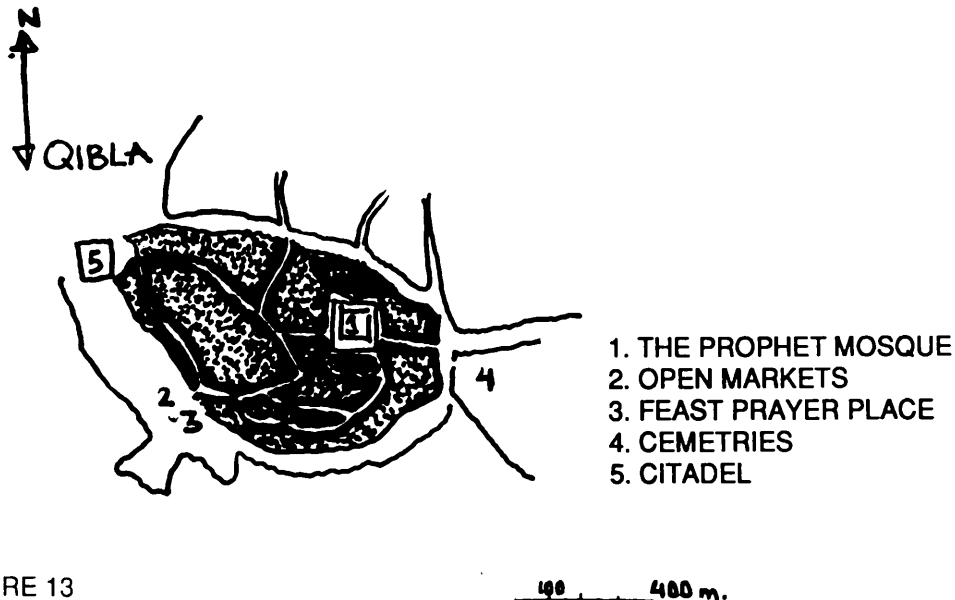


FIGURE 13
TRADITIONAL SPATIAL STRUCTURE
OF MADINA IN 1815 ,after BURTON/MOSTAF(1981)
Probably remianed faithful to that ,that
developed in the early stages of the city
evolution

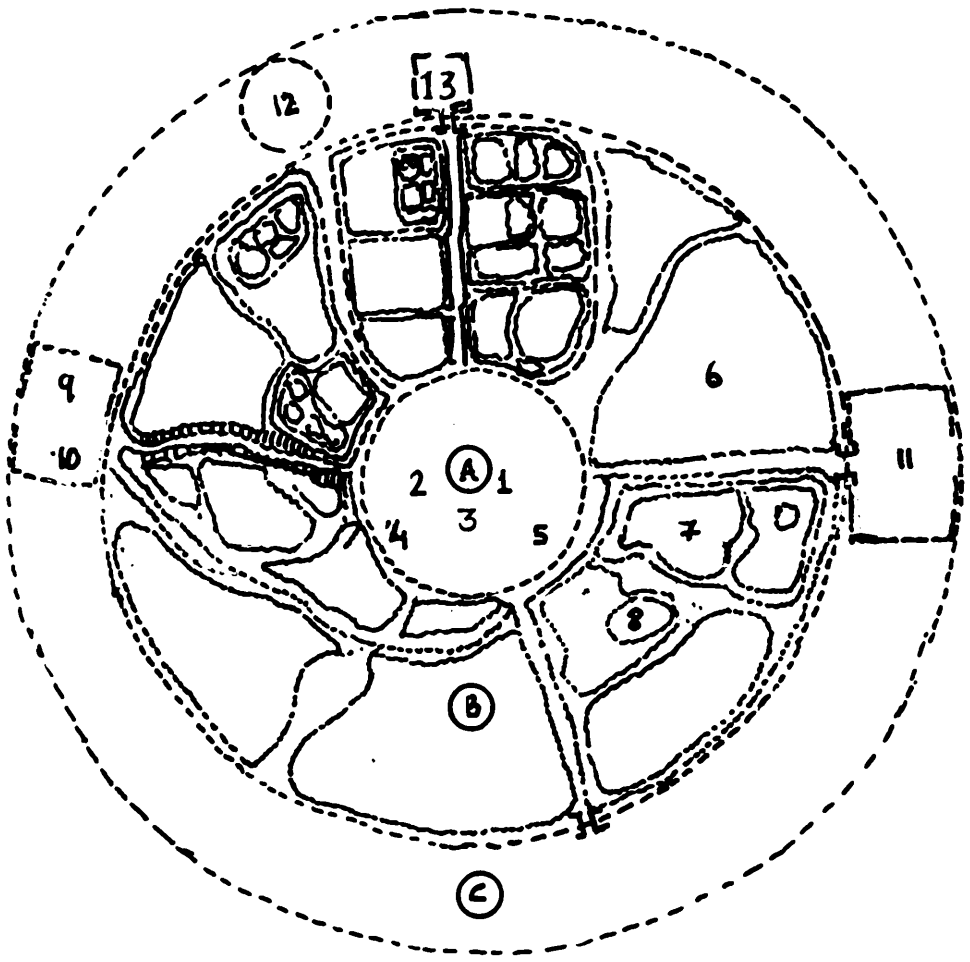


FIGURE 14
SCHEMATIC CONFIGURATION OF THE EARLY SATIAL PATTERN
AND FRAMEWORKS OF MADINA AND LATER EARLY ISLAMIC CITIES

A. CENTRAL ELEMENTS :

1. THE MAIN MOSQUE
2. MARKETS
3. GOVERNMENT HOUSE
4. OPEN SQUARE
5. FUNERAL PRAYER PLACE

B. INTRA URBAN:

6. DISTRICTS
7. QUARTERS (KHITAT)
8. HOUSES LOTS (QATA'I[c])

C. PERIPHERAL ELEMENTS:

9. OPEN MARKETS
10. FEAST PRAYER PLACE
11. CEMETRIES
12. CITADEL
13. GATES OR DESTINATIONS

Foot Notes: Part One, II

1. MICHON (1980), 15

2. SAMHUDI (1984), I, 190-215, 747

3. HITTI, P. **History of the Arabs from the Earliest times to the Present**, St.Martins Press, London(1984), 54

4. MOSTAFA, S.L., **al-Madina as Munawara** (in Arabia) Dar al-Nahda al 'Arabiya Beirut (1981), 10
   The date of the Prophet migration from Mekka to Madina is taken by the Muslim as the start date of the Muslim calendar, which is based on the lunar year, and will be referred to hereafter as A.H., After Hijra (Migration).
   Note that the lunar calendar is 11 days less than the sun calendar.

5. SAMHUDI (1984), I, 244-6; GRUNEBAUM, G.E.Von, "The Sacred Character of the Islamic Cities" in **Melanges Taha Husain**, Cairo (1962), 31

6. SAMHUDI (1984), I, 250, after Ibn Shaba, from Jabir he mentioned that "we have stayed two years before prophet migration to Madina, in which we erected mosques and performed prayers"

7. SAMHUDI (1984), I, 258

8. BALADHIRI, A, **Futuh al-Buldan**, Dar al-Kutub al ᶜIlmiya Beirut (1983), 20

9. SAMHUDI (1984), after Ibn Zibala, I, 262

10. SAMHUDI (1984) after Matari, I, 262

11. CRESWELL, K.L.L. **Early Muslim Architecture**, Hacker Art Books, New York, (1979), I, 6

12. As the Prophet Mosque in Madina was enlarged and rebuilt several times, no accurate configuration, of its original layout is possible, except from Historians and Geographers descriptions. Inaccurate reports and misinterpretation led to contradicted configurations.

13. SAMHUDI (1984), I, 332-59, inclined to assert that the Prophet's Mosque was first built of three

porticoes and of seven bays, while later enlarge to 10 or 12 bays.

14. JAIRAZBHOY,R.A., "The History of the Shrines at Mekka and Madina, in Islamic Review Jan/Feb (1962), 28; SAMHUDI (1984), 338-40; MOSTAFA (1981), 56-8

15. MOSTAFA (1981), 57, 58; SAMHUDI (1984), I, 458-70, 472; IBN RUSTA, al-Aᶜlaf al-Nafisa, E.J.Brill, Leiden (1891), 64

16. MOSTAFA (1981), 57; SAMHUDI (1984), I, 359-64

17. SAMHUDI (1981), I, 367-70; MOSTAFA (1981), 58

18. SAMHUDI (1984), 472, 688

19. MOSTAFA (1981), 57; SAMHUDI (1984), I, 337, 473-80

20. SAMHUDI (1984), I, 250

21. BALADHIRI (1983), 20; SAMHUDI (1984), I, 325

22. SAMHUDI (1984), I, 250

23. SAMHUDI (1984), I, 203

24. SAMHUDI (1984), I, 327

25. IBN RUSTA (1891), 66; SAMHUDI (1984), 339, 481, 501; MOSTAFA (1981), 64, From Samhudi after Bukhari, he mentioned, that Umar the second caliph ordered those who rebuilt the mosque to do their job in a way which would prevent rain water from falling on the people in prayers, and not to add any embellishment which would draw the attention of the people and deviated them from concentrating in their prayer.

26. GRABAR (1973), 108

27. CRESWELL (1964), 10; GRABAR (1973), 107, 108; JAIRAZBHOY (1962), 28; MOSTAFA (1981), 12, 59, 61

28. SAMHUDI (1984), 734, 735

29. FISCHELL, W.J., "The City in Islam" in Middle Eastern Affairs, June/July (1956), 230

30. MOSTAFA (1984), 12, concluded that the number of households at the time of The Mosque first construction was 200-300, while after six years

and the first enlargement of the Mosque, the number of households was 700-800

31. In estimating a native house-size in Madina in the Prophet's time we may refer to two information sourses, first, that part of the houses at that time possibly consisted of two floors. SAMHUDI, (1984), I p.264, reported that the prophet stayed in the upper level in the house of Abu Ayub al-Ansari, before erecting his house. The second according to CRESWELL, (1979), p.8 The rooms of the Prophet's house were 3.5x3.5m. Then a modest house with three rooms of the above size, distributed on one side of an open court, would lead to a 10.5x10.5m lot size, that is 110m^2 plot.

32. SAUVAGET, J., "Le Plan de Laodicee-Sur-Mer" in Bulletin d'Etudes Orientales, 4, (1934), 108, 109

33. SAMHUDI (1984), II, 780-3

34. SAMHUDI (1984), II, 792

35. SAMHUDI (1984), I, 748

36. SAMHUDI (1984), I, 734, 735

37. MOSTAFA (1981), 10; SAMHUDI (1984), I, 747

38. SAMHUDI (1984), I, 748

39. SAMHUDI (1984), I, 748

40. MOQADDASI, S.D., **Ahsan al-Taqasim fi Ma'rifat al-Aqaleem**, E.J. Brill, Leiden (1877), 80

41. SAMHUDI (1984), II, 1039, 1083-85; BALLADHIRI (1983), 22-3; HAMAWI, Y., **Mu'jam al Buldam** (in Arabic), Dar Ihya' al-Turath al-'Arabi, Beirut, (1979), V, 870

42. BALADHARI (1983), 23-4; HAKIM (1986), 148; SAMHUDI (1984), II, 1079

43. SAMHUDI (1984), I, 267

44. Several historians indicated and reported that the Prophet assumed to himself chief responsibility for distributing the lands between the original and immigrant settlers. SAMHUDI (1984), I, 717-8; HAMAWI (1979), I, 86; BALADHIRI (1983), 20; YA'QUB, A., **Kitab al-Buldam** (in Arabic) Manshurat al-Mutba'a al-Haydariya, al-Najaf (1957), 73,

reported that the Prophet after arriving at Yathrib (Madina), he distributed the lands between the original settlers and the emigrants. He commented "and the when people delineated their areas, the dispersed and discrete entities became contiguous city".

45. GUEST, A.R. "The Foundation of Fustat and the Khittahs of that Town" in, **The Journal of the Royal Asiatic Society of the Great Britain and Ireland**, London (1907), 57 "From its roots, Khittah seems to convey the idea of marking out with a line, its general meaning is ground occupied for the first time, a 'pitch' or holding; hence it comes to mean a site of any sort."

46. SAMHUDI (1984), 718-34, quoted many historians, who referred to the land distribution into Qata'i^{c} and Khitat (plots and quarters)who gave impression that Qata'i^{c} were given to individual while Khitat to group of people.

PART TWO: THE EVOLUTION OF THE TRADITIONAL ISLAMIC CITY

PART TWO: THE EVOLUTION OF THE TRADITIONAL ISLAMIC CITY

Traditional Islamic City: Background Classifications

In the past, authors have tended to devise a system of classification when describing traditional Islamic cities.

Muslim geographers often classified towns according to their early place in an administrative structure. Al-MOQADDASI, for example, in his **Ahsan al-taqasim fi ma'rifat al-aqalim** (the best classification for knowledge of region) written around the year 375/985, classifies towns by comparing them to the status of individuals in a kingdom. The **Misr** (pl. **Amsar**), the administrative capital of a region, is compared to the king. Examples of such cities include Cairo, Baghdad, Qayrawan and fourteen other metropolises. The **Qasaba** (pl. **Qasabat**), a provincial capital, is compared to a government minister. Examples include Benghazi, and seventy-five others. The **Medina** (pl. **Mudun**), a market town, is compared to a cavalry officer. The **Qarya** (pl. **Qura**) a village dependent on agriculture, is compared to a foot soldier[1].

Other systems have been devised by later authors to classify cities according to their function, whether they existed before Islam or were newly founded, their geographical location or their date of foundation or dynastic affiliation[2].

In these classifications the city's function, related to the time of its founding, may be categorized as camp settlement, sanctuary settlement, fortress settlement or princely settlement[3]. Camp settlements are mainly associated with the rise and spread of Islam; they served as bases to administer and control newly conquered provinces, from which Muslim armies were dispatched to further conquests. Examples of such settlements are Basra and Kufa in Iraq, and Fustat in Egypt. Sanctuary settlements are associated with a shrine or a religious event which occurred on or near the site. Renowned of their religious associations, many sanctuary settlements also played a role in political events. Example of this type are Kerbela in Iraq and Mashhad in Iran. A third type of perceived functional division is the Ribat, a fortified settlement,

garrisoned by religiously motivated troops who defended the Islamic frontier and on occasion embarked on further conquest. Examples of this type are Rabat, Sus and Monastir on the North African coast. The fourth functional division comprises royal and administrative centres which form the majority of surviving Islamic cities. The reason for their founding are categorized variously as political, military, administrative and even psychological. Examples include Wasit, Hashimiya, Baghdad and Samarra in Iraq, al-Qata'i[c] and Cairo (al-Kahira) in Egypt, Fez, Marakesh and Raqada in North Africa, Madinat az-Zahira and Madinat az-Zahra in Spain and many others throughout the Islamic Empire (see Fig.15).

PAUTY proposed in 1951 that Islamic cities fall into two distinct categories "spontaneous" and "created" that is pre-Islamic settlement captured by the Muslims or Muslims settlement which evolved according to no preconceived plan, as distinct from cities purposely planned and built by Muslims.[4] However, with the passage of time cities tend to become "spontaneous"; as Hourani has observed, "created cities must become spontaneous if they are to remain alive".[5] Examples of spontaneous Damascus, Aleppo, Kerbela and Mashhad and created cities, are Baghdad, Samarra and Cairo.

Since the extent of the Islamic Empire is vast, geographical divisions are numerous and can form an almost unlimited number of different classifications. Authors generally follow historical regional nomenclatures (such as Mesopotamia, Levant, etc.), current regional nomenclatures (the Middle East, North Africa, Iran, Iraq, etc.) or alternatively, natural features such as mountains, plateau, rivers, deltas, etc. Chronological classification usually refer to ill-defined eras such as Early Islamic, Middle Ages, etc. or to particular historical periods such as the seventeenth century, etc. or to ruling dynasties such as the early Islamic caliphate, Umayyads, Abbasids, Fatimids, Saljuks, Ayyubids, Mamluks, Safavids, Moghuls, Ottomans, etc (see Fig.16)[6].

The Classification Limits

HOURANI, "the Islamic city in the light of recent research" discussed the context of these classifications.

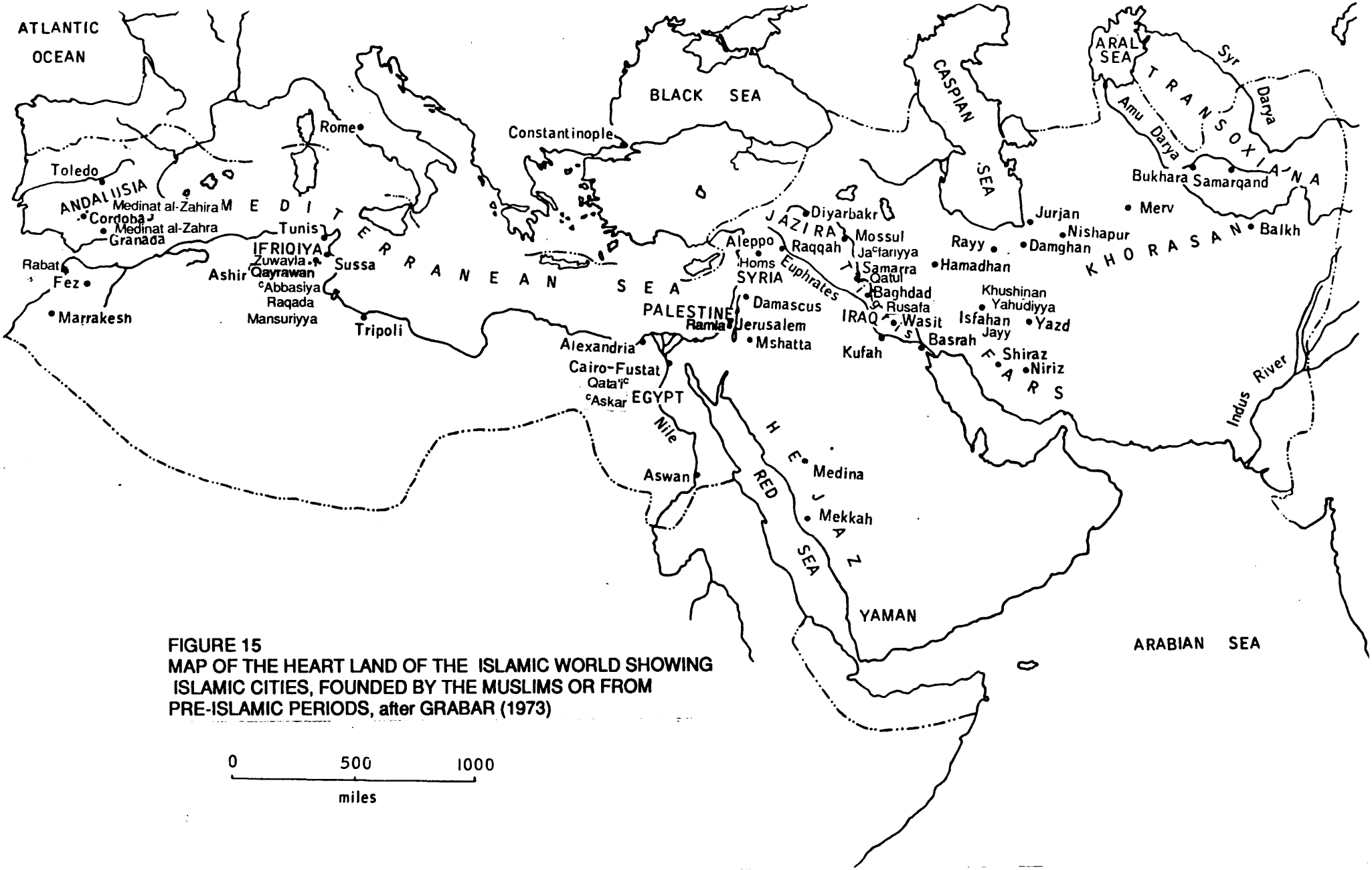


FIGURE 15
MAP OF THE HEART LAND OF THE ISLAMIC WORLD SHOWING ISLAMIC CITIES, FOUNDED BY THE MUSLIMS OR FROM PRE-ISLAMIC PERIODS, after GRABAR (1973)

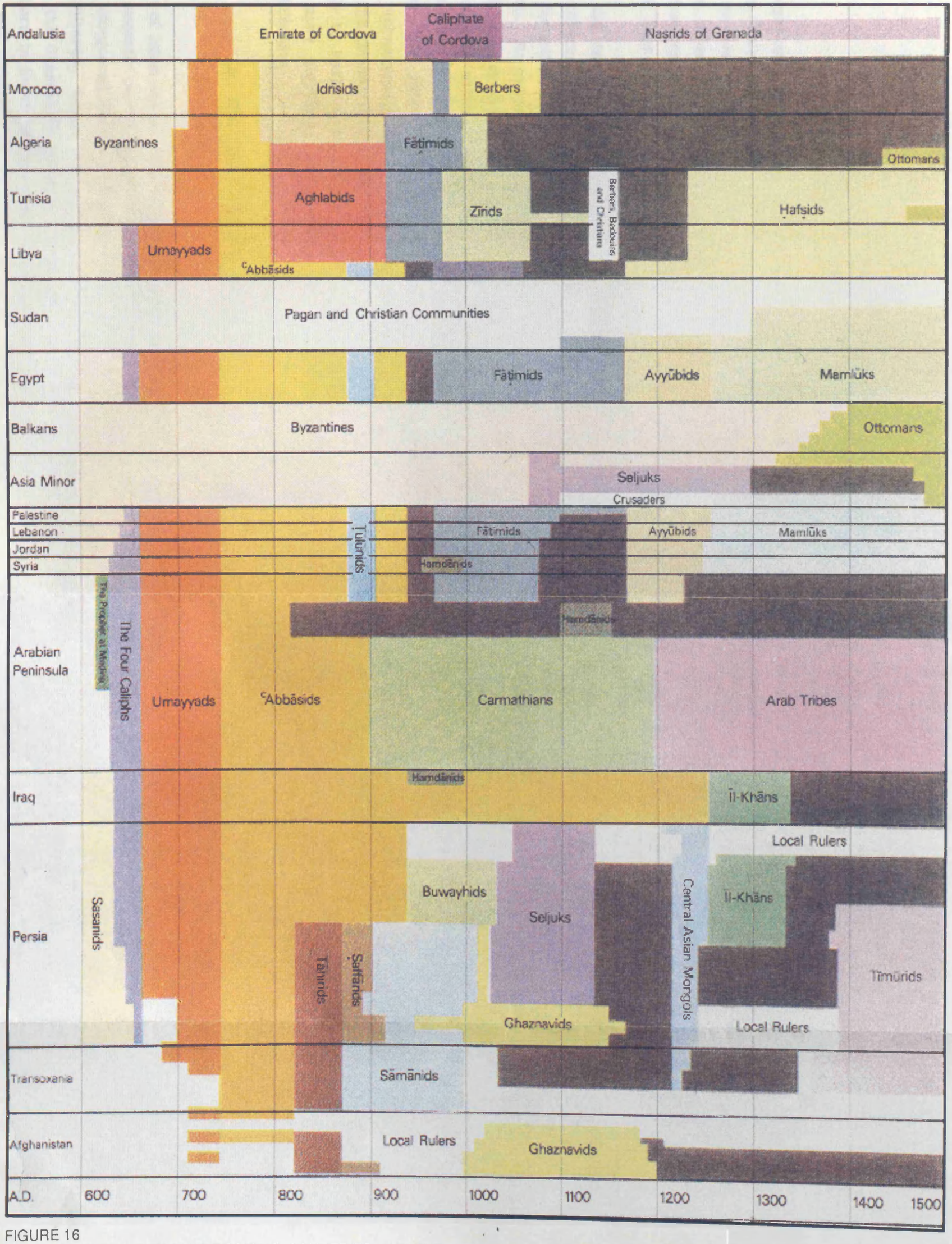


FIGURE 16
TABLE OF VARIOUS ISLAMIC REGIONS, COUNTRIES, AND THE HISTORY OF THE CALIPHATES AND DYNASTIES, after ROGERS (1976)

> "Even allowing for the slow pace of change in what we regard as "traditional society" it is clear that change did take place, and in the life of cities which existed throughout most or all of this long period several phases must be distinguished....[7]

However a royal city, for instance, will have had undergone successive changes, not only in function but also in physical, societal and economical as well as its position in the cultural framework. Consequently, cities do not lend themselves to precise classification, and their classifications needs to be altered frequently to cope with their contemporary change.

If changes did take place in Islamic cities, they do not coincide throughout different cities in the different regions. Also while cities were under formation, other existing ones were undergoing a sort of transformation. To attempt to mark both formation and transformation this part will consider the successive changes, that will incorporate, the foundation of new urban centres in relation to the transformation occurring in existing ones. Also it will consider these processes, as pertinent to the prevailing religious sociological and political frameworks, subsequently their affect on the physical layout. The vastness of the Islamic empire and the limits of this part will make it very difficult to mark definite timed phases. Yet it will attempt to present as many significant cases within the allowed limits of the available information.

I: THE ISLAMICIZATION PHASE

Introduction

The diffusion of Islam out of the Arabian peninsula in the early decades of Islam / seventh century A.D. encompassed beside the diversity between the conquered people and the conquerors, a wide variety of people and cultures. Under the influence of the Christian Byzantine Empire were the Ghassanids Arabs in the Levant, the Copts in Egypt and the Berbers in North Africa, while to the east were the Lakhmids Arabs under the influence of the Pagan Sasanian Empire of Persia[8].

The Muslim armies themselves were comprised of Arab nomads recently converted to Islam, and of sedentary Arabs from the main cities. Mekka and Madina, who had been muslims for some years[9]. Many regions and urban centres under the influence of the Byzantine empire were mainly captured by treaties, while most of those under the influence of the Sasanid empire were captured by force[10].

Congregation - Segregation in the Islamicization Strategy

With the capture of new territories came the second aim of Islam, the process of Islamicization. This process involved not only the conversion of conquered peoples but also acquainting, settling and strengthening the new Muslim faith between the Muslim-army[11]. Thus while contact was maintained to introduce Islam to the non-muslim societies, it was important to ensure that the muslim soldiers, who were accompanied by their families, do not disperse or assimilate into non-Muslim societies[12]. To achieve this double objective, Muslims were either congregated in new centres[13] or cantoned in areas[14] segregate from the native people in or near captured centres.

Factors Affecting the Decision to Found New Centres or to Settle in Pre-Islamic Ones

New centres were founded where wide rivers, difficult to cross, meant that if Muslims were settled in existing towns across the rivers they might be cut off from Madina[15] (capital of the Islamic Caliphate). In Egypt and Mesopotamia, for example, Muslims considered settling in Alexandria and Ctesiphon but the former lay in the Nile delta and the latter beyond the Euphrates and Tigris rivers, and so Muslims decided to withdraw from both and to found Fustat on the west bank of the Nile, and Basra and Kufa on the east bank of the Euphrates.

No geographical obstacles intervene between the Levant and Madina but treaties with the indigenous population prevented Muslims from founding new centres in this region, and consequently Muslims were cantoned in the pre-Islamic urban centres, such as Damascus and Aleppo. The new centres and also those existing of the Levant's as it happened, had the additional advantage of being situated on the edge of the desert which suited the traditional life style of the Arabs.

Congregation-General Criteria

These new centres were founded by order of the second Caliph ʿUmar, following his instruction to each army leader to choose a site in which his troops should congregate[16]. The nature of the site was to be on the edge of the desert near a source of water and pastures where horses could graze, but with no wide expanse of water to separate it from Madina[17]. The troops were to be congregated together, not to be dispersed among rural villages[18], nor were they to distribute the agricultural lands amongst themselves[19], nor to engage in farming or agriculture (la yazracun wa la yuzariʿun)[20]. A congregational mosque was to be provided large enough to serve the whole army[21]; there were to be no congregational mosques in the villages[22]; local mosque were to be allocated to each tribe; no building was to be larger than necessary[23].

Following ʿUmar's instructions, Basra, Kufa, Fustat, Jabiya and Jawatha were founded. The first three later became major Islamic cities while the last two were later abandoned[24].

The Organizational Structure of the New Congregational Centres

The basic layout of each new settlement comprised tribal districts (Mahalt sing. Mahalah) or quarter (Khitat sing. Khita), five in Basra, ten in Kufa (later reduced to seven), and about forty seven in Fustat[25], distributed around a centre. The centre comprised the Masjid al-Jamaʿa or al-Jumʿa (congregational mosque or Friday mosque) the Dar al-Imara (the government house), the Dar al-Shurta (the police), the Bayt al-Mal (the treasury) and the Diwan (registry for the army). The last two offices did not possess a separate building but were housed within the Dar al-Imara[26]. These congregational centres did not have any encircling walls or ditches; thus probably, their role was offensive rather than defensive[27].

The organization of the Muslim army, which worked successfully in the war of conquest, is reflected in the layout of the districts and quarters, which may have been arranged in anticipation of further expansion[28]. Tribal and clan groups were merged or divided to reach a reasonable number to form a district or a quarter, which were also formed by non-

tribal grouping such as Persians, Greeks and Anatolians.[29] Small lots were assigned to individuals of importance or individuals who are not affiliated with tribes or clans near the centre[30].

The Diwan - Reflecting of Hierarchy and Distribution of Stipend

The Diwan played another roll in the centres' organization. The Muslims were registered in a hierarchical grading according to which stipends were given to Muslim leaders to be distributed among the Umura' al-Asbac and the Umura' al-Akhmas (the leaders of the districts) who in turn distributed them to the Ashab al-Rayat (Banner Holders) and they in turn to the people through the agency of the representatives (ᶜUrafa') of the ᶜArafa (a group of twenty to forty men with their families)[31]

The Spatial Pattern of the New Congregational Centres

> "It is clear that with some differences the three towns (Basra, Kufa and Fustat) were much alike in their general character.."[32]

This statement by GUEST reflects the organizational structure of these towns - the district the quarter the centre - which gave them their general character. Nevertheless these towns did not possess an identical physical or spatial layout.

Basra

Basra, the first of these towns (founded in 14/636)[33], lay on a pebble or gravel site from which it took its name Basra[34]. The scanty information on Basra does not give a complete picture of its physical configuration, but it would appear that the surrounding marshes and seasonal stream- beds (Khur) governed its layout[35]. Shortly after Basra was founded, the people began to complain of the increasingly brackish quality of the water and the long distance they had to walk to get good drinking water from the river. As a result, the bed of one of the seasonal streams which ran past the site was excavated to allow it to fill all the year round, providing fresh water and a navigable canal[36]. Basra seems to have had a rectangular shape[37], with a wide 60 cubits (30m) spine running south-west from the khur past the religious and administrative centre to a marbad[38]. EL-ALI described the marbad as

a major open space which in various ways played a commercial, cultural and political role in urban life[39]. MAWARDI, on the other hand, equated the marbad with the central spine 60 cubits (30m) and gave details of a hierarchical arrangement of streets leading from it. Main streets 20 cubits (10m) wide led toward and through five districts (mahalat) and their various quarters (khitat), with smaller alleys 7 cubits (3.5m) wide branching from them[40]. Nearly all the districts and quarters had a rahba (open space) where people gathered informally[41]. Somewhere to the south of the spine lay a cemetery, the maqbarat al-jabana, in which each tribe appears to have had its own burial plot[42]. The Centre of the town appears to have included an open space (rahba) associated with the mosque and the Governor's House. Later in (45/665) the Government House was shifted from the north-east side of the mosque to the qibla side, south-west, leaving a rahba (known as the Rahbat Bnu Hashim) in its place[43] (see Fig.17).

Kufa

Kufa, about two hundred kilometres from Basra, is often referred to as its twin-sister. Founded in 17-18/639-40, Kufa derived its name from its circular shape[44]. (Kufa = Kawf, circular mound). It had an altogether more developed layout than that of Basra. In the centre was a large open square (Muraba^{c}a) enclosed by a trench. The size of the open square was determined by four arrow-shots, the first in the direction of the qibla, one east, one north and one west[45]. From ZIYADA[46], following an earlier author, TIJANI, we know that an arrow shot was about 250 cubits (125m) long, and so we may conclude that the open square of Kufa was approximately 250m. square, orientated towards the qibla direction in which the first arrow was shot. BALADHIRI, writing in 255/869 recorded that the congregational mosque, government house, treasury, police, registry, and the open market (suq) were all housed within the muraba^{c}a[47]. Main streets (Manahij) opened in all directions off the square. TABARI writing about ^{c}Umar's instructions to the city's founders, describes a hierarchical pattern of streets: main streets were 40 cubits (20m) wide; secondary streets were 30 and 20 cubits (15m and 10m) wide; and alleyways (Zuqaq) not less than 7 cubits (3.5m) wide[48]. TABARI gives the distribution of the main streets as five on the north side (opposite the qibla), four on the qibla side, and three

on each of the other (west and east) sides[49]. Although Kufa's circular layout guaranteed a more or less equitable disposition of tribes around the centre, the side of the town nearest the river Euphrates was preferred, and for the sake of fairness lots were drawn to decide which tribes would settle on that side[50]. The ten tribes (later reduced to seven) had their residential districts located either along or between the main streets. MASSIGNON concluded that the tribes were divided into clans, each of which had its own quarter along a main street of the tribal district (see Fig.18)[51]. These clan quarters were disposed around secondary streets and alleyways, with some secondary streets serving to define boundaries between adjoining quarters[52]. In this way the hierarchical spatial structure of the town appears to have been influenced by the societal structured hierarchy of the tribes and clans.

Fustat

Fustat (founded in 21/633) in Egypt is also sited on a river, on the east bank of the Nile at a point where the river could be bridged easily, beside the Roman fortress of Qasr al- Shamc near a dried-up Pharaonic canal linking the Nile to the Red Sea. Here there was an abundant supply of water from the river, the fortress could be garrisoned and defended by Muslim troops and the canal re-excavated, as it was shortly after the town was founded, to provide a convenient passage to the Red Sea and Madina for supplies of grain and other foodstuffs grown in the Nile valley.[53] Reasonable proximity to the river for all the inhabitants was achieved by laying out the town along the river bank[54]. The quarters were distributed in a spacious arrangement forming an upper and lower precinct (ᶜAml Fawq and ᶜAml Asfal). At the conjunction between the two precincts was the Governor's House, the Police, the Treasury and the Registry. To the north of the centre's quarters were distributed over three districts known as the Hamrawat: the Dunya (the nearer); the Wusta (the middle) and the Quswa (the farther). MAQRIZI reported that the name Hamrawat (Reds) came from the complexion of the Anatolians and Greeks who settled in these districts[55]. The quarters of the town distributed along a five-kilometre stretch of the river, were constructed around the Congregational Mosque (the Mosque of ᶜAmru b. al-ᶜAs). On the basis of early authors' description of the town, GUEST identified two open spaces in the

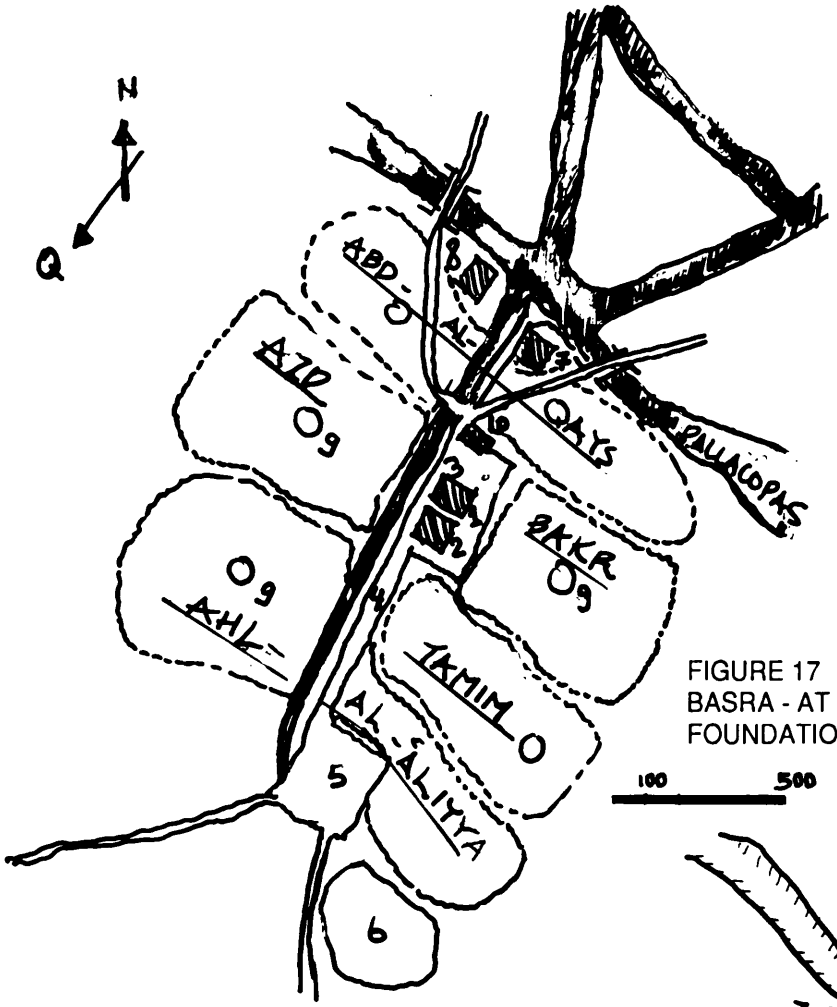


FIGURE 17
BASRA - AT THE TIME OF ITS FOUNDATION, after MASSIGNON (1954)

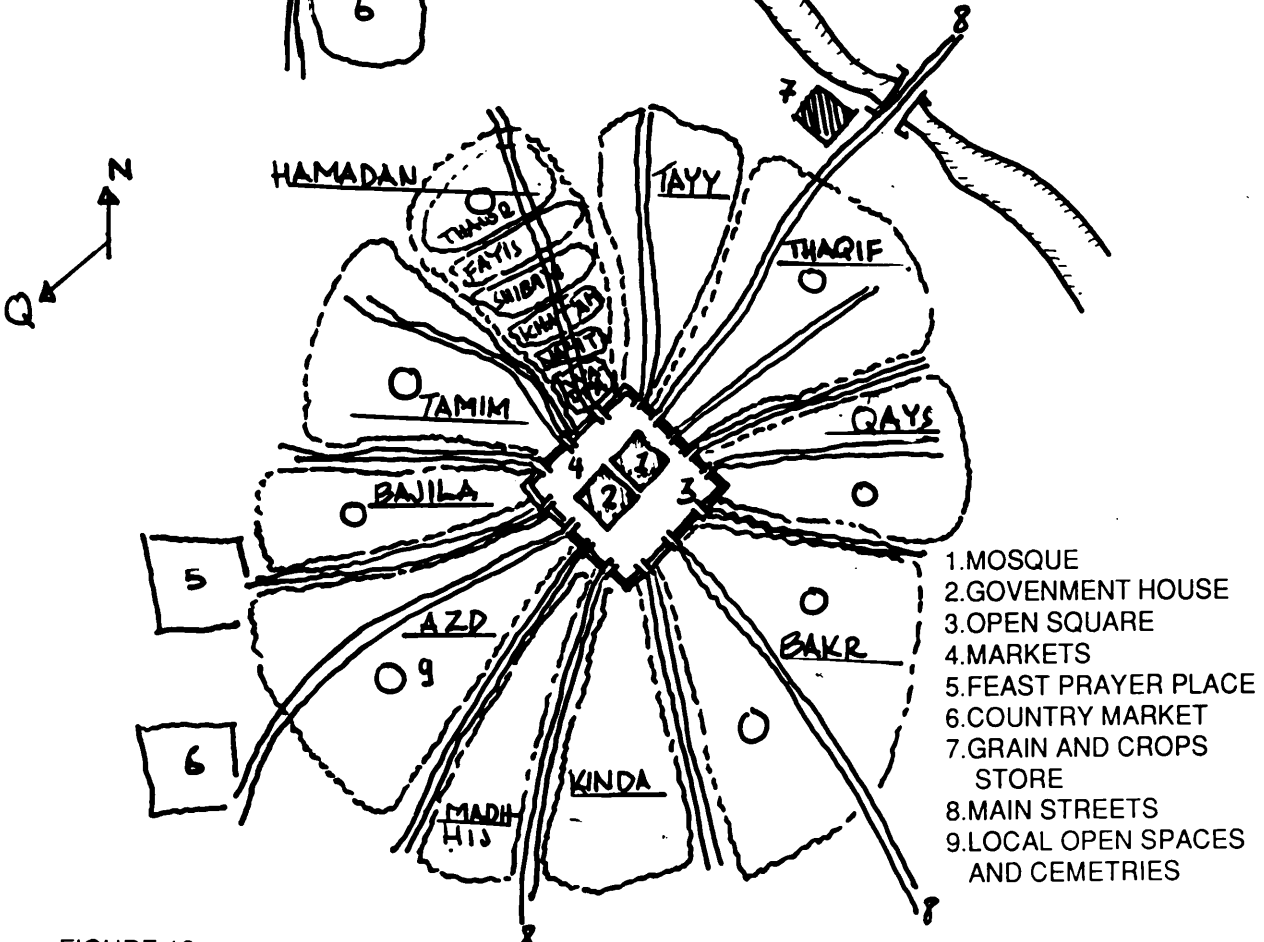


FIGURE 18
KUFA AT THE TIME OF ITS FPOUNDATION ,
after MASSIGNON(1940); AL-TABARI(1987)

vicinity of the mosque. Those quarters that were far from the mosque were more sparsely populated (see Fig.19), leaving many unoccupied spaces (fada') within and around the quarters[56]. There was another district on the west bank of the Nile, probably established to defend the town from attack from the west. The residents of this district were asked to resettle in the main town on the east bank but they requested to stay where they were because they had already built their houses there. Their request was granted by the Caliph ʿUmar on condition that they erected a new fortress on the side of that river[57].

The topography of the site has influenced the layout of Fustat. The river to the west, the canal to the north and the range of the Muqattan hills to the east formed natural boundaries. Within this site stood mounds (akwam; sing. **kuwm**) of accumulated sand and rubble. The quarters were distributed along the river, spreading inland between these mounds and occasionally, as in the Jebel Yashkur quarter, occupying the mounds themselves[58]. The focal point of the town, the congregational mosque, was built beside the river (from which water for ritual ablution could be drawn) about 300m north of the strategic fortress of Qasr al-Shamc.

The Second Side of the Islamicization Strategy

A second aspect of the ideology of Islamicization concerned the indigenous peoples in conquered territories, whether Christians, Jews, Arabs or Persians. The idea was to introduce Islam to these people by bringing them and the Muslims into contact but in the same time ensuring that contact was controlled in order to prevent the newly Muslim Arabs of the conquering army becoming assimilated into the culture of the indigenous peoples. Thus the Muslim troops engaged in the conquest of the Levant (about 24,000 men)[59], for instance, cantoned in separate quarters either within existing towns or beside them.

Segregation - General Criteria

The instruction of the Caliph ʿUmar regarding towns acceded to the Muslims by treaty were somewhat different from those regarding newly founded towns (see above). Only one mosque was to be built; there were to be no local mosques for the various localities or tribes[60]. Also,

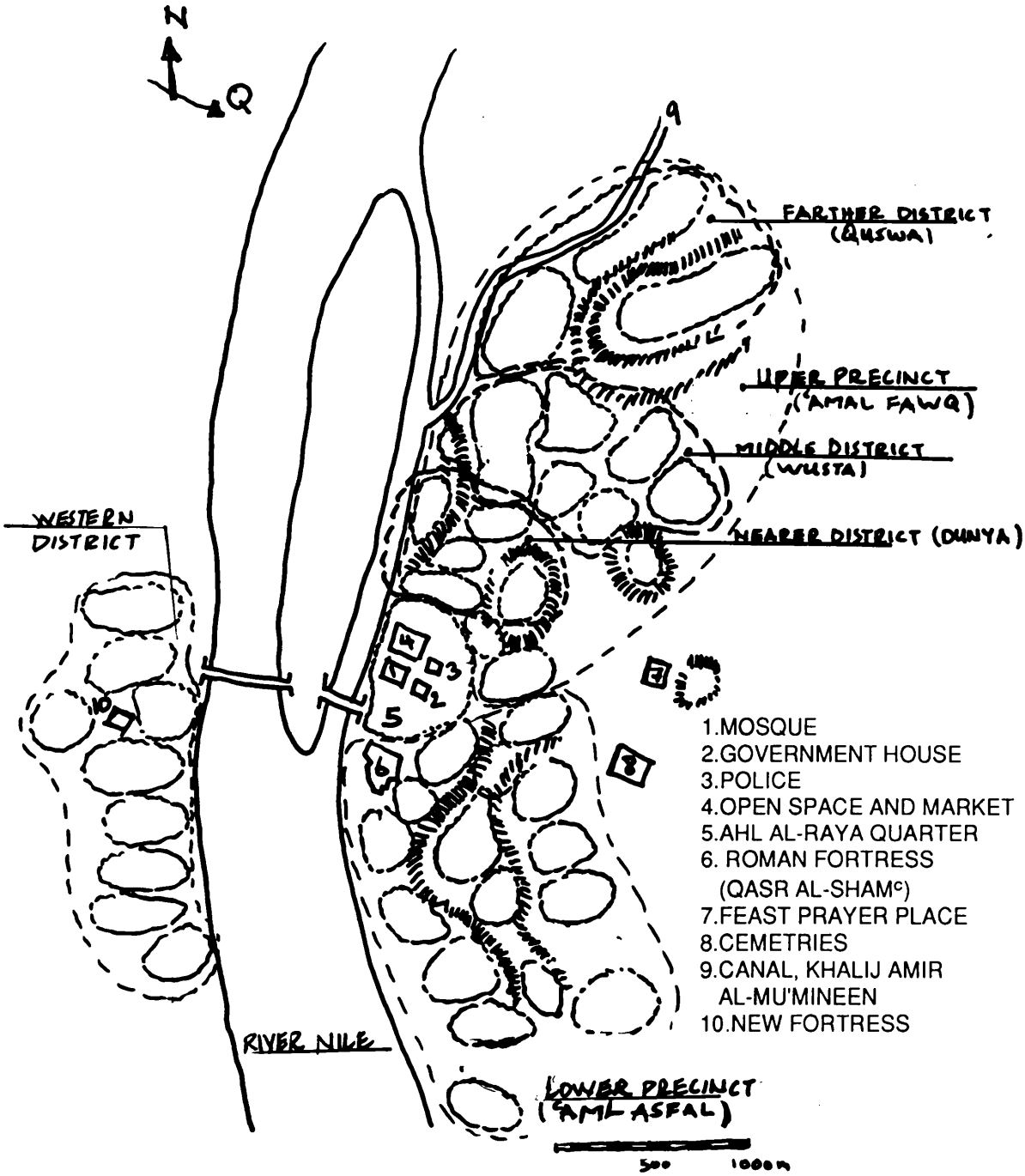


FIGURE 19
FUSTAT AT THE TIME OF ITS FOUNDATION
after GUEST(1907); CASANOVA (1919)

the Muslims were to settle in or beside urban centres, not to be dispersed among rural villages or to engage in agriculture or to acquire agricultural land[61].

The nature of the Muslim conquest and the capture of most urban centres mainly by treaty meant that there was no forced emigration from town to country and no massacre of the indigenous population. The treaties forbade confiscation of privately-owned property and land except for those that had been abandoned or had belonged to the conquered state, which automatically became property of the Islamic state[62].

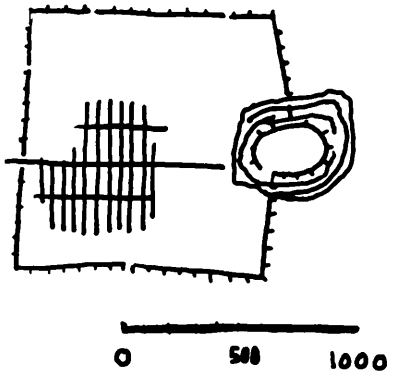
The Muslims were grouped (segregated from the local people) either in new quarters outside the city gates or in abandoned quarters within the city. Public open spaces were appropriated as sites for the mosque and new Islamic public buildings[63].

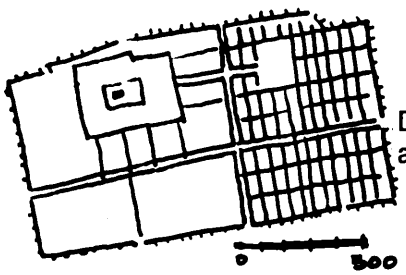
Most of the urban centres in the Levant captured by the Muslims had a long history, having been controlled or colonized by ancient civilizations (Hittites, Seleucids, Romans, Byzantines, Sasanians, etc.). These ancient civilizations left their mark on such cities as Damascus, Aleppo, Jerusalem and Homs, etc. in the shape of a grid-iron street plan, *agoras*, intersecting colonnaded main streets (*decamanus* and *cardo*) *forums*, and other public buildings[64] (see Fig.20). At the time of the Islamic conquest, however, many of these cities were in a more or less ruinous condition for they had been recently attacked by the Persians and shortly afterwards recaptured by the Byzantines[65].

Damascus (Dimashq)

The terms of the treaty of surrender of Damascus and in accordance with ʿUmar's instruction, the site chosen for the new mosque was a public open space on the east side of the Byzantine church, originally the Roman temple[66]. This site was located not far from a city gate(now known as the Jabiya Gate) where the Muslims established their quarter, both in the area immediately outside the Jabiya Gate and in the abandoned areas near to it, within the city[67] (see Fig.21). The taking of

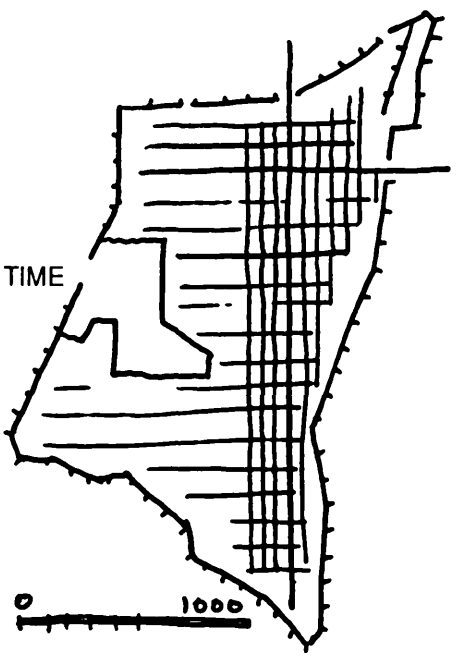
ALEPPO IN THE SELEUCIDS TIME
after,SAUVAGET(1934)

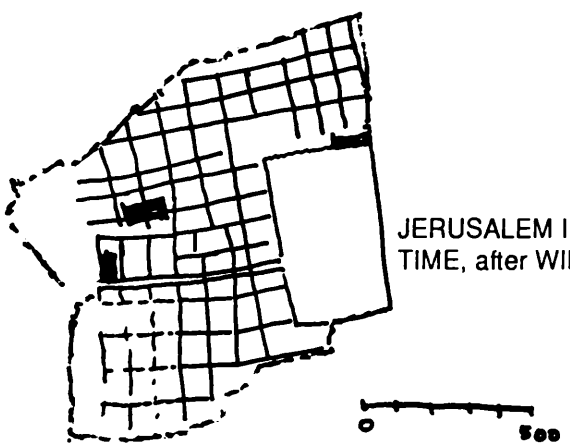




DAMASCUS IN THE SELEUCIDS TIME
after SAUVAGET (1934

LADIQUE IN THE SELEUCIDS TIME
after SAUVAGET(1934)





JERUSALEM IN THE THE ANCIENT
TIME, after WILKINSON (1976)

FIGURE 20
ALEPPO, DAMASCUS, LADIQUE,
JERUSALEM IN CLASICAL TIME

Damascus in 13/635 led to the capture of many other towns in the Levant.

Aleppo (Halab)

Here the mosque was located in a public space just inside the Antioch Gate at the west end of the main colonnaded street. SAUVAGET concluded that the mosque was enclosed by free-standing walls erected between the street columns[68]. No historical source indicates where the early Muslims settled in Aleppo, but it is reasonable to suppose that the arrangement was similar to that of Damascus (see Fig.22).

Jerusalem (Bayt al-Muqaddis)

Jerusalem known to the early Muslims by its Roman name Ilya (*Aelia*), surrendered in 17/638 some time after the capture of the majority of other cities in the Levant. Like many cities in the Levant, Jerusalem before the Islamic conquest had just started to recover from a major massacre and destruction wrought by Persian invaders, which left many Christian buildings in ruins or abandoned[69]. The capture of the city was probably delayed because it was not a military stronghold which might threaten the Muslim movement. Its fall after the capture of the surrounding regions and the decisive battle of the Yarmuk made its surrender more or less peaceful. Because of the city's place in Christian belief, the indigenous population requested that they surrender to the Caliph ʿUmar himself and so it happened. Both the request and the granting of it show that the holiness of the city was apparent not only to the Christian but also to the Muslim. It was the first Qibla prayer direction before Mekka, the place of the "furthest place of prayer"[70] (founded, according to IBN KHALDUN and SAMHUDI, based on the saying of the Prophet Muhammed, by Abraham 40 years after the founding of the Kaʿba in Mekka)[71] and the place of the Prophet Muhammed Miʿraj ascend to Heaven[72] When he came to Jerusalem ʿUmar was invited to make his prayers in the Holy sepulchre, but he chose instead to pray in an open area on the south-east periphery of the town. The open space was associated with several holy traditions, with Abraham, the temple of Solomon and Herod, which had made a major impact on the structure of the city in the pre-Christian and the Muslim periods. Little is known about the first

mosque built by ʿUmar, although reports refer to the holy rock as the place of that mosque. A Christian pilgrim, Arculf, described it in the year 18/680 as the sited on the south side of the open space and able to accommodate 3000 person performing prayer[73] (see Fig.23).

Homs (Hims)

By the term of the treaty of surrender, the Muslims acquired a fourth part of the John (Yuhana) Church for their mosque, which may indicate that there was no suitable open space available. BALADHIRI's description indicated that the town was divided into quarters and that the Muslims acquired those of them that had been abandoned[74].

It is worth recalling that, while there was no mass emigration from the towns of the Levant, part of the Christian population especially Greeks, Anatolians, Byzantines did flee north to resettle in territory that remained under Byzantine control, leaving certain areas of the towns unoccupied[75]. Also, it was in the Byzantine period that the orthogonal plan of the seleucids started to disappear, and the Roman colonnaded streets were gradually encroached upon by trades[76].

The bulk of the inhabitants remained in the conquered cities, encouraged by the Muslims to stay in order to allow the cities to continue to function. City walls were left standing, the churches were not defiled and private property was not expropriated. There were controls placed on the indigenous population, however: no new churches were to be built, ruined houses in the new Muslim quarters could not be restored or rebuilt, and in some cases it was forbidden to baptise children. Above all, non-Muslims were obliged to pay special land and personal taxes, the **kharaj** and the **jizya**, the later being an obligation that ceased only with conversion to Islam, and as a Muslim was obliged to pay the **sadaqa** (pious donation). Thus, while other religions were tolerated, conversion to Islam was promoted.

Conclusion

The difference in size and structure of the Muslim Army in relation to the large size of the indigenous population, with its own religions, cultures and traditions meant that careful strategies had to be devised

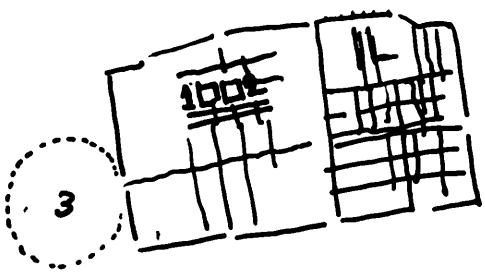


FIGURE 2I
DAMASCUS AT THE TIME OF THE MUSLIM CONQUEST
after, SAUVAGET (1949)

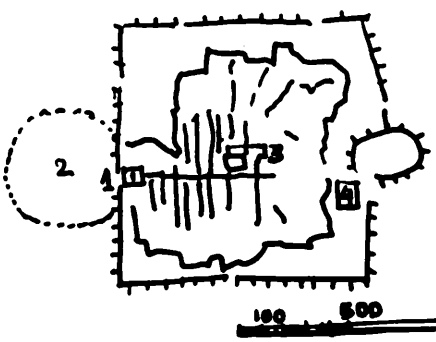


FIGURE 22
ALEPPO AT THE TIME OF THE
MUSLIM CONQUEST,
after SAUVAGET (1941)

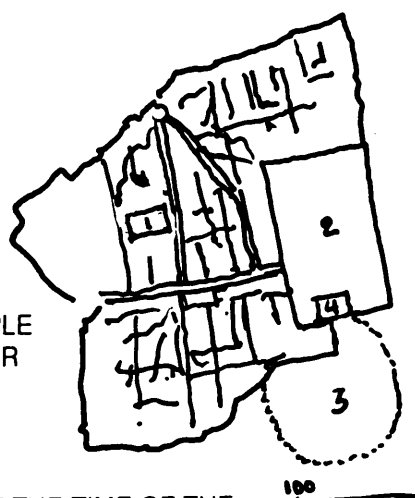


FIGURE 23
JERUSALEM AT THE TIME OF THE
MUSLIM CONQUEST, after PRAG (1989)

if Islam was to spread and to continue in the acquired territories. ʿUmar's instructions were well designed to take account the diversity and variety of the conquered peoples. The aim was to encourage the indigenous population to stay and maintain the existing viability of the agricultural lands and the urban centres. At the same time it was important to introduce Islam to these people. Equally it is necessary to maintain the cohesive and efficient fighting force of the Muslim army and to make sure that because of their relatively small numbers they did not become dispersed over the countryside or assimilated into the much larger numbers of the indigenous population in the towns.

The Muslim army was segregated from that population in new centres or in quarters in or near open spaces in existing towns. It was important also to tutor in the religious doctrines of Islam the recently converted Muslims in the army and the conquered peoples, who were encouraged to convert to Islam. Military measures were taken to keep the bulk of the Muslim army in direct contact with Madina to ensure that the army was not cut off from supplies. Religious and communal measures were taken in each of the existing or new centres: a congregational mosque was to be founded in all towns; local mosques were to be built only in new totally Muslim populated centres; no local mosques were to be founded in captured towns. The aim of this instruction was to help keep the garrisoned Muslims together in a cohesive structure among the indigenous population. Administration was handled by new administrative centres (government house), which included the Registry, the Treasury and the Police, all in close contact with the mosque and conforming to the religious ideals of Islam. Social measures came in the form of the spatial organization, with a district allocated to each tribe, which included quarters for the different clans, each comprising several ʿarafas or neighbourhoods. We do not know the exact layout of either the existing or the newly founded centres of the time of the Islamic conquest, but from the descriptions of early authors like BALADHIRI, TABARI, HAMAWI and MAWIRDI, we know that the number and distribution of streets, districts, quarters and open space depended on the social structure of the Muslims. The differences in the numbers of districts and quarters of Basra, Kufa and Fustat reveal a chronological progression in the structure of the Muslim army. In Basra (13/635) for

instance, there were five major tribes living in five districts while in Fustat (921/633) there were many clans and non-Arab troops living in about 47 quarters. Within the above framework these centres reveal some tendencies to reproduce the model set by Madina.

Although the spread of Islam brought no massacres or destruction or major emigration, most of the existing towns, both Persian and Byzantine, were only beginning to recover from major massacres and destruction caused by their long war with each other and the fall of their cities under the rival occupation. These actions left part of each town in ruins or abandoned, thus Muslims were able to take over abandoned areas and public spaces in these towns, as well as settling in new quarters outside the towns or in new congregational centres away from existing towns.

Foot Notes: Part Two, I

1. MOQADDASI, (1877), 47, beside presenting a settlement gradation, he further explicated his classification into regional hierarchy. In both he indicates a mutual hierarchy, in which; the cosmopolis (Misr al-Islam) is the capital of the Islamic Empire (Mamlakat al-Islam); the metropolis (Misr) is the capital of a region; the town (Qasaba) is the capital of a province; the market town (Medina) is the centre of a number of country districts; the village (Qarya) is the centre of a number of farms or agricultural units.

2. HOURANI, A.H., " The Islamic City in the Light of Recent Research" in **The Islamic City**, Oxford (1970), 9, 11, refuted most of the recent classification and called for further consideration which would take into account the various aspects of urban forms and the Islamic city evolution.

3. GRUNEBAUM, G.E. Von, " The Structure of the Muslim Town", in **Islam Essays in the Nature and Growth of a Cultural Tradition**, London (1964), 144-5, he devised the function classification, which considers towns only in their time of formation he does not consider the pre-Islamic towns as a separate type, neither the change in the city function which occurred in many cities after their formation.

4. PAUTY, E., " Villes Spontanees et Villes Crees en Islam" in Annales de l'Institut d'Etude Orientales, (1951), IX, 52-75; SCANLON, G.T., "Housing and Sanitation" in The Islamic City, Oxford (1970), Scanlon tended to add a third category to Pauty's classification, that is to define the pre-Islamic town as a separate category from the genuine Islamic "spontaneous" town.

5. HOURANI (1970), 10

6. LAPIDUS, I. Muslim Cities in Later Middle Ages, Cambridge and Massachusetts (1967); LAPIDUS, I., Middle Eastern Cities, Symposium, University of California Press, Berkeley and Los Angeles (1969), Sociologists and Geographers tended to device town classification according to the city's social and geographical aspects.

7. HOURANI (1970), 110

8. BACHARACH, J.L. A Near East Studies Handbook, 570-1974, University of Washington Press, Seattle and London (1974), 56

9. FISCHEL (1956), 227-8

10. GRABAR (1973), 32-3

11. GRUNEBAUM (1964), 143; BENET, F., "The Ideology of Islamic Urbanization" in International Journal of Comparative Sociology, the Netherlands, Leiden, (1963), 214; LAPIDUS, I "Traditional Muslim Cities" in From Madina to Metropolis, L.Carl Brown (ed.) New Jersey (1973), 52; FISCHEL (1956), 227

12. YUSIF, Sh., Tarikh Fan al-ᶜAmara al-ᶜIraqiya, (in Arabic) Dar al-Rashid Lil-Nashr, Baghdad (1982), 234; HAMAWI, Y., Muᶜjam al-Buldan (in Arabic), Dar Sadir, Beirut (1986), IV, 491

13. BALADHIRI (1983), 341

14. WIET, G., Cairo City of Art and Commerce, University of Oklahoma Press, Norman Oklahoma (1964), 3

15. HAMAWI (1986), IV, 433, 490; BALADHIRI (1983), 275, 341; YUSIF (1982), 105, 230; IBN KHALDUN, Muqadimat Ibn Khaldun (in Arabic), Dar al-Qalam, Beirut (1986), 349; MAQRIZI, T.A., Al-Khitat al-Maqriziya, Maktabat al-Thaqafa al-Diniya, Cairo (1987), I, 167

16. HIMYARI, M., Kitab al-Rawd al-Miᶜtar fi Khabar al-Aqtar, Ihsan ᶜAbas (ed.) (in Arabic), Maktabat

Lubnan, Beirut (1975), 105; HAMAWI (1986), I, 432, IV, 490, 491

17. HAMAWI (1986), IV, 491, the lack of familiarity of the Arab Muslims with sea navigation and war and river bridges and crossing, limited Islam diffusion in its early times; BALADHIRI (1983), 134, reported that Umar the second Caliph rejected the request of Muᶜawiya (Governor of Syria), to engage in conquest in or beyond the sea.

18. MAQRIZI (1987), II, 259

19. BALADHIRI (1983), 156; BADRAN, ᶜAbd al-Q., Tahzib Tarikh Dimashq al-Kabir (in Arabic) Dar al-Masira, Beirut (1979), I, 182

20. MAQRIZI (1987), II, 259, 260; ᶜUTHMAN, M.A., al-Medina al-Islamiya (in Arabic) ᶜAlm al-Maᶜrifa, Kuwait, August (1988), 27

21. YUSIF (1982), 236; HAMAWI (1986), IV, 491

22. MAQRIZI (1987), II, 246, reported the ᶜAmru b. al-ᶜAs (Governor of Egypt) refused to allocate congregational mosques (Friday mosque) in villages; ᶜUTHMAN (1988), 18

23. HIMYARI (1975), 105

24. EL-ALI, S., "The Foundation of Baghdad", in The Islamic City, (1970), 41

25. The two terms, Mahala, and Khita have had repeatedly mentioned by TABARI and other historians, which indicates that the Mahala was a tribal district, which may have had consisted of many clans quarters (Khitat), TABARI, Abi Jaᶜfar, Tarikh al-Umam wa al-Muluk, (in Arabic) Dar al-Kutub al-ᶜIlmiya, Beirut (1987), II, 479

26. CRESWELL, K.A.C., A Short Account of Early Muslim Architecture, revised and supplemented by James W. ALLAN, Scolar Press, England (1989), 110, the early government house in Kufa had a huge size like that of the mosque about 13,225 square metres. In that time it served as the governor's abode, the administrative bureau, the treasury, and probably the police station.

27. EL-ALI, S., Khutat al-Basra, in Sumer (in Arabic) (1952), VIII, ii, 302; YUSIF (1982), 234; ᶜUTHMAN (1988), 106; EL-ALI (1970), 90

28. EL-BABOUR, M.M, **Urban Networks of Settlement in Mesopotamia and Persia: Ninth and Tenth Century A.D.**, Ph.D Dissertation, University of Arizona (1981), 52; UTHMAN (1988), 67; LAPIDUS (1973), 52; GUEST (1907), 59

29. BALADHIRI (1983), 279, reported that 4000 Persians settled in Kufa; MAQRIZI (1987), I, 298, reported that in the conquest of Egypt, part of the Muslim army was from non-Arab Muslims, who converted to Islam before, after and during the conquest of the Levant and Mesopotamia.

30. GUEST (1907), 58; DJAIT, H., "al-Kufa" in The Encyclopaedia of Islam, E.J.Brill, 2nd. reprint, Leiden (1986), V, 347

31. TABARI (1987), II, 482

32. GUEST (1907), 82

33. Differences in the dates of foundation of Basra, Kufa and Fustat can be traced in early historians' reports. However these differences can be attributed to the fact that the Muslim army used these sites as temporary camps before setting there permanently.

34. HAMAWI (1986), I, 432

35. EL-ALI (1952), VIII, i, 75, 76; BALADHIRI (1983), 351,

36. BALADHIRI (1983), 350-1; PELLAT, Ch., "Basra" in The Encyclopaedia of Islam, E.J.Brill, 2nd. reprint, Leiden (1986), I, 1985-7

37. EL-ALI (1952), VIII, i, 72

38. YUSIF (1982), 230; EL-ALI (1952), VIII, ii, 282-3

39. EL-ALI (1952), VIII, ii, 282

40. al-MAᶜADIDI, ᶜAbd al-Q., **Wasit fi al-ᶜAsr al-Umawi**, (in Arabic) Dar al-Huriya Lil-Tibaᶜa, Baghdad (1976), 141, cited MAWARDI, A.M. al Ahkam al-Sultaniya wa al-Wilayat, Matbaᶜat Mustafa al-Halabi, Cairo (1916), 179, 180

41. YUSIF (1982), 230

42. EL-ALI (1952), VIII, ii, 284

43. BALADHIRI (1983), 341-2; YUSIF (1982), 231

44. BALADHIRI (1983), 273; HAMAWI (1986), IV, 490

45. TABARI (1987), II, 479; HAMAWI (1986), IV, 491; HIMYARI (1975), 105, reported this arrangements to had happened in Basra also; BALADHIRI (1983), 275

46. ZIYADA, N. Mudun ᶜArabiya (in Arabic), Dar al-Taliᶜa, Beirut (1965), 81

47. BALADHIRI (1983), 275; DJAIT (1986), V, 347; TABARI (1987), II, 479

48. TABARI (1987), II, 479

49. TABARI (1987), II, 479

50. HAMAWI (1986), IV, 491

51. MASSIGNON, L., "Explication du Plan de Kufa (Irak)", in Melanges Maspero, (1940), III, 343

52. TABARI (1987), II, 479

53. MAQRIZI (1987), I, 71

54. GUEST (1907), 77

55. AHMED, Y., Al-Muhadarat al-Athariya: Madinat al-Fustat, (in Arabic) Matbaᶜat al-Taraqqi, Misr (1917), 9, 20; GUEST (1907), 67; MAQRIZI (1987), I, 298, 299

56. GUEST (1907), 77

57. MAQRIZI (1987), I, 206; GUEST (1907), 53

58. GUEST (1907), 61

59. BALADHIRI (1983), 141

60. IBN MANZUR, M., Mukhtasar Tarikh Dimashq li, Ibn ᶜAsakir, (in Arabic) Dar al-Fikr, Demascus (1984), I, 257; GRABAR, O., "The Architecture of the Middle Eastern City from Past to Present: the Case of the Mosque" in Middle Eastern Cities, Ira M. Lapidus (ed.), University of California Press, Berkeley and Los Angeles (1969), 34

61. ABD al-RA'UF, ᶜI. Al-Hawadir al Islamiya al-Kubra (in Arabic), Dar al-Fikr alᶜArabi, Cairo (1976), 23; IBN ᶜASAKIR/BADRAN (1979), I, 182

62. GRABAR (1973), 33, 34

63. SAUVAGET, J., "Halab", The Encyclopaedia of Islam, E.J.Brill, Leiden (1986), III, 85; ELISSEEFF, N., "Physical Lay-out" in The Islamic City, Cambridge (1980), 94, 95; IFFI, B.N., The Application of Western Urban Theories to Middle Eastern Cities:

A Case Study of Cairo, Ph.D Dissertation, Boston University Graduate School (1978), 94; EL-ALI (1970), 88

64. ELISSEEFF (1980), 95

65. GRABAR (1973), 28

66. ELISSEEFF (1980), 95; BALADHIRI (1983), 129; IBN MANZUR (1984), I, 260; IFFI (1978), 95

67. ELISSEEFF, N., "Dimashk", The Encyclopaedia of Islam, E.J.Brill, Leiden (1983), II, 280

68. SAUVAGET (1986),III, 86

69. BALADHIRI (1983), 144; PRAG, K., Blue Guide: Jerusalem, A&C Black, London (1989), 36

70. PRAG (1989), 35

71. IBN KHALDUN (1986), 356; SAMHUDI (1984), I, 485, 486

72. IBN KHALDUN (1986), 355

73. PRAG (1989), 36

74. BALADHIRI (1983), 143

75. ABD al-RA'UF, (1976), 21; BALADHIRI (1983), 129

76. ELISSEEFF (1980), 95; LAPIDUS, I., Middle Eastern Cities, University of California Press, Berkeley and Los Angeles (1969), 22

II. THE ASSIMILATION PHASE

Introduction

The accelerated pace of events, the success of the holy war (Jihad) and the flow of bounty throughout the Islamic regions and the benefits gained by both new founded and existing towns inevitably affected the original role of these towns. In turn the prestige of the towns grew and with it their influence on the way in which the Islamic state developed.

People began to move to the towns to settle there, a process that came to be encouraged by the Islamic state, regarding Islam as being essentially urban in nature. As more and more people moved to the towns, so their old tribal affiliations and militant status tended to break down to be replaced by urban, religious and societal loyalties.

The growing number of Muslims in towns dating from the pre-Islamic period gradually led to secure Muslim authority. There was therefore, no reason why Muslims should not develop the cities and the hinterland. Muslim no longer need to be segregated from the indigenous population, in turn the mosque and the muslim administrative buildings came to dominate the existing towns, and agriculture came under state control. Such changes no doubt entailed changes in the form of both existing and newly-founded cities.

At this time Islam continued to spread into new territories and new urban centres were founded. To populate these new centres, Muslims were transferred from increasingly overcrowded established towns.

Absorption in the Assimilation Process

Previously founded centres like Basra, Kufa, and Fustat quickly absorbed a growing population made up of Arab and non-Arab Muslims as well as non Muslims[1]. At the time of their foundation these centres contained only 500 to 800 soldiers, but within a year or two the centres comprised about 40,000 inhabitants and within thirty years grew to up to two or three hundred thousand in Basra and one hundred and fifty thousand in Kufa[2]. These populations included about 8% dhimmi (Jews

and Christians), Mawali (vassals) and immigrants from the surrounding region and from as far afield as Persia, Khurasan and Sind[3].

The absorption of considerable part of the Arab stock from the Arabian peninsula to the new Islamic territories, namely Mesopotamia, Levant and Egypt, meant that the centre of power was shifted from the Arabian Peninsula to the new Islamic regions. ʿAli the forth Caliph moved the seat of the capital from Madina to Kufa, and not long afterwards it was shifted again, by the Umayyads to Damascus in the Levant region[4].

Effect of the Growing Population on the Form of the Existing Cities
The growing number of inhabitants and the change in their life style inevitably affected the structure of the cities. TABARI records that each tribe or clan received different and variable numbers of new arrivals. For instance, he states that the ʿarafa (the basic grouping unit in the quarters) was initially formed from twenty soldiers and their families, but after the arrival of new immigrants comprised sixty men and their families, each tribe or clan allocating part of its district or quarter to the new arrivals. Some quarters were allocated more than they could reasonably contain, disturbing the original equilibrium between the quarters. Consequently the number of tribal groupings was adjusted to rectify this imbalance by merging the less populated quarters[5] thereby reducing their overall number.

In Kufa the original ten quarters were reduced first to seven and then to four[6]. It would appear that this reduction in the number of quarters led to a corresponding reduction in main thoroughfares (manahij), as at the time of Kufa's foundation (17/639) Tabari mentioned fifteen thoroughfares while MASSIGNON, on the basis of the later development, shows only six main thoroughfares[7] (see Fig.24).

In Fustat, according to MAQRIZI, some of the early settlers had allotted to them two quarters, one near the congregational mosque, in which they used to leave horses when attending Friday prayer[8], and one farther from the mosque, where they lived. Fustat at this phase appears to have absorbed a reasonable number of Muslim and non Muslim immigrants until its people became numerous. Each party made

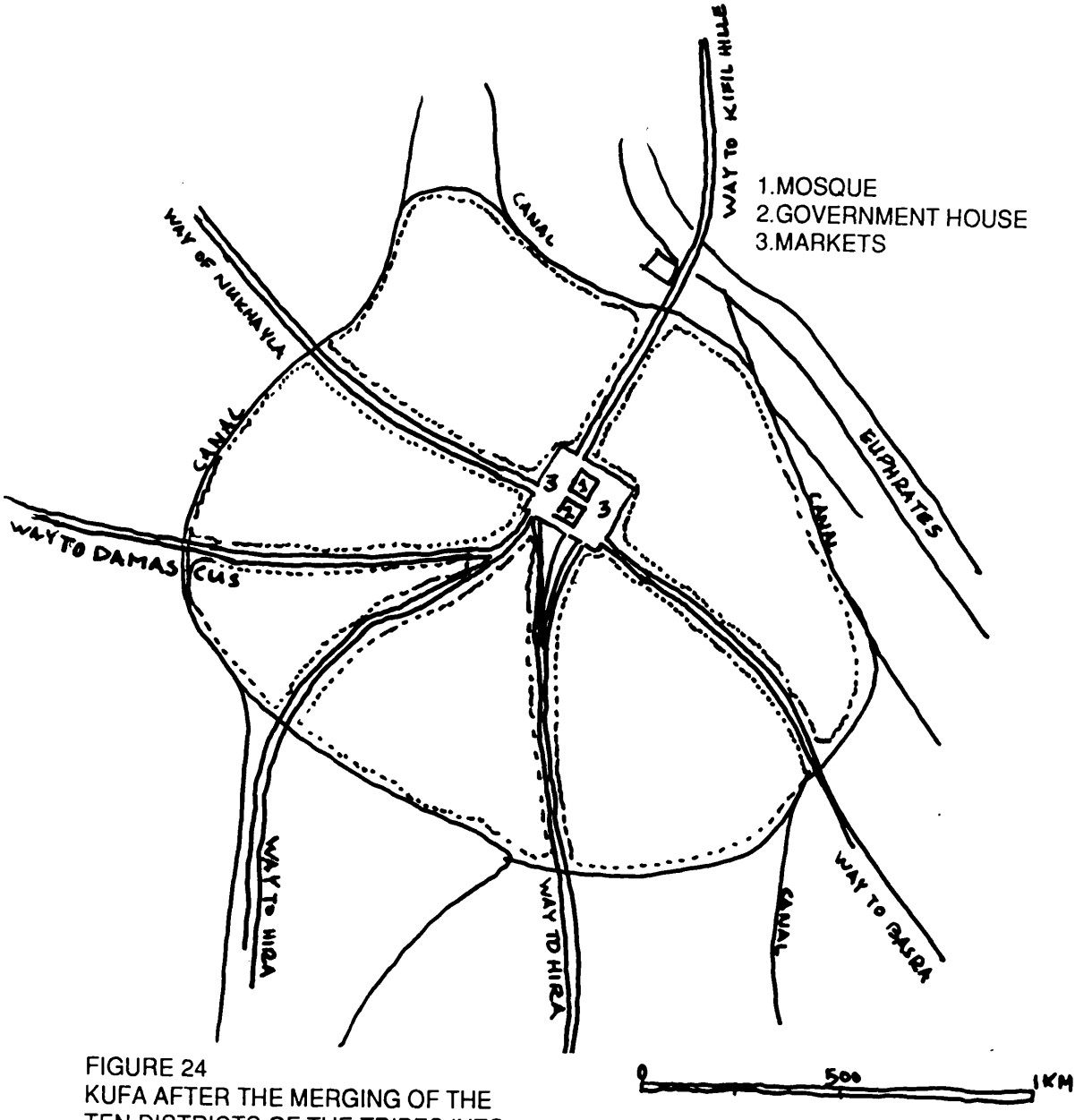


FIGURE 24
KUFA AFTER THE MERGING OF THE TEN DISTRICTS OF THE TRIBES INTO FIVE, after MASSIGNON (1940)

room for its clan fellows and new arrivals until its quarters merged[9]. However, the early settlers of Fustat, unlike those of Basra and Kufa, anticipated greater numbers of new immigrants than actually materialized for, as the time passed, beside the transferring of part of Fustat inhabitants to North Africa, the farther quarters were abandoned and the whole population including the new arrivals established their houses around the mosque[10].

As a result of the growth in population, the congregational mosques in all three towns were enlarged and rebuilt in part by using the accumulated knowledge of the earlier inhabitants of the region and in part the materials of their ruined cities and buildings[11]. As the Muslims army and various tribes started to be absorbed, called after and related to their regions and towns, and to adapt to urban life, at the same time a gradual process of assimilation and settlement broke down the old tribal affiliations (ʿAsabiya). IBN KHALDUN described this process as the result of the intermixing of the various tribes among themselves and among the non-Arab population and the change in their life style[12]. As a result of the assimilation process these early congregational centres gradually transferred into important urban centres.

The transformation in the societal structure of these towns, the excessive growth in the size of their populations and the effect of the religious and political schism meant that several towns, notably Basra, Kufa and Fustat became centres of turbulence and rebellion[13]. Measures had to be taken to prevent full-scale revolt.

Fifty thousand inhabitants of Basra and Kufa were sent to Khurasan where they probably settled in a new centre, Shiraz[14] and ten thousands from Fustat and the Syrian provinces were sent into North Africa where they settled in a new congregational centre, Qayrawan[15]. About thirty years later a further twenty thousand were dispatched from Basra and Kufa to undertake further conquests, and to extend the eastern frontier in the Turkish and the Punjabi regions[16]. In (81/700) a new town, Wasit, was founded between Basra and Kufa to assimilate and to replace the earlier towns as the political and administrative centre of the region[17].

Qayrawan - a New Facet of an Old Strategy

Except for its remoteness (see below), the founding of Qayrawan followed the same process as earlier congregational centres. The army commander ʿUqba b. Nafiʿ, in 50/674 selected for the town a site near where an earlier expedition had set up camp. For almost a century the town had no defensive wall; the first buildings were the mosque and, on its qibla side, following the arrangement used at Basra, Kufa, and Fustat, the government house (dar al-imara). Apparently like Kufa both were surrounded by the market. From descriptions of early authors such as AL-BAKRI and YAʿQUBI it would appear that, like Basra, Kufa and Fustat the town was divided into quarters for the various Arab tribes[18]. Qayrawan's reported perimeter of about 7.5 km. indicates that the town was planned not only to congregate the Muslim army, which was engaged in the conquest of North Africa but also anticipated number of immigrants and converts from the indigenous people[19].

Unlike earlier towns founded during what we have termed the Islamicization phase, Qayrawan was far from the heartland of the Islamic state. Although it was situated neither on the coast (where it would have been vulnerable to attack by the Byzantine navy) nor in the mountains (where it would have been vulnerable to attack by the native Berbers), the town nevertheless fell to the Berbers in 64/684 and was not recovered by the Muslim's until five years later[20].

Wasit - a New Facet of a New Strategy

Wasit, also named after its founder al-Hajjaj city, was sited beyond the Euphrates on the west bank of the River Tigris opposite an old Persian town called Kaskar. The new administrative centre was located equidistance from where it took its name, Wasit, between the major urban centres in Mesopotamia, notably, Basra, Kufa and Ahwaz[21]. Its location near an existing town, and separated by the Euphrates from Madina and the new capital city of the Islamic state, Damascus, indicates a change of strategy for, by this time, the Islamic state was securely established in the new territories and the frontiers of the state lay far to east, north and west.

The new inhabitants of Wasit were composed mainly of men and their families from the Syrian army, whose loyalty to the Umayyad Caliph was assured. The leading citizens of Basra and Kufa were moved to Wasit[22], and to prevent trouble the town was surrounded by a wall with gates which were closed at night after the departure of non-residents[23]. And as Wasit became the principal administrative centre of the region, Basra and Kufa became centres of commerce and intellectual life[24].

Wasit Spatial Pattern

Apart from its city wall, the spatial pattern of Wasit seems to present few essential differences from that of the earlier towns. The first element built was the congregational mosque and, on its qibla side the administrative centre which is described as the palace of the provincial viceroy, al-Hajjaj. Alongside the mosque and the palace was the market (suq)[25]. Further information on the town is sparse. There are reported to have been three open spaces (**rahba**) 100m wide and 100 or 150m long, the largest of which was associated with the market[26], and there were streets (**darb** and **sikka**) connecting these spaces with the mosque, the palace and the market with the city gate, one of which was reported to emerge from near the mosque and the palace, passing the market on the south and turning east towards the River Tigris.

According to an incomplete archaeological survey, the city as envisaged by Fu'ad Safar, was comprised of a half circle, abutting the Euphrates[27], and connected by a bridge of boats with the Persian town which was later considered as part of Wasit[28] (see Fig.25).

Utilization in the Assimilation Process: Pre-Islamic Cities

As more and more Muslims moved into the pre-Islamic towns and more and more local people converted to Islam, so the initial desire for segregation became unnecessary and the Muslims started to show more concern to utilize the predecessors, achievements and resources.

> ..., one can safely maintain that, whatever influences might have arrived from urban centres of previous civilizations, the Muslims transformed them in their cities, utilized them according to their own way, and finally absorbed them. In the

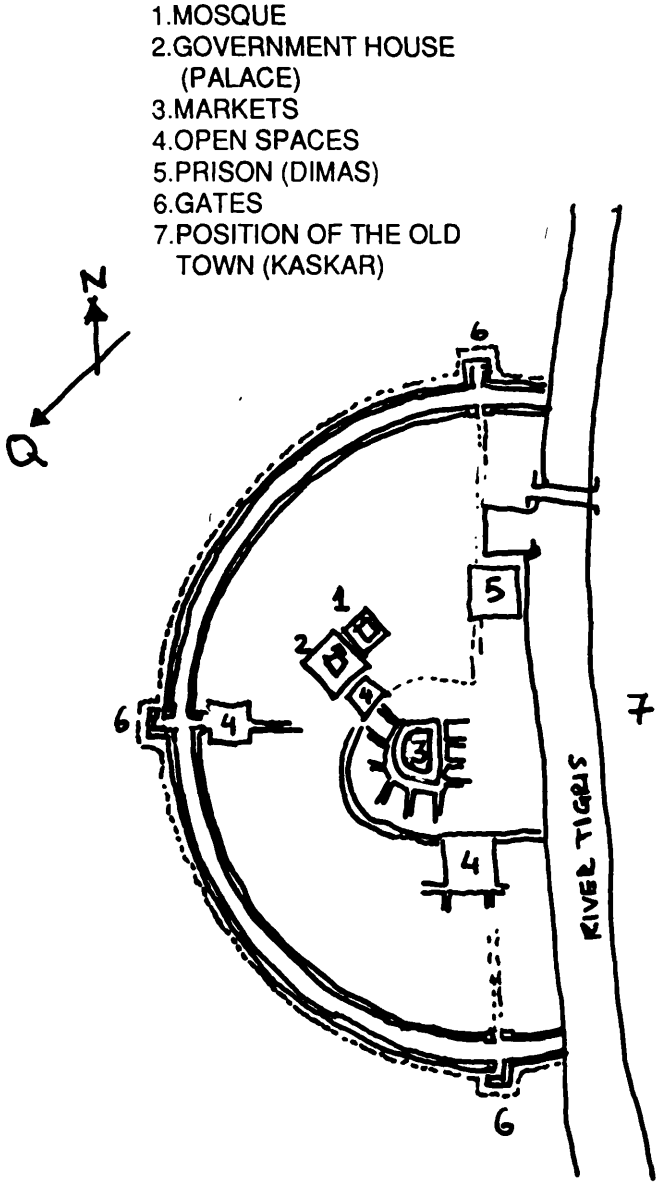


FIGURE 25
WASIT IN THE TIME OF THE UMAYYADS
after MAᶜADIDI/FU'AD SAFAR (1976)

> urbanistic sense, Islam's capability to assimilate is remarkable[29].

Damascus

> At (Damascus) more than elsewhere circumstances seemed as if they ought to have favoured Arab assimilation to Greek culture... Assimilation took place in the opposite direction so that the positive result of conquest was the introduction of Islam, ...[30].

The Muslims, who were no longer wary of the intentions of the indigenous population, favoured not a newly founded Islamic city such as Kufa, but Damascus as the new capital. Muʿawiya, when he became caliph (see note 4 above), made the city his administrative centre of the Islamic state and fixed his residence there[31].

He remodelled the house of the former Byzantine governor as his residence and as the government house (**dar al-imara**), and rebuilt the mosque in its original place at the east end of the Roman temple precinct at the west end of which the Byzantine cathedral still stood[32].

The growing number of Muslims led to the whole area of the temple precinct being taken over for a much larger mosque. **Al-Walid b. ʿAbd al-Malik**, in order to acquire the whole temple precinct, exchanged the above mentioned Christian cathedral, which stood on the temple area, with other churches outside the city; he then demolished the cathedral and built his famous mosque in about (86-96/706-713)[33] (see Fig.26).

The process of assimilation occurred more or less simultaneously in most pre-Islamic towns. In Aleppo a new mosque was built in the *Agora*, the main square in the centre of the town[34] (see Fig.27); in Hama the principal mosque was built in the place of the principal Byzantine church[35]; and in Hims the Muslims are said to have acquired for their mosque all of the area of the church of St. John instead of only the forecourt and part of the cathedral as before[36].

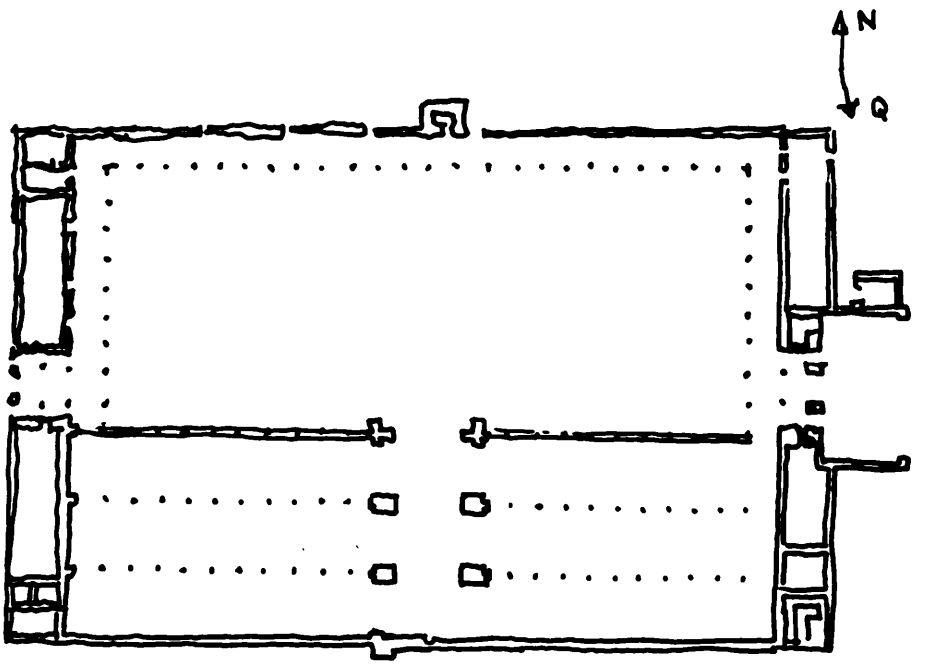


FIGURE 26
DAMASCUS,THE GREAT MOSQUE,
after CRESWELL (1989)

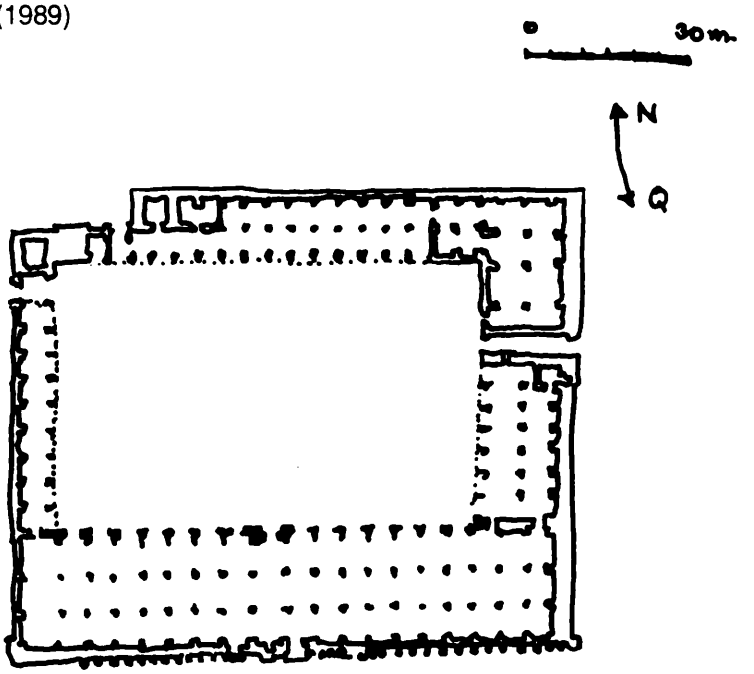


FIGURE 27
ALEPPO, THE GREAT MOSQUE
AT PRESENT, after GAUBE/WIRTH (1984)

Jerusalem

Jerusalem in this phase attained the importance of an Islamic religious centre, third only in importance to the other holy cities of Islam, Mekka and Madina. The Umayyads rebuilt the retaining walls around the former Herodian temple platform and proceeded to erect within the enclosure over the holy rock, traditionally associated with the Prophet Muhammad's Ascent to Heaven (Mi'raj), the remarkable commemorative octagonal structure of the Qubat al-Sakhra, the Dome of the Rock, completed in 72/691-92[37].

To the south the Aqsa Mosque stood opposite to the Dome of the Rock (see Fig.28). LE STRANGE cited MOQADDASI, who gave two accounts as to why the main building of the (Aqsa) Mosque does not come up to the eastern Wall of the platform area. The first reason is, that the people did not want to go counter to the Caliph 'Umar's injunction in founding the first mosque, (believed to be in the same position of the Aqsa Mosque), in the western part of the platform area. The other reason given is: that it was not possible to extend the main-building of the (Aqsa) mosque as far as the south-east angle of the area wall, lest the Mihrab in the centre-place at the end of the mosque, should not then have stood aligned with the Rock under the Dome[38].

However, both the Dome of the Rock and the Aqsa Mosque created an axial line with the Sanctuary Mosque in Mekka. GRABAR described this composition:

> "... a uniquely original architectural composition had been created: two major buildings on a partly refurbished enormous space inherited from earlier times which unlike the Roman in Damascus, was too large to be transformed into a single building...[39]".

The Aqsa Mosque was built along the line of the new mosques in Mekka, Madina and Damascus except that in Jerusalem the main building of the mosque had no internal courtyard, the whole of the platform serving that purpose instead[40]. On the qibla side of the mosque, outside the enclosure, following the arrangement of Basra, Kufa, and Damascus, was

built the government house, and an associated structure probably intended to accommodate the Muslim settlers[41] (see Fig.29).

Similar processes of Islamicization and assimilation occurred later in remote regions and urban centres at Isfahan in the east and at Cordova in the west.

Isfahan

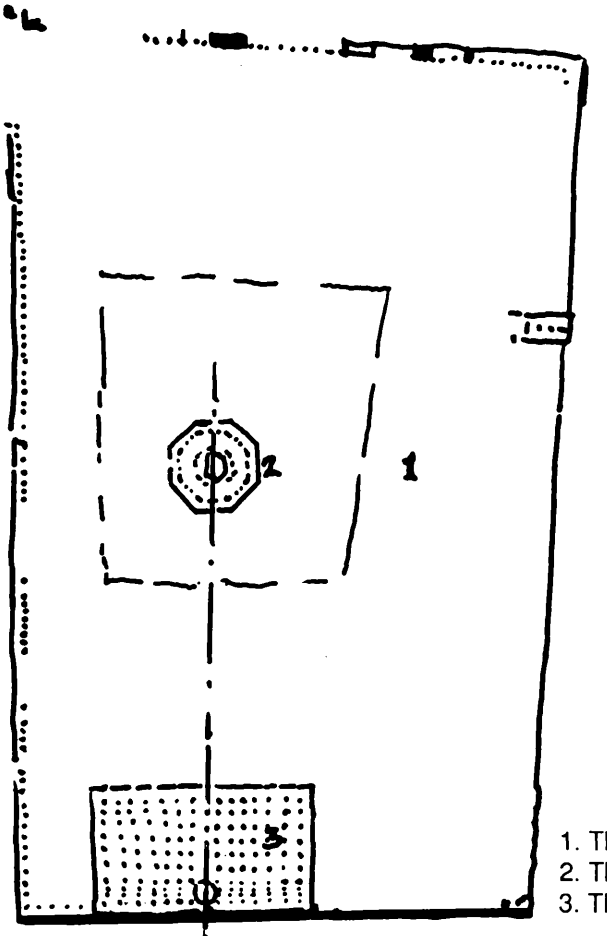
In the region of Isfahan the Muslims originally cantoned their garrison and built their mosque at Jayy, about 8 kilometre from the major town of Yahudiyya (the centre of the present-day city of Isfahan). As GAUBE has observed:

> "The decision to built the mosque in Jayy rather than in Yahudiyya was governed by rational and strategic reasons. Due to its fortifications and the open spaces enclosed within the wall... Jayy was most fitted to serve the Arabs as a military camp.[42]

In the course of time as the process of Islamicization achieved its aim the seat of the governor was transferred from Jayy to the outskirts of Yahyudiyya in an area called Khushinan. Beside the government house they built the main mosque on the bank of a canal, the Nahr Fursan, and a new bazaar (market) outside Khushinan in the direction of Yahudiyya[43]. The location of this bazaar between the two settlements appears to have stimulated their expansion in this direction and soon the two coalesced. With the merging of the two settlements, the mosque in Khushinan became somewhat remote from the centre of the urban conglomeration. Thus a new mosque, began in 156/773 was erected near the centre beside a large open space or Maydan[44] (see Fig.30).

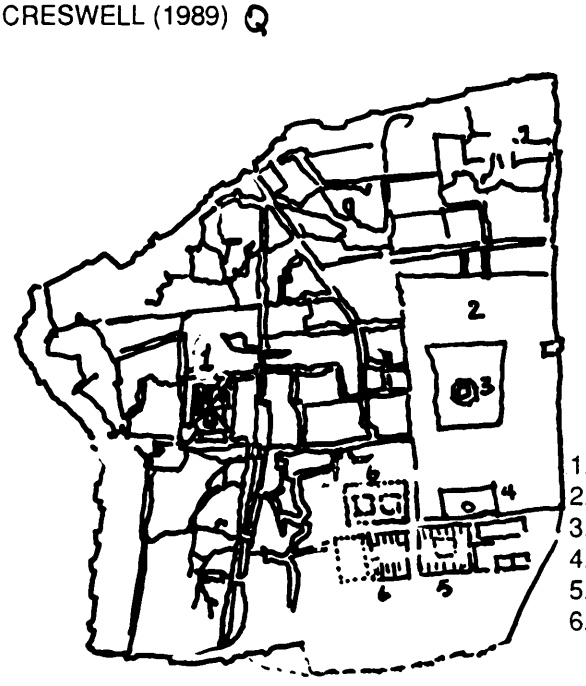
Cordova (Qurtuba)

In Cordova at the time of the conquest in 92/711 the Muslims, closely following the Islamicization process implemented in the Levant, acquired one fourth of the main church and converted it into a mosque[45]. At the same time they remodelled the pre-Islamic governor's house as the Dar al-Imara (Government House), which happened to be on the east side of



1. THE NOBLE SANCTUARY
2. THE DOME OF THE ROCK
3. THE AQSA MOSQUE

FIGURE 28
JERUSALEM, QUBAT AL-SAKHRA
AND AL-MASJID AL-AQSA,
after PRAG (1989); CRESWELL (1989)



1.CHURCH
2.SANCTUARY
3.DOME OF THE ROCK
4.MOSQUE
5.GOVERNMENT HOUSE
6.RESIDENTIAL AND ADMINISTRATIVE BUILDINGS

FIGURE 29
JERUSALEM AT THE TIME
OF THE UMAYYADS after BURGOYNE (1987);
MAZAR (1975)

the Mosque. A door was opened in the eastern side of the mosque and a covered space (Sabat) connected both with a Roman street[46].

Nearly ninety years later in the assimilation process, ᶜAbd al-Rahman I, in 169/785 bought the cathedral from the Christians of Cordova and had it demolished. In its place he erected the great hall and court of a new mosque which was completed in about 180/796[47] (see Fig.31).

Utilization of Traditional Experience in the Assimilation Process

In this phase the Muslim played the central role in the administration of the towns and the country. This central role took a physical as well as an administrative form. As mentioned above nearly all main mosques and the Government House were rebuilt on a grand scale and so came to dominate the central area of the towns, while the rest of the non-Muslim communities started to move away from these central areas and to lose the administrative role they had played in the previous phase[48]. However the change in their role came as a result of the Arabization process (to be discussed below, under the urban and administrative frameworks in the assimilation phase) and coincided with the rebuilding programmes implemented in this phase.

In the rebuilding programmes in the various cities Muslims incorporated and utilized traditional building techniques in two ways; they re-used *spolia* such as stones and marble-columns from ruined buildings; and employed local artisans alongside specialists and others from neighbouring territories. For instance, columns and capitals were brought from ruined buildings for re-use in rebuilding the mosques in Kufa and Basra[49]. Mosaicists specializing in the art of glass mosaics probably were brought from Byzantium to decorate the Dome of the Rock and the Umayyad mosque in Damascus and probably the mosque in Madina[50]. The plan and spatial form of a classical martyrium may be traced in the plan of the Dome of the Rock[51].

Notwithstanding the continuity of traditional ways of building, the Muslims introduced new construction techniques, such as the use of pointed arches and vaults[52], and imposed new criteria to suit the precepts of their religion. Figural representations were not permitted

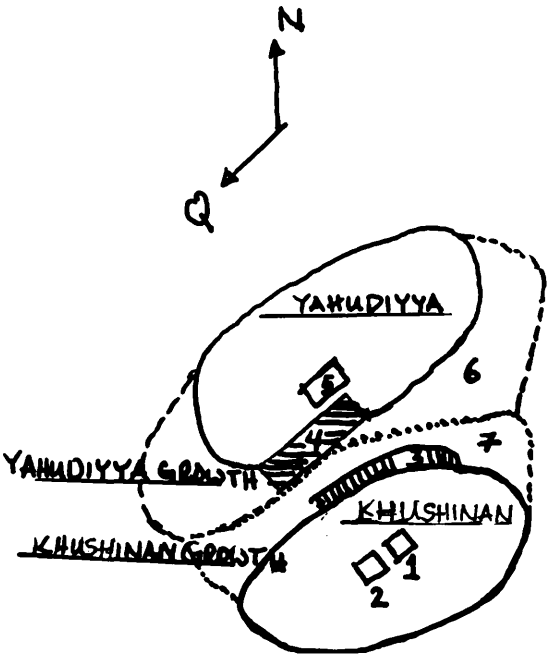


FIGURE 30
ISFAHAN, THE SETTING OF ORIGINAL SETLLEMENT YAHUDIYYA AND NEW KHUSHINAN, after GAUBE (1979)

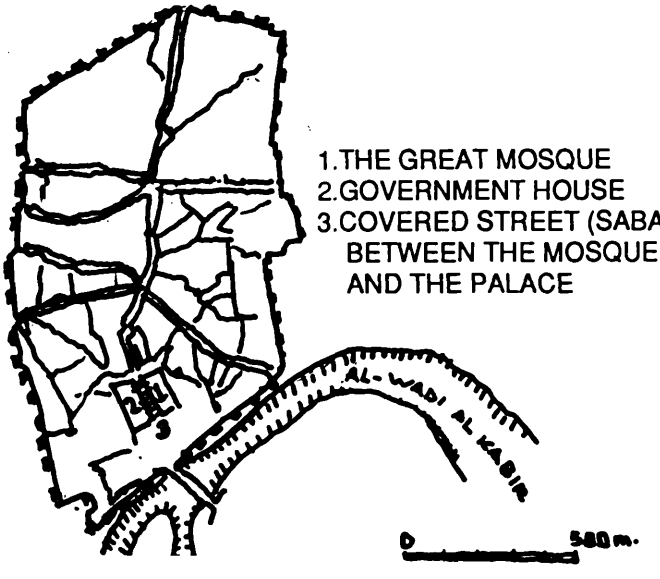


FIGURE 31
CORDOVA, AFTER THE MUSLIM CONQUEST AND THE ADVANT OF THE UMAYYADS, after BENEVELO(1980); SALIM(1982)

in religious buildings and so the mosaics in the Damascus Mosque and the Dome of the Rock contain no zoological images. Arabic and Qur'anic Verses, and inscription and stylized representations of inanimate objects were however portrayed with a skill belying the craftsmen's lack of familiarity with the new subject matter[53].

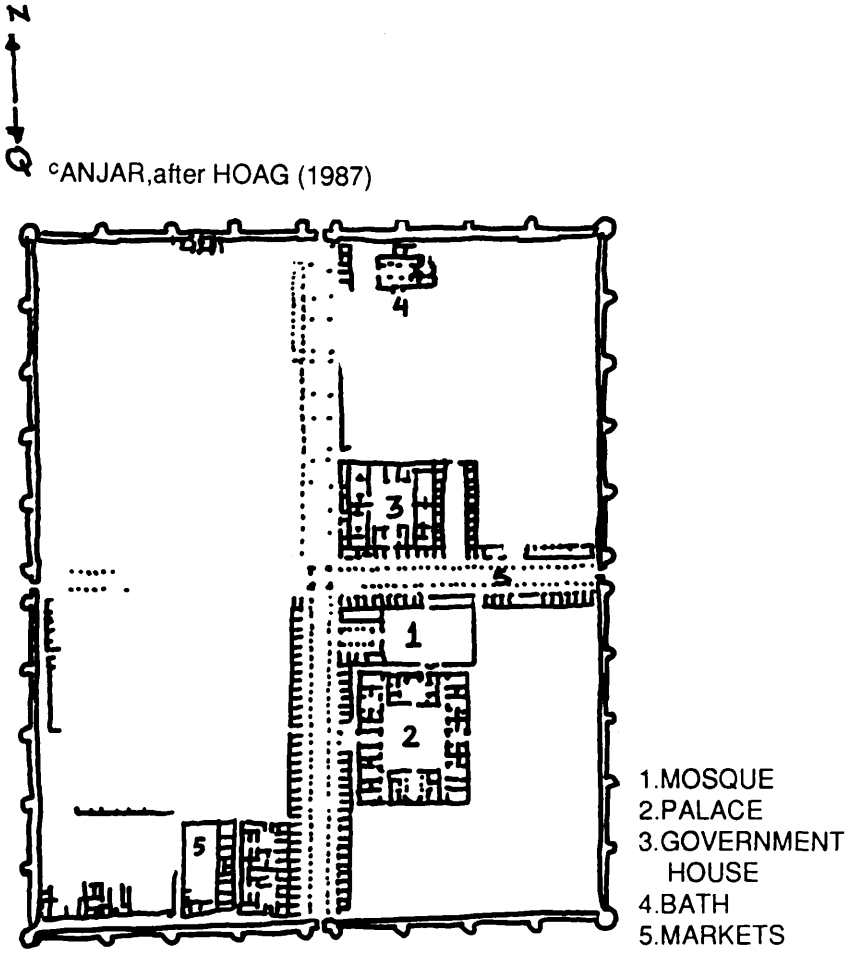
The layout of the mosque had by this time became standardized, based on the plan of the Prophet's Mosque in Madina (see above p.28) and later developed in the mosques of Basra, Kufa and Wasit. Thus the new Umayyad mosque in Damascus had a wide prayer hall on the qibla side and porticoes around the other sides enclosing an open courtyard[54] (see Fig.26).

In the country side new centres were founded by the Muslims for the first time in the Levant. Large complexes built by the Umayyads include the new town of Ramla (93/711), the town-like settlement of ᶜAnjar (95-96/714-15) and princely private recreational residences such as Qasr al-Hayr and al-Mushatta[55] (see Fig.32).

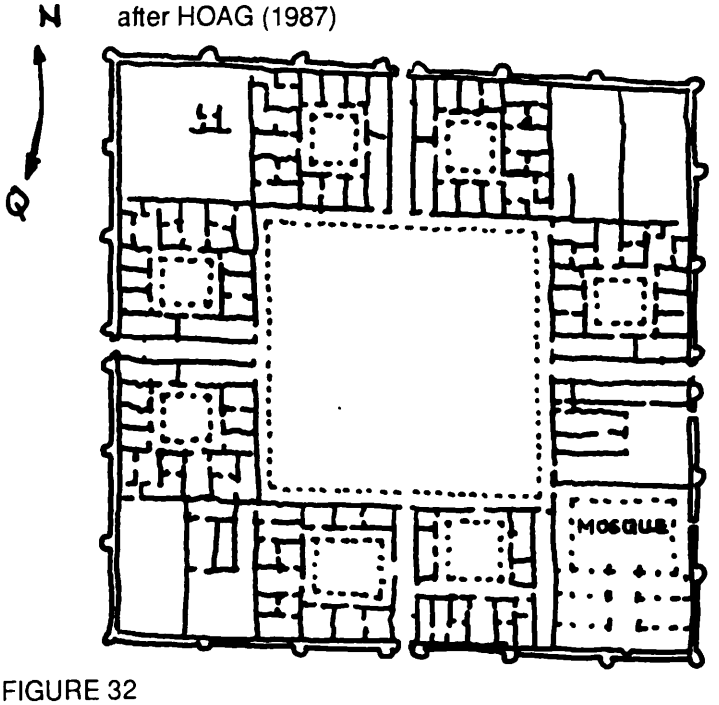
Ramla

Sulayman, governor of the province of Palestine (Filastin), was inspired by building works undertaken by his father, the Caliph ᶜAbd al-Malik in Jerusalem and by his brother, the Caliph al-Walid, in Damascus and elsewhere. In apparent emulation of their achievements, Sulayman founded the town of Ramla in 93/711 as a new provincial capital to replace the nearby town of Ludd (Lydda)[56]. The population of Ludd were forced to move to Ramla and their town was left to fall into ruin. When Sulayman acceded to the caliphate in the death of his brother Ramla, became the capital of the Islamic state (97-98/715-17)[57].

Little of that Umayyad town survives today although excavation has unearthed traces of the main mosque, known as the White Mosque. (see Fig.33)[58] BALADHIRI reported that this mosque was completed by Sulayman's successor ᶜUmar b. ᶜAbd al-ᶜAziz, who made it smaller than Sulayman had intended, saying that the smaller size "would be sufficient to serve the community of Ramla"[59]. Other features of Sulayman's foundation included his own palace and another, probably founded as



cANJAR,after HOAG (1987)



QASR (PALACE) AL-HAYR AL-SHARQI,
after HOAG (1987)

FIGURE 32
cANJAR,TOWN-LIKE AND QASR AL-HAYR AL-SHARQI

the administrative centre, which contain a central water tank and was known as Dar al-Sabbaghein (the "Dyers House"). Since there was no spring or river nearby, wells were dug and rainwater was collected in cisterns and, in addition, Sulayman built an aqueduct to carry water to the town. No chronicle at the time of Ramla's foundation indicates if it was encircled by a wall, neither does MOQADDASI in his description state clearly if the town had a wall, but NASIR-I.KHUSRAW, who visited the town 336 years after its founding, described it as having a wall with iron gates[60].

The main market is said to have been around the White Mosque, and there were roads named after towns and villages in the region, such as the Darb Bayt al-Maqdis (Jerusalem Road), Darb Ludd and Darb Yafa (Jaffa Road), reflecting either the direction in which these roads led or the native towns of the residents of the quarters the roads served. Another road was called Darb Bi'r al-ᶜAskar, after the "army cistern"[61]. YAQUT stated that ᶜAskar is the name of one of the quarters of Ramla. The names of the roads and of the quarters suggest a new process of spatial organization in which soldiers were separated from civilians in their own quarter[62] (see Fig.34).

Urban Framework in the Assimilation process

In this phase the main elements in the urban framework, the mosque and the Government House, retained their central role. They also retained their intimate physical relationship, the Government House being located adjacent to the qibla wall of the mosque, for the leaders of the muslim community at that time, and following the tradition of their predecessors, continued to lead the Friday prayer in the mosque and so needed direct access from his residence which also remained in the Government House[63].

Instead of being purely functional and made of simple materials, however, the architecture of mosques at this time, while still following the architectural form established by the prophet's mosque in Madina, became more elaborate and incorporated embellishments[64].

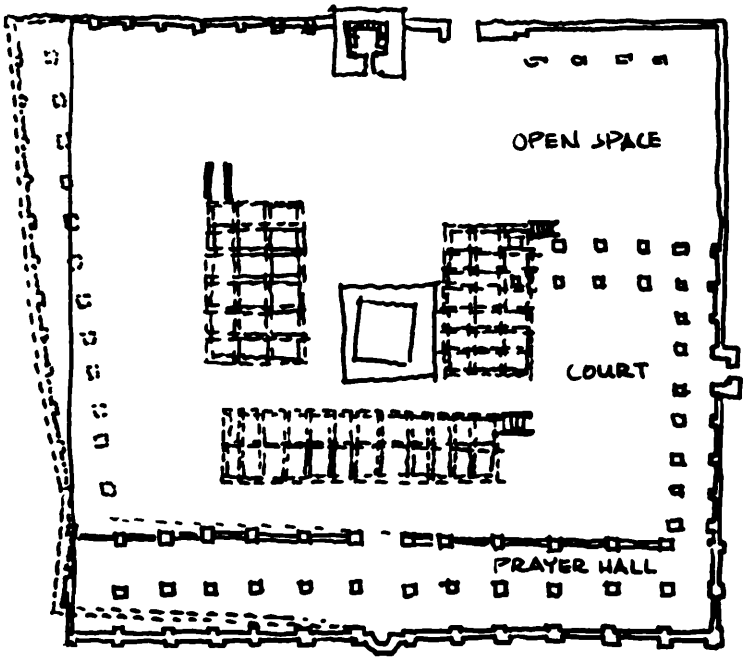


FIGURE33
RAMLA, THE WHITE MOSQUE,
after KABLAN (1959)

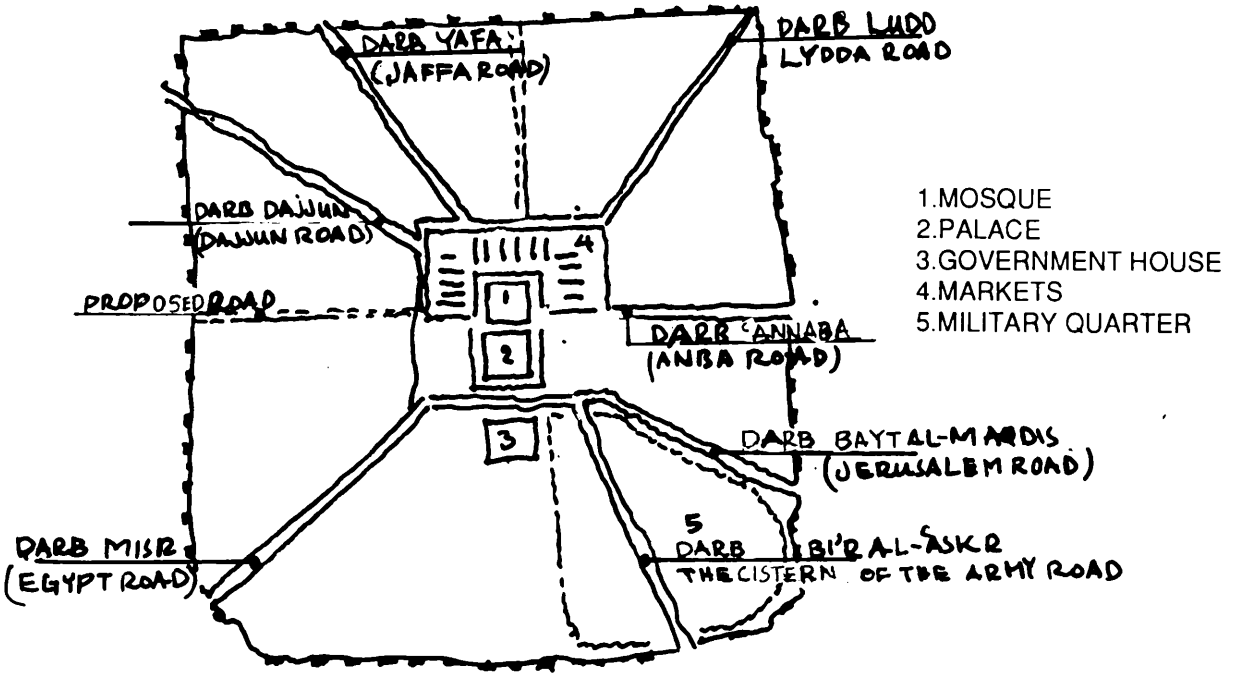


FIGURE 34
RAMLA, PROPOSED RECONSTRUCTION

The market place (**suq**) was located around the mosque and in this phase began to acquire a permanent rather than makeshift character[65].

The **suqs** in Kufa were built (105 - 20/723 - 37) as vaulted structures, presumably in the form familiar in traditional Islamic cities to this day. According to MASSIGNON, the specialized nature of individual suqs, which reflected their activities had already been acquired[66].

Also associated with the mosque was the bath-house (**Hammam**), where ritual ablutions might be performed and which could be built only with the consent of the governor of the town[67]. The origin of the **hammam** lies in the Roman *Thermae*[68].

The grain store (**dar al-rizq**), the primary food store, was located close to the main supply route. In Basra, for example, it is reported to have been situated beside the ancient *Pallocopas* Canal[69].

The mint (**dar al-darb** or **al-sika**), where coins were struck, was organized and controlled by the Islamic state through the governor[70].

The prison (sijn) appears at this time to have become a separate building. The Dimas prison built by al-Hajjaj in Wasit, a famous early prison is said to have occupied a considerable area[71].

The influx to the cities of immigrants from Arabia and other cultural backgrounds and the increasing proportion of Muslims in the population brought about changes in the system of government in line with the changing social fabric of the cities.

The religious law (**Shari^{c}a**) entered the second stage (see above p.14) of its development as the evolution of the traditional Islamic city entered its second phase.

State administration was adapted to accommodate these changing conditions. The existing pre-Islamic land tax registry (**diwan al-kharaj**) was retained along with the army registry (**diwan al-jund**) introduced by the Caliph ^{c}Umar and probably the expenditure registry (diwan

al-nafaqat). In this phase, however, all Byzantine, Persian and Coptic registries that were utilized by the Islamic state were Arabized (75-87/ 697-709)[72]. New diwans were introduced to deal with revenues from state property (**mustaghallat**), charitable donations, personal taxes and alms-giving (**saddaqa**, **ʿushr** and **zakat**), official regalia (**tiraz**), and three departments concerned with official correspondence (**rasa'il**), seals (**khatam**) and the postal system (**barid**)[73].

All pre-Islamic calendars were adjusted in accordance with the Muslim Hijra (Prophet's migration) calendar[74]. New coins bearing Arabic inscriptions were minted to replace the various existing currencies of the captured territories, which had remained in circulation since the conquest[75].

Conclusion

In this phase of their development, early Islamic towns such Basra, Kufa and Fustat, and pre-Islamic towns such as Damascus, Aleppo and Hims underwent gradual societal and spatial adaptation.

In the early Islamic cities adaptation came as a result of several factors. Different groupings of people in their own quarters were merged and rearranged to form a smaller number of large groupings (see above p.75). Fighters in the army settled down to civilian life. Affiliations between groupings changed as a result of the measures discussed above (see p.77) and new political allegiances slowly replaced old tribal and other ties.

Adaptation in the spatial arrangement of the towns will probably have occurred as the towns started to change from military to civilian status. Districts and quarters became crowded and had to expand into available open areas in the towns, and probably included streets or open spaces that formerly had served to separate one quarter from another. Mosques were enlarged, perhaps also Government Houses as we know happened at Kufa, to cope with both the growing numbers of Muslims and the developing administrative system.

Markets became permanent structures perhaps to facilitate the collection of taxes from shopkeepers; in all likelihood the number of shops increased to provide for new civilians who became tradesmen and new arrivals who were not of military status.

In the pre-Islamic towns adaptation of the social structure was marked by the Muslim acquisition of the town centres and their increasing control of administrative and public affairs. Spatial adaptation occurred as the Muslims rebuilt and enlarged the main mosques and probably, the government houses and the market. They also at this time started to build local mosques and to spread out to take over and build up abandoned or ruined areas of the cities.

Unlike the earlier towns of Basra and Kufa, for example, which were founded primarily as centres to congregate the army, new towns were established as formal, permanent urban centres with a defensive wall and all the features the earlier towns had by this time acquired (including quarters for the army). In descriptions of these towns no reference is made to names of tribes and therefore it may be assumed that they were not arranged in tribal groupings.

The above formation and transformation of new and existing towns opened the way for what may be termed a generation process. In the generation process the religious and administrative institutions became more highly developed. This institutional development was reflected in the evolution of the urban fabric of existing towns, which became more elaborate, while in new towns innovative urban forms were introduced.

Foot Notes: Part Two, II

1. HOLT, P.M., (ed) **The Cambridge History & Islam**, Cambridge University Press, Cambridge (1970), I, 92; LAPIDUS (1973), 54

2. EL-ALI (1952), I, 72, after Yaqut and Ibn Ishaq, that Basra reached 300 thousands inhabitants within the first 50 years after its foundation; DJAIT (1986), V, 346

3. PELLAT (1986), I, 1085

4. HOLT (1970), I, 71, political events in the fourth decade of the Islamic calender led to the division of the Muslim Community. The caliph Uthman was seen by certain Muslims to be nepotistic, and was assassinated in the year 35/658. The governor of Syria, Uthman's nephew Muᶜawiya and Ali the forth caliph, disputed the fate of the assassins, Muᶜawiya wanted Uthman's murderers to be put to death while ᶜAli proposed leniency. As this dispute grew, ᶜAli was declared caliph and moved the centre of power from Madina to Kufa, where his greatest support lay. Muᶜawiya who continued to control Syria from Damascus, remained hostile to ᶜAli. Nonetheless, he proposed a negotiated arbitration, which ᶜAli appeared disposed to accept. A group of ᶜAli followers known as the Kharijites (al-Khawari) rebelled and opposed the arbitration with Muᶜawiya, however, and endeavoured to resolve the dispute by killing the leaders of the opposing factions. They killed ᶜAli but failed to kill Muᶜawiya, who in due course became the first Umayyad caliph and made Damascus the new capital of the state.

5. TABARI (1987), II, 479

6. DJAIT (1986), V, 346; TABARI (1987), II, 480

7. MASSIGNON (1940), 336

8. MAQRIZI (1987), I, 297; AHMAD (1917), 12-13; JOMIER, J., "Al-Fustat" in The Encyclopaedia of Islam, E.J. Brill, Leiden, (1983), II, 958

9. GUEST (1907), 78

10. WIET (1964), 3; MAQRIRI (1987), I, 297; JOMIER (1986), II, 958

11. TABARI (1987), I, 480; PELLAT (1986), I, 1085; DJAIT (1986), V, 347, BALADHIRI (1983), 276, 343; HAMAWI (1986), IV, 491

12. IBN KHALDUN (1986), 130

13. HOLT (1970). I, 69, 72; see F.N. 4 above

14. BENEVOLO, L., **The History of the City**, Scolar Press, London (1980), 259; DJAIT (1986), V, 346; Holt (1970), I, 78

15. NAJI, A., **Dirasat fi al-Mudum al ᶜArabiya al-Islamiya** (in Arabic) Basra University, Iraq, (1986), 213-214; BALADHIRI (1983), 230

16. MAᶜADIDI (1976). 90

17. EL-BABOUR (1981), 60

18. TALBI, M., "al-Kayrawan" **The Encyclopaedia of Islam** E.J.Brill, Leiden, (1978), IV, 826; NAJI (1986), 221, 222, cited Yaᶜqubi and Nasiri as references in his conclusion of the arrangement of the quarters and districts in Qayrawan.

19. TALBI (1978), 829

20. TALBI (1978), 827

21. HAMAWI (1986), V, 347; BALADHIRI (1983), 288; MAᶜADIDI (1976), 54

22. ᶜUTHMAN (1988), 75, after BAHSHAL, **Tarikh Wasit** Beirut (1986), 38,39; MAᶜADIDI (1976), 95, 141; YUSIF (1982), 248

23. MAᶜADIDI (1976), 97

24. EL-BABOUR (1981), 61

25. MAᶜADIDI (1976), 126, 134, 144

26. HAMAWI (1986), V, 347; YUSIF (1982), 256

27. MAᶜADIDI (1976), 123-124, 141

28. STRECK, M., "Wasit, **The Encyclopaedia of Islam**", E.J.Brill, Leiden, IV, (1934)

29. MONTEQUIN, F., "The essence of Urban Existence in the World of Islam" in **Islamic Architecture and Urbanism**, Aydin German (ed.), King Faisal University, Dammam (1983), 45; ABD al-RA'UF (1976), 25

30. ELISSEEFF (1983), II, 280

31. ABD al-RA'UF (1976), 34

32. IBN MANZUR (1984), I, 292; HITTI, P., **Capital Cities of Arab Islam**, University of Minnesota Press, Minneapolis (1973), 74; ELISSEEFF (1983)

33. IBN MANZUR (1984), I, 261; ELISSEEFF (1983), II, 281; CRESWELL (1989), 46; IBN SHADAD, I., **al-Aᶜlaq al-Khatira fi Zikr Umar' al-Sham wa al-Jazira: Tarikh Medinat Demashq** (in Arabic), al-Matbaᶜa al-Kathulukiya, Damascus and Beirut (1956), 51

34. IBN al-SHAHNA, M., **al-Dur al-Muntakhab fi Tarikh Mamlakat Halap** (in Arabic). Dar al-Kitab al-ᶜArabi, Demascus (1984), 60-61, SAUVAJET (1986), III, 85

35. SOURDEL, D., "Hamat", **The Encyclopaedia of Islam**, E.J. Brill, Leiden (1986), III, 120-121

36. ELISSEEFF, N., "Hims", **The Encyclopaedia of Islam**, E.J. Brill, Leiden (1986), III, 401

37. GOITEIN, S.D., "Al-Kuds A History", **The Encyclopaedia of Islam**, E.J.Brill, Leiden, (1986), V, 325; HITTI, (1973), 72

38. MOQADDASI (1877), 171; LE STRANGE, **Palestine under the Moslems**, London (1890), 99

39. GRABAR, O., "Al-Kuds, B. Monuments", **The Encyclopaedia of Islam**, E.J.Brill, Leiden, (1986), V, 341

40. IBN KHALDUN (1986), 355; HITTI (1973), 74

41. MAZAR, B., **The Mountain of the Lord**, Doubleday & Company Inc., Garden City, New York (1975), 267-9

42. GAUBE, H., **Iranian Cities**, Hagop Kevorkian series on near Eastern Art and Civilization, New York University Press, New York (1979), 68

43. GAUBE (1979), 68

44. GAUBE (1979), 71

45. CRESWELL (1989), 291, after another Author, he questioned the validity of this report. He was more or less inclined to believe that this report was invented to resemble that of the great Mosque of Damascus.

46. SALIM, S.A., **Tarikh** al-Muslimin wa Atharahum fi al Andalus (in Arabic, Mu'assast Shabab al-Jami^{c}a, Alexandria (1982), 88; NAJI (1986), 363, 364, 366

47. CRESWELL (1989), 291; NAJI (1986), 364

48. IFFI (1978), 91

49. HITTI (1973), 74, 75; BALADHIRI (1983) 343; HAMAWI (1986), IV, 491; TABARI (1987), II, 479

50. IBN KHALDUN (1986), 355; CRESWELL (1989), 43; SAUVAGET, J., "La Mosque Omeyyade de Medine", Institut Francais de Damas, (1947), 80, 81; IBN SHADAD (1956), 58, 60, 61

51. CRESWELL (1989), 36-7

52. CRESWELL (1989), 116, pointed out that the pointed arch is proof of the priority of the east. However only one example, with very slight, probably accidental separation of centre, the eleventh of the span, was found in Qasr Ibn Wardan in 561-4 before its widespread use by the Muslims, and its widespread use in the west 500 years later.

53. CRESWELL (1989), 27-35, 57-6

54. CRESWELL (1989), 40

55. CRESWELL (1989), 122, 162, 167, 201

56. HONIGMANN, E., "Al-Ramla", **The Encyclopaedia of Islam**, E.J.Brill, Leiden, III, (1936), 1116

57. BALADHIRI (1983), 149

58. KAPLAN, J., "Excavation at the White Mosque in Ramla" in ᶜAtigot, Jerusalem (1959), 107

59. BALADHIRI (1983), 149, the excavation of the mosque plan shown under F.N. 58 above illustrate that there is an open (unbuilt) space between the Riwaq (Arcade) and the rear wall of the White Mosque precinct. This area probably came as a result of the reduction in the size of the mosque made by ᶜUmar b. ᶜAbd al-ᶜAziz. Implemented by replacing the rear Arcade forward, thus reducing the size of the court and founding an open space in that area.

60. HONIGMANN (1936), 1116

61. MOQADDASI (1877), 165; HONIGMANN (1936), 1117

62. HONIGMANN (1936), 1116, cited Yaqut

63. MAQRIZI (1987), II, 271, 347; IBN KHALDUN (1986), 129

64. BALADHIRI (1983), 342, reported that Ziyad b. Abih, Governor of Iraq in 34/665 and 40/671 rebuilt both Basra's and Kufa's Mosques by using burnt brick and mortar, also using columns of hollowed drum stone fitted with lead and dowels of iron to support a roof made of teak. Embellishments in Mosques were not introduced until the time of ᶜAbd al-Malik and his son. The first major buildings to have embellishment were the Dome of the Rock in Jerusalem and Damascus Mosque and probably the Prophet Mosque in Madina.

65. SAMHUDI (1984), I, 748, 749, reported that the market in Madina was kept without construction until the

reign of Muᶜawiya b. Abi Sufyan in 41/661; TABARI (1987), II, 480; BALADHIRI (1983),297

66. DJAIT (1986), V, 347, cited Massignon; JOMIER (1983), II, 958

67. HAMAWI (1986), I, 435; BALADHIRI (1983), 280, 348

68. ROGERS, M., **The Spread of Islam: The Making of the Past**, Elsevier Phaidon, Oxford (1976), 142

69. MASSIGNON, L., Explication du Plan de Basra, Westost (Liche) Abhand (Lungen) (MGL Rudolp Tschudi) for Wiesbaden Hawassowitz (1954), 156, 157

70. MAᶜADIDI (1976), 373, IBN KHALDUN (1986), 261

71. MAᶜADIDI (1976), 146-7

72. DURI, A.A., "Diwan, i. caliphate", **The Encyclopaedia of Islam**, E.J.Brill, Leiden (1983), II, 324; IBN KHALDUN (1986), 243-251; MAᶜADIDI (1976), 296

73. DURI (1983), II, 323-4; MAᶜADIDI (1976), 289

74. DURI (1983), II, 324

75. HITTI (1973), 72; BALADHIRI (1983), 451-6

III. THE GENERATION PHASE

Introduction

The processes begun in the previous phase reached their fulfilment in this phase.

As the Arabs lost their military status and turned to commercial, industrial, craft and intellectual activities, the state had to turn to other sources of military manpower. Non-Arabs from distant parts of the Islamic state were drafted into the army, thereby introducing a separate element into the social structure.

The Islamic domain now is a multinational state, stretching from the Atlantic in the west to China in the east. Within this vast empire people moved from place to place creating multiracial urban societies.

No longer was it necessary to bring specialists in certain building or other crafts from outside the Muslim world. Instead craftsmen from the various parts of the Muslim world could be called upon, and the interaction between their different cultural traditions in the context of Islamic religious and administrative precepts produced new and distinctive forms, advances in architecture and other arts as well as in theology, philosophy, geography, astronomy, medicine and so on.

Elaboration in the Generation Process: Existing Cities

Earlier Islamic cities such as Basra, Kufa, Fustat, Wasit and Ramla became fully developed in this phase. Those that did not already have a wall were provided with one (Basra, Kufa, Qayrawan and Madina) or with a moat (Fustat)[1], thus introducing the term "Medina" and creating a differentiation between a town and the suburbs. The term "Medina" in the sense of a historical urban centres well-organized, closely packed and protected by walls with gates, makes its appearance for the first time in the account given by TABARI[2].

Basra became a complete metropolis, with a population of about 600,000 living in a city 3 mils (approx. 7.5 km) long, equal or probably larger than Constantinople at that time[3]. Besides its commercial and

agricultural activities, it was the industrial centre of the region[4]. Its wall seems to have followed the long rectangular shape of the city (see above p.56). MOQADDASI described it as having one gate in its **badiya** (desert) side, which will led to the central spine (**marbad**) running through the middle of the city[5]. At this time Basra contained three centres, each around a Friday Mosque (**jami^{c}**)[6], one in the Main Market, one at the Badiya gate (mentioned above) and a third near another gate called the **Jami^{c}** Gate. There were three markets, the Main Markets, the Kala Market near the canal and the Jami^{c} Gate Market near the city gate of that name[7].

Kufa was both the commercial centre of the region and the administrative capital of the Islamic state[8], for the ^{c}Abbasids chose this city for their official residence and the diwans, the public and administrative offices, were moved from the former Umayyad capital of Damascus[9].

Fustat was two thirds of a **farsakh** (about 4 to 5 km long), a congested commercial and industrial entrepot, with flourishing markets spread around the Friday Mosque (**jami^{c}**) on all sides. The mosque itself was bigger in size than that of Damascus, even though people at Friday Prayer prayed in the markets 600 metres from the mosque. Its streets were narrow and winding; the houses were four or five stories and they were provided by air and light from inner courts. However MOQADDASI considered Fustat to be an outstanding Islamic metropolis and one of which the Muslims could be proud[10].

Qayrawan, like Kufa and Madina became one of the chief cultural and religious centres of Islam[11]. The city spread and reach about 7.5 km square, bigger than Damascus and more splendid than Isfahan. There were fifteen major streets (**darbs**), and the twelve gates of the Great Friday Mosque opened on to different markets such as the **Simat** Market, the Exchanger Market, the Thursday Market, the Dyers Market, the Rammahin Market and the Butchers Market[12].

Wasit comprised two centres each with its own Friday Mosque and Market, on either bank of the River Tigris. The city was fully

developed with contiguous construction and a bridge connecting the two sides[13].

Ramla became the principal city of Palestine, larger than Jerusalem, measuring 1 mil (2.5 km) on each side according to MOQADDASI. Its streets were wide but unpaved, and it contained spacious houses, many funduqs (hostels), bath-houses and local mosques. Its Friday Mosque was one of the most beautiful[14]. The ᶜAbbasids restored the city's water supply and the irrigation system of the agricultural hinterland[15].

Most of these cities came to possess a multi-racial social structure. Kufa, for instance, is said to have lost much of its original tribal toponymy, which was replaced by one reflecting the regional background of new arrivals such as Khurasanians. Qayrawan included in addition to Arabs, Persians, Khurasanians and Berbers, with Jews and Christians practising their religions alongside the Muslim majority[16].

Pre-Islamic Existing Cities

Pre-Islamic cities lost their early pre-eminence in this phase, when efforts concentrated on founding new cities rather than developing existing ones. The shift of the seat of the caliphate to Mesopotamia meant that the cities of the Levant lost the dominant administrative and political role that they had acquired in the previous phase. These cities did not decline, however, continuing to develop throughout this phase.

Damascus, for example, retained the Roman *decumanus* as its main market street extending straight from west to east through the city. But nevertheless, it appears to have been subdivided into three lines. IBN ᶜASAKIR described the street market as spread into three lines between Jabiya Gate and the Eastern Gate. Traffic was organised in a way which would allow pedestrians to use the middle lane, while each of the side lanes was a one way direction. One headed east, the other west and both were allocated to those who use animals[17].

MOQADDASI also mentioned covered markets engaged in a flourishing trade, and bath-houses and hostels (funduqs), of which he says none

better could be found. In contrast to the main markets, however, minor streets (zuqaqs) were narrow and houses were built of wood and clay (teen)[18].

Aleppo, like Damascus, did not extend beyond the city walls, but nevertheless, new development under the Hamadanis, Sayf al-Dawal'a, took place on the eastern bank of Quwak river near the western side of Aleppo's wall. However the new administrative palace with two associated maydans (training course) and a growing district on the south corner of the wall were destroyed by Naqfur the Byzantine in his invasion at Aleppo in 351/962[19]. The walls according to IBN HAWQAL were not in good condition, the citadel too, despite its eminent situation, is said not to have been strong or in good condition. The markets, on the other hand, were spacious with rows of shops clustered together and the buildings were of stone[20].

In Jerusalem, wrote MOQADDASI, the buildings are of stone and nowhere will be found finer or more solid construction[21]. The markets, too, were fine, well built and clean, according to NASIR-I KHUSRAW, each craft having its own suq. The paved streets were washed by the rain[22]. The bath-houses were however expensive and filthy[23]. In this Phase the Aqsa Mosque was rebuilt and enlarged by the ᶜAbbasids to accommodate up to 12000 Muslims in prayer[24]. Later on, following an earthquake the Aqsa Mosque was reduced in size and the south-eastern corner of the city was abandoned and left isolated outside the rebuilt city wall[25].

In the east, Isfahan is described as large and well populated. It still comprised two flourishing centres[26], Khushinan and Yahuduya (see above p.84), the latter of which contained twelve main streets (darbs) and a fine mosque. Some of the markets were covered, while others remained uncovered. MOQADDASI reported that the houses, like those of Damascus, were built of clay[27].

Innovation in the Generation Phase: Newly Founded Cities

Although Kufa appears to have retained open spaces and gardens, in its fully developed form there was not enough free space available to

satisfy the needs of an ambitious dynasty. Just as the last Ummayyads had founded new towns such as Haditha near Mosul, Madinat Ibn Hubayra near Kufa and Qasr Ibn Hubarya nearly 100 km north of Kufa[28], so the first ᶜAbbasid caliph, al Safah, first of all began to build his residence in a new town he called al-Hashimiya at Qasr Ibn Hubarya, later abandoning it in favour of a new town of the same name nearby. Later in 134/752 he moved again to settle near Anbar, the former Persian city of Firuz Sabur, but he died before completing it. His brother and successor al-Mansur, then established his residence, also called al-Hashimiya near Madinat Ibn Hubayra in the vicinity of Kufa[29].

The search of al-Mansur and his brother for a suitable city for their capital of the caliphate led eventually to the founding of another new city, this one different from the others which presented and incorporated many innovative concepts.

However a similar search process for a new city appropriate to the ambition and need of the ruler led to the generating of many other cities in this phase, such as Fez in modern Morocco, Samarra to the north of Baghdad and Mahdiya in modern Tunisia (see below p.132, 135)[30].

Baghdad

Of the several names ascribed to the city founded by al-Mansur, including **Medinat al-Salam** (The City of Peace), **Medinat al-Mansur** (the city of al-Mansur), al-Medina al-Mudawara (the Round City), al-Zawra (the Bent or Crooked city; a name derived from the inaccurate orientation of the qibla of the main mosque), the original name of the site, Baghdad, remains the common one[31].

Al-Mansur's decision to build Baghdad in 145/762 came after a long search for a suitable site. HAMAWI records that al-Mansur was looking for a site that was central and convenient for the people and the army (**wasita, rafiqa bil-ᶜamma wal-jund**)[32]. He eventually selected a site on the west bank of the Tigris at a point where that river and the Euphrates run close together, only 40 km apart (see Fig.35). The site was fertile, densely cultivated, irrigated by many canals which also

provided means of communication, transport and defence, with no restriction on future proliferation[33].

TABARI quoted al-Mansur as expressing his satisfaction with the site:

> "This is an excellent place for construction. Here is the Tigris to keep us in touch with land as far as China and bring us all that the seas yield. It will also give us the food products of Mesopotamia, Armenia and their adjacent territories. And there is the Euphrates to carry us all that Syria, Raqqa and their adjacent territories have to offer"[34].

In general, Baghdad in its early layout comprised a full round-centre divided into four quarters distributed around a huge open court. In the middle of the court lay the Caliph's domain, his palace and the main mosque. Behind the round wall and between its four gates, four suburbs were laid and extended in all directions.

The building of the city involved a great number of men. It is reported that for its construction 100,000 architects, engineers, artisans, smiths, carpenters, builders and other labourers were drawn from Basra, Wasit, Kufa, Mosul and various parts of the Islamic empire[35].
Although it has been suggested by some modern authors that these numbers are exaggerations, there can be little doubt that large numbers of those responsible for the building of the city remained to live in it[36].
Another major component of the population came from the army; the population included 30,000 soldiers, 4,000 of whom resided in the round-centre of the city[37]. It seems that al-Mansur followed the tradition established by an Umayyad governor of Khurasan, Qutayba (96/715), of conscription into the army a certain number of men from each city. The army itself was subdivided into many groups, each comprising men from one particular city or province[38].

The citizens included Arabs and non-Arabs. There were the numbers of the ruling ʿAbbasid dynasty with their entourage, companions, associates (mawali) and servants, as well as 700 important figures from the various Arab tribes brought by al-Mansur himself and 500 Ansaris from Madina brought by his successor al-Mahdi in 160/777[39].

We know that others who settled in Baghdad included Arabs from Kufa, Basra, Wasit and Yemen, because the early tribal organization at that time was virtually obliterated and contemporary historians named them after their native cities or regions, not their tribes as was common in the first phase[40]. There were also considerable numbers of non-Arabs from Khuwarizm, Bukhara, Fars, Kirman, Kabul and North Africa.

It appears therefore that one of al-Mansur's reasons for founding Baghdad was to create a cosmopolitan city. A city with its heterogeneous and cosmopolitan population represented the cosmopolitan character of the Islamic state[41].

The Early Organizational Structure of Baghdad

The traditional organization of Islamic cities such as Kufa was followed in Baghdad[42]. However nothing survives above ground of al-Mansur's city and no archaeological excavation has been undertaken. The layout of the city is known, from the detailed descriptions given by YA'QUBI and IBN AL-KHATIB.

Like Kufa (see Fig.18), Baghdad was comprised of a communal and public centre, a huge open space containing the mosque, the Caliph's Palace and markets, surrounded by residential districts and quarters in which the inhabitants were grouped according to their ethnic background, their native towns or their occupation.

Baghdad's layout was a pre-conceived innovative arrangement. However its circular shape was not as novel as it might seem. Assyrian military camps, a Parthian city in Mesopotamia and a Sasanian one in Iran provide antecedents[43].

> " But none of the parallels exhibit the peculiar configuration of space in Baghdad. All that it really owes to its antecedents is its circular plan. What goes on within that plan is new" [44].

The pre-conceived circular layout illustrates how the urban structure was planned to accommodate the various components that constituted the Islamic city at that time. The streets and open spaces, in particular,

while reflecting the tradition seen in earlier cities like Kufa and Wasit, here show clearly the interrelationships between the Islamic citys components.

Unlike the earlier capital cities of Islam, Madina, Kufa, Damascus, Baghdad came into existence by the elaborate act of one man, al-Mansur[45]. His long search for a suitable capital no doubt allowed him to form a good idea of what form his new city should take. Although the circular shape existed in earlier pre-Islamic settlements, the spatial articulation of Baghdad is an elaboration of the pattern already observed in Kufa[46] (see above p.59).

Conflicting reports give the area of the Round City-Centre as anything from 576,000 to 64,000,000 square cubits (dhira^{c}). Modern scholars incline to a report mentioned by YA^{c}QUBI, giving the area as 20,000,000 square cubits, with a circumference of four miles, which means that the diameter of the city will have been 2512 metres[47].

The vast central court of the city-centre was surrounded by three concentric walls inner, middle and outer, with a protective moat beyond the outer wall. Between the outer and the middle walls was a clear space (faseel) where troops were free to move to defend the city. Between the middle and the inner walls lay the residential areas, with two clear spaces to allow the inhabitants to reach their quarters. Access to these clear spaces and to the central court was gained by way of four clearly articulated axial streets leading north-east, north-west, south-east and south-west, from four fortified gates in the outer wall named after the city or province towards which they opened, the Kufa Gate (SW), the Basra Gate (SE), the Khurasan Gate (NE) and the Damascus Gate (NW)[48].

In the central court, besides the Friday Mosque and the Caliph's Palace, were two additional buildings, one housing the chief of the guard and his troops, the other housing the chief of police and presumably, his men[49]. LASSNER, following YA^{c}QUBI, indicates that the residences of al-Mansur's younger children, his servants in attendance, the treasury (bayt al-mal) the arsenal, the diwan (Registry) of the palace personnel,

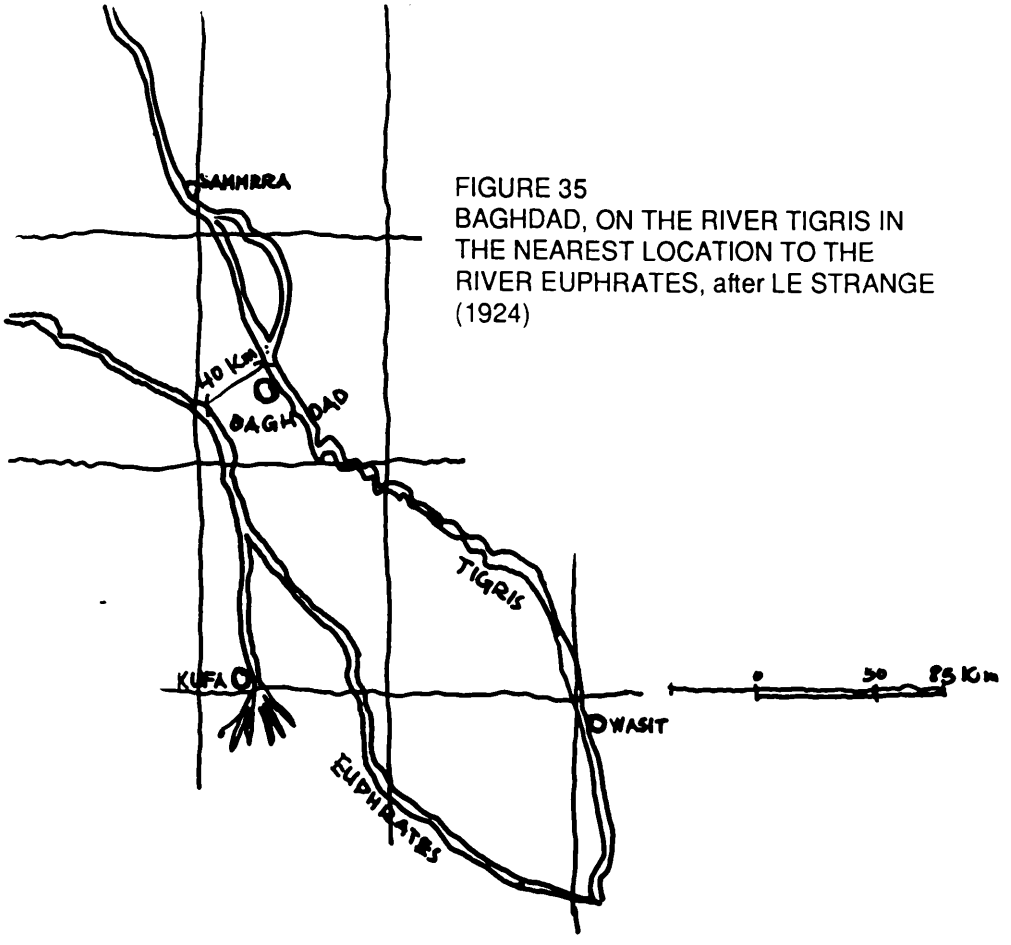
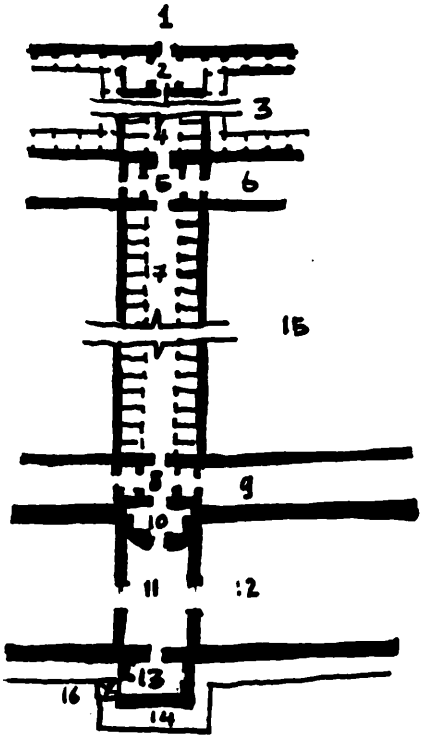


FIGURE 35
BAGHDAD, ON THE RIVER TIGRIS IN THE NEAREST LOCATION TO THE RIVER EUPHRATES, after LE STRANGE (1924)



1. CENTRAL COURT
2. INNER PORCH (DIHLIZ)
3. ADMINISTATIVE BUILDINGS INNER RING
4. SMALL ARCADE (TAQAT)
5. INNER OPEN SQUARE (RAHBA)
6. INNER CLEAR SPACE INTERVALLUM (FASEEL)
7. LARGE ARCADE (TAQAT) MARKET AND SHOPS)
8. MIDDLE OPEN SQUARE (RAHBA)
9. MIDDLE CLEAR SPACE (FASEEL)
10. MIDDLE PORCH (DIHLIZ)
11. OUTER OPEN SQUARE (RAHBA)
12. OUTER CLEAR SPACE (DIHLIZ)
13. OUTER PORCH (DIHLIZ)
14. MOAT (KHANDAQ)
15. RESIDENTIAL QUARTERS OUTER RING
16 BRIDGE

FIGURE 36
BAGHDAD, THE AXIAL ARCADED STREET-MARKET AND GATE, after LASSNER (1970)

the public kitchen and various other governmental agencies surrounded the central court and must have formed an inner ring of buildings separated from the court by the inner wall[50]. This arrangement led LASSNER to describe the Round City as the "administrative centre of Baghdad"[51].

Each of the long axial streets leading to the central court was divided into two arcaded sections (taqat) roofed by vaults each side comprising about 54 rooms, with open spaces (rahba) where it intersected the three concentric clear spaces or roads (faseel). At either end there was a porch (dihliz), one in the bent entrance gateway in the outer wall and one opening on to the central court. A third dihliz opened between the first (outer) rahba and the rahba at the intersection with the second faseel (see Fig.36). Above this dihliz was a majlis, a great domed chamber overlooking the city (see Fig.37)[52].

In the quadrants between the main axial streets the residential areas were seamed by side-streets (sikka, pl. sikak). YA'QUBI gives a long list of the side-streets in each quadrant. There were twelve in the south quadrant between the Kufa and Basra Gates; twelve in the east quadrant between the Basra and Khurasan Gates; nine in the north quadrant between the Khurasan and Damascus Gates; and eight in the west quadrant between the Damascus and Kufa Gates (see Fig.38). YA'QUBI gives the names of these side-streets. Each was named after an important figure who had lived there (eg. Sikkat Abu Hanifa)[53], after a major building on the street (eg. Sikkat al-Matbaq, "the Matbaq Prison Street"), or after the occupation of dwellers in the street (eg. Sikkat al-Mu'adhdhinin, the street of those who call for prayers; Sikkat al-Saqqa'een, "Water-carriers Street"; Sikkat al-Haras, "Guards Street")[54]. The quadrant and their various names suggests that the number of streets and so the size of the residential quarters between them were determined in accordance with the size of the groups intended to settle in each[55].

The Suburbs (Arbad) of Baghdad

At the same time as the Round City was founded, four suburbs were also built. Between the suburbs were streets, each leading to an open

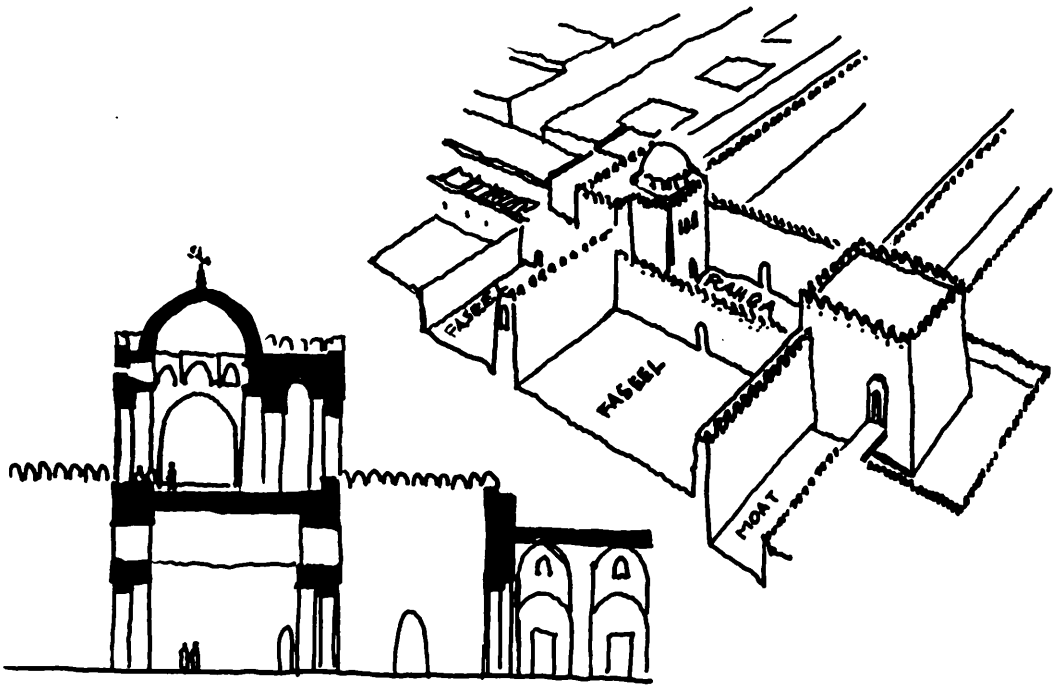
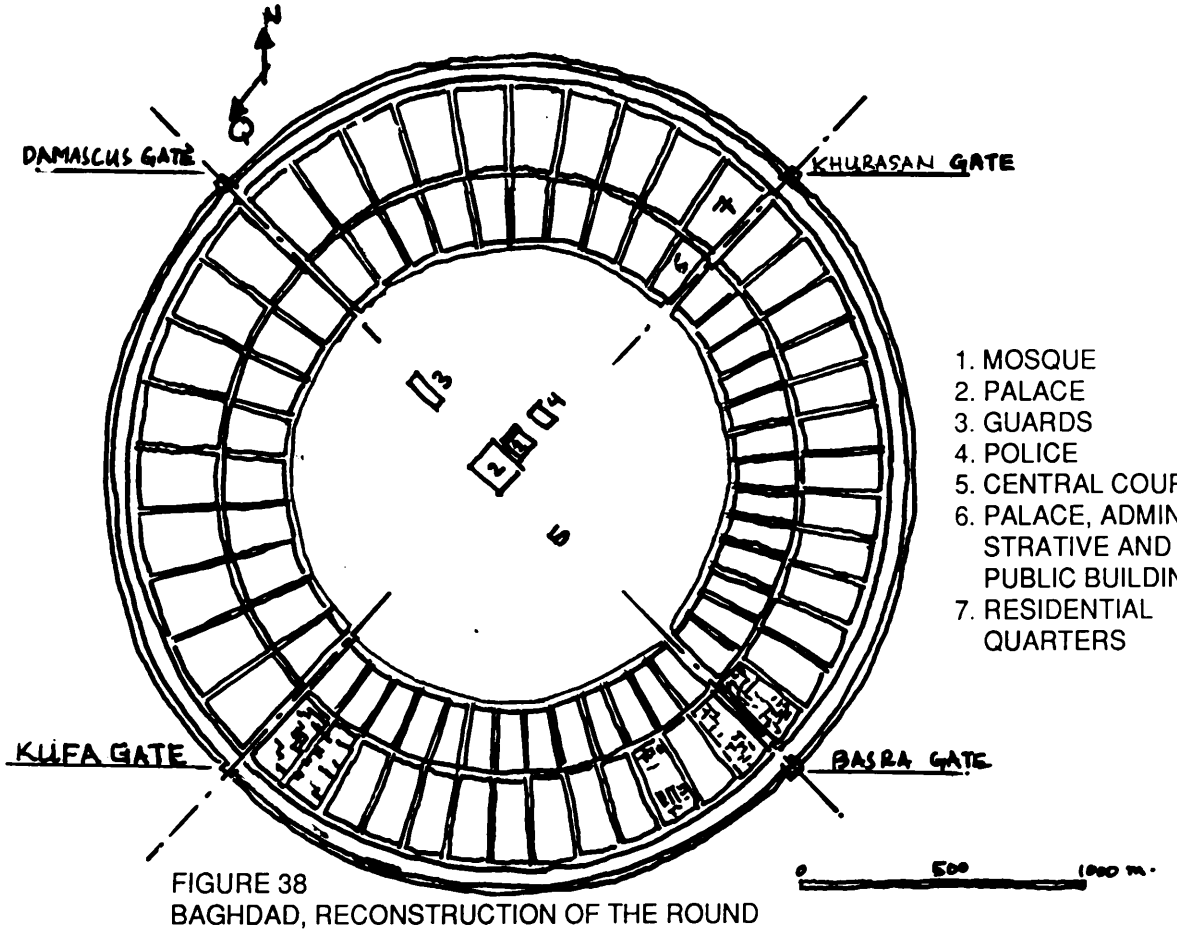


FIGURE37
BAGHDAD,THE CLIPHAL CHAMBERS (MAJLIS),
ABOVE THE CITY GATES, after LASSNER/HERZFELD (1970)



1. MOSQUE
2. PALACE
3. GUARDS
4. POLICE
5. CENTRAL COURT
6. PALACE, ADMINISTRATIVE AND PUBLIC BUILDINGS
7. RESIDENTIAL QUARTERS

FIGURE 38
BAGHDAD, RECONSTRUCTION OF THE ROUND ADMINISTRATIVE CENTRE, after CRESWELL (1989); LASSNER (1970)

space (rahba) in front of one of the gates of the Round City. Each suburb included several districts (mahalla) subdivided into areas (nahiya) and plots (qata'iᶜ) with markets (suqs) and local markets (suwayqas), local mosques and bath-houses. In describing the process of design and distribution of the suburbs, YAᶜQUBI quoted al-Mansur as giving instructions to the engineers (muhandisin) to lay out thoroughfares (durub nafidha), side-streets (sikak) and cul-de-sacs (durub ghayr nafidha) along which the residential areas were to be aligned (yuᶜtadal buha al-manazil)[56]. The main streets were to be 50 cubits (about 25 m) wide and the smaller streets 16 cubits (about 8m) wide. Each street was to be named after a group of people or an important individual to be settled there. Many districts and streets were named after the city or province from which the new residents had arrived: Kabul, Bukhara, Khuwarizm, etc., with a naqib (provost) designated for each district (see Fig.39)[57].

Al-Karkh: The Commercial Centre of Baghdad

As the population of Baghdad grew rapidly, so commercial activities increased to the extent that the limited market area within the Round City was no longer able to cope[58]. Thus twelve years after the founding of Baghdad the commercial activities were moved to a new area known as al-Karkh to the south of the southern suburb, and provided with a congregational mosque designated for the shopkeepers and traders.

> "Karkh, which thus before long became the great commercial centre of ... Baghdad, though founded by Mansur, was an after-thought on the part of the caliph, no such suburb being included in his original plan of the Round City"[59].

After-thought or no, for the first time in the evolution of the traditional Islamic city the commercial central activities moved from the city centre into a separate centre.

The construction of Karkh, according to YUSIF, was designed by al-Mansur on a piece of cloth[60]. He allocated a specific area, a street or part of a street to each trade, and the crafts or industries were distributed according to the degree of disruption or offence they might

cause: light trades being located in or near the centre while others that created unpleasant smells, smoke or involved the movement of large heavy materials being located towards the outskirts[61].

The Military Centre of Baghdad: al-Rusafa or ᶜAskar al-Mahdi

Rusafa lies on the east bank of the Tigris, opposite the Round City. Originally it was founded as a camping ground, a base for al-Mahdi's army (the Khurasanian army) on its expedition to Rayy and elsewhere in the East[62].

The account of early authors suggest that the congregational mosque of Rusafa was built eight years before al-Mansur built a new palace for his son, al-Mahdi in 151/769, in anticipation of al-Mahdi's victorious return from Khurasan[63].

In choosing a site on the east bank, not the west for his son's army camp, al-Mansur according to TABARI intended to create a counter military centre that would serve to quell revolt that might break out in the Round City. In this way, too, the bulk of the army, who were mainly Khurasanians, were kept apart from the other non-Khurasanian troops garrisoned in and around the Round City. Also, since this army was mainly engaged in the east, such a site would have been in the best place from which to launch expeditions and to defend the city from counter-attack[64].

Al-Mahdi's palace, the congregational mosque, a maydan (open space) and garden were associated[65]. The exact locations are unknown but the garden was laid out near the river, an arrangement which became favoured and in later times was to become usual. Indeed, al-Mansur's new al-Khuld palace founded (157/774) on the opposite bank of the river overlooked a large open square, a parade ground outside the Khurasan Gate[66] (see Fig.40). Besides founding Baghdad, al-Mansur founded four other towns according to YAᶜQUBI: Malita and Massisa in Iran, Mansura in Sind (northern India), and Rafiqa in the Jazira (northern Mesopotamia)[67]. ROGERS has observed that towns existed on these sites before Islam, but Rafiqa (later called Raqqa) was in fact built in the vicinity of an earlier town[68] and so it is possible that the other three

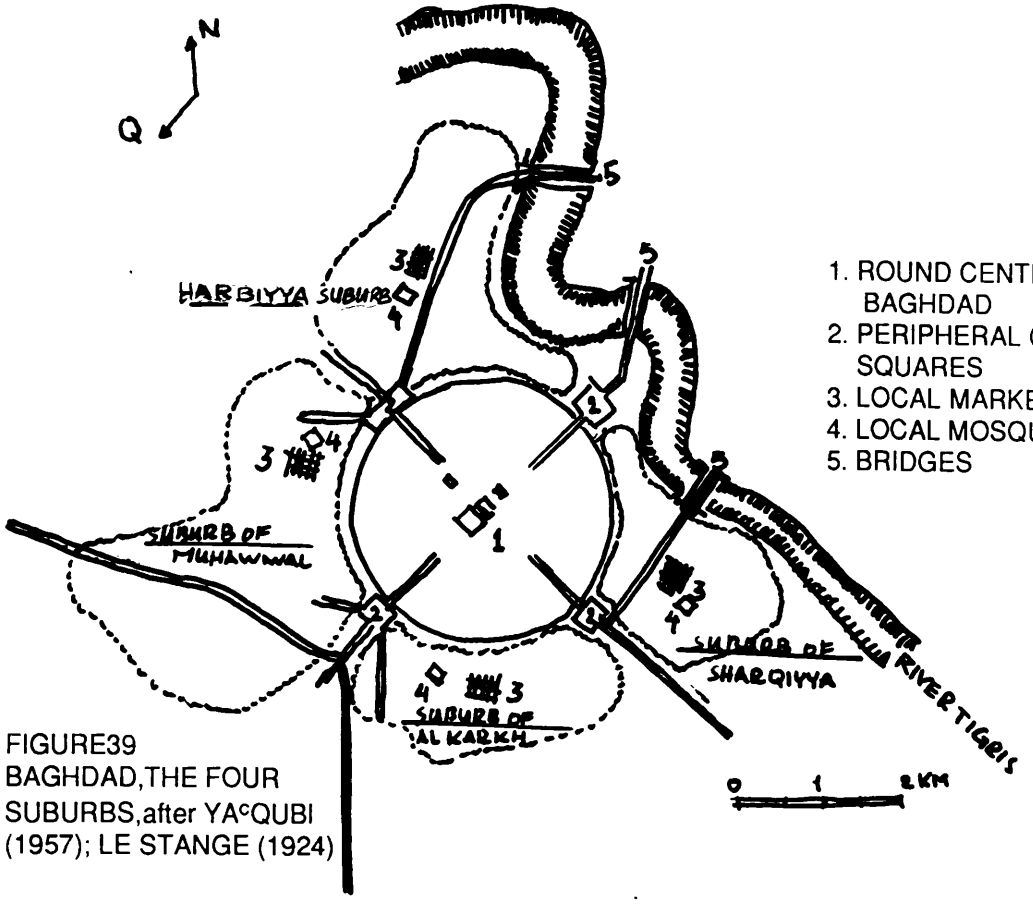


FIGURE39
BAGHDAD,THE FOUR SUBURBS,after YAᶜQUBI (1957); LE STANGE (1924)

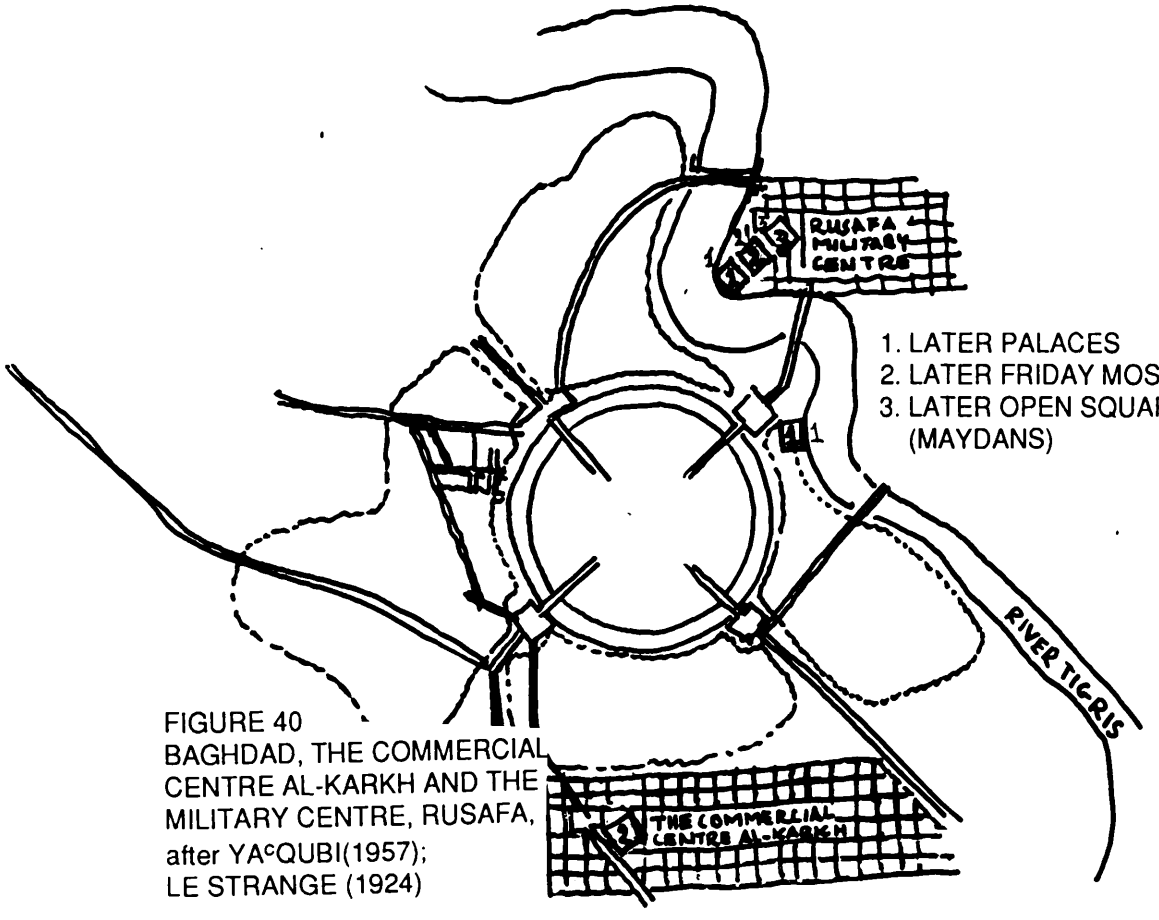


FIGURE 40
BAGHDAD, THE COMMERCIAL CENTRE AL-KARKH AND THE MILITARY CENTRE, RUSAFA, after YAᶜQUBI(1957); LE STRANGE (1924)

were likewise beside old towns, not simply redevelopments of them. The founding of new urban centres near existing settlements was to become common in the Generation Phase.

Excavations have shown that Raqqa was round in shape, surrounded by a double wall, with a large mosque in the northern part of the town[69]. The rounded shape of Raqqa and the circular configuration of Baghdad and a memorial monument of Harun al Rashid, al Mahdi's son and second successor, a huge full circle 3 kms in diameter called Hiraqla[70], appear to have been inspired by the form of the Ummayyad city of Wasit (see above p.80) which according to MA'ADEEDI after Fu'ad Safar was almost a complete circle [71] (see Fig.41, 42).

Within the first seven decades after its founding, Baghdad underwent successive development. The Round city functioned only as the administrative centre and no longer as the Caliph's Residence. Al-Karkh became the dominating commercial centre of the whole city and extended beyond its original limits which according to YA'QUBI originally were two leagues by one league[72]. The bulk of the army, the Khurasanians, apparently reverted to civilian life. Subsequently the caliph turned to other sources for Military stock, this time the Turks[73].

Several new palaces and suburbs such as Shammasiya north of Rusafa were founded[74]. The Caliph al-Mu'tasim (218/833) made an unsuccessful attempt to settle with his Turkish troops in Shammasiya, before having considered several alternatives, he founded a new Islamic city[75] and a new capital Samarra about 100 kms north of Baghdad[76].

Samarra (Sur man Ra'a) ("He who sees it will be pleased")
Like his predecessor al-Mansur, al-Mu'tasim considered several sites before fixing in Samarra. Apart from Shammasiya (see above) other sites consideration were Bardan, Bahammsha and Matira, the locations of which are now unknown[77]. Just before settling finally at Samarra he chose a site known as Qatul described by YA'QUBI as being between Shammasiya and Samarra, where he laid out his administrative palaces and distributed the land between the leaders of the army, the bureaucrats and the public. He also distributed the markets along the

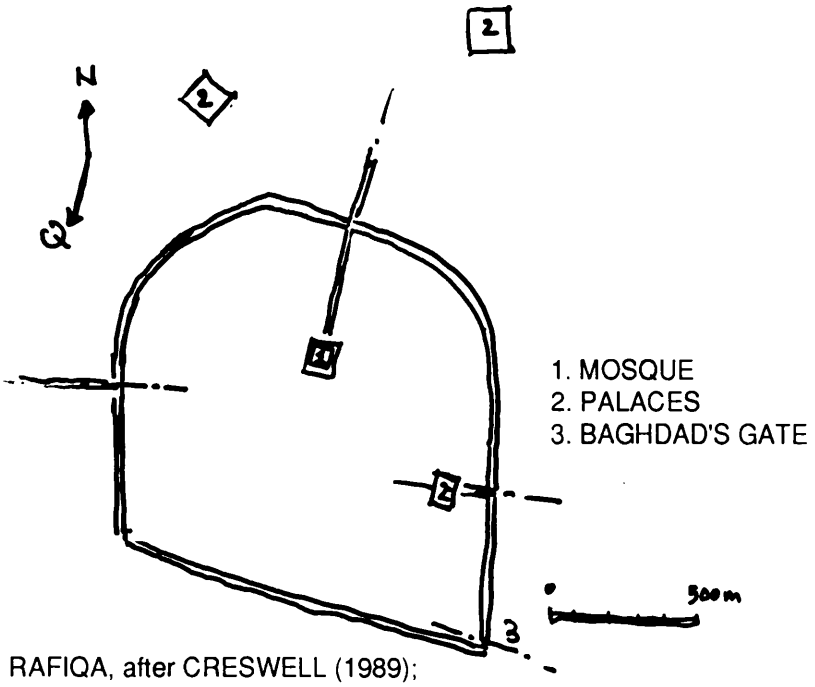


FIGURE 41
RAQQA OR RAFIQA, after CRESWELL (1989); MEINCKE/HEUSCH (1989); MEINCKE (1983)

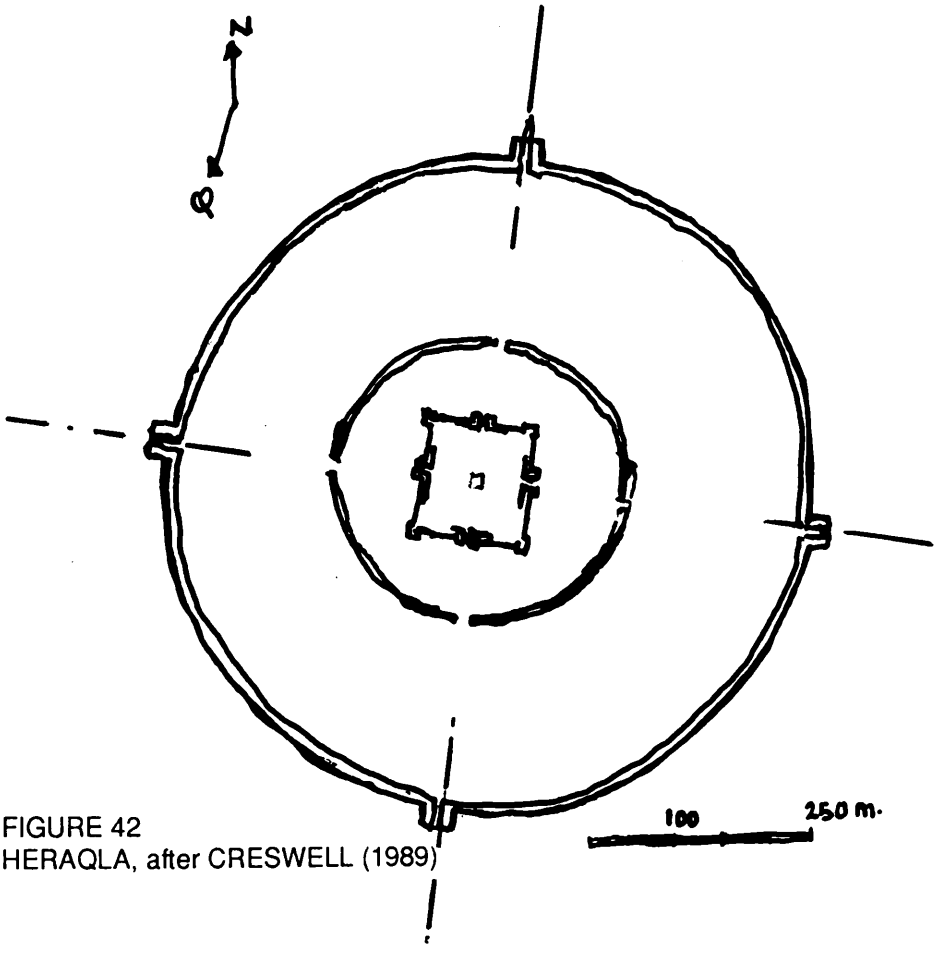


FIGURE 42
HERAQLA, after CRESWELL (1989)

river and the canal at Qatul and began a city construction[78]. HERZFELD concluded that Qatul is the site now called Qadisiyya, to the south of Samarra, which consists of a large octagonal enclosure 1,500 m across with gates in the middle of all eight sides and several large unfinished structures laid out within it and in its vicinity (see Fig.44) in a manner reminiscent of, and presumably influenced by, the Round City of Baghdad[79]. The construction was never finished, however for the ground was hard to dig and the site too narrow for future development[80]. Instead, al-Muʿtasim moved 15 kms further north to begin work in 221/836 on a site on the east bank of the River Tigris, that was to become Samarra.

The Organizational Structure of Samarra

In the short period of about fifty years during which Samarra flourished, the city underwent successive transformations, first under al Muʿtasim and later on under his successor, al-Mutawakkil (reigned 232-47/847-61).

Unlike Baghdad (which was initially founded as a one-centred composition), Samarra was from the beginning set out as a multi-centred composition (as Baghdad had became when al-Muʿtasim moved away from it) with commercial and administrative centres and two separate military centres associated with the palaces of al-Muʿtasim's sons (see Fig.43).

The commercial centre comprised a congregational mosque and a complex of markets distributed in the same way as those of Baghdad[81]. The administrative centre was the caliph's palace (**dar al-Khalifa**) of "Populace House" (**dar al-ʿAmma**) which was called the **Jawsaq al-Khaqani** (see Fig.45). Two more palaces al-ʿUmari and al-Waziri each associated with a military camp were situated away from the city centre, one to the north-west, called Ashnas (known as al-Karkh not to be confused with the commercial centre in Baghdad) and one to the south-east, called Mutira. These two remote palaces and military camps follow the model of Rusala al-Mahdi's palace and camp at Baghdad (see above). Within the military centres the leaders and their troops were allocated plots of land (**qitʿas**) distributed along the main streets (**sharicʿs**) and side streets (**darbs** or **sikkas**) and provided with local markets or small markets (**Suwayqas**) and bath-houses and mosques[82].

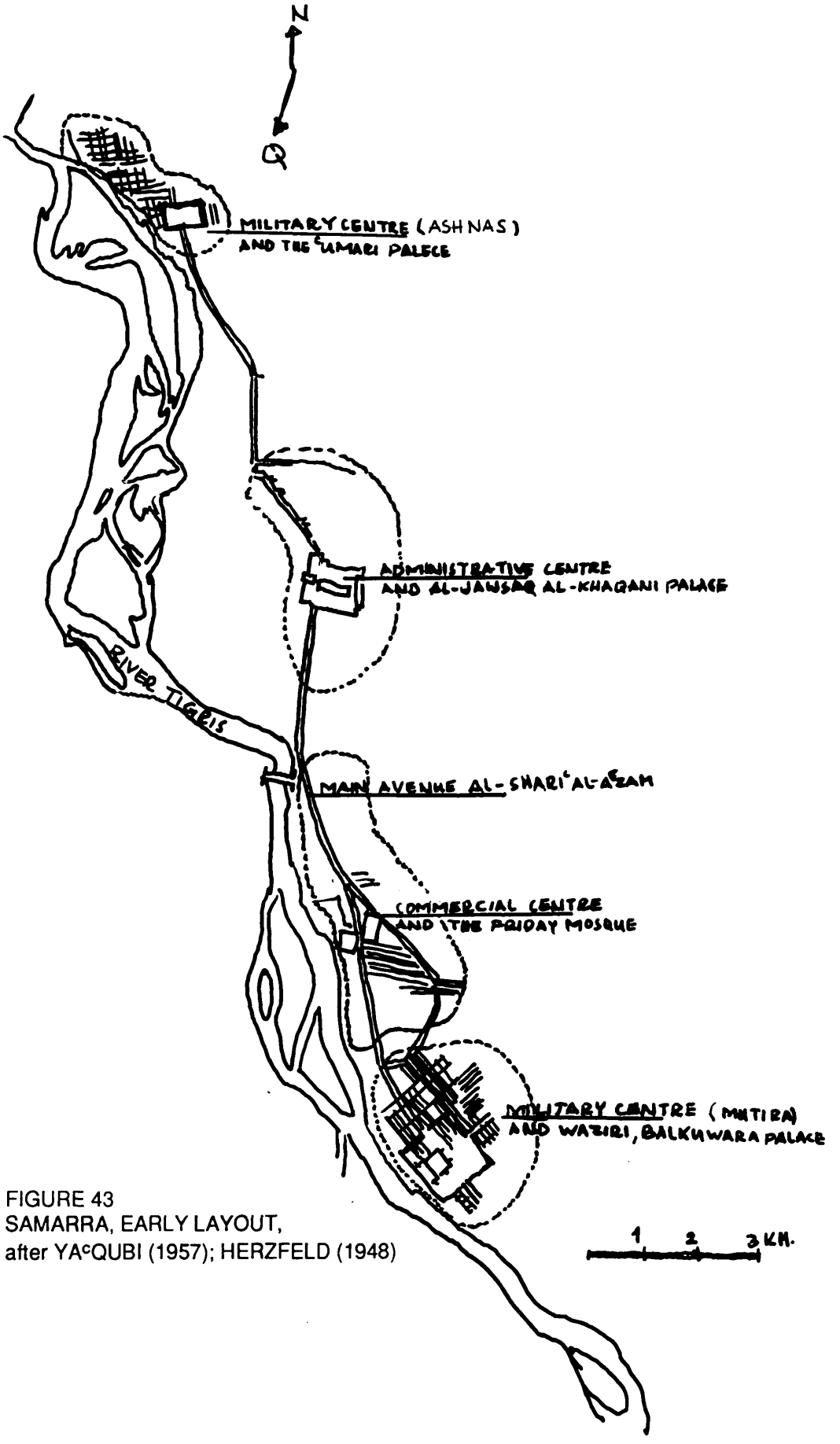


FIGURE 43
SAMARRA, EARLY LAYOUT,
after YA^{c}QUBI (1957); HERZFELD (1948)

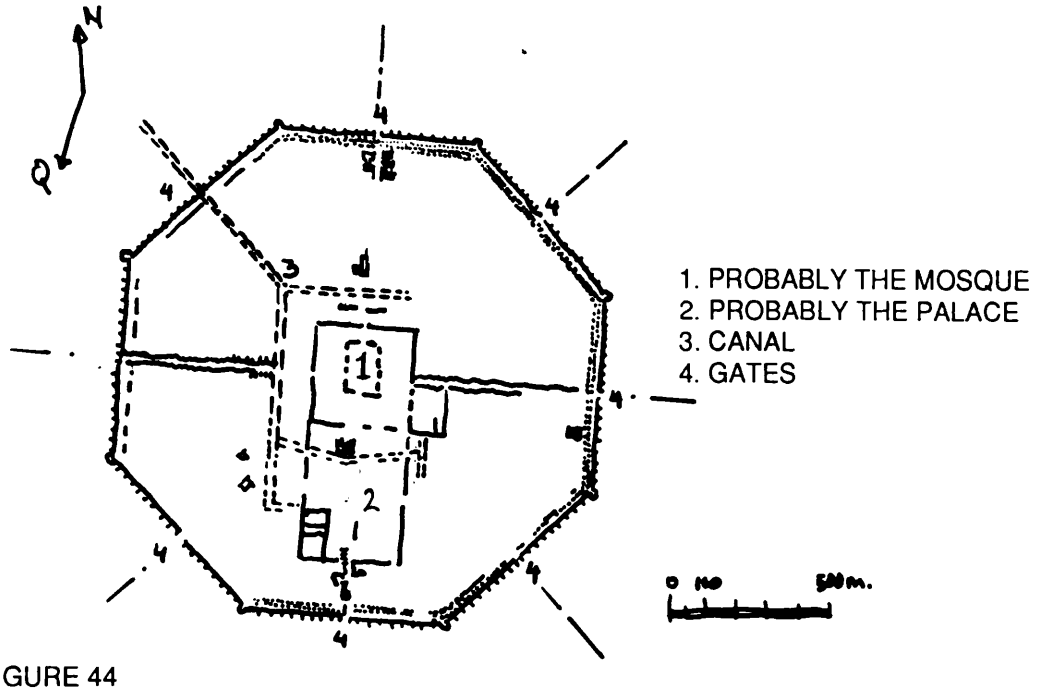


FIGURE 44
QATUL, OR SO CALLED HISN AL-QADISIYYA,
after CRESWELL (1989); HERZFELD (1948)

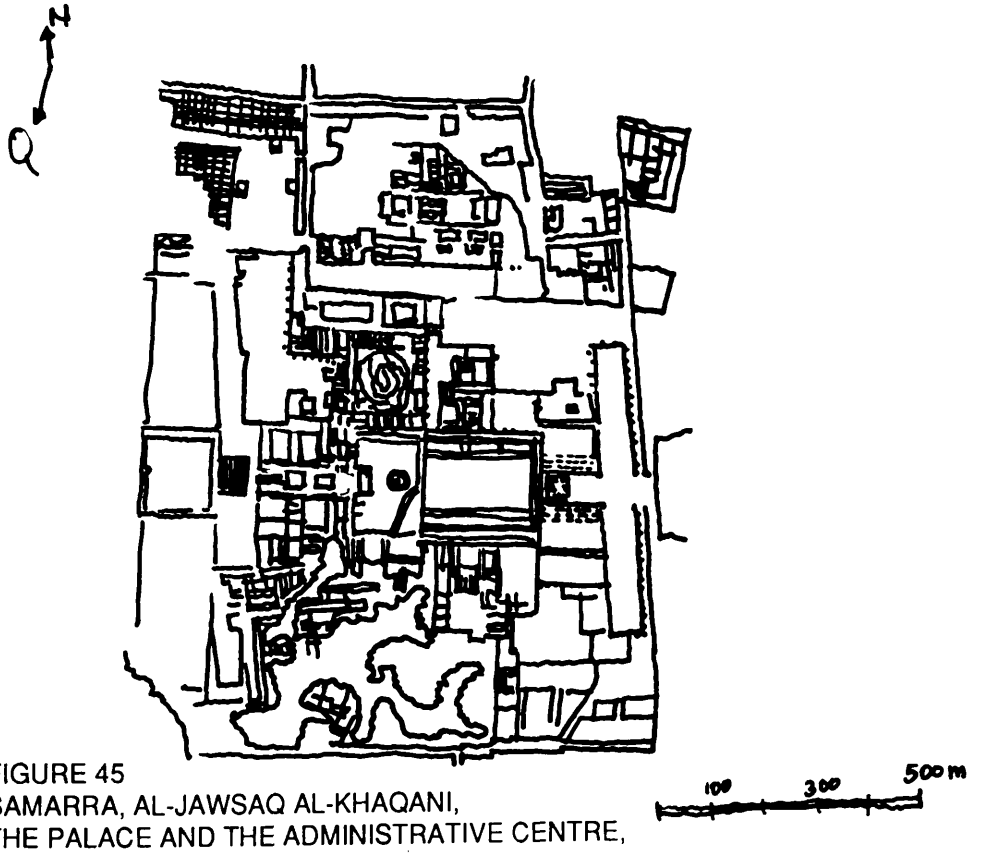


FIGURE 45
SAMARRA, AL-JAWSAQ AL-KHAQANI,
THE PALACE AND THE ADMINISTRATIVE CENTRE,
afterHOAG (1987)

Spatial Arrangement of Samarra

A major street, the Shari^{c} al A^{c}zm connected the two camps at Ashnas and Matira to the Caliph's Palace and the commercial centre. ROGERS has described this avenue as being like an indefinitely extended maydan or open square, recalling the marbad, the central spine of Basra (see above p.59)[83]. Along this avenue were the principal public buildings such as the tax registry, the police headquarters, the prison, the government stores, the public stables and the caliph's private stables, as well as various trades and crafts. The great Bab al-^{c}Amma, the Public Gate, a trible-arched gate which led to the caliph's palace, also opened off the main avenue and overlooked the River Tigris[84].

Four main streets ran parallel to the major avenue, linked with it at intervals. One of these streets, called Shari^{c} al Khalij (Gulf Street) ran along the bank of the river. Secondary streets (darb) lay between the main streets. YA^{c}QUBI description indicates that different social, ethnic and army groupings were distributed in specific areas and streets. Thus, Turks, Khurasanians, and even immigrants from a single town were concentrated in particular areas while artisans and tradesmen and their families were also concentrated according to their craft or trade[85]. Such social distribution suggests that the spatial organization of the city was taken as the basis for the social structure.

The Expansion of Samarra

To the east of the city was a large walled game preserve (hayr) in which were kept all sorts of animals including deer, zebras, rabbits and ostriches. As the population grew and the areas between the centres of the city became built up, al-Mutawikkil had the wall of the game preserve moved further east and added two new main streets parallel with the earlier ones[86]. The original mosque had become too small for the congregations and so he had it demolished and a new one constructed, the largest ever to be built in a traditional Islamic city, on the eastern edge of the city[87]. The new mosque was connected to the Caliph's palace, and the new main streets by three very wide (100 cubits, approximately 50 m) roads perpendicular to the new and old main streets. These roads functioned as ceremonial arteries used by the Caliph and his entourage in his procession to the weekly Friday prayer.

They were also lined with shops, workshops and markets. Smaller streets and lanes (darbs and sikkas) ran between the main streets. Thus according to YA'QUBI, "the people of Samarra renewed their houses and elaborated their construction only when they recognized that Samarra had become a flourishing city, before which they called it 'Askar (camp)"[88].

Yet within a few years al-Mutawakkil was to build a great new administrative centre known as Ja'fariyya to the north of Samarra evidently in order to satisfy an ambition to build on the scale of his predecessors as Baghdad, Raqqa and Samarra[89].

Ja'fariyya

The physical layout of Ja'fariyya followed that of Samarra, although on more elaborate lines. In order to create his new centre of administrative power, al-Mutawakkil extended the major avenue of Samarra northwards beyond the previous military centre of al-Karkh. This extension of the avenue formed the central spine of Ja'fariyya. It was 200 cubits (100 m) wide and approximately 7 kms long, flanked by canals on either side, leading to al-Mutawakkil's Ja'fari Palace at the north end[90].

The new establishment covered an area three leagues (farsakh) long and one league wide (approximately 15 x 5 kms). It included a new congregational mosque, the Jami' Abu Dulaf, a new market in a separate area and palace complexes. Local mosques and markets were distributed throughout the different quarters, which were as in Samarra allocated to military, ethnic, professional and trade groups[91]. The building plots were arranged together to form blocks on a grid pattern (see Fig.46) which, unlike the earlier Seleucid or Roman street pattern, was composed of non-identical blocks, nor were they orientated to one direction[92]. The varying dimensions of the rectangular blocks suggest that like Samarra the size of the block reflected the size of the group destined to occupy it.

Al-Mutawakkil's ambitious plans were never fully realized. Canals, including those alongside the main avenue, proved to be technically

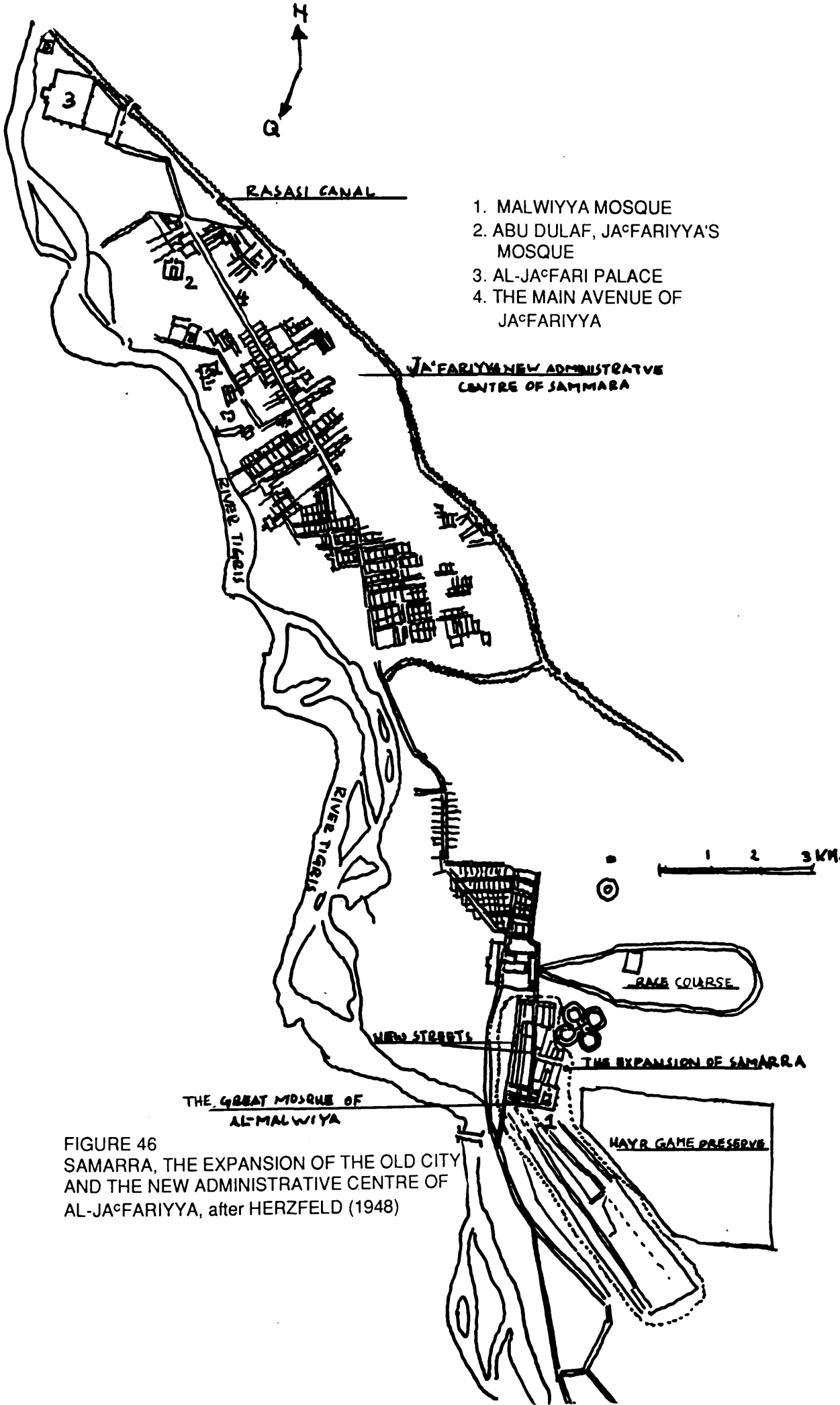


FIGURE 46
SAMARRA, THE EXPANSION OF THE OLD CITY AND THE NEW ADMINISTRATIVE CENTRE OF AL-JAᶜFARIYYA, after HERZFELD (1948)

unsound for water failed to run sufficiently in them. The death of al-Mutawakkil brought a speedy end to his foundation. His son and successor al-Muntasir, in 247/861 ordered the people of Jaʿfariyya to destroy their houses and abandon the city taking with them what ever of their belongings, they could carry to Samarra. The extravagant buildings of Samarra itself, built at huge scale and great speed with inferior materials like clay bricks, were expensive to run and to maintain. Within a dozen years the seat of the caliphate had been moved from the city back to Baghdad and Samarra was left to decline[93].

The grand formality of the layout of Samarra appears to have inspired one of the Abbasids Turkish deputies, the governor of Egypt, Ibn Tulun to build in a similar style in another part of the Islamic empire. In 254/868 Ibn Tulun founded his new administrative centre, al-Qata'iʿ (see below p.123) in the vicinity of a former army camp, al-ʿAskar (not to be confused with ʿAskar al-Mahdi at Baghdad and the nickname of Samarra, ʿAskar) which had by then become the administrative centre of Fustat[94].

The New Military and Administrative Centres in the Vicinity of Fustat

Al-ʿAskar (The Camp)

Al-ʿAskar was founded in 133/752 as a military centre to house ʿAbbasid troops engaged in controlling the population of Egypt and quelling revolts that broke out as the last Umayyad caliph, Marwan II, fled west towards North Africa and Spain[95]. The site of ʿAskar had formerly been occupied by one of the Districts of Fustat, known as Hamara' al-Quswa (see above p.58)[96].

The founding of al-ʿAskar came at a time when Fustat was already a fully developed city and the commercial centre of the region. The population was largely civilian. To differentiate between their own city and the new centre, the people of Fustat called it al-ʿAskar, the camp, a name which is reminiscent of the early names of Rusafa and Samarra (see p.). This differentiation indicates the distinction between a civilian commercial centre and a military centre and their spatial separation and probably their arrangements. For about 65 years after al-ʿAskar's foundation, the people of Fustat were prevented from building in or around al-ʿAskar until the year 200/810 when Fustat

grew in the direction of the military centre and the two became contiguous[97].

Within a short time the administrative centre was move to al-ᶜAskar, where a new government house and police headquarters were built[98]. A new congregational mosque was not added until 169/785, more than thirty years after the foundation of al-ᶜAskar. Although the mosque was built after the government house, the relationship between the two followed the traditional pattern, with the government house abutting the qibla wall of the mosque[99] (see Fig.47). The delay in erecting the mosque gives a clear indication that ᶜAskar was not founded as a separate city but rather as a new centre associated with the existing one.

ᶜAskar remained the administrative centre of Fustat until the foundation of al-Qata'iᶜ.

Al-Qata'iᶜ

As mentioned above, Ibn Tulun was inspired by the innovative model of Samarra when he came to found Qata'iᶜ. Initially his foundation comprised his palace and the residences of his attendants, entourage and troops. The construction of a government house and congregational mosque (Jamiᶜ) was not undertaken until nine years after the building of the palace when the residents of Fustat complained that the Fustat Mosque had became overcrowded with Ibn Tulun's attendants and troops. The government house was in the traditional place on the qibla side of the mosque[100]

Thus we may conclude that, like ᶜAskar, Qata'iᶜ was an administrative-military centre around a palace along the lines of the relationship between Rusafa and Baghdad, and between Mutira and Karkh and Samarra.

The palace was connected to the mosque by a maydan or open square. The maydan served as a more or less public communal space. Of its seven gates, some were open all year and others were opened only on the occasion of religious festivals, charitable banquets for the poor, and

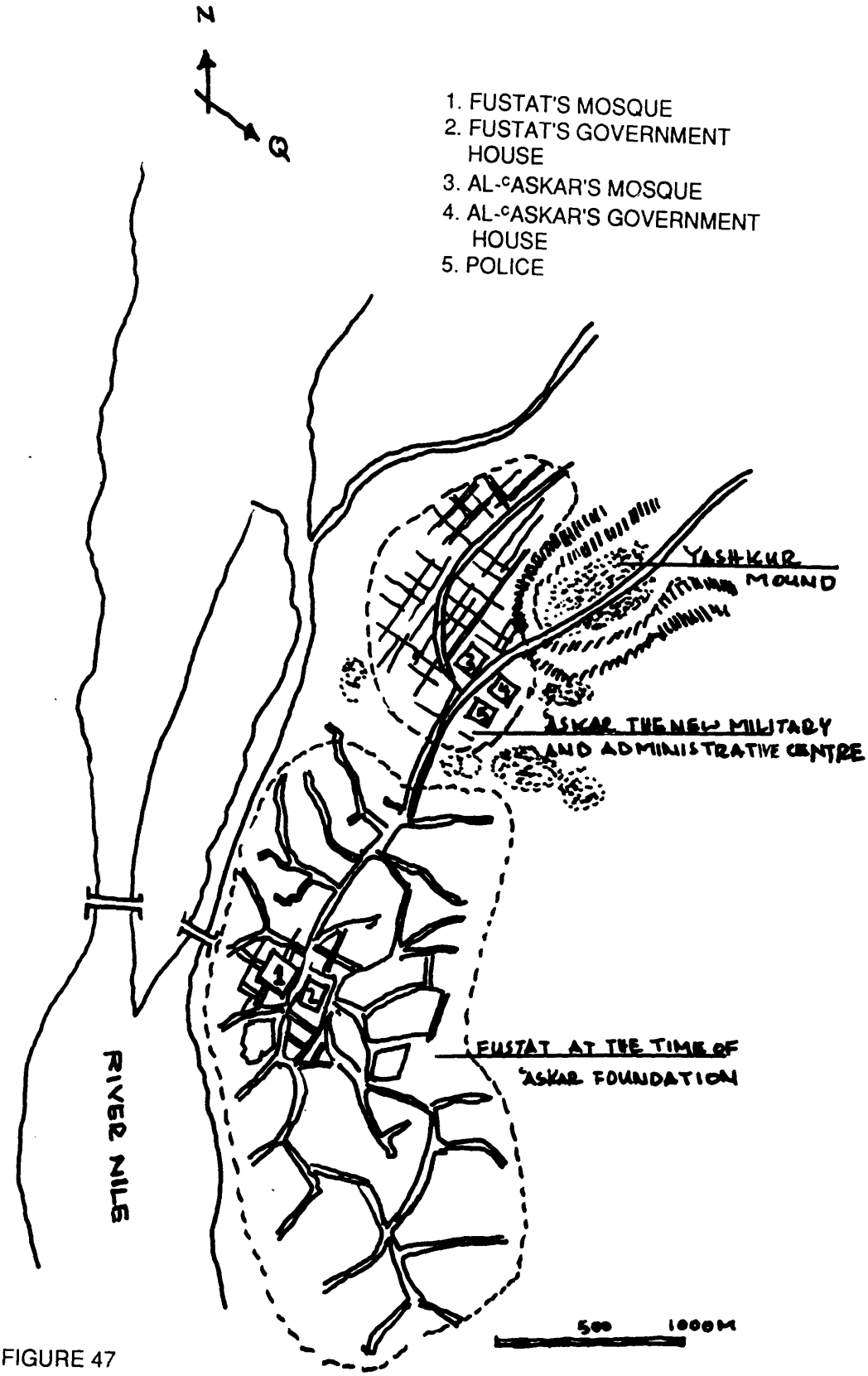


FIGURE 47
AL-ᶜASKAR ,THE CAMP, PROPOSED RECONSTRUCTION OF THE NEW MILITARY AND ADMINISTRATIVE CENTRE OF FUSTAT, after CASANOVA (1919); MAQRIZI (1987)

military parades. Among the gates were **Bab al-Salat** (Prayer Gate - used by Ibn Tulun in his weekly procession to reach his mosque and the government house) leading to the Ibn Tulun mosque and to ᶜAskar and Fustat; **Bab al-Jabal** (Mountain Gate) leading to the Muqattam range of hills to the east; **Bab al-Khassa** (The Elite or VIPs Gate); **Bab al-Harim** (Harem Gate); and a triple gate, **Bab al-Maydan**. This triple gate recalls the Public Gate of the Caliph's palace at Samarra and the Jaᶜfari palace at Jaᶜfariyya which also were triple. Similarly, a **majlis** (chamber) above the Prayer Gate, which was also used by Ibn Tulun to look out over all of Qata'iᶜ, ᶜAskar and Fustat, recalls al-Mansur's **majlises** surmounting the gates of the Round City of Baghdad. Ibn Tulun had another **majlis** in his palace, overlooking the **maydan**[101].

The residential areas including military quarters of Ibn Tulun's new administrative centre were divided into building plots (**qita'iᶜ** hence the name of the place) which were distributed among the people according to their occupation or their country or city of origin, such as the palace attendants, and civil servants, army leaders and officers, Egyptians, Nubians and Turks. Running through the residential areas were streets, including the wide street mentioned above, side-streets (**sikkas**) and alleys (**zuqaqs**) (see Fig.48).

Unfortunately, little remains of the original layout of Qata'iᶜ except for the mosque, which survives remarkably intact. Since the design of Ibn Tulun's mosque closely follows that of the two main mosques in Samarra and Jaᶜfariyya, it is reasonable to assume that the street plan at Qata'iᶜ resembled the non identical grid-pattern founded at Samarra (see above p.121)[102].

The three centres Qata'iᶜ, ᶜAskar and Fustat, continued to function together and gradually the land around them became build up so that the whole group functioned as a sort of three-centred city[103]. Ibn Tulun improved the water supply by constructing a new aqueduct, water wheels and wells, and founded a new hospital (**bimaristan**) in ᶜAskar, which had separate facilities including baths for men and women[104].

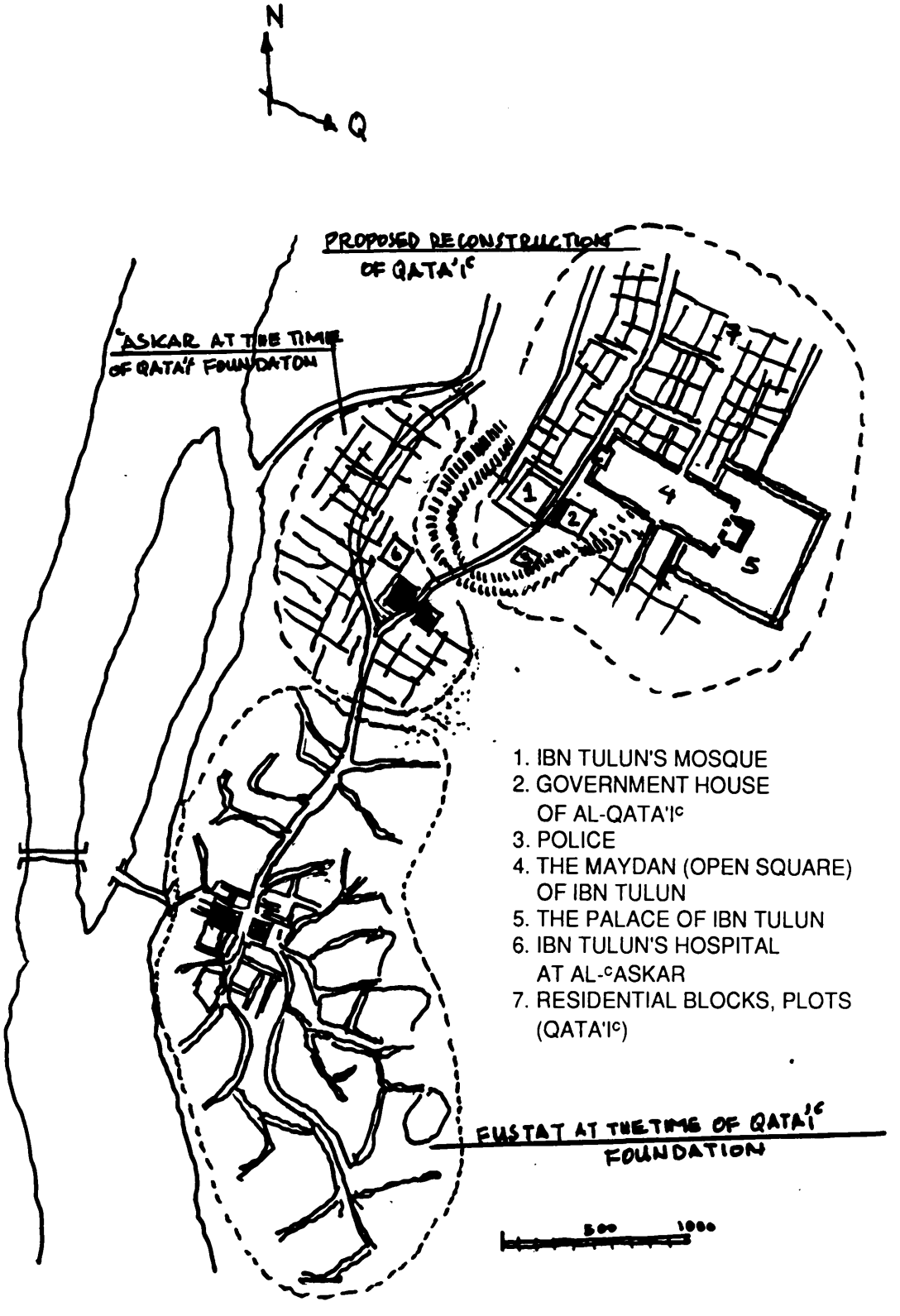


FIGURE 48
AL-QATA'I^{c} (LAND PLOTS) PROPOSED RECONSTRUCTION OF IBN TULUN'S ADMINISTRATIVE CENTRE ALONG FUSTAT AND ^{c}ASKAR after MAQRIZI (1987)

Under Ibn Tulun's son and successor, Khumarawayh, Qata'iᶜ took on a more luxurious appearance, reminiscent of al-Mutawakkil's development of his father's foundation at Samarra. The palace was extended, a new maydan for horse-racing built, the old maydan made into a garden and a new game park (hayr) added[105].

The rise of the Tulunid dynasty eventually led to an Abbasid reaction. Within ten years of the death of Khumarawayh, an Abbasid army attacked and destroyed the Tulunid palace complex in Qata'iᶜ, leaving only the mosque of Ibn Tulun. The seat of the government was moved back to ᶜAskar. Fifty years later the seat of government was to move again, this time to Cairo, the new capital city of the Fatimids[106].

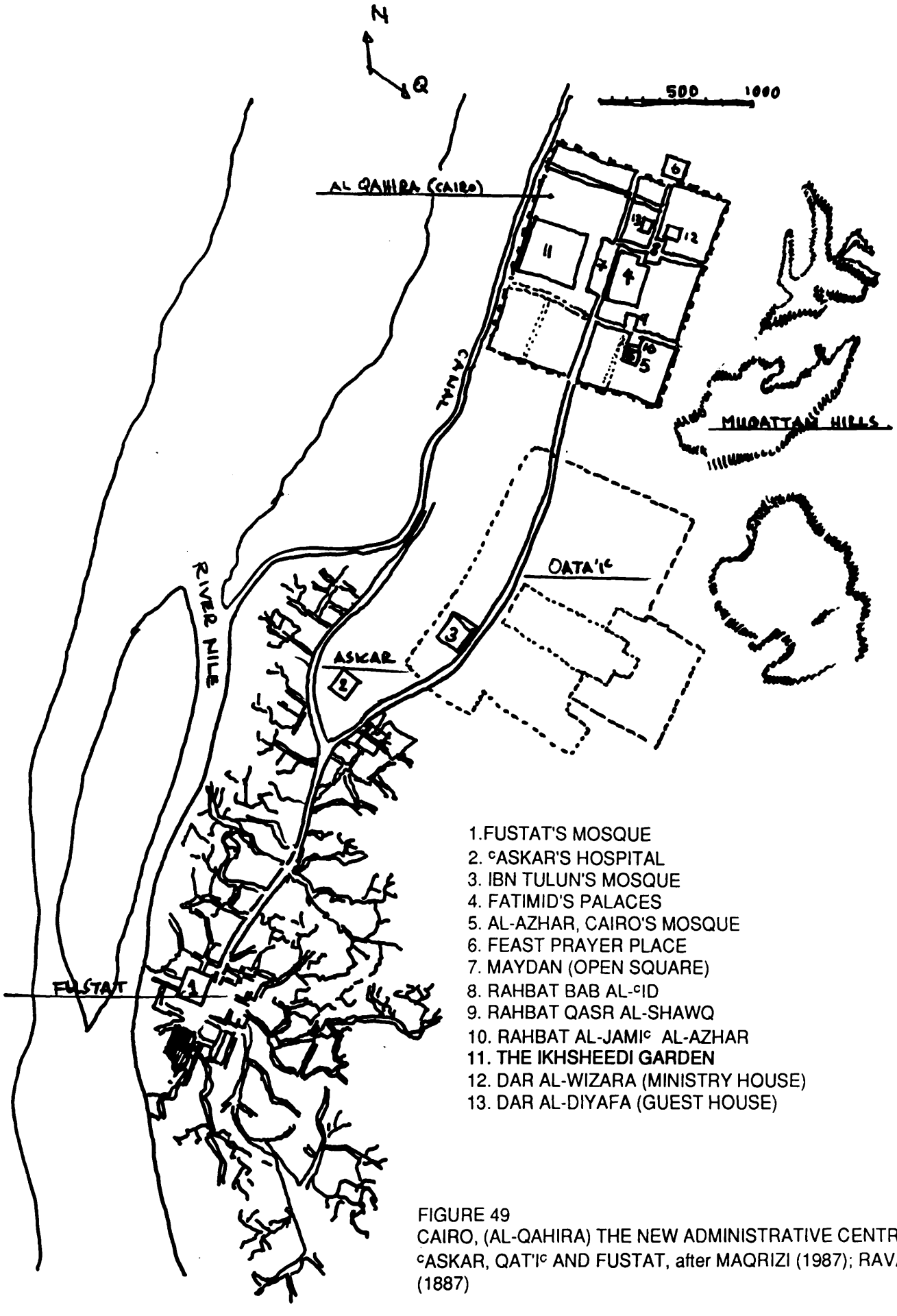
The Shiᶜite dynasty of the Fatimids was founded by ᶜUbaydallah al-Mahdi, who claimed descent from the Prophet Muhammad through his daughter Fatima, wife of Ali. They rose to power in North Africa with the support of the Berber tribesmen and established themselves in Qayrawan as rivals to the Abbasid caliphate in Baghdad to the east and the Umayyads, in Cordova in Spain to the west[107]. In extending their power and influence they were determined to move east towards the centre lands of Islam. Their primary target was the city centred around Fustat, which at that time was at least as important as Qayrawan and was one of the principal cities of Islam.

Cairo (Al-Qahira "The Victorious")

Cairo was founded in 358/969 by the Fatimid army commander, Jawhar al-Katib[108]. It was the last in the succession of new administrative centres established in the vicinity of Fustat[109]. Located about 1 km north of the mosque of Ibn Tulun, between the Muqattam hills to the east and the canal (see p.) to the west, the walled city at Cairo was strategically situated to protect the existing city to the south. That city continued to function as the commercial centre of the region and of Cairo[110] (see Fig.49)

The Organizational Structure of Cairo

Cairo's early organizational structure closely followed the last formation and transformation which had occurred in previous cities such as



1.FUSTAT'S MOSQUE
2. ᶜASKAR'S HOSPITAL
3. IBN TULUN'S MOSQUE
4. FATIMID'S PALACES
5. AL-AZHAR, CAIRO'S MOSQUE
6. FEAST PRAYER PLACE
7. MAYDAN (OPEN SQUARE)
8. RAHBAT BAB AL-ᶜID
9. RAHBAT QASR AL-SHAWQ
10. RAHBAT AL-JAMIᶜ AL-AZHAR
11. THE IKHSHEEDI GARDEN
12. DAR AL-WIZARA (MINISTRY HOUSE)
13. DAR AL-DIYAFA (GUEST HOUSE)

FIGURE 49
CAIRO, (AL-QAHIRA) THE NEW ADMINISTRATIVE CENTRE OF ᶜASKAR, QAT'Iᶜ AND FUSTAT, after MAQRIZI (1987); RAVAISS (1887)

Baghdad, Samarra, and Qayrawan (see below p132). Within the limited area encompassed by a squared wall, the new administrative centre consisted of: the caliph's palace or complex of small palaces, a congregational mosque, following that of Samarra and Qata'iᶜ in being separated from the palace, but connected to it by two huge open spaces (Rahbas). Commercial activities in the administrative centre were limited to local needs, while the main market was kept remote in the commercial centre in Fustat. The residential areas were organized into districts (in Cairo called harat) and quarters distributed around the palace and the mosque.

Cairo's Spatial Arrangements

Nearly square in plan (1100 x 1180 m), the site of Cairo lay parallel to the east bank of the canal, Khalij Amir al-Muᶜmineen, incorporating the Ikhsheedi Garden which had belonged to a previous governor of Fustat. The whole area was almost as large as the Jawsaq al-Khaqani at Samarra (see above p.118). About one-fifth of the site was occupied by the Caliph's palace, one-fifth by open spaces (Rihab), and the remainder by the districts and quarters of the Caliph's attendants, entourage and soldiers[111].

In the middle of the square facing the Ikhsheedi Garden was laid the caliph's palace, known as the Big Palace, surrounded by three huge squares. The main square, known as the Maydan was laid between the above mentioned palace and the garden. The second square known as Rahbat Bab alᶜId (the Open Square of the Feast Gate) was laid between the palace north side and the Ministry house (Dar al Wizara al-Kubra) known as al-Dar al Afdaliya or al-Dar al-Sultaniya and Dar al Diyafa (Guest or Reception House). The third square, Rahbat Qasr al Shawq, was laid to the south of the palace, near al-Turbat al-Zaᶜfaraniyya (apparently the caliph's private cemetery) and another, hence four open spaces were associated with the main mosque, al-Azhar mosque. The Azhar mosque along with the open space known by the mosque's name, Rahbat al-Jamiᶜ al- Azhar, lay further to the south east of the third square mention above[112].

Each of the four squares was incorporated with the general setting of Cairo and thereafter its eight gates by main streets. A main and long avenue ran from the gate known as Bab Zuwayla (Zuwayla Gate, named after the people who lived near to it) in the southern side of the wall, through the maydan between the Big palace and the Garden, to Bab al Futuh (Conquest Gate) in the northern side of the wall. Another main street connected Rahbat Bab al ʿId with Bab al Nasr (Victory Gate) and the Musla al ʿId (the Feast Prayer Place) on the northern side of the wall. A third street incorporated Rahbat Jamiᶜ al-Azhar and its associated mosque with Bab al Barqiya (called after the quarter of the people coming from Barga) on the eastern side of the wall. There were a further four gates in the city walls giving two gates in each side[113]. Following the above arrangement it is reasonable to presume, that each of the remaining gates was incorporated by means of the central avenue and the open spaces by further main streets (see Fig.50)[114].

The Residential areas including the military quarters were divided into four districts (Mahalla) each housed in one of the squares quadrants. Each district consisted of a number of quarters (in Cairo called Hara). Secondary streets ran through the districts and quarters, which were designated for military peoples and civilians according to their city or region of origin such as the Barqiya quarter mentioned above; ethnic groups such as Turks and Rumi (Greeks and Anatolians) were housed for example in two quarters, the Zuwayla and Kitama (Berber tribes from North Africa); military troops in quarters such as the Mahmudiya, and Jawdariya. Other quarters were named after a major public building, such as the Harat al Waziriya (ministry quarter) probably inhabited by Kurds, or named after an important public figure such as the Burjwan quarter (called after a Fatimid minister)[115].

Within the above arrangement, the palace was the first element to be laid out and erected. Although its position facing the garden gave it visual and spatial relief, nonetheless the Fatimid caliph al-Muʿiz conveyed his preference for another site which would lie near to the Muqatam's Hill[116]. The palace comprised twelve buildings enclosed behind one wall, including the caliph and his family's abode the

1. THE BIG PALACE
2. AL-AZHAR MOSQUE
3. MINISTRY HOUSE
4. GUEST, RECEPTION HOUSE
5. FEAST PRAYER PLACE
6. MAYDAN (OPEN SQUARE)
7. THE FEAST-GATE'S OPEN SQUARE
8. QASR AL- SHAWQ'S OPEN SQUARE
9. AL-AZHAR MOSQUE'S OPEN SQUARE
10. IKHSHEEDI'S GARDEN
11. GATES
12. LATER SMALL-PALACE
13. HARAT (QUARTERS)
14. ROYAL CEMETRIES

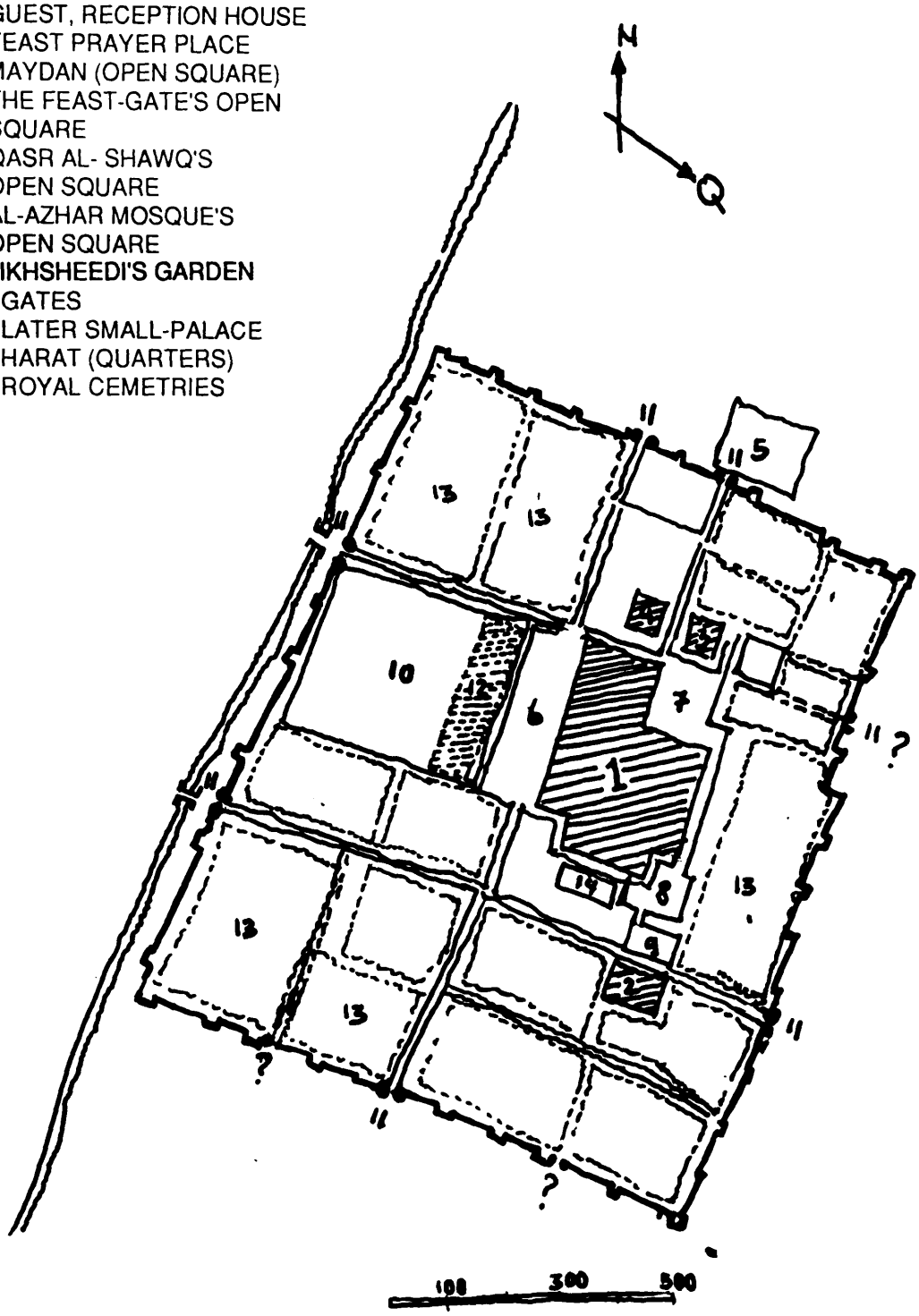


FIGURE 50
CAIRO, PROPOSED RECONSTRUCTION OF THE EARLY SETTING OF THE NEW ADMINISTRATIVE CENTRE after, MAQRIZI (1987); RAVAISSE (1887

Treasury, the Registration (Diwans) the Arsinals, the courts (Majlises) and public chambers[117].

Access to and from the palace was gained through nine gates. The main and elaborate gate Bab al Zahab (the Golden Gate) faced the Maydan. A Manzara (Watch Balcony) above this gate which was used by the Fatimid caliphs to review the army parade, recalls al Mansur's and Ibn Tulun's majlises surmounting the gates of Baghdad and the Maydan's Prayer Gate in Qata'i^{c} (see above p.110, 125). Another main gate called Bab al^{c}Id (the Feast Gate) opened on Rahbat Bab al ^{c}Id (see above), where the caliph's entourage and army assembled in their procession to the Feast Prayer Place, near al-Nasr Gate[118]. The Fatimids following the prophet's tradition (see above p.37) used to go to and to return from the Musalla by the way of different streets[119]. The other doors and gates were distributed on the different sides of the palace. One of which, called Bab Qasr al-Shawq opened on the southern square and was used by the caliph when heading to the Azhar Square and Mosque[120].

Nearly one hundred years after the foundation of Cairo, another palace, this time called the small palace (al Qasr al-Saghir) or the western palace was erected beyond the maydan, facing the Big Palace. Hence afterwards the maydan was called Rahbat bayn al Qasrayn (the square between the two palaces)[121]. A tunnel linked both palaces with a third palace, al Lu'lu'a Palace (the Pearl Palace) laid between the garden and the eastern bank of the canal[122].

Similarly the above arrangement probably followed the setting, the Fatimids themselves had implemented in their previous capitals, Mahdiyya on the Tunisian coast and Mansuriyya in the vicinity of Qayrawan, in north Africa[123].

Qayrawan's Administrative and Military Centres

Extending about 8 x 8 kms, Qayrawan was to become became comprised of four centres, namely old Qayrawan centred around the great mosque of Qayrawan, Abbasiya and Raqada both founded by the Aghlabids who

were deputies of, the Abbasids governors of Qayrawan and North Africa and Mansuriyya or Sabra founded by the Fatimids[124].

Abbasiyya

Being intended to commemorate the Abbasid dynasty, the new urban centre was named after them. Abbasiyya was also known as Qasr al-Aghaliba (the Palace of the Aghlabids)[125]. Situated about 5 kms SE of Qayrawan, it was founded in 184/800 by Ibrahim b. al-Aghlab as a military and a new administrative centre. Abbasiyya's foundation appears to have been encircled by a wall with several gates, such as Bab Ghalyun, Bab al-Rih, Bab al-Rahma and Bab al-Sa'ada. Somewhere in the middle lay the Aghlabid's palace surrounded by the quarters of their entourage and troops. The palace was associated with a huge open square (maydan) used for the army's reviews, parade and celebrations[126]. Ibrahim I transferred the Treasury, the Registry and the Arsinal to Abbasiyya where he built a new mosque, after that of Qayrawan, and a mint house. The Aghlabids received the Byzantine Embassadors, and signed a truce with one of them in Abbasiyya[127]. and for nearly 80 years it was the main administrative centre, and the focus of the region, till a new administrative centre, Raqada, was founded in its vicinity.

Raqada

The new administrative centre was founded in 263/877, nearly nine years after Qata'i^{c} near Fustat, Egypt (see above p.122). Lying near Abbasiyya 7 kms from Qayrawan, like its predecessor, it was first planned to serve as a new military and administrative centre for the Aghlabids[128]. Scant information about its setting does not enable us to envisage its spatial arrangement, but we know that Raqada was not transferred into an urban centre until a congregational mosque was founded there and people from Qayrawan and elsewhere acquired houses and gardens and built markets and baths[129].

The rising Fatimids (see above p.127), in 296/909 took over North Africa from the Aghlabids. They placed the seat of their new government in Raqada, which remained and for about 12 years their administrative

centre until in 308/920 when they moved to their new capital, Mahdiyya[130].

Mahdiyya

Named after its founder ʿUbayd Allah al-Mahdi the Fatimid, Mahdiyya lay on the Tunisian coast, about 170 kms north of Qayrawan. ʿUbayd Allah chose a site in a process which is reminiscent of the search made by al-Mansur and al-Muʿtasim (see p.104, 114)[131] The site is surrounded by the sea on three sides. The fourth western side was fortified by a rampart, preceded, at a distance of 40 m, by an outer wall which appears also to have encircled the city on the coastal sides[132]. Access to Mahdiyya was gained by two elaborate well-fortified gates. Somewhere in the middle stood al-Mahdi's palace opposite to his son's palace with an open square laid in between the two palaces and the square setting, which appears to have become a special arrangement which have emerged again in Cairo (see above p.129)[133].

A congregational mosque was also somewhere near the coast; a musalla (feast prayer place) lay on the city's periphery where its location was determined by an arrow shot[134], markets lay according to their different specialized trades and professions, warehouses (khans) and bath houses (Hammams) were all part of the early layout of Mahdiyya[135].

Zuwayla, the New Commercial Centre of Mahdiyya

Within a short time Mahdiya became a flourishing city, crowded with buildings and people, who moved from different parts of North Africa and from Qayrawan. It would appear that because of limited space within the city walls, and for strategic reasons, the markets and their shop-keepers were moved outside Mahdiyya. Reminiscent to the arrangement made by al-Mansur just shortly after founding Baghdad (see above p.111)[136], Al-Mahdi founded new markets, and new residential districts' part of which was allocated to the Fatimid's army, in a new commercial centre called Zuwayla (not to be confused with Zuwayla gate and district in Cairo)[137]. After 37 years the Fatimids returned to Qayrawan, where they founded a new administrative centre, al-Mansuriyya or Sabra, just on the outskirts of the old city.

Al-Mansuriyya or Sabra

The Fatimids moved back to Qayrawan in order to prevent the city from falling into the hands of Mukhlid al-Zanati, a rival Kharijite. Shortly after quelling a revolt which broke out in Qayrawan, Isma'il al Mansur the Fatimid, in 337/948 founded a new administrative centre, adjacent to Qayrawan[138]. He moved the seat of government, the treasury and the registry to his new centre. MOQADDASI who visited the city in 375/985 recorded that Mansuriyya was separated from Qayrawan by a street and a wall which encircled the city in a cup shape. The walls had five gates named after their location, such as the Eastern and the Valley of Qasarin gates or after the people, district or quarter which was laid near to the gate such as Zuwayla and Kitama (Berbers tribes) gates, or after an auspicious or wishful thinking such as Bab al Futuh (the Conquest Gate). The palaces also according to MOQADDASI were laid in the centre reminiscent of the palace of al-Mansur at Baghdad (see Fig.51).

A congregational mosque, called Jami' al-Sultan, is mentioned by MOQADDASI, who gave no indication of its arrangement nor its relation to the palaces, but we may conclude from the arrangements, that the Fatimids made later when founding Cairo that they somehow emulated Mansuriyya and Mahdiyya[139].

The process that prevailed in the Islamic city evolution at this phase appears to have spread to include other old cities and to generate more cities or new urban centres in other Islamic regions, such as Fez in North Africa, Modern Morocco and al-Zahra and al-Zahira near Cordova in Andalusia, Spain.

Fez

Idris b. 'Abd Allah, a descendant of the Prophet Muhammad, founded Fez in 173/789, about 28 years after the foundation of Baghdad. Like al-Mansur, Idris made a long journey in search for a site for his new city. However, unlike al-Mansur's cosmopolitan ambition, Idris's aspiration, which he expressed when laying the foundation of Fez, and in the first Friday prayer to be held there, was not a show of ostentation, nor arrogance or haughtiness but rather a city where God

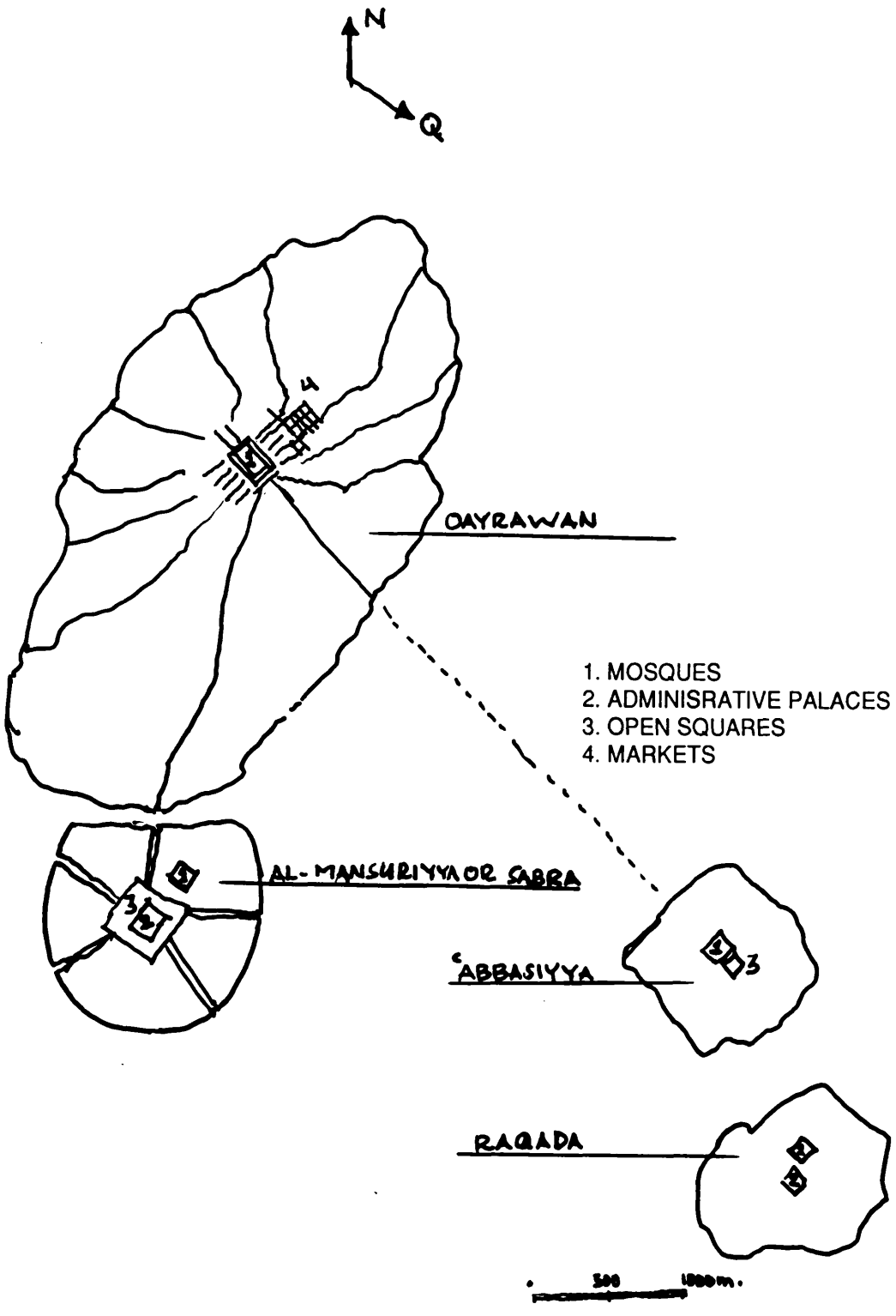


FIGURE 51
QAYRAWAN'S NEW MILITARY AND ADMINISTRATIVE CENTRES, ʿABBASIYYA, RAQADA, MANSURIYYA OR SABRA PROPOSED RECONSTRUCTION

should be worshipped, his book (Qur'an) should be recited, and his law and Islamic jurisprudence and the prophet's tradition should be implemented[140].

Scanty of information does not enable us to conjecture the city's layout but it would appear that Fez consisted more or less of modest establishments intended mainly to house the Idris's and the growing numbers of their followers, Arabs, and Berbers[141]. The speedy death of the founder of Fez left the first establishment with an informal layout centred around the mosque and probably a government house[142]. This informality led Idris's son and successor Idris II to found a new administrative centre in 193/809 on the other side of the Sebour River opposite the old centre[143]. Like early Fez, no information is available about the original layout of Fez II, but nevertheless its formation followed the contemporary process of founding a new centre in the vicinity of an existing one which nearly always prevailed in Islamic cities at this phase.

In the short time nine and sixteen years - both centres received an influx of immigrants coming from Andalus in Spain who settled in the left hand centre and from Qayrawan, who settled in the other centre. Both lots of immigrants were greatly influential on the development of the two centres to a degree that each centre was called after them, ᶜAdwat al-Andalusiyin (the Andalusian side) and ᶜAdwat al Qarawiyin (the Qarawanian side)[144]. Like many other Islamic cities at that time each of Fez, sides had its congregational mosque. After a rapid growth in the city's population, two new mosques, on new sites and to a larger scale were built in 243/857. The two mosques seem to have shifted the city's evolution and development towards their direction, thus forming new centres in the city's layout[145] (see Fig.52).

Cordova's New Urban Centres

Cordova at this phase reached its zenith, its population reaching a million or more. The city grew and expanded widely beyond the 1 km square of the Roman town, which at that time was called the Qasaba (the Core)[146]. New suburbs grew in all directions. Ibn Bishkwal named 21 suburbs, two of them were founded on the other bank of al-Wadi al-

Kabir (Big Valley River), nine on the west side, seven on the east and three on the north. However the new suburbs and their main streets were connected with the old town and its Roman streets. Other minor streets extended inside the different quarters and were mainly of a dead-end character[147] (see Fig.53).

Cordova's Mosque, like most congregational mosques in the Islamic cities at that time, witnessed successive enlargements and additions until it formed a vast rectangle (178 x 125 m), the third largest mosque, coming after those in Samarra's, the Great Mosque and Abu Duluf Mosque[148].

Within the above urban development and other political developments, the Ummayads in Spain declared the revitalization of the Ummayad Caliphate in 316/927. The first Neo-Ummayad caliph in Andalus, Abd al-Rahman III, known as al-Nasir (the Helper), within nine years from declaring himself a caliph, commemorated his status and the splendour of his rule by founding a new administrative centre Al-Zahra[149].

Medinat Al-Zahra (The City of the Flower)
Started in 325/936 and finished in 334/945, al-Zahra lay about 6 kms to the west of Cordova (see Fig.54). In its early layout al-Zahra was merely a complex of 130 palaces. Abd al-Rahman moved his residence and court to al-Zahra; however, the new establishment did not attain the position of the administrative centre until later when the caliph transferred the Registry, the Mint house, the Treasury, the Prison, the Arsinals and the stores to his new centre. Further transformation occurred when part of the people of Cordova moved to live there[150].

While Cordova Mosque remained the main congregational mosque in the city complex, a new but smaller mosque, was reported built in Zahra[151]. The area acquired by al-Zahra - nearly equal to that of Al-Jawsaq al Khaqani in Samarra and to Cairo - was reported mainly to be allocated to the caliph's palaces; however, the rest of this area appears to have been divided into two sides. The east comprised the houses and probably the public buildings of the ministries and ministers' and notable and important figures of the state, while the west side

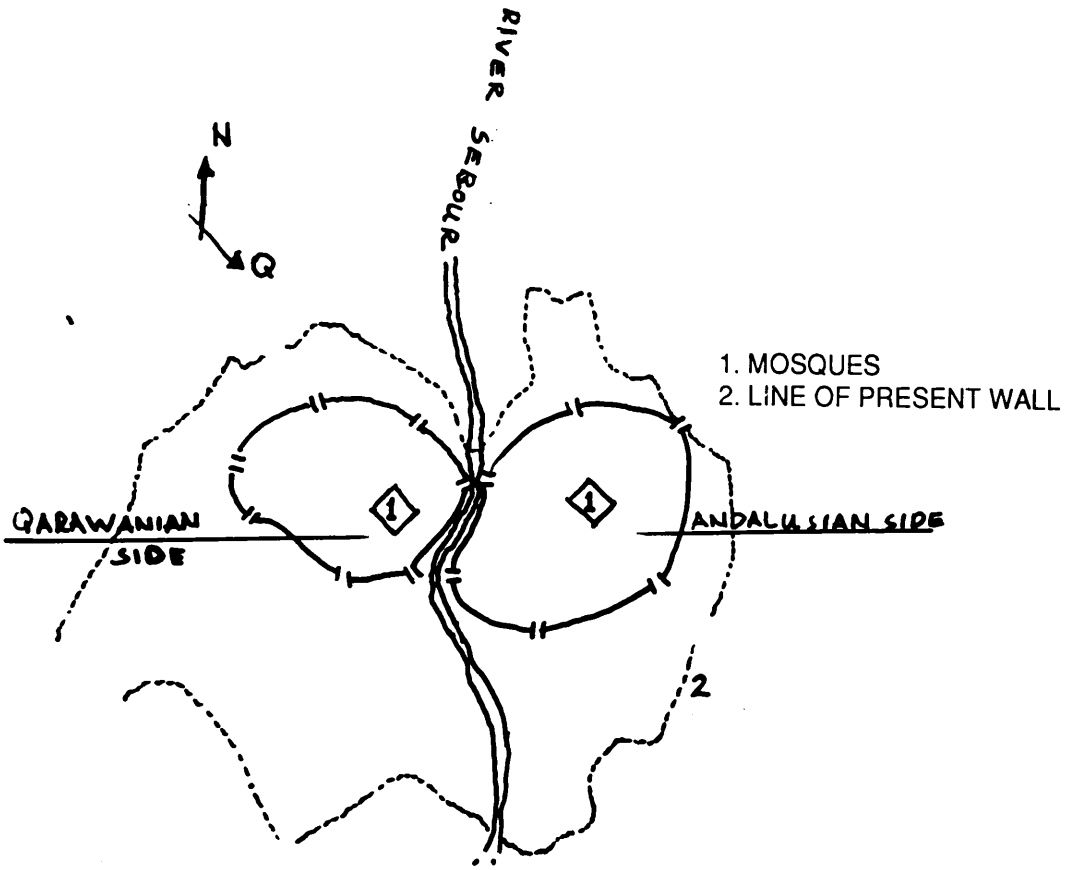


FIGURE 52
FEZ, THE EARLY SETTING OF THE TWO SIDES ,TWO CENTRES,
afterMASSIGNON(1906)

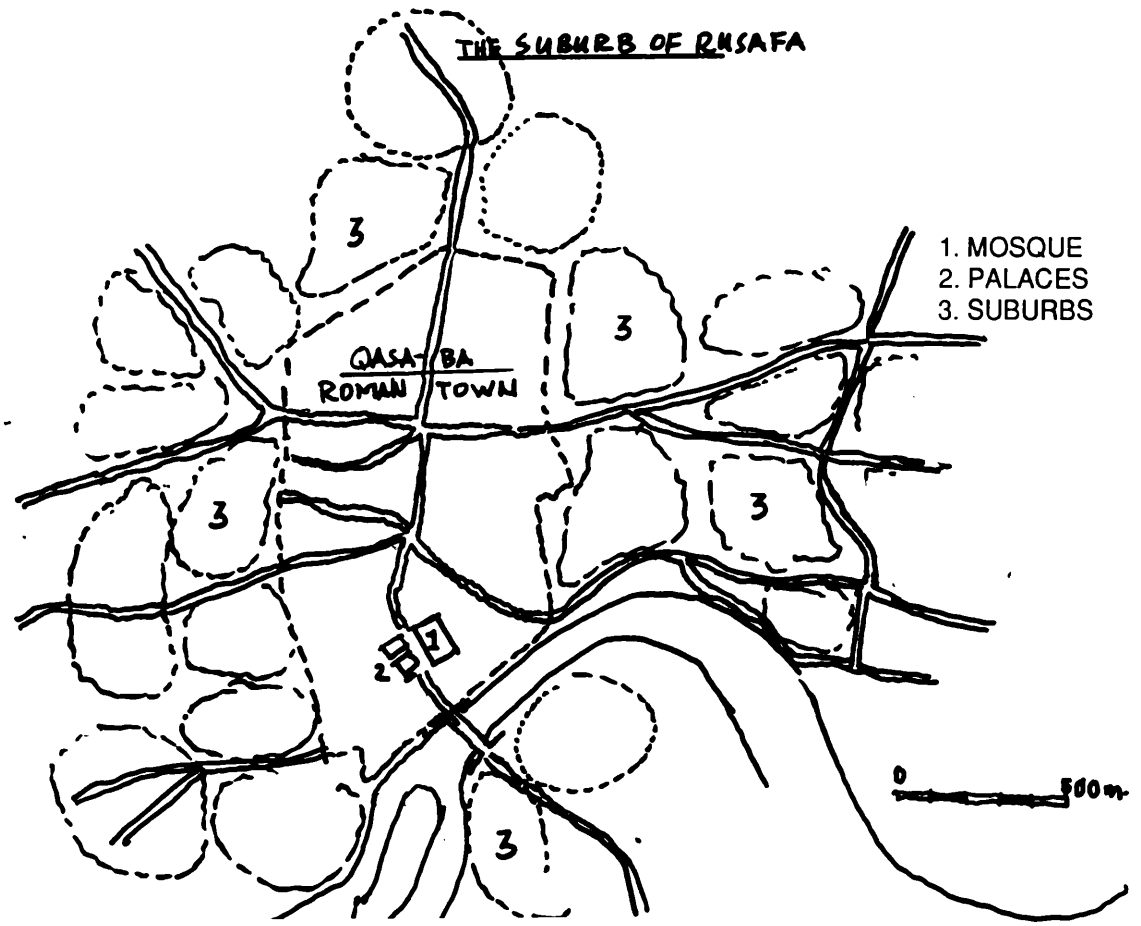


FIGURE 53
CORDOVA, THE GROWING SUBURBS,
after SALIM (1982)

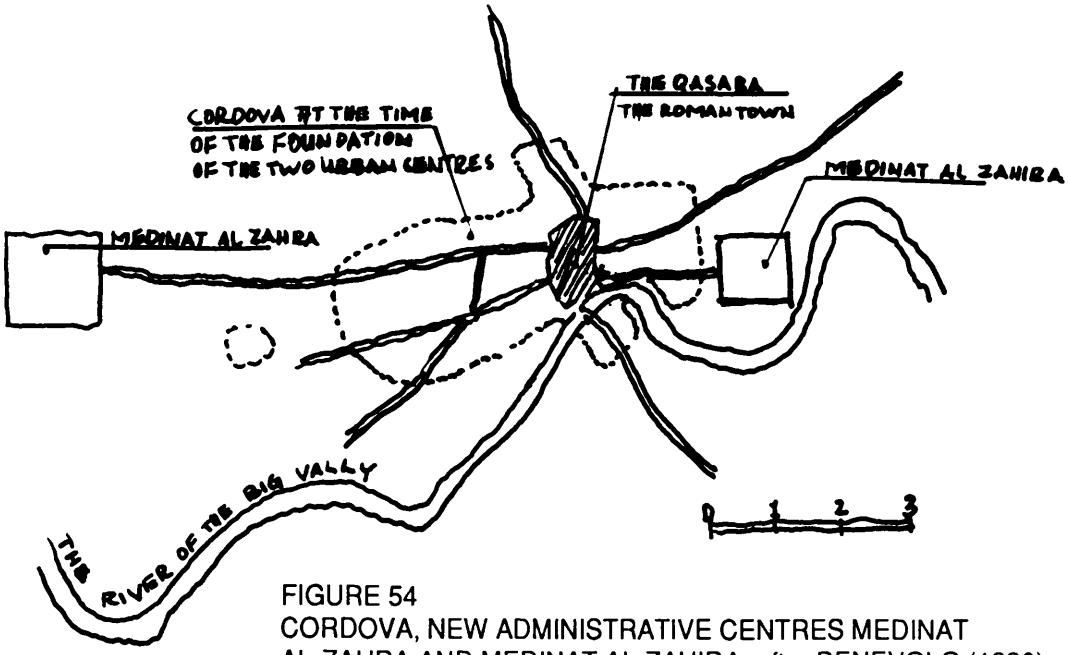


FIGURE 54
CORDOVA, NEW ADMINISTRATIVE CENTRES MEDINAT AL-ZAHRA AND MEDINAT AL-ZAHIRA, after BENEVOLO (1980)

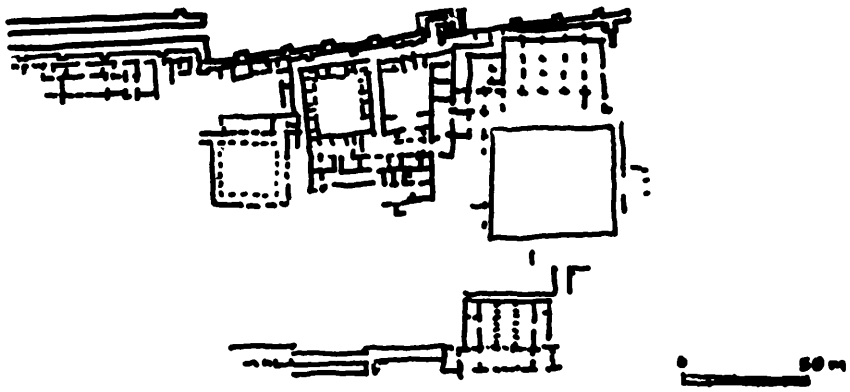


FIGURE 55
MEDINAT AL-ZAHRA , PART OF THE EXCAVATIONS,
after HOAG (1987)

comprised the soldiers and attendants and servants' quarters and houses[152] (see Fig.55).

For about 35 years Al-Zahra, was the Ummayad's and Andalusia's pride till it was replaced or challenged by another and new administrative centre, al-Zahira, founded in the eastern vicinity of Cordova.

Medinat Al-Zahira (the Flourishing City)

Al-Mansur Muhammad al-Maʿafiri, the leading figure in the Ummayad court, acquired a glorious reputation and an eminent power after his successive victories over the Christian Kingdoms in north Spain. By getting so much power, al-Mansur became not only a rival figure to the caliph himself, but also in 368/979 he founded a rival administrative centre[153].

Like its antecedent, al-Zahira was comprised mainly of a number of palaces and a congregational mosque. The complex of the palaces and the congregational mosque seems to have formed the core of the new establishment. On their walls and periphery the ministers and bureaucrats houses were situated and in turn the people's houses lay on the edge of the new centre. Apparent the proximity between al-Zahira and Cordova's suburbs stimulated each of them to expand in the direction of the other and soon the two coalesced[154].

Urban, Administration and Spatial Frameworks in the Generation Process

By becoming a multinational state, the Islamic Empire, as mentioned above, reached its zenith. Most of its military, Arab and non-Arab, stock and settlements became on the one hand fully urbanised, and on the other comprised multi-racial societies, consisting not only of different ethnic groups and religious but also groups of tradesmen, professionals, craftsmen, bureaucrats and soldiers.

As a result of the changes and transformation described above, the state drafted new army troops, mainly at this phase from non-Arab stock. Subsequently the urban society became comprised of three major sections, namely: (i) the Ruler or Governor; his entourage, attendants and servants; and the administrative sector including bureaucrats and

civilians on the state payroll such as judges, market supervisors, police etc; (ii) the military sector mainly comprised Khurasanians, and in later stages Turks and Berbers; (iii) the public sector included tradesmen, craftsmen, workers of modest industries, and probably nomads and peasants who engaged in country and desert trades.

Wide expansion in these three sectors resulted in more or less the formation of three separate institutions: the administrative; the military; and the commercial, in which each institution attained its own composition.

Apparent differentiation in these centres and their institutions, at least at this phase, did not result in a breach between them and the religious institution. As a result and for the first time in the Islamic city's evolution, more than one Friday Mosque (congregational mosque) was built in the one city. The multi-Friday mosques, initiated by al-Mansur in Baghdad when he founded a Friday mosque in both Karkh and Rusafa (see above p.111, 112), became a normal practice spreading to all Islamic cities. Nevertheless at this phase numbers of main mosque were limited to one mosque in each centre; also their emergence and formation were controlled and regulated under certain criteria, such as a Jami^{c} (congregational mosque) should serve a defined section of the community, with an inclusive but not totally separated physical and spatial area. In the case of Baghdad, Friday Mosques were only allowed in centres where spatial elements such as rivers, canal, or open spaces would form spatial and physical boundaries to the area the mosque served[155]. In the case of Fustat, Qata'i^{c} and Cairo, the caliph or the ruler attended the Friday prayers alternating between ^{c}Amru Mosque in Fustat, Ibn Tulun Mosque in Qata'i^{c} and al-Azhar and al-Hakem Mosques in Cairo[156].

Although proliferating, the Jami^{c} mosque remained and functioned as: a communal assembly point, a centre of learning and teaching, a court of legal practice. Majlis, (a place for the qadi's court), Halaqa's (circles for learning and debates, arranged after an Imam or school of thought) and Zawiyas (corners for teaching special subjects in the Islamic precepts), were all placed within the mosque or its precinct. Multi-

centres formating by themselves emerged in the Islamic city, as spatial as well as social groupings. Still sub-groupings remained a special characteristic of the different centre's arrangements. The commercial centre was arranged according to the trades and crafts and industries. The military centre was arranged according to the ethnic origins, or the city or region from which the soldiers were drafted from. The administrative centre similarly was arranged according to the ranks of the bureaucrats, attendants, and their entourage.

Each of the three centres took on a rather complex composition. For instance, tendencies towards the separation of the religious, political and administrative duties of the ruler or governor and huge expand in each, resulted in a spatial separation between the ruler's abode and the government house. In this case the government house remained associated with the mosque. However, to overcome a total separation, the rulers or governors, who at this phase, although they did not lead the Friday prayer nevertheless regularly attended it, had their residences connected directly or indirectly with the mosque and the government house by a wide street such as is the case of the later development in Baghdad and Samarra, or by an open square (Maydan or Rahba) such as is the case in Qata'i^{c} and Cairo. Such arrangements resulted in the emergence of the extended or elongated administrative centre and the ceremonial street or space.

The commercial centre at this phase became spatially elaborated, constructed with large parts of it covered. Trades, professions, crafts and industries became distributed into defined spaces, and probably from this phase trades and crafts were distributed into a hierarchical arrangement, according to their use and the size of their products. Small and light trades which were less disruptive or offensive, were distributed near or around the mosque while others with large heavy materials and unpleasant smells and smoke were located towards the outskirts. Also commercial centres at this phase started to spread in shape and activities. In cases such as Baghdad, Samarra, Qata'i^{c}, Fustat and Qayrawan, commercial shops and activities reached the city outskirts and gates, where country markets and wholesale commerce took place.

Military centres were associated with or distributed near or around the prince's or army leader's palace or residence, such as the case of Karkh at Baghdad, Ashnas, Matira at Samarra, Qata'i^{c} etc. However these military centres emerged in more or less rigid arrangements such as the grid distribution in Samarra and probably blocks in Qata'i^{c}. Nevertheless, as will be demonstrated in Samarra below, this arrangement attained a sort of spatial hierarchy.

Social and occupational sub-groupings were reflected in sub-spatial arrangements, districts, quarters, wards, blocks, streets, roads or part of them being allocated to different groups. A social and commercial as well as administrative hierarchy was sustained and reflected in the spatial hierarchy. For instance, the Round city of Baghdad attained a clear spatial hierarchy: the highest level, the commercial level formed by the open main court, with the caliph's palace and the main mosque standing in its centre, and the bureaucrats building and the secondary palaces encircling it. The main and concentric streets, connecting the gates with the main court, which was also where trades and commercial activities took place, were the public levels. The clear spaces (Faseels Intervallums) connecting the residential areas and quarters with the public spaces, mentioned above, worked as semi-public spaces. The wide streets (sikka) distributed between the wards and connecting the Faseels with streets inside the wards worked as semi-private spaces. These side streets in day time formed traditional spaces between the wards and the Faseels, while at night and for security reasons a gate at each end of the street was locked, thus transforming the semi-private space to a fully private one. The ward's inner streets, probably of a dead-end character and connecting the houses with the side streets, acted as an extension to the houses and worked as private spaces (see Fig.56). Street types, width, and apparently their distribution and numbers, were implemented after a preconceived plan, for instance, a dead end street, became part of the designed street system. As mentioned above, al-Mansur instructed the engineers to distribute thoroughfares as well as dead-end alleys between the different quarters.

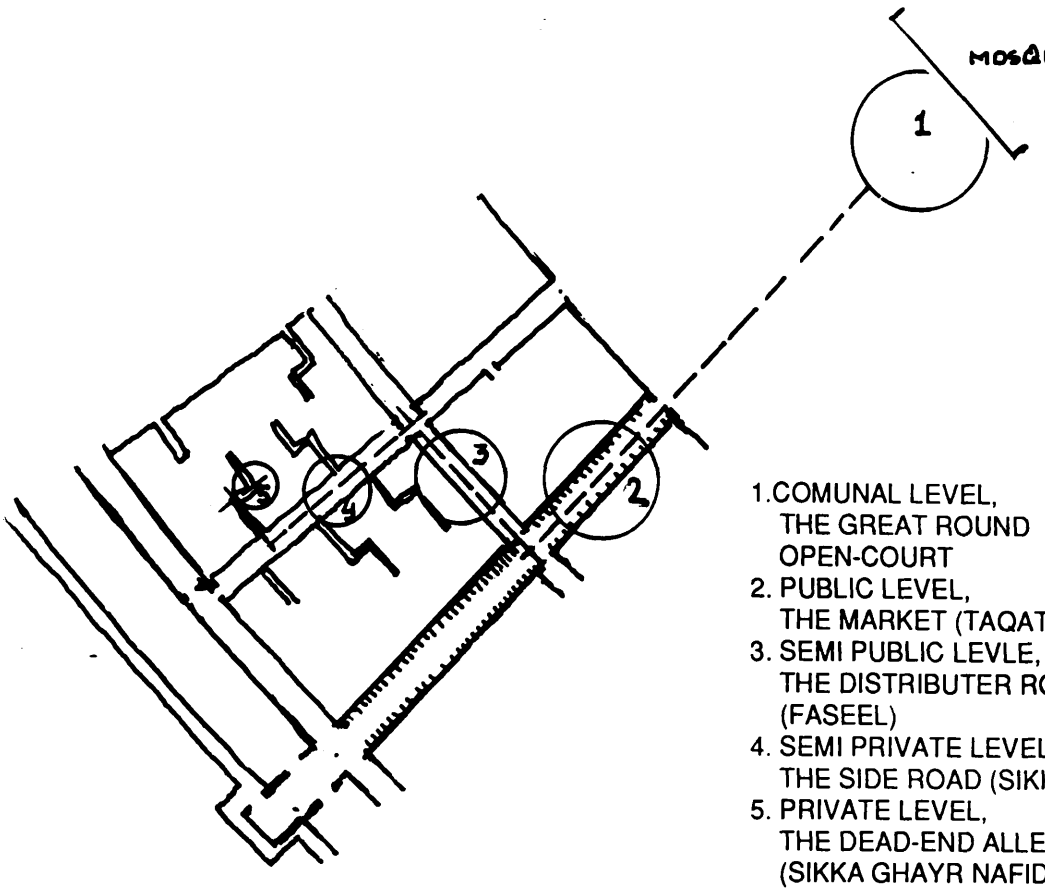
In Samarra, the city best known in its original layout (for it is not built over but is and excavated archaeologically), communal spaces were the ones associated with the caliph's palace and the congregational mosques. Public spaces, buildings and trades were part of and located on the main avenue and other streets lead from the mosque and the palace to it. Semi-public streets and spaces formed tertiary levels connecting the quarters with the avenue, semi-private and private streets and spaces lying between the quarters, wards and blocks, and they can be traced by their different widths and probably their arrangement (see Fig.57).

In Qata'i^{c}, the maydan between the palace and the mosque acted as the communal space - a conclusion which can be sustained by the type of practices which took place in the maydan, (see above p.123). The main street, the qasba, which linked the different centres and Qata'i^{c}, formed the public space, while other streets and spaces could be graded like those of Samarra mentioned above.

In Cairo, the communal spaces, where communal ceremonies took place, were the four open squares, associated with and lying near the palace and the mosque. Public spaces were formed from the streets which connected the squares with the gates; semi-public spaces formed the streets between the different quarters, while semi-private and private levels were those streets which ran through the quarters. It is most probable that, as in Baghdad, part of these streets were originally of a dead-end character.

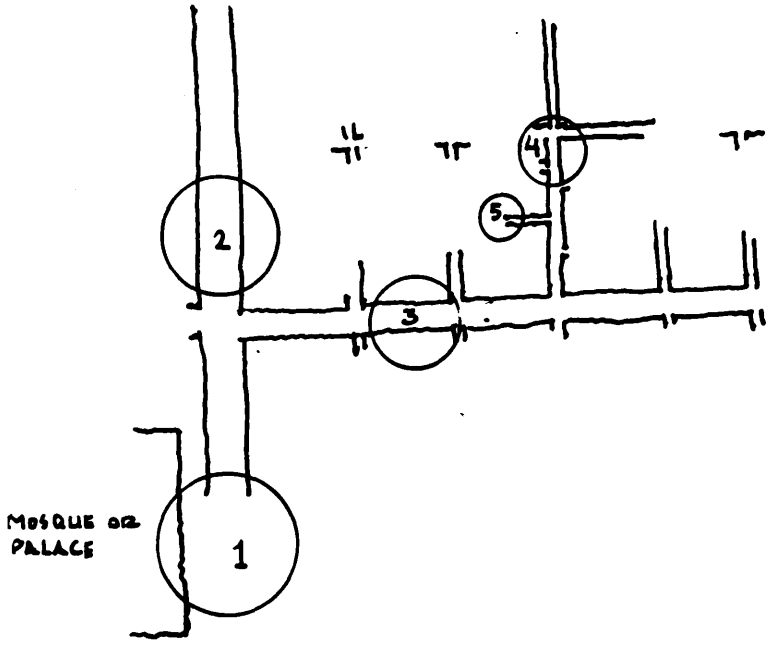
Open spaces such as **Rahbas** and **Maydans** (squares and training courses) became more formal in shape and use. However communal and public spaces were founded alongside private recreational spaces such as gardens, race grounds, zoo-like Hayrs and pools. In Baghdad communal space had the circular shape while in Samarra and Qata'i^{c} it had an elongated shape and in Cairo a squared shape.

Special features at this phase were the vast numbers of local mosques, and bath-houses, the emergence of libraries such as Dar al^{c}Ilm (House of knowledge or Science) at Cairo and Beit al-Hikma (House of Wisdom)



1.COMUNAL LEVEL,
THE GREAT ROUND
OPEN-COURT
2. PUBLIC LEVEL,
THE MARKET (TAQAT)
3. SEMI PUBLIC LEVLE,
THE DISTRIBUTER ROAD
(FASEEL)
4. SEMI PRIVATE LEVEL,
THE SIDE ROAD (SIKKA)
5. PRIVATE LEVEL,
THE DEAD-END ALLEY
(SIKKA GHAYR NAFIDHA)

FIGURE 56
SPATIAL HIERARCHY IN THE
ROUND CITY OF BAGHDAD



1. COMMUNAL LEVEL,
SPACE ASSOCIATED WITH
THE PALACE AND THE MOSQUE
2. PUBLIC LEVEL,
THE MAIN AVENUE (AL-SHARIᶜ
AL- AᶜZAM)
3. SEMI PUBLIC LEVEL,
SIDE STEETS (DARB)
4. SEMI PUBLIC LEVEL,
SIDE ROAD (SIKKA)
5. PRIVATE LEVEL,
DEAD-END ALLEY

FIGURE 57
SPATIAL HIERARCHY IN THE
CITY OF SAMARRA

at Baghdad. Bimaristans (Hospitals) became functionally and spatially well designed, provided with licensed doctors and specialized staff.

In the foundation of the new city at this phase, more concern was paid to the city's position, in some cases, its location in relation to its regional context or network and its site locality. This will be discussed later under Factors of Macro and Micro Influence in Islamic City Layout.

Within the religious framework, **Shari'a**, the Islamic Law entered its third stage (see shari'a evolution p.14). The emergence of the first school of thought (**Mazhab**) coincided with the formation of Baghdad. Abu Hanifa (see p.109) the founder of the Hanafi mazhab, worked as quantity and quality inspector in the construction of the Round city of Baghdad[157]. Further school founders emerged from time to time and in other regions but nevertheless they travel, debated with their rivals or their students. One of them, **Imam Shafi'i**, was the student of **Imam Ibn Malik**.

Qadis (judges) at this phase established a powerful position in urban affairs. They became more involved in the religious and administrative institutions besides their main contribution in the area of legal practice. At this phase, they led the Friday prayer and sermon, a practice which before was part of the governor's duty. However judges, positions came in a way to cover the vacancy left by the ruler whose status became more or less political, rather than the combined religious, administrative, military and political position he had held in previous phases[158].

In the realm of public affairs, the **Muhtasib** or **Sahib al-suq** (market inspector) became a formal position with deputies and policemen assisting him in supervising and inspecting the markets and the public spaces. Each market or craft had a **naqib** (representative) and a **shaykh** (chief). These positions in some cases were appointed by the government[159].

Also this phase witnessed the emergence of many historians, chroniclers, geographers and scientists. However the limits of this thesis do not

allow us to refer to all of them or to all their practices but the following refers to a number of those, whose books have been used in preparing this work: Baladhiri, **Futuh al Buldan**, written in 255/869; Ibn Qudama, **Kitab al-Khiraj**, written in 260/874; Ibn Rusta, **al- Aʿlaq al-Nafisa**, written in 290/903; Yaʿqubi, **Kitab al Buldan**, written in 290/903; al Istahkri, **Masalik al-Mamalik**, written in 240/951; Ibn Hawqal, **Surat al-Ard**, written in 367/978 and al-Moqaddasi, **Ahsan al-Taqasim**, written in 375/985. However there were many other historians who dated prior to the above mentioned ones; we know them as references only as unfortunately we did not possess their books.

Conclusion

To conclude the chapter on the generation process - new and existing cities or urban centres, in general, took on a more spacious and luxurious appearance. The process on the one hand introduced a new model but nevertheless, on the other, developed as an elaboration of previous models which had appeared in previous phases.

The need to expand and to possess a more elaborated cities or spatial arrangement, became one of the reasons behind the founding of many cities or centres at this phase. However it is rather obvious that cities development in Islam do not follow a systematical process, but come as a result of several changes and transformation in part beside the notion just mention, these were:- (i) old cities were already fully developed and crowded, even newly founded ones becoming crowded within a short time; (ii) the restriction imposed by allowing only one Friday Mosque in the one urban centre and the limits of expanding that mosque relatively governed the growing size of the city and its community; thus a new urban centre or city has to be spatially independent if a Friday Mosque is to be allocated there; (iii) the introduction of a new military sector to an urbanized one and the transformation in their way of life and probably a transformation in the spatial requirements imposed by the old and the new way of life, (iv) the big expansion in the areas acquired by the various urban sectors, institutions and practices, and in some cases a rapid growth of one of them on behalf of the areas allocated to an another, such as the case of Baghdad, compelling the shift of some main practice and centre to

new areas (v) the trends towards the independent institutions and urban practices; subsequently the formation of the independent centres in the one city.

However within the above formation and transformation, the new spatial arrangements, although developing in similar layouts such as the round resemblance between Wasit, Baghdad, Heraqla, Raqqa, Qadissiya and Mansuriya or the orthogonal resemblance between Qata'i^{c}, Samarra, Cairo, al-Zahra and al-Zahira, nevertheless did not result in identical repetitions.

The cities formation in any one region usually happened over a period of two or three generation (a generation is taken to be about 35 years) such as Abbasiyya Raqada and Mansuriya, or Askar, Qata'i^{c} and Cairo etc. Yet their emergence in different regions nearly coincided such as Qata'i^{c} (256/870) and Raqada (263/877), or Cairo (358/969) and al-Zahira (368/979).

The Islamic state at the end of this phase became divided between three caliphates; the Abbasids in the east and Iraq; the Fatimids in the Middle East Syria, Palestine, Hijaz, Egypt and part of north Africa; the Neo-Umayyads in Spain and also in part of North Africa. This breach, although on the one hand weakened the Islamic state solidarity and coherence, nevertheless enriched the generation phase with many new urban centres.

As the Arabs of this phase evolved, they became more or less aristocrats. They became more and more involved in a luxurious life style that was in part manifested in lavish and splendid establishments. Furthermore they competed with each other not only in the splendid establishments they erected but also over territorial domination. Gradually they retreated behind their position and into their palaces; they neglected religious and public affairs and became incompetent in the way they acted as empty figure heads.

The circumstances described above, as well as others, resulted in two major consequences. First, different Islamic states and urban centres

became vulnerable to inside rebellions and revolts and in some cases to nomadic outrages, or to outside invasions such as attacks from the north of Andalusia by the Christian Kingdoms, attacks from the north of Syria, Egypt and the conquest of Palestine by the Salibiyyin (crusaders); invasions from the east of the eastern regions in Iraq and Syria by the Mongols. Secondly, non-Arab Muslims took the lead in running a weak and fragmented state, with many devastated and declining cities.

New non-Arab dynasties, such as the Seljuks (al-Salajiqa) in Iraq and the east, in Iran and beyond, the Ayyubids (al-Ayubiyyin) in Syria, Palestine and Egypt, and the Almoravids (al-Murabittin) and the Almohads (al Muwahhiddin) in North Africa and Spain, worked to integrate the many different states and to consolidate and to fortify those cities still remaining.

However their attempts some of which did not last long, came in the form of new measures they initiated in order to promote the existing institutions, practices and establishments. They sought to standardize new foundations to levels which would suit the prevailing, defensive, social, religious and political circumstances and frameworks that had emerged from the previous phase.

Foot Notes: Part Two, III

1. PELLAT (1986), I, 1085; DJAIT (1986), V, 347; JOMIER (1983), II, 958; EL ALI (1970), 93; TALBI (1978), IV, 829

2. DJAIT (1986), V, 347

3. MOQADDASI (1877), 117

4. MONTEQUIN (1983), 44, cited MOQADDASI, recording of the significance of major cities in Islam: Baghdad for its nobility of virtue, Kufa for its refinement, Basra for industry, Misr (Fustat) for its trade. Rayy for its disloyalty, Nishapur for its tyranny, Samarkand for its craftsmanship ... etc.; PELLAT (1983), II, 1086

5. MOQADDASI (1877), 117

6. For the proliferation of Friday Mosques in this phase, refer to the urban frameworks in the generation process

7. MOQADDASI (1877), 117

8. DJAIT (1986), V, 347, eventhough the caliphs did not always resided in Kufa, the city had assumed the role of the administrative capital of the empire.

9. BALADHIRI (1983), 293; LE STRANGE, G., Baghdad during the Abbasid Caliphate, Oxford University Press, London and New York (1924), 16

10. MOQADDASI (1877), 197-9

11. TALBI (1978), IV, 829

12. MOQADDASI (1877), 225

13. IBN HAWQAL, A., Surat al-Ard M.J. De Geoge (ed.), E.J.Brill, Leiden (1873); AL-ISTAKHRI, A.I., Masalik al-Mamalik, M.J. De Geoge, E.J.Brill, Leiden, (1870), 82

14. MOQADDASI (1877), 164

15. BALADHIRI (1983), 149; HONIGMANN (1936), 116

16. DJAIT (1986), V, 347; TALBI (1978), IV, 829

17. IBN MANZUR after IBN ᶜASAKIR (1984), I, 292; IBN SHADDAD (1956), 36

18. MOQADDASI (1877), 156-7

19. IBN AL-SHAHNA (1984), 61; SAUVAGET, J. "Alep: Essai sur le developement d'une grande ville syrienne, Paul Geuthner, Texte, Paris (1941), 86-8, AL-FITYANI, M.K., Tanzim wa Ihya' Hawal al-Qalᶜa, unpublished B.Sc. Dissertation, University of Aleppo, Aleppo (1986), 26

20. IBN HAWQAL (1873), 117

21. MOQADDASI (1877), 166

22. LE STRANGE (1890)

23. MOQADDASI (1877), 167; The built-up area of the Aqsa Mosque, as reconstructed by the Abbasids was about 7350 m^2. Considering 0.6 m^2 for each person in prayer the covered area of the mosque accommodate about 12000 person.

24. CRESWELL (1989), 76

25. PRAG (1989), 132; CRESWELL (1989), 76

26. LAMBTON, A.K.S., "Isfahan I. History" The Encyclopaedia of Islam, E.J.Brill, Leiden (1978), IV, 101; LOCKART, L., Persian Cities, Luzac and Company Ltd. London (1960); GRABAR, O., "Cities

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28. BALADHIRI (1983), 285, 328; HERZEFELD, E. "Hadith", The Encyclopaedia of Islam, E.J.Brill, Leiden (1986), III, 29; LASSNER, J., "al-Hashimiya", The Encyclopaedia of Islam, E.J.Brill, Leiden (1986), III, 265-6

29. LE STRANGE (1924), 5-7

30. CRESWELL (1989), 242, SEE F.N. 3

31. LE STRANGE (1924), 10, 11

32. HAMAWI (1986), I, 457

33. EL-ALI (1970), 42

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40. EL-ALI (1970), 96; HITTI (1973), 89, 90

41. LAPIDUS (1973), 54; EL-ALI (1973) 96-100

42. EL-ALI (1973), 93

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45. HITTI (1973), 86

46. LASSNER (1970, A), 103

47. JAWAD, A.S., "Madinat al-Mansur wa Jamiᶜuha", in Sumer, (1966), XXII, i, ii, 2, he calculated the diameter on basis of Yaᶜqubi description

48. CRESWELL (1989), 231-233; YUSIF (1982), 273

49. YAᶜQUBI (1957), 9

50. LASSNER (1970, A), 109, 110; LASSNER (1966), IX, 17, 18

51. LASSNER (1970, A), 115; CRESWELL (1989), 233-35; EL-ALI (1970), 94

52. YAᶜQUBI (1957), 9, 10

53. For Abu Hanifa see Islamic Law (Shariᶜa) part one of this thesis and Abu Hanifa in Encyclopedia of Islam (1980), I

54. YAᶜQUBI (1957), 9-10; EL-ALI (1970), 94

55. YAᶜQUBI (1957), 10-11

56. YAᶜQUBI (1957), 10-11; LE STRANGE (1924), 57

57. YAᶜQUBI (1957), 11

58. EL-ALI (1970), 101; LASSNER (1966), IX, 5; YUSIF (1982), 284, 499

59. LE STRANGE (1924), 65

60. YUSIF (1982), 499, the text of his report does not indicate exactly the source of this report.

61. YAᶜQUBI (1957), 12, 14; AL-BAGHAADI, al-Kh. A. Tarikh Baghdad, Madinat al Salam, Baghdad (1931), I, 79-80; DURI (1986), I, 896

62. LE STRANGE (1924), 188-89; LASSNER (1970) 64, 250; BALADHIRI (1983), 293

63. YAᶜQUBI (1957), 18; LE STRANGE (1924), 187-8

64. LASSNER (1966), IV, 18-9, 20; DURI (1986), I, 897; TABARI (1987)

65. LE STRANGE (1924), 188-9; YAᶜQUBI (1957), 18

66. LE STRANGE (1924), 102, 105; ROGERS, J.M., "Samarra: a study in Medieval Town-Planning" in The Islamic City, Oxford, (1970), 147

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71. MA'ADIDI (1976), 124

72. YA'QUBI (1957), 7

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75. The term Islamic City (Medina Islamiya) used by ISTAKHRI, A-I Kitaba Masalik al Mamalik, M.J. De Geoge, E.J.Brill, Leiden (1870), 85, written in 340/951, to describe Samarra, indicates that Islamic city is an old distinction and the terminology was used by old Muslim chronicles and not only by modern scholars, as is the common understanding.

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80. YA'QUBI (1957), 23

81. YA'QUBI (1957), 24

82. CRESWELL (1989), 366-7

83. ROGERS (1970), 143

84. YA'QUBI (1957), 26

85. YA'QUBI (1957), 27-28

86. YA'QUBI (1957), 26, 28, 30

87. CRESWELL (1989), 359

88. YA'QUBI (1957), 30

89. YA'QUBI (1957), 30

90. YA'QUBI (1957) 31, ROGERS (1970), 144

91. YA'QUBI (1957) 31

92. ROGERS (1970), 144

93. YA^{c}QUBI (1957), 32

94. WIET (1964), 4-5; CRESWELL (1989), 393

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98. MAQRIZI (1987), II, 264; AL-BASHA (1970),18

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103. MAQRIZI (1987), I, 315, 331; AL-BASHA (1970), 22

104. CRESWELL (1989), 391; MAQRIZI (1987), II, 405; AL-BASHA (1970), 20; ZAKI (1961), 19

105. MAQRIZI (1987), I, 316-7

106. MAQRIZI (1987), I, 322

107. MAQRIZI (1987), I, 348, 350-351; WIET (1964), 17

108. MAQRIZI (1987), I, 361

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116. MAQRIZI (1987)

117. AL-BASHA (1970), 33

118. MAQRIZI (1987), I, 432, 435

119. ᶜUTHMAN (1988), 59; MAQRIZI (1987), II, 47

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132. TALBI (1986), 1246

133. MAQRIZI (1987), I, 351; NAJI (1986), 238-9; CRESWELL (1978), I, 2-4., see footnote 13

134. ZAYIDA (1965), 81-2

135. NAJI (1986), 240; CRESWELL (1978), I, 2

136. NAJI (1986), 240; TALBI (1986), 1246

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IV. STANDARDIZATION PHASE

Introduction

The change in the role played by the Muslim leaders, societies and institutions from a combined status into more or less specialized bodies, induced changes in the processes prevailing in the previous phase. Instead of founding new centres, or cities of lavish and splendid character, the new leaders paid more attention to consolidating existing or surviving cities. Yet when they did found one, the elements of their new foundations were standardized in accordance with previous elements or existing establishments. However most new formations in this phase came in the form of an extension or accretion to existing centres or a process of promotion of the old one's function or status into a new category or for new purposes.

Defence, unlike in the previous phase, was the momentum behind many new foundations. In nearly all cities, strongholds, maydans for military training, markets for military supplies such as armour, and horse markets, hospitals, schools etc. become standard elements within the urban framework.

Also as part of the defence programme, the new leaders placed themselves within new Qala'as or Qasabas (citadels) which they established on the edge of an old city, or in an existing citadel which was already situated on the edge of an existing settlement. In both cases however these strongholds became another focal element in the city layout and the nucleus of new development.

In the promotion programme, the religious thought (Mazhabs) and pious endowments (waqf), previously merely a personal religious contribution, were promoted into organizations. Both gained an impetus in upgrading the religious establishments and foundations, and also assisted and played a major role in the running and upkeep of religious, social, commercial and public affairs.

Consolidation in the Standardization Programme

However not all Islamic cities underwent the process described above. Only cities that adapted to the new prevailing processed and circumstances survived. Many luxurious and splendid establishments were either destroyed in revolts or attacks or were left abandoned and fell into ruin.

The decline in the leading Arab aristocracy was echoed in the fall of many of the early Islamic cities, which had been mainly populated by Arabs. These cities which in the previous phase had witnessed continuing expansion and spatial inflation entered a process of decline and reduction in size and population.

Basra

Basra, after becoming a full metropolis, underwent a long process of decline, the city being encircled by another rampart, 2km. within the old one[1].

Kufa

Kufa did not enjoy any better fortune. After long and frequent revolts and attacks, the city entered a process of de-urbanization and in the end fell under nomad domination, and later fell to ruin[2].

Qayrawan

Qayrawan, like Kufa, fell under nomad domination, the city shrinking to one-third of the 8km extent it had reached in the previous phase[3].

Wasit

Wasit endured the regional decay that hit Mesopotamia. Its decline was not as fast or as severe as that of Basra and Kufa but nevertheless, a change in the course of the Tigris river brought an end to the city's existence[4].

Ramla

Ramla was destroyed, although perhaps only its wall, by Salah al-Din the Ayyubid in 583/1187, so that it could not be recaptured by the Salibiyyin (crusaders)[5]. The city continued to decline despite two

attempts to restore its mosque by Salah al-Din in 587/1191 and Baybars the Mamluk in 666/1267-68[6]. Further information is yet not available on Ramla but it would appear that it did not regain either its previous establishments or its prosperity.

Baghdad

After reaching its zenith at the end of the third and beginning of the fourth centuries AH. (mid to the end of the tenth century AD.) Baghdad underwent a gradual decline. The city suffered several and successive floods, fires, plagues and scarcities. A major part of this devastation came as a result of the weakness of the caliphate or the government and its neglect of the public services[7].

Baghdad almost contracted to one-tenth of its previous maximum size. Its contraction was not a uniformed shrinkage, but rather a truncation of areas from between the different centres or major urban elements such as a Friday Mosque, a Shrine Mosque, market, and palaces[8]. The two halves of Baghdad from being each comprised of two centres (see above p.113) shrank to a number of nuclei. The round city fell into ruin, the only elements that survived to this phase being al-Mansur's Mosque and the district and suburb surrounding Basra Gate[9]. Al-Karkh, the commercial centre of Baghdad, dwindled in size but apparently at that time was the only flourishing part of the west side[10].

After moving the caliphal seat back to Baghdad from Samarra, the eastern half of the city became the sole administrative centre and the abode of the caliphs. It comprised several but separate quarters or districts. A group of districts surrounded the caliph's palaces, called Dar al-Khilafa (the caliphate house). Other separate quarters or districts were those of the Rusafa Mosque; the area called after Abu Hanifa, surrounding his shrine; the ᶜAttabiyya, famous for its silk and cotton ᶜAttabi cloth; and the Bimaristan (hospital)[11].

By the time of the arrival of the Seljuks led by Tughril Bey in 447/1055, Baghdad had entered a consolidated phase. The Seljuks, and before them the Buwayhids, who emerged as the custodians caliphate, placed themselves in a new palace called Dar al-Imara (The Government

House), on the north-west edge of the district surrounding the caliphal palaces[12]. Tughril Bey enlarged the palace and cleared the area around it, which he then encircled with a wall, thus transforming it into a fortress-like nucleus. He also enlarged the mosque associated with the palace, making it one of the main Friday Mosques in Baghdad. The sultan's abode, mosque and administrative nucleus became known as Dar al-Mamlaka (The House of the Kingdom)[13].

The main urban conglomeration in Eastern Baghdad remained centred around the caliphal palaces. These districts and the caliphal palaces were encircled with a protective wall, leaving many districts and quarters including Dar al-Mamlaka, Rusafa, Shamasiya and Abu Hanifa excluded in the northern part of East Baghdad[14]. IBN JUBAYR, who visited Baghdad in 581/1185, recorded that the whole city was comprised of seventeen districts and eleven Friday Mosques[15] (see Fig.58).

Baghdad in this phase underwent a process of transformation over and above the process of formation that pervaded the previous phase. Many palaces, mosques and other major buildings were destroyed and rebuilt several times, and markets, schools, hospitals and other public buildings took the place of palaces. The Seljuks, as part of their promotion programme, founded several religious schools. Besides the Nizamiya school founded in 459/1066 by Nizam al-Mulk, IBN JUBAYR saw thirty schools[16]. The Seljuks also founded guest houses for the poor, ribats (Hospices), religious retreats, Maktab schools for orphans, and hospitals. During this phase traditional Baghdad assumed a shape which thereafter changed but little[17].

Fez

Yusuf ibn Tashfin, the founder of the Murabittin Dynasty, occupied Fez no earlier than 468/1075. He demolished the two walls which separated the Qarawanian and Andalusian sides of Fez. He then had the wall rebuilt as a small construction surrounding both parts of the city. He also built a fortress on the edge of the two sides and enlarged the Friday Mosque in the Qarawanian Precinct, thus making it the principal mosque for the whole of Fez[18]. In addition he promoted military, economic and religious activity, so that Fez underwent a consolidation

programme and regained its prosperity. The city subsequently became a major centre of religious and intellectual activities in North Africa[19].

Another stronghold was built in Fez in 669/1270. The new fortress-like nucleus built by Abu Yusuf (Ya'qub II b.Abd al-Hagg) the Marinid was intended as an administrative and military stronghold for the sovereign, his family, and the dignitaries of the Marinid state, and the troops. Adjacent to the palace a large mosque was constructed to serve the new nucleus (see Fig.59). Commercial activities in new Fez were limited to initial necessities, and old Fez, which became known at that time as Fas al-Bali (Ancient Fez), remained the centre of public and commercial activity[20]. In accordance with his religious promotion programme, Abu Yusuf founded the first religious teaching and learning school (madrasa) near the principal mosque (the Qarawanian) later known as the coppersmith schools probably because they were located in the coppersmith market. Later on, his successor founded another three schools, each located near one of the main mosques (the Andalusian) the new mosque in new Fez, and in the perfume market near the Qarawanian mosque[21].

Cairo

The multi-centred city of Cairo, like most Islamic cities at the end of the previous phase, suffered many scarcities, plagues and fires. However, the major devastation was the intentional firing of what is known as Misr al-Qadima (old Cairo) or Fustat, so that the southern commercial centre its wealth and activities would not fall in the hands of the crusaders[22]. The whole population of Cairo's southern outskirts moved over and stayed temporarily in the Fatimid administrative centre. Yet the local inhabitants of Fustat were not allowed to settle in Cairo until the city fell into the hands of the Seljuks and later into the hands of Salah al-Din al-Ayyubi. The founder of the Ayyibid Dynasty encouraged the people of Fustat to rebuild their burned houses in Fustat but at the same time he allowed them to settle in Cairo[23].

In order to give impetus to his promotion programme, he demolished part of Cairo's original wall, and built a new wall which would circumscribe and include the whole area previously inhabited, including

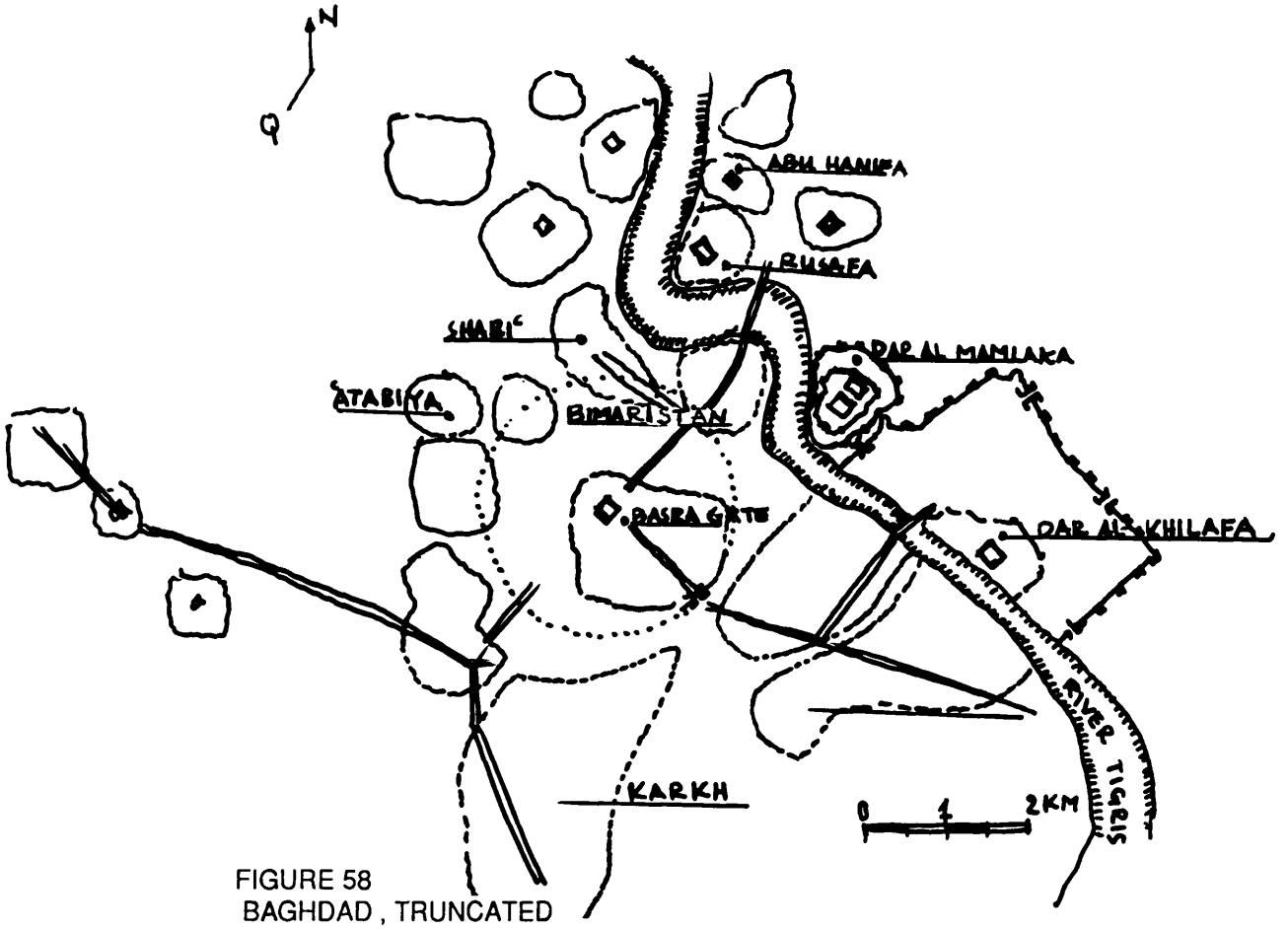


FIGURE 58
BAGHDAD , TRUNCATED INTOONE CENTRE AND SEVENTEEN NUCLEIafter LE STRANGE (1924); DURI (1986)

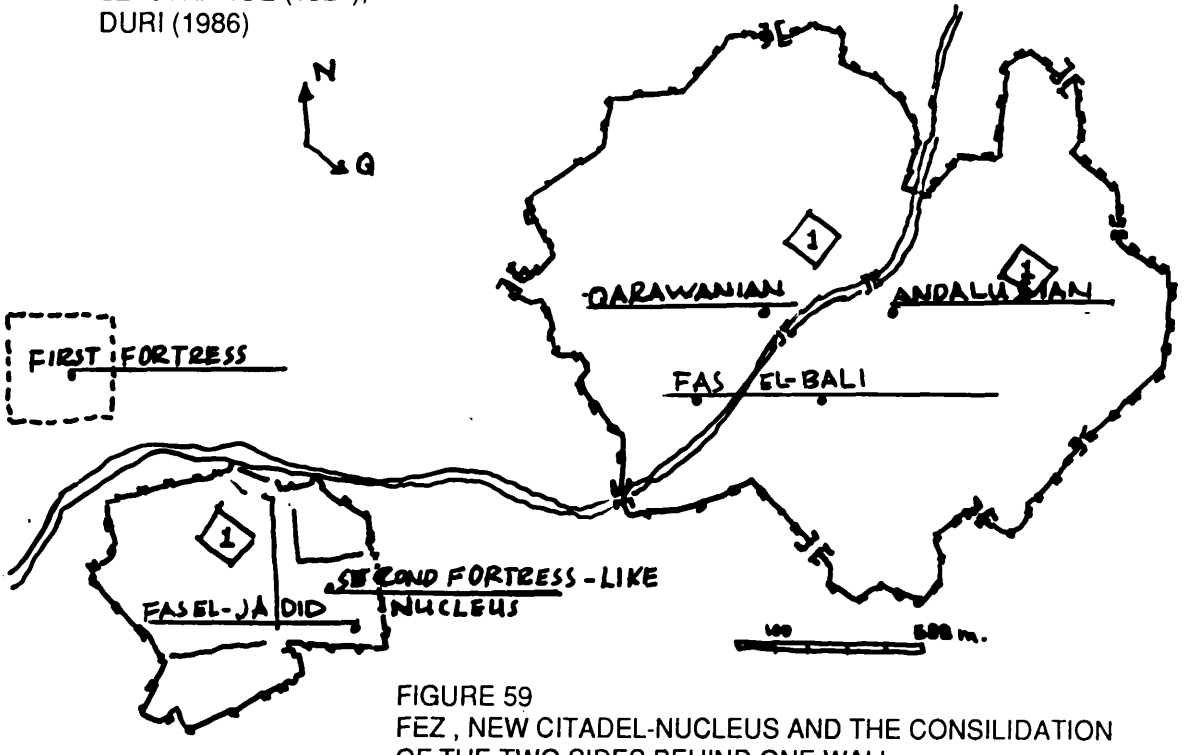


FIGURE 59
FEZ , NEW CITADEL-NUCLEUS AND THE CONSILIDATION OF THE TWO SIDES BEHIND ONE WALL, after MASSIGNON (1906); GAILLARD (1905)

the old centre of Fustat and the lands newly emerged because of the recession of the Nile River westwards[24].

From the Nile, which became the western boundary of Cairo, the new wall was begun to include the northern wall of Fatimid Cairo and stretching eastward to the Muqatam hills where Salah al-Din founded a citadel (Qal^{c}a). MAQRIZI reported the length of the wall to be 15 kilometres, which with the citadel appears to have required more time to build than the life time of Salah al-Din[25]. However Salah al-Din's promotion programme was not limited to the above two huge achievements. He built a new aqueduct in order to bring water from the Nile to the citadel. There he laid the foundations of a complete complex of administrative, military and religious establishments, part of which were finished in his time or were implemented in the time of his successors. The complex including palaces, Friday Mosque, open squares, ministers' residences and administrative offices, a guest house, "public house", treasury, arsenal stores, prison, soldiers' barracks and houses, baths and gardens[26]. The citadel did not alter the city centre, nor did it weaken it, but rather formed a new focal nucleus that drew development in its direction[27]. At the same time as the citadel, a military fortress where the largest contingent had its quarters was built on the island of al-Rawda facing Fustat[28] (see Fig.60).

Similar to the arrangement and standardization programme initiated by the Seljuks in Aleppo and Damascus (see below p.169, 172) Salah al-Din founded a **maydan** at the foot of the citadel. Unlike the ceremonial squares which surrounded the Fatimid Palaces, the new **maydan** was a multi-functional open space. It replaced the previous Feast prayer place near al-Nasr gate. It functioned also as a military training ground, a sports field and race course[29]. On the maydan's western perimeter the Ayyubids founded military stables and markets for mules and horses. Later in 661/1262, a justice house or court (Dar al-^{c}Adl) on the eastern perimeter below the wall of the citadel was built[30].

In his programme to encourage the people of Fustat to rebuild their houses, Salah al-Din remodelled and restored the Friday mosque, Jami^{c} ^{c}Amru. Near to it probably on the site of the old police station, he

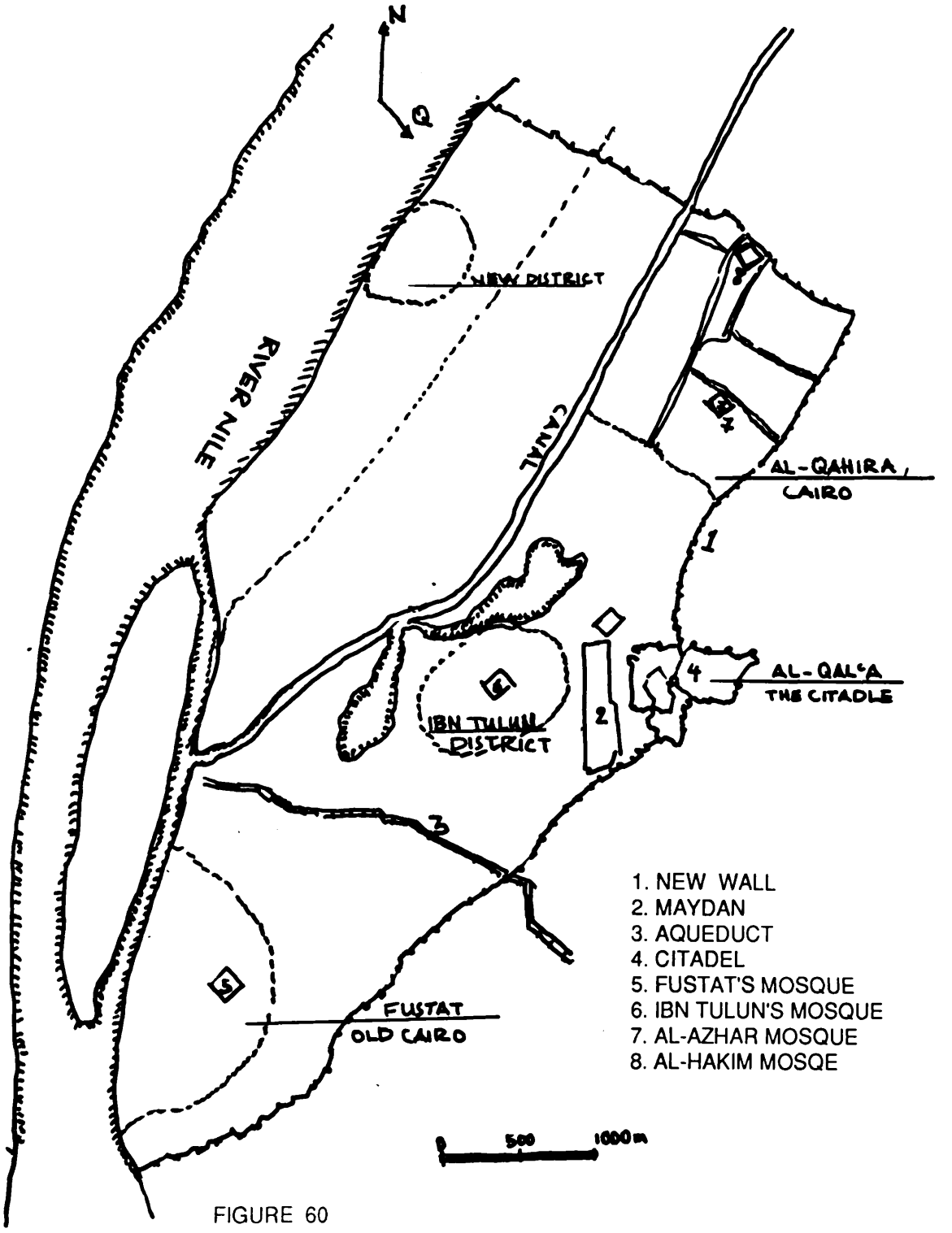


FIGURE 60

CAIRO, AND OLD FUSTAT UNDER THE CONSILIDATION
after AL-SAYYAD (1981); BERGNE (1978); STOCKS

founded al-Madrasa al-Nasiriya, the first school founded in Egypt. He also founded another school, al-Qamhiya, and a bimaristan (hospital) and endowed several suqs (markets), and qaysariyas (courtyard markets) and other commercial foundations which would support and run these establishments[31]. IBN JUBAYR who visited Cairo and Fustat at this time reported that all Fustat's buildings and houses were new and clustered (mutamasika)[32].

In the north, Cairo witnessed a radical spatial transformation. As mentioned, since the new maydan replaced the previous open squares, they had lost their prestigious, ceremonial and communal importance; so they were available for development not only for the state public buildings but also for the people of Cairo and Fustat. These squares were either occupied by public buildings or transformed into quarters. Small squares or streets which remained named after the original square or street were reminiscent of the name of the old place but not its size or shape[33].

The Fatimid palaces, Ministries and public buildings were first remodelled and adapted for other uses; yet they were later demolished and replaced by new buildings for new facilities. These in part were Al-Muristan al-Mansuri (Hospital of al-Mansur), Mint House, al-Madrasa al-Suyufiya (the school of the swords named after the new swords market), Manazil al-ʿIz school, (named after the original Fatimid palace), Qutbiya school in place of Dar al-Dibaj (the Costume House), Khanqa al-Salihiya (al-Salih's Hospices), Qaysariyat al-Shurb and Qaysariyat Ibn Abi Usama, (both courtyards markets)[34].

As Cairo at this phase was no longer functioning only as an administrative centre, new and lively markets and Qaysariyas were founded on part of the existing buildings or the wide streets. Maqrizi reported several new and specialized markets to have been located on the main avenue and streets. One of these markets specialized in food and groceries was located in and was named after the Bayyan al-Qasrayn street (between the two palaces). Other markets were, al-Futuh Gate market, which specialized in birds and animals' meat and restaurants, the Arsenal Market in the southern part of the Qasaba

(avenue), the Sagha qaysariya (jewellery and goldsmith) in place of the palace's kitchen and part of the avenue, Suq al-ᶜAnbariya (The perfume sellers market) in place of the Fatimid prison[35].

Under the Ayyubids, Cairo not only became a huge fortified city but also the main capital of the Islamic world.

Consolidation in the Standardization Programme:
Pre-Islamic Cities

The pace of transformation, which had occurred in previous phases, both in cities founded under Islam and cities of the pre-Islamic civilization which were later occupied by Muslims, brought the two to a large extent into similar spatial characteristics. Yet, as mentioned, neither the pre-Islamic cities nor genuine Islamic cities, at the time of their foundation had similar spatial arrangements.

The term "Pre-Islamic" cities, referred to in this thesis is not intended to imply a special type of classification. It is rather an approach whose aim is to follow and detect the forces and processes of change. This process not only changes what was previously considered as a non-Islamic spatial pattern into an Islamic one, but also included both in what is now considered to be a distinctive Islamic city pattern.

Isfahan

Almost the first Islamic city that underwent the consolidation programme, Isfahan's two centres Yahudiya and Khushinan were amalgamated and enclosed behind a strong and high wall. It was reported that the city wall reached a length of about 20 kilometres. Part of the wall construction was a citadel built in 429/1037-8[36], and placed in the south-east corner (see Fig.61). The Seljuks rebuilt the Friday Mosque of Isfahan to a new and grander scale and concept. Along with the new mosque they founded a library and the first madrasa (religious school) in 459/1066, called al-Nizamiya after the Seljuk minister, Nizam al-Mulk[37]. The mosque and the school stood near to the maydan which at this phase appears to have been surrounded by other administrative and government offices, religious as well as commercial buildings[38]. Part of the commercial activity took place in the

maydan where probably, like that of Cairo, was a training ground and a sport and race field. Isfahan under the Seljuks regained its prosperity and became the regional capital of Iran and one of the leading intellectual cities at that time.

Damascus

In addition to changes which occurred in the previous phases, Damascus in this phase underwent a vigorous transformation process. It took on a religious, military and functional appearance[39]. In the consolidation programme which was mainly implemented under the Seljuks and the Ayyubids, the wall of the city was restored and strengthened with new towers. Part of it was demolished and rebuilt, while being adjusted to the last changes in the city's fabric. New gates were added while old ones were closed[40].

A small citadel together with a government house were first built in Damascus in 471/1077 by Taj al-Dawla, the Seljuk. Later Seljuk governors, including Nur al-Din Zenki, and the Ayyubids, including Salah al-Din, successively rebuilt and enlarged the citadel and added many new buildings. These include new palaces, a Friday Mosque, government court, financial offices, and military offices, residences and barracks[41].

The citadel overlooked two open squares (maydans), which were the precedent of the maydan founded in Cairo (see above p.165). They functioned as a military training ground, race and sport course and probably also, as was to be the case in Cairo, for feast prayers. Also acting as a precedent for Cairo (see above p.165), Nur al-Din founded a house of justice (Dar al-ʿAdl) known later as Dar al-Saʿada to the south of the citadel[42].

While the city centre remained where the Umayyad mosque is, the citadel, along with the two maydans and the house of justice formed an administrative and military stronghold-cum-nucleus. There, in the centre its position was sustained by a new hospital and a madrasa built in the vicinity of the mosque in 491/1098. Later another hospital,

served also as a medical teaching school, and about seven madrasas in all were built by Nur al-Din Zenki[43].

At the time of IBN JUBAYR's visit to Damascus in 580/1174, the city had twenty schools. Each school was endowed to cover a certain topic in religious teaching, such as the prophetic sayings (Dar al-Hadith) or an Islamic religious doctrine (Mazhab). Also the Seljuks and later the Ayyubids endowed Damascus with several Khanqa (hospices) and Ribats (convents). Each was dedicated either to a devout religious group, such as the Sufis (mystics), or to the poor, or to a specific pious preacher[44].

However, it is not only the religious institutions that were promoted and benefited from these establishments. Commercial buildings and public services were founded and endowed by the founders of the religious building for their upkeep and maintenance[45]. Markets in Damascus flourished and gained from the promotion programme. New markets were organized into standard commercial specializations in the form of commercial establishments. Beside Qaysariyas (enclosed and specialized markets), Khans (warehouses), Funduqs and Wikalas (merchant depots and wholesale markets) formed part of the congested markets[46].

Damascus in this phase witnessed a lively construction programme. Governors, dignitaries, senior state officials and merchants, all competed with and rivalled each other in endowing religious, public and commercial foundations.

Damascus regained its superiority. It became crowded but vigorous. Quarters became fully developed with narrow and winding streets. Suburbs started to emerge at the north and west corners of the walls, in the direction of and close to the citadel[47] (see Fig.62).

Aleppo

The pace of change in Aleppo nearly coincided with that of Damascus. Like most cities that fell under the Seljuks and later the Ayyubids dominion, Aleppo entered the standardization phase. In the

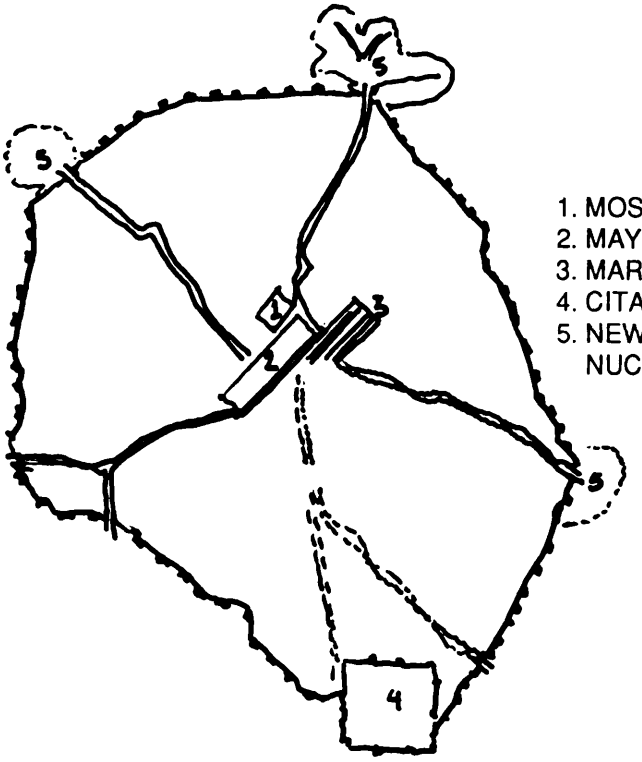
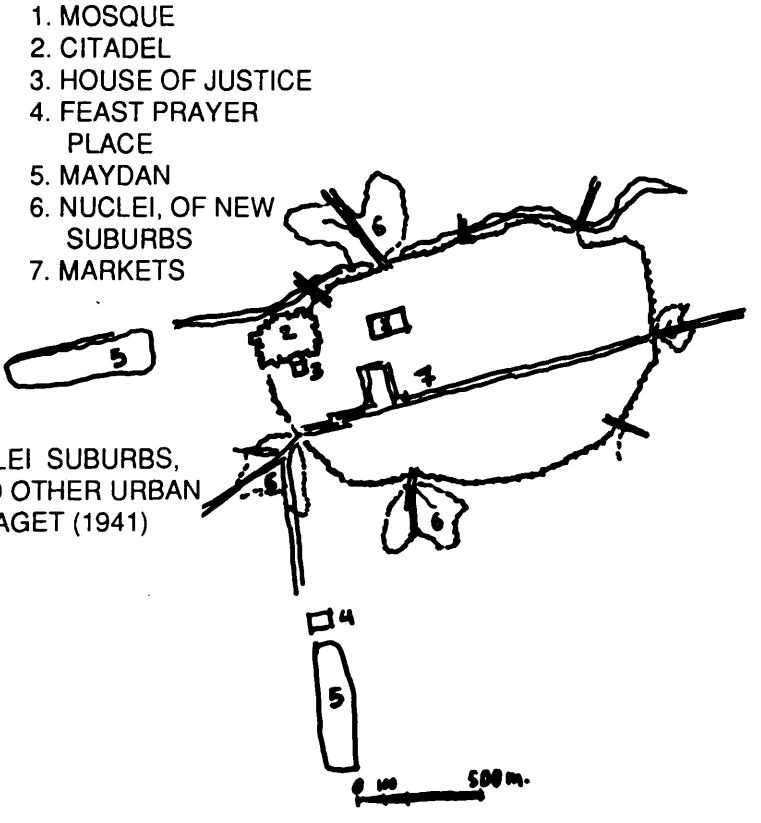


FIGURE 61
ISFAHAN, THE TWO CENTRES CONSILIDATED BEHIND ONE WALL, after GAUBE (1979)



FIGRE 62
DAMASCUS, NEW NUCLEI SUBURBS, MAYDAN ,CITADEL AND OTHER URBAN ELEMENTS, after SAUVAGET (1941)

consolidation programme, rulers of both the dynasties already mentioned successively restored reinforced, and adjusted the walls in line with the city's latest developments. They opened new gates while closing existing ones[48]. They restored and rebuilt big areas of the citadel and added to it a palace, a mosque and the governmental buildings. Below the citadel they founded a **maydan** similar to that of Damascus, for military training and parades and probably for the feast prayers[49]. Near the **maydan** they founded a military quarter and a court of justice and on another side, stables and markets for horses and mules[50].

Nur al-Din is reported to have founded six **madrasas**, the first in 516/1122. Many other **madrasas** were built subsequently along with Khanqas, Ribats and **Zawiyas**[51]. Many of these religious establishments were associated with the complex of public and commercial services built in accordance with endowments contributed to serve the religious institutions and the religious groups, preachers and the poor[52].

The markets at this phase were reported to be clustered in alignment with the Umayyad mosque. New **suqs** (markets) founded on the eastern side of the mosque along with the old ones were all covered with wooden roofs. New **Qaysariyas**, **Khans** and **Funduqs** and **Wilakas** extended the markets areas. Aleppo like Damascus became congested, with new suburbs starting to appear around the city and in the direction of the citadel on the eastern side (see Fig. 62)[53].

Jerusalem

At the end of the previous phase, Jerusalem had undergone a dramatic spatial as well as societal change. After two destructive earthquakes in 424/1033, 466/1068 and several military and nomadic outrages, the city shrank in size, with parts of the previously growing quarters being abandoned or destroyed[54].

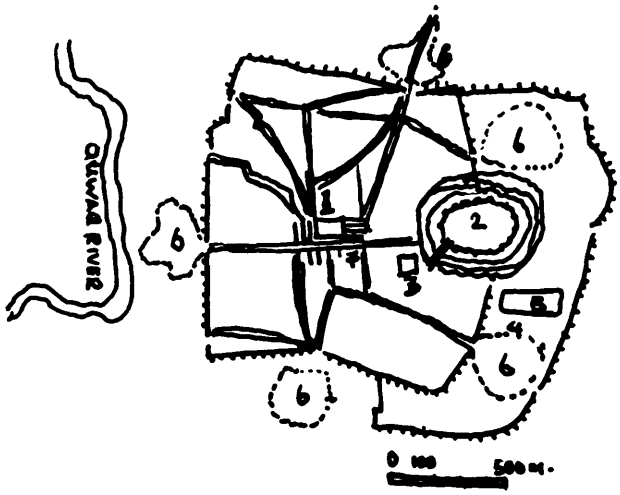
Moreover the city, before falling into the hands of the crusaders (Salibiyyin), began a process of depopulisation, culminating in a massacre committed by the crusaders. The whole city's population including eastern Christians, was replaced by Europeans Christian. Jerusalem became the capital of the new Christian Kingdom in the east[55].

The crusaders contributed for their part to the city's spatial transformation. They replaced or altered the use of many Islamic buildings for their own purposes, and at the same time they constructed and founded several community churches. Each church served a sect of the Christian community, which clustered around their church[56]. This new social pattern did not in later stages pervade only Jerusalem but also many other Islamic cities[57].

Further transformations occurred when Jerusalem was recaptured by the Muslims under the Ayyubids. Following the pattern implemented in other Islamic cities such as Damascus and Aleppo, the Ayyubids restored the city walls, but later intentionally demolished parts of it at strategic points so the crusaders would not be able to hold it again. They also built a citadel in association with the Herodian tower in the middle of the western wall[58] (see Fig. 64). Many Crusader churches were altered into schools or hospitals, and at the same time many schools, fountains, libraries, mausolea and convents were built[59]. The city was repopulated by Muslims, eastern Christians and Jews coming from other Islamic centres and regions[60].

Cordova (Qurtuba) (Spain)

The trends towards a decline appear to have swept through most Islamic cities at the end of the third phase. Both new administrative centres, al-Zahra and al-Zahira in the vicinity of Cordova, were destroyed in revolts in 399-401/1008-1010[61]. Cordova, the mother city, did not enjoy a better fortune. It too suffered revolts, scarcities, and earthquakes, but the biggest blow came from the Berbers who attacked the city several times and destroyed part of it[62]. However, before the city fell into the hands of the Christian Kingdoms of Spain in 633/1236, the Murabittin (Moravids) and the Muwahiddin (Mohads) attempted to consolidate Cordova. The Moravids in 517/1064 built a protective enceinte and probably a ditch, around the city and its suburbs (see Fig.65). The Mohads later followed their lead but nevertheless the city was doomed to an inevitable decline[63].



1. MOSQUE
2. CITADEL
3. HOUSE OF JUSTICE
4. FEAST PRAYER PLACE
5. MAYDAN
6. NUCLEI, OF NEW SUBURBS
7. MARKETS

FIGURE 63
ALEPPO, NEW NUCLEI-SUBURBS, MAYDAN AND OTHER NEW ELEMENTS, after SAUVAGET (1941)

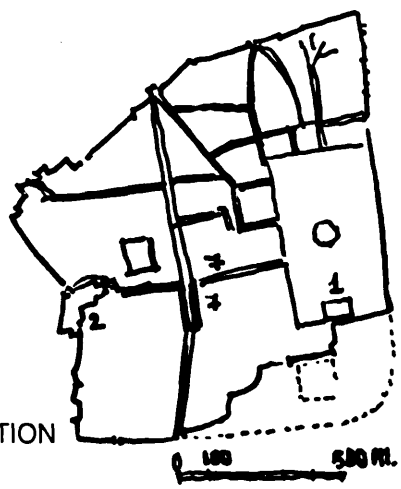
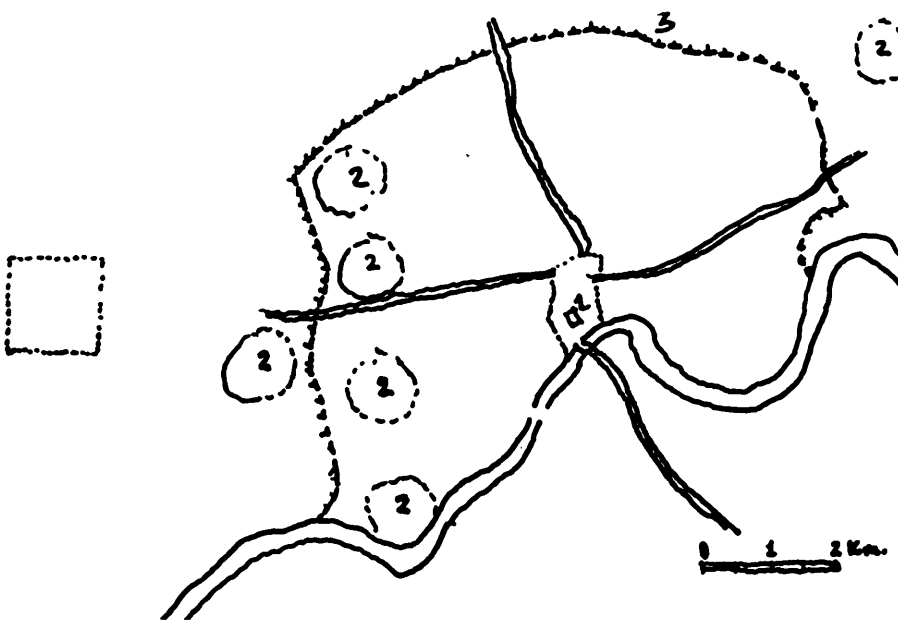


FIGURE 64
JERUSALEM, IN THE STANDARDIZATION PHASE, after PRAG (1989)



1. MAIN MOSQUE AND CENTRE
2. NEW NUCLEI
3. ENCIENT

FIGURE 65
CORDOVA, ENCLOSED BEHIND A NEW ENCIENT, after BENEVOLO (1980)

Promotion in the Standardization Programme

Newly Founded Cities

Newly founded cities in this phase did not emerge in the proliferated fashion of the previous phase. They came into existence either by the accretion of new areas to a fortress or citadel or by the promotion of a nucleus-like settlement into a town or a city. Nevertheless they conformed to the processes which had resulted from the previous phase or this phase. However of the few cities which did emerge in this phase, Marrakesh and Ribat from the western part of North Africa, are here presented as model examples.

Marrakesh

The city was begun in 451/1060 by Yusif Ibn Tashifin, the founder of the Berber Murabittin Dynasty. However his intention had not been to establish a city, but rather not more than a fortress and a military ground for his troops[64]. In the centre he built a small fortress of local but sophisticated structural design, and a mosque. Originally , he and his troops resided in tents and modest constructions[65]. The pious figure of Ibn Tashifin and his religious causes as well as consolidation programme attracted many religiously motivated subjects, who settled around the new nucleus[66]. While Ibn Tashifin had consolidated Fez behind one wall (see above p.162) he did not encircle Marrakesh with a wall. Here again, after nearly four centuries, the formation of Marrakesh recalls the processes that had occurred early in Basra and Kufa.

Marrakesh is reminiscent of the transformation which had occurred in the early congregational centres (see above p.100). Until 70 years after its formation, the city was surrounded by a wall built by one of Ibn Tashifin successors, who also founded a new palace[67].

When the Muwahiddin dynasty took over Marrakesh, they rebuilt the wall on the city's original boundaries, but added to it new gates, probably adapted to the spatial transformation that had occurred in the city's fabric. As an extension to the new wall the Mohads built a citadel (Qasaba) in 584/1189 on the southern boundary. Following the pattern of the standardization programme implemented in the Islamic

cities in Syria and Egypt and Iran, the Mohads transferred the administrative and military offices to the new nucleus[68]. There, they divided the citadel into three enclosed parts. The middle was comprised of a huge open space surrounded by the guard's house, offices of ministers and army officers, guest house, a school, a library. Another element was long porticoes, called al-Saqa'if, organized and distributed according to the Mohad dynasty members and representatives; the north-west part was comprised of a mosque and the Mohad court and headquarters; the eastern part was occupied by Mohad palaces[69].

Moreover they endowed Marrakesh with a special hospital, (richly furnished, with an abundance of water and trees, an underground water supply), markets, and probably covered like those they built in Ribat (see below p.177) and madrasas (schools)[70] all situated in place of their predecessors' palaces in the city centre near the mosque. Although schools were introduced by Mohads in Marrakesh they did not become teaching institutions until later in the time of the Marinids in 748/1347[71].

The Mohads claimed that all the mosques of their predecessors are wrongly orientated, so, they demolished them all, and rebuilt them in the correct orientation, including the principal mosque which was now built on a larger scale[72].

Marrakesh remained the capital of the Mohads until they promoted another monastery-fortress (Ribat) into a full city called Rabat al-Fath (Fortress of Victory).

Rabat

The town Rabat was founded near to and as an extension of a monastery-fortress (Ribat), which itself presumably was founded either by the Neo-Umayyads of Andalusia or the Zenata Berbers in the 4th/10th century. It was situated on the place in which the soldiers congregated near the fortress before they crossed to Andalusia. The fortress and the town lay on the mouth of the Bou Regreg river where it pours into the Atlantic Ocean, in front of an old Roman colony camp, Sale, which probably had been founded in the 2nd century AD.

However Sale was in ruins by the time the fortress (Ribat) was founded[73].

When the Mohads took over the fortress from the Muravids they either rebuilt part of it or founded a new fortress in place of the old one. Yet the fortress was not promoted into a town until 544/1150 by Abd-al-Mu'min the Mohads when he built in the area near to it a mosque, palaces, a set of water reservoirs, and residential quarters[74].

Once again, in 595/1191 under al-Mansur Ibn Tumart the Mohad, the small town was enlarged into an enormous city. The whole area which had previously been used as the army agglomeration site, to the south of the town, was now enclosed by a new wall. The wall encircled only two sides of the new city while the other two sides are bounded by the Atlantic Ocean and Bou Regreg river. The western side of the wall was 3.5 km long and included four gates, while the southern wall was one km and had only one gate[75]. Inside, the city's buildings were laid out in wide streets, spread out and distributed between numerous residential quarters, a huge 183x139 m. Friday Mosque, and vast covered markets with workshops, baths, hotels, fountains, hospitals and schools[76].
Sale, on the other side of the river, benefited widely from the construction and promotion programme that took place in Rabat. There, in Sale, a new mosque, two schools and other public buildings and a new wall and bridge have consolidated the reviving towns and brought them together[77] (see Fig.66).

Urban Frameworks in the Standardization Phase
Within the administrative and political framework, the new leaders, who were mainly non Arab Muslims, did not come forward at least at this phase, as the heirs to the caliphate but rather its custodians. Thus they came to be concerned more with a religio-militant cause, and did not attempt to attain the rank and position of their predecessors nor to control the centre of the urban life[78]. Because of the above attitudes and other reasons of defence, the new leaders tended to position themselves in strongholds, placed on the edge of the cities.

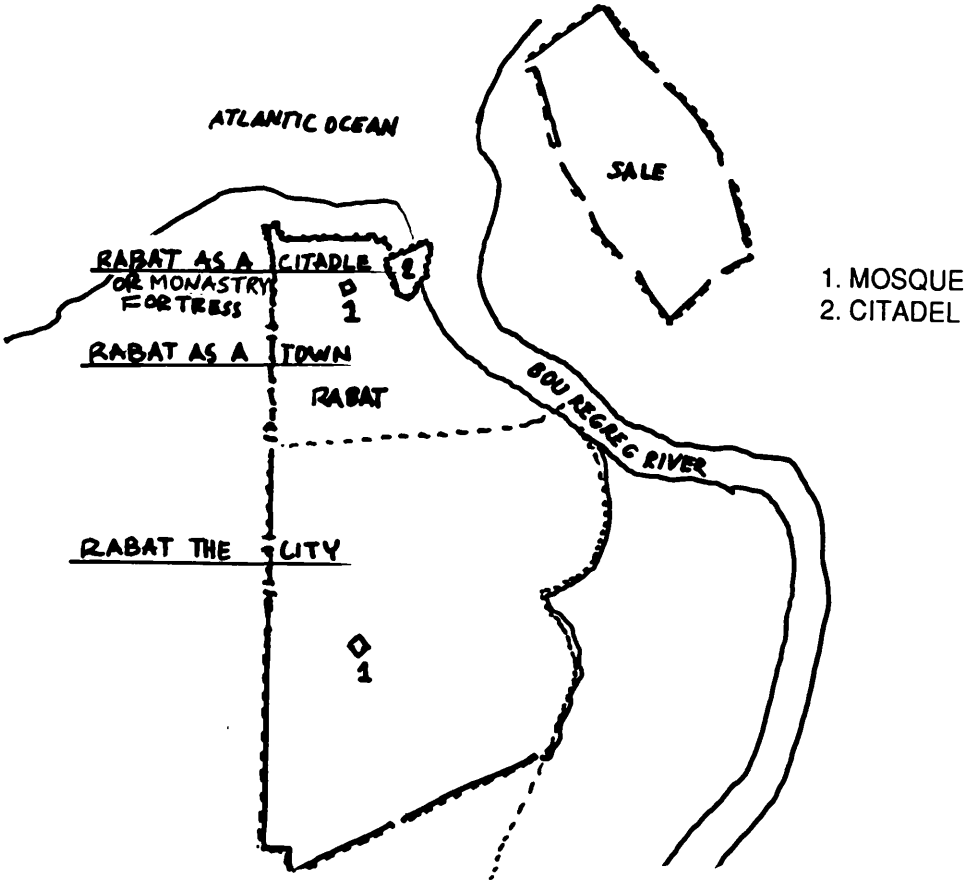


FIGURE 66
RABAT, UNDER THE PROMOTION PROGRAMME,
after ABU LUGHOD (1980)

Nearly all Islamic cities that had survived the end of the previous phase at this time acquired a citadel. Small existing strongholds were enlarged and transformed into administrative nucleus that doubled as military centres. New ones were built on a larger scale at the edge of existing cities that did not have one, and, when a new city was founded, it was associated with a nearby pre-existent fortress or citadel.

By moving the leader's residence and all administrative and bureaucratic practices from the centre of the cities to the citadels, these, beside their military role, now acquired a new administrative status. This move, however, did not replace or shift the cities, centres, but, nonetheless changes in them and above all the rise in the status of the citadels formed a new centre of gravity in the city,s fabric. In turn, markets, and public and private buildings took over the sites of the palaces, administrative buildings. The open squares inside the city were was also replaced by new **maydans** such as had been the case in Cairo (see above p.165).

In order to tackle the weakness and the decline of the Islamic states, societies, and urban centres, the new leaders as already mentioned, initiated a religio-militant programme. Its aim was to encourage and to revive the **jihad** cause, to oppose schismatic sects, to defend the state and to drive out the invaders. Yet indirectly these programmes prompted changes in the religious and societal frameworks, encouraged ethnic amalgamation and promoted new societal and religious leaders, however they stress the trend of previous religious and societal assemblies. Thus, in this phase religious groupings formed another strong motive behind many residential and urban conglomerations.

The constitutionalization of the orthodox doctrine (**Mazhabs**) were reflected by the formation of the various religious schools (**madrasas**). Many pious institutions emerged as the result of the religious promotion programme as well as from the institutionalization of the endowment (**Waqf**). Piety, judicial and scholarly activities, previously performed and practised in mosques, became housed in special buildings. Although partially depriving the mosque of some activities practised in its sphere,

nevertheless this resulted later in the emergence of the university complexes.

Religious schools, and probably the same could be applied to the religious convents (Ribats), hospices (Khanqas) and Zawiyaz (preaching corners), which according to MAQRIZI, had appeared as buildings as early as the end of the fourth/tenth century. However, they were not constitutionalized or institutionalized until the end of the fifth/eleventh century[79].

Also by the constitutionalization of the Mazhabs, the Islamic law (Shari'a) entered its fourth stage (see above p.14), which resulted in the rise of the 'Ulama (scholars in religious sciences). The new 'Ulama however did not introduce new doctrines (Mazhabs) but rather promoted and elaborated the existing ones[80].

The further detachment among the various institutions, along with the proliferation started in the previous phase, resulted in the emergence of more Friday Mosques. Then new mosques built in citadels, and the local mosques in residential quarters and the new ones in the new quarters as well as the previously central mosques of the multi-centred cities, almost all began to function as Friday Mosques.

Although the proliferation of the Friday Mosques released the huge and congested central mosques, yet their influence became in turn decentralized and brought their continuing expansion to a halt. A new type of mosque thus emerged with new concept of spatial arrangement but which is non-expandable as the previous ones[81].

Within the public and commercial frameworks, almost every Islamic city acquired at least one hospital, many sabils (fountains), water reservoirs, and aqueducts. Covered markets, with warehouses, wholesale markets, merchants depots, travellers and tradesmen's lodges and small enclosed markets. Along with the public buildings and services mentioned above, pious and religious buildings, citadels and maydans became not special but were rather standard and common urban elements that pervaded nearly all Islamic cities in this phase.

Conclusion

Islamic cities in this phase went beyond the generation or proliferation of centres into nucleus growth. Personal endowments and enterprises along with the state's contribution, enriched the Islamic cities with many religious, military, commercial and public buildings.

By transferring the palaces, administrative and military buildings and by providing new open spaces on the edge of the cities, the centre of the city was deprived of any administrative function or buildings. Nonetheless new areas were left for new commercial, public and religious development. Further growth in earlier institutions and the rise of new ones, plus the constitutionalization and institutionalization of the mazhabs and the waqf, endowed the Islamic city with many new urban elements.

At the end of this phase the Islamic city had almost obtained and gathered together the majority of its evolving elements and components. Further formation however was not a preconceived or planned layout but rather by a process of correlated developments tending to incorporate existing urban elements and patterns or buildings with a new growth and transformation. Thus the distinctive characteristics of spatial correlation expressions, of the Islamic city was manifested at the end of this phase.

Foot Notes: Part Two, IV

1. PELLAT (1986), I, 1086
2. DJAIT (1986), V, 348; IBN JUBAYR, M., Rihlat Ibn Jubayr (in Arabic), E.J.Brill, Leiden and London (1907), 211
3. TALBI (1978), IV, 830
4. STRECK (1934), ..
5. HONIGMANN (1934), 1117; LE STRANGE (1890), 308
6. MARMADJI, A.S. Textes Geographiques Arabes sur la Palestine, Paris (1951), 86
7. DURI (1986), I, 899

8. DURI (1986), I, 901; LE STRANGE (1924), 326-7

9. LE STRANGE (1924), 314, 318, 322

10. LE STRANGE (1924), 322; DURI (1986), I, 901

11. DURI (1986), I, 901

12. Buwayhids (Buyids) of Persian race, and Shi^{c}ite Muslims, while al-Salajiqa (Seljuks) are of the Turkish race and are Sunni Muslims. LE STRANGE (1924), 318-9, 322

13. DURI (1986), I, 901; LE STRANGE (1924), 319

14. DURI (1986), I, 901

15. IBN JUBAYR (1907), 226

16. IBN JUBAYR (1907), 228; LE STRANGE (1924), 319

17. DURI (1986), I, 900

18. LE TOURNEAU (1961), 8; TERRASSE (1983), II, 818, al-Murabittin are of the Berber race from western Sahara.

19. TERRASSE (1983), II, 818; LE TOURNEAU (1961), 10

20. LE TOURNEAU (1961), 11-13, al-Marinids like the Moravids and Mohads were Berber tribes but they were more or less Arabized.

21. TERRASSE (1983), II, 819

22. MAQRIZI (1987), I, 335

23. MAQRIZI (1987), I, 339, 364; ABU LUGHOD, J. Cairo 1001 Years of the City Victorious, Princeton University Press, New Jersey (1971), 30

24. MAQRIZI (1987), I, 379-80; AL-SAYYAD (1981), 24

25. MAQRIZI (1987), I, 80; WIET (1964), 43

26. LANE POOLE, S. Cairo: Sketches of its History, Monuments and Social Life, J.S. Virtue & Co. London (1898), 67-8; MAQRIZI (1987), II, 205; IBN JUBAYR (1907), 52

27. AL-SAYYAD (1981), 24

28. MAQRIZI (1987), II, 183; ABU LUGHOD (1971), 30

29. MAQRIZI (1987), I, 364, I, 205

30. MAQRIZI (1987), II, 205

31. AL-SAYYAD (1981), 24; IBN JUBAYR (1907), 52; MAQRIZI (1987), II, 363-4, LANE POOLE (1906), 183, 186

32. IBN JUBAYR (1907), 54

33. ABU LUGHOD (1971), 30

34. MAQRIZI (1987), II, 86, 364-8, 406, 414; IBN JUBAYR (1907), 51

35. MAQRIZI (1987), II, 95-99, 102; MEINECHE-BERG, V. "Outline of the Urban Development of Cairo" in AARP, (1980), 11

36. BLUNT, W., Isfahan, Pearl of Persia, Elek Books Limited London (1974), 20; LAMBTON, A.K.S., "Isfahan" 1 History, The Encyclopaedia of Islam, E.J.Brill, Leiden, (1978), IV, 101; SOURDEL-THOMINE, J., "Isfahan" 2 Monuments, The Encyclopaedia of Islam, E.J.Brill, Leiden (1978), IV, 106

37. DURI (1986), I, 902; LAMBTON (1978), 101

38. SOURDEL-THOMINE (1978), 106; LAMBTON (1978), III, 101; HOAG (1986), 94

39. ELISSEEFF (1983), II, 284

40. IBN SHADDAD (1956), 36-7

41. IBN SHADDAD (1956), 38-40; ELISSEEFF (1983), II, 282-3

42. ELISSEEFF (1983), 283; IBN JUBAYR (1907), 288

43. IBN JUBAYR (1907), 283; ELISSEEFF (1983), II, 283

44. IBN JUBAYR (1907), 284-6

45. IBN JUBAYR (1907), 285; IBN SHADDAD (1956)

46. ELISSEEFF (1983), II, 284; IBN JUBAYR (1907), 288-9

47. IBN JUBAYR (1907), 282

48. IBN AL-SHANNA (1984), 32-46

49. IBN AL-SHANNA (1984), 50-3

50. IBN AL-SHANNA (1984), 34, 51, 57

51. SAUVAGET (1986), 87; IBN AL-SHANNA (1984), 109-24

52. SAUVAGET (1986), 87-8; IBN AL-SHANNA (1984), 106-109

53. IBN JUBAYR (1907), 252-3; SAUVAGET (1986), 88

54. MAZAR, B. (1975), 271; GRABAR, O., (1986), V, 342

55. GOITEIN (1986), v, 330; MAZAR (1975), 274

56. MAZAR (1975), 274

57. LAPIDUS (1973), 56

58. PRAG (1989), 207

59. GRABAR (1986), V, 343; GOITEIN (1986), V, 330

60. GOITEIN (1986), V, 331

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68. CENIVAL (1936), III, 304

69. CENIVAL (1936), III, 304

70. PARKER (1981), 49, 54

71. CENIVAL (1936), III, 305

72. CENIVAL (1936), III, 305

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74. ABU LUGHOD (1980), 54

75. ABU LUGHOD (1980), 55-6

76. MEAKIN (1899), 81; ABU LUGHOD (1980), 56

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79. MAQRIZI (1987), II, 414, 427

80. WILLIAMS (1984), 34

81. GRABAR (1969, 37

V. THE MANIFESTATION PHASE

Introduction

As the traditional city fabric took its final shape, many Islamic cities at this time attained considerable spatial as well as urban and institutional similarities. Thus in this phase we will deal only with two well-known examples of surviving traditional Islamic cities, Cairo and Aleppo. Both cities hereafter and in the coming part will form the core of our analysis. Nonetheless the two cities will not serve as a comprehensive description for other Islamic cities but as models for analysis. Other model examples from other Islamic cities will therefore be drawn on to sustain the analysis if necessary.

At this phase, there was no need for non-Arab sultans, namely the later Mamluks, to use the Arab caliphs, as figures to bolster their rule's legitimacy; instead they abrogated these caliphates and declared themselves the new caliphs[1].

Community leaders and leaders of the religious institutions "the ʿUlama" as well as leaders and princes of the military and the monarchy, emerged as bourgeois elites. They became more and more engaged in running public and urban life, which in turn further minimized the role of the central government[2].

The traditional Islamic cities, as already mentioned had nearly achieved the majority of their emerging components and elements. Thus further formation and transformation did not generate new elements or institutions but rather took the form of art and architecture which highlighted the expressive character of social conduct and religious belief. Further growth in the city layout did not work to a preconceived arrangement but involved a correlation between the religious, societal and commercial frameworks and the spatial arrangements. This correlation at this phase was mainly interpreted in the form of a cellular aggregation and an accretion of new components and elements.

Cairo

Soon after becoming the Ayyubid's capital, Cairo was not only the capital of the Mamluk Sultanate but later, after the destruction of Baghdad by the Mongols, the capital of the caliphate and also the greatest Islamic city at that period.

The previous development, that had taken place inside and outside the enlarged Fatimid walls, now became densely populated. Many new public, religious and commercial buildings, inside the walls replaced the remaining parts of the Fatimid palace, eating away at the areas originally located to residential use, and further reducing the areas previously allocated to open spaces.

As a result of the changes discussed above, new developments took place in almost all directions around the original wall. These developments however were over-shadowed by the existing layout, the previous development and the urban features. The citadel, as well as the Zuwayla and Futuh, the main two gates, affected a major part of these developments.

On the north wall, close to al-Futuh gate, radial streets spread in the salient directions. Towards the north a street formed an extension to the main Qasaba street. To the west another street extended from the gate to the canal and subsequently in the direction of the Nile further west. In the opposite direction another street extended towards the original place of the feast prayers, a previously existing maydan and the cemeteries in the north-east. A street connected the gate with the new Jami^{c} Mosque and the palace of Baybars the Mamluk, built in 665/1266 on the site of a previous training ground which had been founded by the Ayyubids[3].

To the south of Zuwayla gate, the extended streets also took on a radiating shape. A street headed toward Ibn Tulun and ^{c}Amru Mosques to the south, forming a further extension to the main Qasaba street. Another main street reached the citadel south-east of Zuwayla gate. A third street extended towards the canal and west to the Nile[4]. In addition, further radiating streets spread from the maydan associated

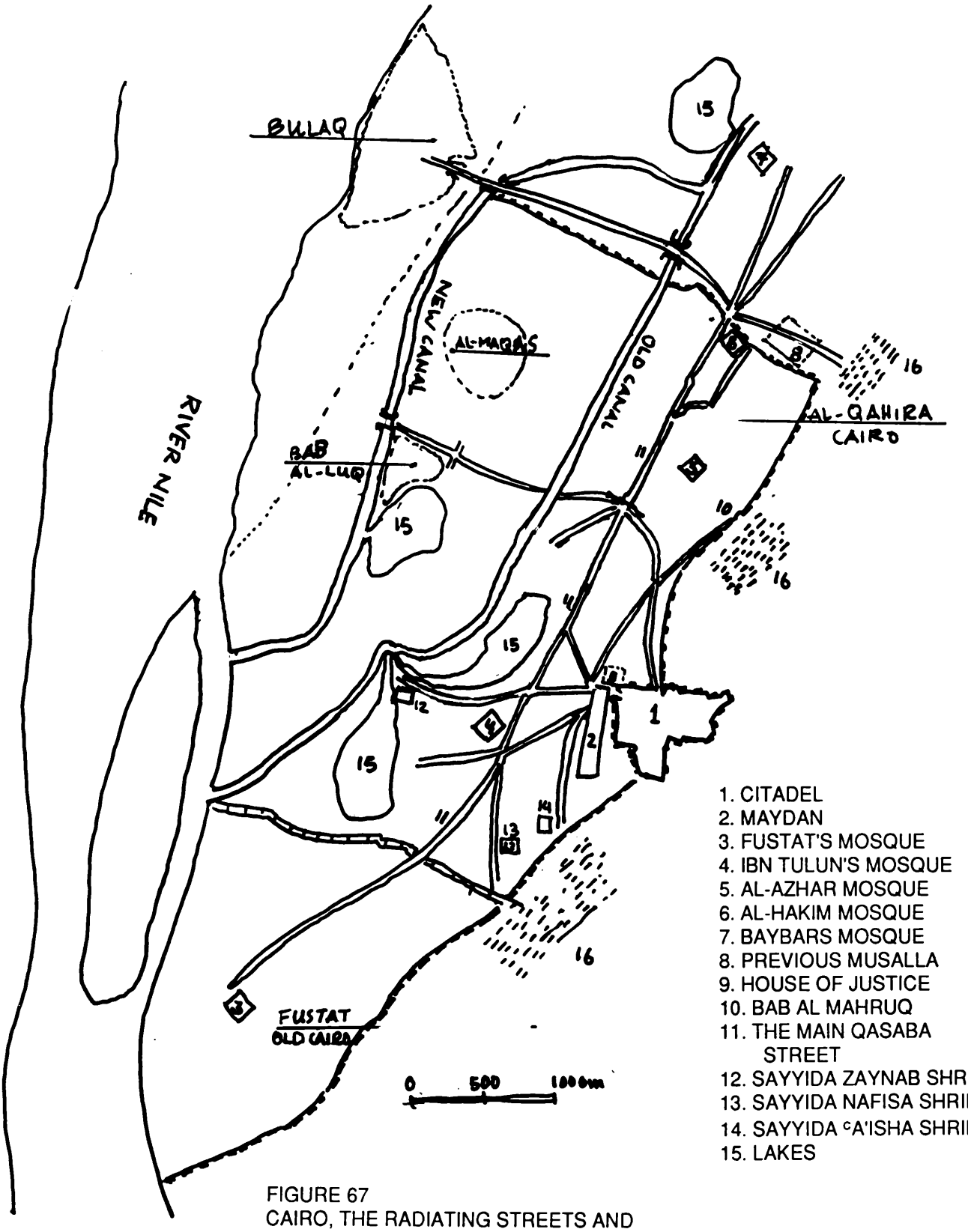
with the house of justice and the citadel towards the cemeteries in the north-east, the Burned Gate (Bab al-Mahruq) in the north, the main street (Qasaba), the Ibn Tulun Mosque and the Sayyida Zaynab Shrine west, the southern side of Ibn Tulun Mosque and old Cairo south, the Sayyida Nafisa Shrine south-west, and the Sayyida ᶜAisha Shrine and the cemeteries in the south (see Fig. 67).

In order to encourage new development on the west side of Cairo in the area between the canal and the Nile the Mamluks excavated a number of small lakes, a new canal, built a bridge and proclaimed the area open for development[5]. So it happened that new development took place along the new canal and stretched east and west forming new suburbs such as Bulaq and al-Maqs near the Nile[6].

Further to the south, excavation of new lakes such as Birkat al-Nasiri and al-Fil also encouraged new development and resulted in the emergence of new suburbs such as Bab al-Luq[7]. With the new developments described above and the previous ones Cairo formed a triangular shape. Its base of about 4 km formed the northern side of the triangle, while Fustat to the south formed the triangle's apex at a distance of 7.5 km from the base (see Fig.67).

Inside Cairo's old walls, the Qasaba main street became the main market for the whole city complex. MAQRIZI reported an extended market, of about 2.2 km. comprising of 12000 shops, probably in part to numberless itinerant vendors who displayed their wares along the street[8]. Other specialized markets such as **Suq al-Tuyuriyyin** (the bird market), **Suq Jamiᶜ Qusun, Suq Hawd Ibn Dahnas, Suq Rubᶜ Tafji** etc. developed inside the walls on other main streets or along the new streets of the southern part outside the Fatimid walls[9]. **Suwayqas** (small markets) such as **al-Suwani, al-Bashlun** etc. separate from the main markets were located in the northern suburb, while other local markets were founded in the new western suburbs[10].

Although the Qasaba main street was transformed into a lengthy market it continued to function as a communal as well as a celebrational space. Most of the festivals processions advanced along it from al-



1. CITADEL
2. MAYDAN
3. FUSTAT'S MOSQUE
4. IBN TULUN'S MOSQUE
5. AL-AZHAR MOSQUE
6. AL-HAKIM MOSQUE
7. BAYBARS MOSQUE
8. PREVIOUS MUSALLA
9. HOUSE OF JUSTICE
10. BAB AL MAHRUQ
11. THE MAIN QASABA STREET
12. SAYYIDA ZAYNAB SHRINE
13. SAYYIDA NAFISA SHRINE
14. SAYYIDA ᶜA'ISHA SHRINE
15. LAKES

FIGURE 67
CAIRO, THE RADIATING STREETS AND THE FINAL " CORRELATIVE STRUCTURE" OF THE TRADITIONAL FABRIC,
after AL-SAYYAD (1981)

Futuh gate in the north to Zuwayla gate in the south and ultimately to the citadel through al-Darb al-Ahmar[11].

Along with the large number of shops located on the two sides of the main street, complexes of public and religious buildings such as Sultan Qalawun Hospital, Madrasa and Mosque, Baybars school, and the fountain at al-Nasiri and the former Ayyubids schools etc. totally took over the sites of the Fatimid palaces and encroached upon the open space[12]. Further religious educational and public buildings were constructed on other main streets and in other new open spaces (see above Baybars Mosque and palace) so a new maydan and open spaces were relocated in areas near the river. The many gardens, promenades and lakes, unlike the congested areas inside the walls, gave spatial relief to the new development[13].

Aleppo

Aleppo followed almost the same pattern as that manifested in Cairo and other Islamic cities at that time, but unlike Cairo, which gained its importance from being the Islamic administrative and commercial capital, Aleppo owed its importance to being located at the trades cross routes and to being the terminal depot of international trade between the Middle Eastern Islamic regions and Europe in the north-west and the Indian sub-continent and China in the east[14]. Yet its strategic position brought to the city many catastrophic invasions. For many decades military strife not only paralysed the city's development but also destroyed many of its existing establishments. Also the city became the military depot of the Mamluks and a target for their enemies[15].

After a long stagnation lasting about a century, Aleppo regained its stability, which in turn led to lively new development and vigorous religious and commercial activities. Evolving markets and religious institutions resulted in part in residential, societal and commercial as well as a spatial redistribution[16].

On the residential level, besides the developing quarter around the citadel, new suburbs, districts and quarters were constructed in almost all directions, from the position of the existing gates[17].

On the societal level, evolving residential areas coincided with societal redistribution. New quarters accommodated social groups bound by one origin, religion, industry or trade. The northern side was dominated by ethnic or religious groups, such as Christians, Jews, Armenians, Kurds, or Turks. In the north-east, **Bab al-Qanat** (the gate of the canal), was occupied by trades, caravansaries and a quarter called after them and probably after traders who settled in another quarter near to it. The eastern and part of the southern Badiya (desert) side, was overwhelmed by nomads' trades and a quarters called after them. Other quarters were called after industries, such as the dyers quarter, the soap makers' quarter, the fabric makers' quarter, grouped inside and outside the city wall. The west, at Antaqiya gate and the Quaqe river, was pervaded by gardens and quarters of the A'jam (non-Arab) residents [18].

On the spatial level, the citadel and the **maydan** became included within the centre's composition, with new streets, with new and old gates incorporating the citadel, the **maydan** and the markets. Here radial streets stretched the salient directions from the gates and their associated open spaces. Each street accommodated a growing district. Spaces between the radial streets were gradually filled with alleyways and dead-end streets thus forming new quarters, while thoroughfares ran between the quarters and occasionally connected them[19] (see Fig.68).

On the religious level, many mosques inside and outside the walls were built, a large number of these mosques being allocated as Friday Mosques. New convents, schools, and hospices, were also built. The waqf endowments and estates dominated the city fabric[20].

On the level of the city's fabric, new development was attracted by the citadel and its associated open space, the military quarter, the justice house and later the construction of yet another wall beyond the citadel and the existing eastern wall. The citadel itself was now

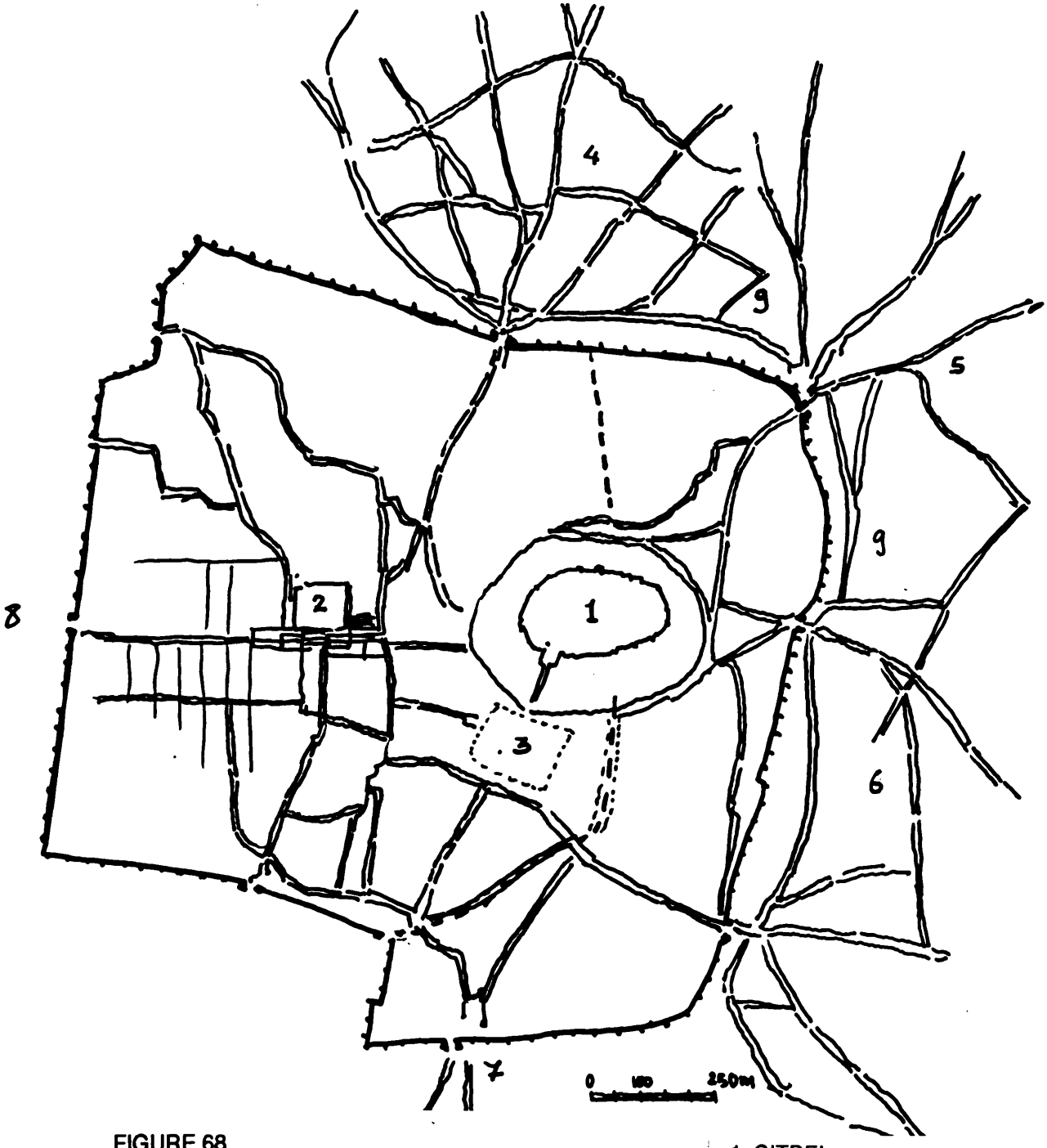


FIGURE 68
ALEPPO, THE EVENTUAL "CORRELATIVE STRUCTURE" AND THE RADIATING STREETS OF THE TRADITIONAL FABRIC, after GAUBE (1984)

1. CITDEL
2. MOSQUE
3. OPEN MARKET
4. ETHNIC AND RELIGIOUS GROUPING -QUARTERS
5. CARAVANSERIAS QUARTERS
6. SETTLED NOMADS QUARTERS
7. BADIYA QUARTERS
8. AL-AᶜJAM QUARTER
9. INDUSRTIES QUARTERS

surrounded by new construction[21]. Later the citadel lost its administrative role to the house of justice, which was in turn rebuilt on a larger scale, thus forming a new administrative assembly place[22].

On the commercial level, the maydan also lost its military role and came to function only as an open market for various wholesale trades. As a result of the flourishing trade, the markets inside the city wall again expanded into the residential areas. Peripheral open markets were built and stretched along new streets. New markets, Qaysariyas, Khans, Wilakas, were built beside many of the old ones[23].

Urban Frameworks in the Manifestation Phase

The religious, societal and military institutions initiated by the Ayyubids followed a clearly defined framework in this phase.

A combination of religious, judicial, and public affairs under the religious institutions formed a major communal framework in the life of the city. Religious and communal leaders evolved from being purely religious into a social and political elite (Khasa). They played a major role in organizing the urban life and endowed the Islamic city with a high degree of cohesion among its inhabitants.

Military leaders and officers, in addition to their military role, became engaged in the bureaucratic agencies and thus also administered parts of public life[24]. Although they were reputedly involved in harsh political and military strife, nevertheless they did show tendency towards engaging in urban life. Their urban feeling was manifested by numerous personal contributions, not only in the religious establishments they founded, but also in public services. They endowed the city with mosques, schools, convents, hospices, as well as hospitals, drinking fountains, markets, wholesale markets, merchants depots, warehouses etc. And they also built palaces for their own use.

The strong religious and commercial institutions, and the numerous agents and leaders influenced the societal structure. The city's community formed groupings which were tightly bound to their origin, religion, industry or trade. These bonds strengthened the ties between

family and kins. Finally association with a school or religious movement such as the sufis (mystics) and cellular agglomeration around a religious leader or shrine influenced and accounted for many new developments, and explained at the same time the enhanced adherence to old spatial patterns[25].

Intra urban, cellular aggregations, were either formed from areas enclaved behind defined streets such as thoroughfares, or a number of side streets (Darb) as well as a number of associated dead-end alleyways (Zuqaqs). These aggregations formed part of bigger conglomerations of districts and suburbs, yet were composed of smaller wards or neighbourhood and kinship groups which were confined to a dead-end street or a part of a street.

New mosques, Zawiyas, Khanqas and Ribats were added to already existing ones. Besides the Friday Mosques surviving from before, many local mosques became places where the Friday prayer was performed. New local mosques were allocated directly as Friday Mosques. MAQRIZI, for instance, reported that in Cairo at this phase, 130 Friday Mosques were distributed between old and new developments[26]. Jami^{c} Mosques and Friday prayer became the common practice in residential quarters and districts, a practice which was formerly in the fourth phase confined to suburbs and before that only to urban centres.

Commercial endowments such as Suqs, Suwayqas, Khans, Wikalas, Funduqs etc., contributed to the Waqf (endowments institution) and provided for many public services such as education and health, and municipal services such as canals and drinking fountains. Many of these buildings and establishments pervaded various parts of the Islamic city and contributed one of the major manifestation of its distinctive urban life.

Also these endowments provided the means for the emergence and the training of many conscientious teachers, encyclopedists, authors, craftsmen and religious leaders. But, unlike the third and fourth phase, they did not promote nor generate innovative scholars nor did they initiate original work, but rather maintained the existing

tradition[27]. The four religious schools (see above p.14) were given equal rights with special teachers, and judges appointed for each. The shari'a (Islamic law) entered its fifth stage. Its main concern was the upkeep of the existing institutions and it introduced no evolution in its interpretation.

Conclusion

To conclude, intra-urban elements and the location of existing components and space inside the city walls, dominated any new development. New spatial growth conformed to societal, religious and urban interrelationships, rather than to any preconceived organization or plan. Numerous institutional buildings dominated the city's face and enhanced its religious as well as its commercial appearance. These buildings however were adapted to the city's existing pattern and were laid out in accordance with the site's constraints and locality, and thus achieved part of their expressive traditional or spontaneous characteristics[28].

The city expanded again beyond the new walls, with gates and peripheral markets forming a nucleus for new growth. New streets originated from the gates and other bottleneck elements, such as bridges, took on a radial shape. Cellular aggregation filled the spaces in-between.

The shari'a and the schools of thought, and hence the waqf and the many religious, educational and training institutions, entered a stage of stagnation. As already mentioned, these institutions continued and flourished but witnessed no evolution. Although cities expanded and developed and art and architecture also flourished, they produced no evolution and only served to convey already existing correlative concepts.

The Evolutionary Cycle of the Classical Islamic City.

In summary, the evolution of the traditional Islamic city - discussed in the previous phases - represents a wide but successive processes of transformation and formation.

In the various aspects of the Islamic city's urban system it is obvious that the spatial fabric, with its patterns and components, developed as an interpretation and reflection of the religious, societal, administrative, military and commercial frameworks.

The evolution of these frameworks corresponded to the Islamic society's formation, rise, maturation, specialization and self manifestation which in turn coincided with successive change of strategy, ideology, or programme that featured in an era of the Islamic city evolution. Each of the above eras considered here as a phase has a twofold facet. The first involves a process of transformation in the existing frameworks and subsequently in building and spatial patterns. The second involved a process of formation which produced new spatial patterns and components. These patterns took the place yet conformed to the latest transformations that had occurred in previous phases.

Modes of spatial expressions such as congregation, segregation, utilization, absorption etc. dominated one side of the evolution process and mirrored the change in the city and its various frameworks.

The topics and the analysis of this part have noted the five successive characteristic changes which would constitute an evolutionary cycle (see Fig.68). Still later examples of cities or modes of evolution from later phases emulated and represented previous cities in previous phases. Thus it is more likely that such a cycle can be presented as a spiral evolution (see Fig.70)

Evolution in the Islamic City Urban Frameworks and its Subsequent Spatial Interpretation

Evolution in the Islamic City's Societal Structure

A reasonable part of the formation and transformation that occurred in the Islamic city is attributable to the corresponding transformation that occurred in its society's structure and status. A major example was the transformation of a military society into civilians, tradesmen, bureaucrats and workmen or craftsmen.

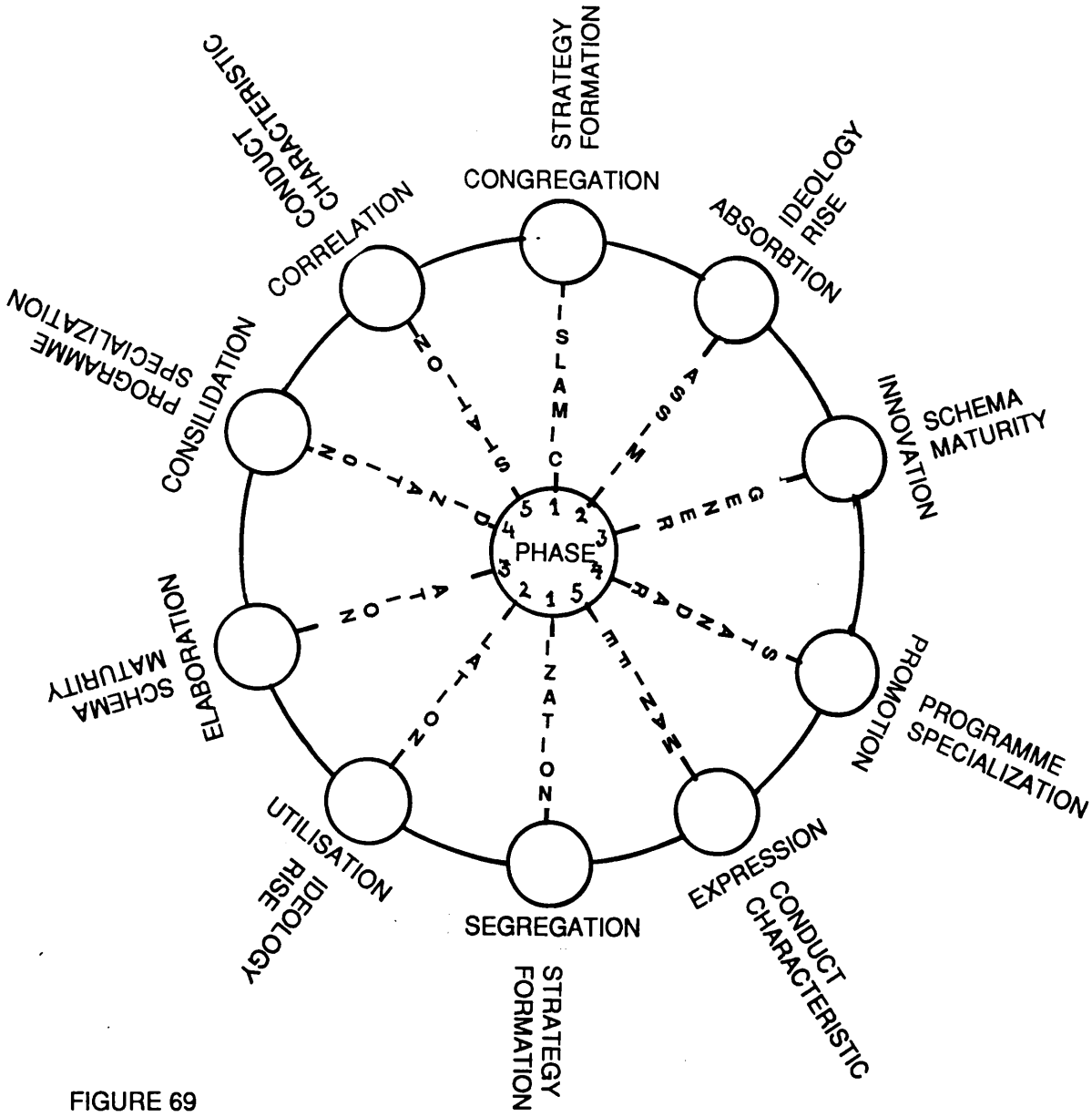


FIGURE 69
THE CYCLE OF THE EVOLUTION
OF THE TRADITIONAL ISLAMIC CITY

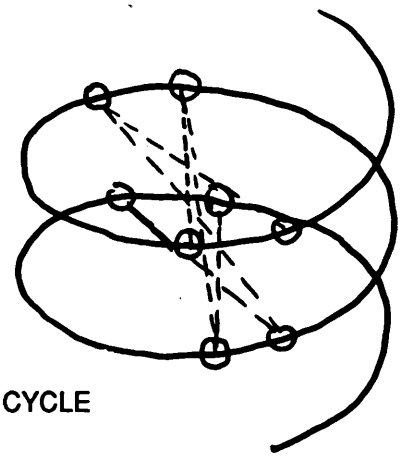


FIGURE 70
SPIRAL EVOLUTIONARY CYCLE

In the first phase, during the formation of the Islamic empire, the Muslim community (ummah) was mainly comprised of fighters (Mujahideen). Unlike the armies of its rival civilization, the Muslim army was not comprised of regularly trained and recruited troops and regiments but was rather formed from social groups of fighters who consisted of or were based on tribe, clan, or family, or were people coming from one origin or urban centre. Hence their early settlements comprised not barracks or camps but centres of social congregation. These warriors who lived with their family kin, clan, tribe etc. freely congregated around and near one centre, forming "free organic congregations" (see Fig. 71).

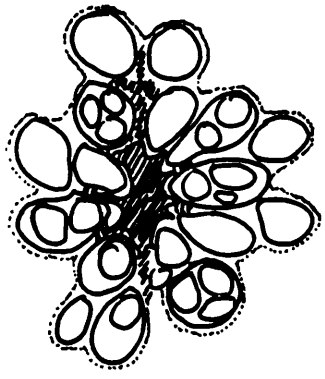


FIGURE 71
SPATIAL CONFIGURATION OF THE SOCIETAL STRUCTURE OF THE ISLAMIC CITY, FREE ORGANIC GROUPING: FIRST PHASE

Along with the new migrants, fighters and non-fighters who came to settle in the early centres, a considerable part of its society was transformed into tradesmen and craftsmen. In the second phase the concept of the free organic congregation was thus no longer of importance to a society which was on the way to becoming demilitarized. In turn the citizen's army was replaced by special military regiments of a regular army. Tribal and clan societal groupings remained, but they were subordinated to urban, neighbourhood and religious groupings. In the second phase there was an apparent merger between the groups, and defensive and

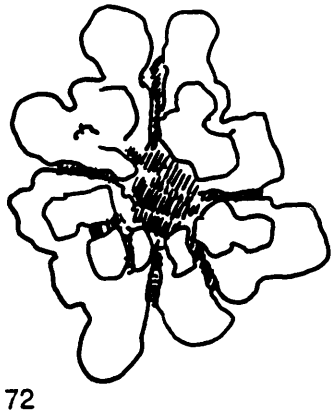


FIGURE 72
COMPACT CONCENTRIC GROUPIN(
SECOND PHASE

compacted concentric groupings over ran the free organic congregations (see Fig.72).

As society in many Islamic cities in the third phase became fully demilitarized, a new and separate military sector was introduced. With the introduction of the military, and expansion in the administrative and bureaucratic agencies, society in the city became comprised of three major sectors: professional army' merchants or traders, artisans and bureaucrats. As a result of the proliferation in the societal framework, more than one centred grouping was generated leading to a multi centred community (see Fig.73)

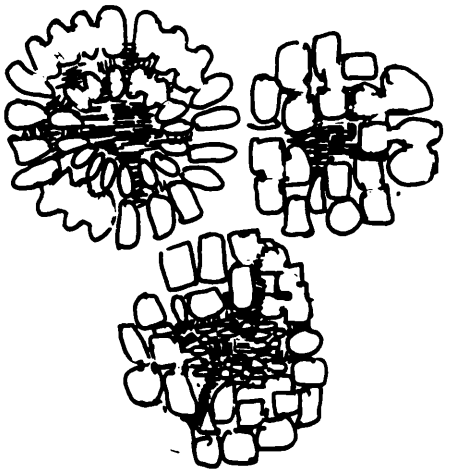


FIGURE 73
MULTI CENTRED GROUPING:
THIRD PHASE

At this time namely the fourth phase Muslim cities and societies were totally submersed in commercial and civil activities. Defence and a military role were left to a territorial army (Murabiteen). A further expansion in the various religious, commercial and administrative practices produced trends towards societal specialization. Both trends had a further impact on the societal structure, as religious, commercial and military alliances or affiliations formed nuclei of gravity leading to a trend of societal decentralization (see Fig.74).

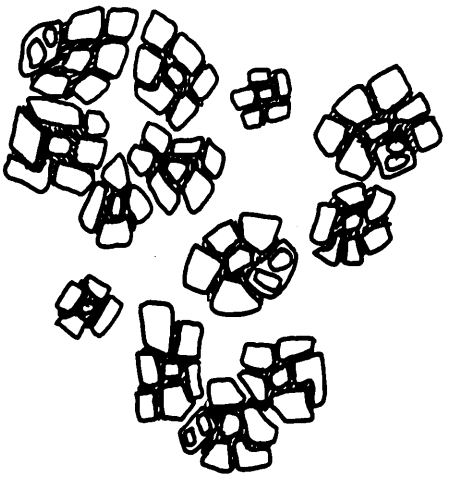


FIGURE 74
NUCLEI GROUPING:
FOURTH PHASE

In the fifth phase more decentralization and other small alliances in the different frameworks brought further transformation and redistribution in the societal pattern. Cellular grouping and aggregation overwhelmed the growing fringes of the city and its society. (see Fig.75)

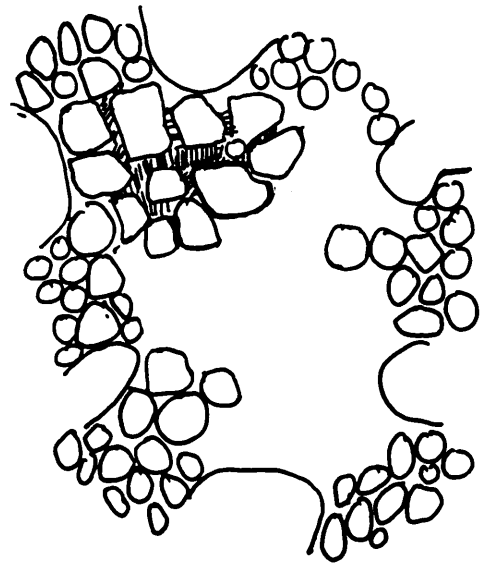


FIGURE 75
CELULAR GROUPING:
FIFTH PHASE

Ethnic, religious and other means of social groupings were new and remained a main factor in the spatial and structural evolution of the traditional Islamic city . However these groupings did not reached a static size or a constant structure, but nevertheless they formed a basic element in the arrangement of the Islamic city.

Evolution in Religious Frameworks

Evolution of the religious frameworks can be traced to the evolution of religious practices, such as law, religious sciences, learning, education and movements or institutions.

Since the above mentioned practices mainly took place in the mosque or emerged from there, the context of the mosque and its associated spaces and building arrangements can be studied as a model for the evolution of religious framework and its pertinent practices.

Beside the religious activities such as prayer and preaching' Friday Mosques in their early evolution at the first phase were places for communal assemblies. They were also involved in most communal practices except commercial and administrative ones. Nonetheless both practices at this phase were in contiguous association with the Friday Mosque. Prayer, judicial, preaching, teaching classes and circles, and lodging for the poor or homeless

acquired, corner areas, (Zawiyas), sides (Janibs), court (Majlis), or circles (Halaqas) within the orbit of the mosque. Yet at the time, these activities were not allocated formal places, that were prepared specifically for them, but were freely practised in the mosque's court, or covered spaces. (see Fig.76).

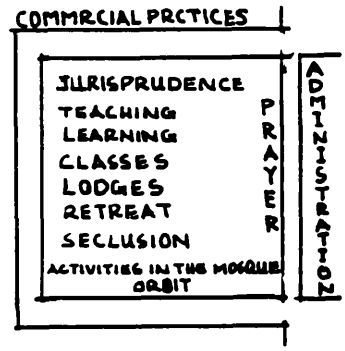


FIGURE 76
THE ONE SPACE MOSQUE: FIRST PHASE

The evolving expansion in the practices associated with the religious framework promoted in turn religious leading figures. Judges (Qudat), religious scholars (Faquha) or experts in the sciences of the Islamic religion, preachers, teachers, and religious leaders (Imams) emerged as separate professions. In this phase Friday Mosques attained a formal prototype arrangement. Designated spaces or enclaved parts within the mosque or its court were allocated and prepared for the various practices. For security reasons, treasuries were placed in the open courts and the area of the ruler's (praying place) was enclosed in a special compartment (Maqsura); also special rooms were arranged for religious adherents and devoted Muslims (Mu'takiffin or Murabittin) (see Fig.77).

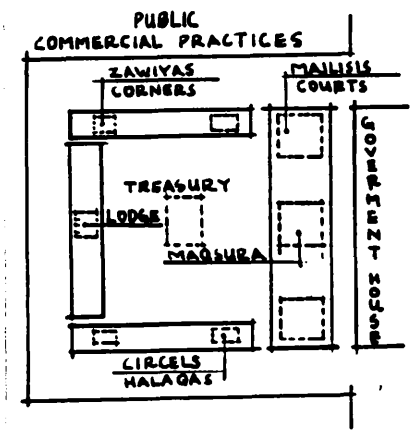


FIGURE 77
THE PROTOTYPE SPACE DISTRIBUTION OF THE FRIDAY MOSQUE: SECOND PHASE

The large expansion in the size of the community of the city and in the third phase brought with it a huge growth in the size and area allocated to Friday

Mosques. The proliferation of the community as mentioned, introduced separate sectors for rulers and bureaucrats, militants, merchants and artisans, which in turn generated more than one Friday Mosque in the one city. The religious practices associated with political and administrative roles became formal rather than official rituals. No longer did rulers address or lead the religious activities, yet they continued to attend them. These religious activities themselves turned into specialized rather than generalized practices. Special personnel as well as a special part of the mosque were appointed for different elements of the religious framework (see Fig.78)

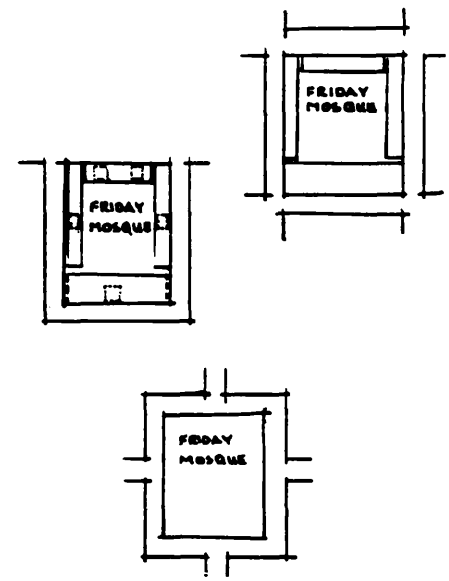


FIGURE 78
FRIDAY MOSQUES PROLIFERATION
THIRD PHASE

In the fourth phase, the practices associated with religion became standardized into formal institutions. They expanded beyond the mosque area and acquired their own foundation or establishments. Teaching circles (Halaqas) transferred into schools (Madrasas), which were either specialized in one of the Mazhabs (school of thought or a religious doctrine) or in the Fiqh (jurisprudence) or Hadith (Prophetic sayings) etc. Preachers' corners (Zawiqas) emerged as separate foundations endowed to a specific preacher or group after which the Zawiya was named after him or them. Devout Muslims acquired Ribats (Monasteries), and Mystic movements

(Sufis) acquired Khanqas (Convents). Beside the judicial courts which remained in Friday Mosques, specialized judges in the various doctrines, jurisprudence and legal practices, exercised the Islamic law in houses of justice (Dur al-ᶜAdl). The rise of these foundations as separate institutions, however, in some cases did not isolate the mosque from all its associated practices nor were they spatially detached from it but rather formed annexed buildings to the mosque itself (see Fig.79).

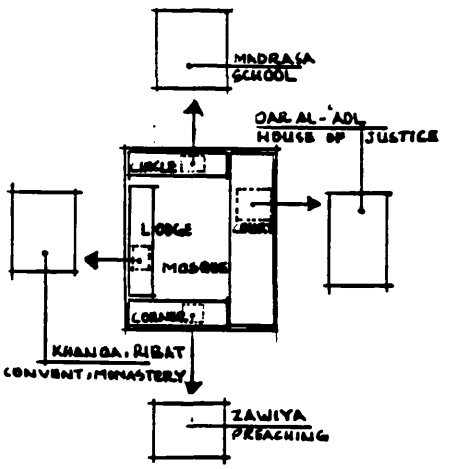


FIGURE 79
RELIGIOUS INSTITUTIONS PROLIFERATION:FOURTH PHASE

Further proliferation of Friday Mosques in the one city, in the fifth phase along with the emanation of part of the activities associated with religion from the central mosques created a multi-spatial influence and reduced the unique centrality of these mosques. As the urban fabric expanded to annex old cemeteries, the graves of religious figures became shrines. Elaborate graves (Mausolea) of public or state figures emulated these shrines, and both when associated with a mosque or other religious building acquired a religious aura. Annexation of various institutions and buildings into complexes formed the nucleus of expanding religious universities (see Fig.80).

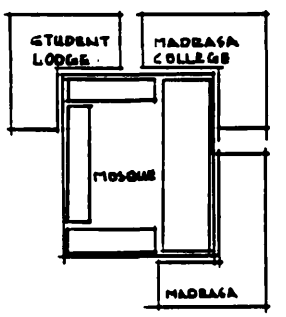


FIGURE 80
THE JAMIᶜI MOSQUE AND THE CONCEPT OF THE JAMIᶜA, UNIVERSITY: FIFTH PHASE

As illustrated, many of the specialized foundations that evolved had their roots in the early and modest activities associated with religion

that took place in the mosques. Expansion in the religious framework and proliferation in its institutions pervaded the Islamic city and endowed its fabric with many religious as well as spatial expressions. The waqf (endowment) attained manifold dimensions. Emerging originally as religiously affiliated institutions, later they became engaged to and contributed to many other areas such as financial, public, and commercial. Special judges and commissions were appointed to run their huge assets.

Evolution in the Commercial Framework

Early markets, like early Islamic cities, were of an open character. No construction however was allowed within the space allocated to the markets. Spaces were distributed to traders on a daily basis and they were obliged to free the space at the end of the day. They appear to have congregated according to their trade type as early as the markets themselves were founded (see Fig.81).

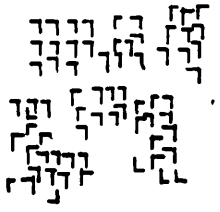


FIGURE 81
GROUPING IN OPEN MARKET:
FIRST PHASE

In the second phase, the modest free markets were not sufficient to cope with the evolving commercial activities and the growing sector of merchants and artisans in society. Markets took on a permanent character and buildings with shops gradually occupied parts of the open space. During this process, markets in this phase appear to have consisted of a number of separate enclosed buildings, spaces in between the buildings seems to have been covered too. Along the central market and the peripheral wholesale markets, remote markets (caravanserais) were located on

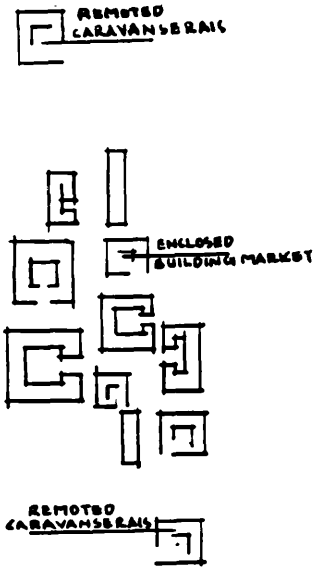


FIGURE 82
ENCLOSED MARKETS:
SECOND PHASE

pilgrimage and trade routes. They served as rest lodges for traders and travellers and supplied them with modest commodities (see Fig.82).

Commerce and industry in the third phase became a flourishing establishment. In some cases they acquired their own centres and in others they expanded into areas formerly with different land uses. Markets became well designed and planned according to professions and trades. Street markets extended the commercial activities into new areas beyond the centre. Local markets were allocated to local areas and districts. A hierarchy in trades, markets and commodities seems to have been applied in the commercial framework from this phase and on (see Fig.83)

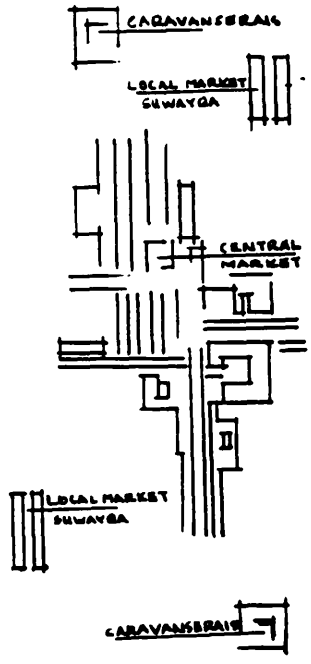


FIGURE 83
ENCLOSED AND EXTENDING
STREET-MARKETS: THIRD PHASE

As a big part of Muslim society turned to trades, crafts and industries, the commercial framework assumed a great deal of importance in the life and affairs of the Islamic city. Specialized types of commerce such as retail wholesale, warehouses, country sales, luxurious and distinguished sales acquired and were held in special markets, mainly of an enclosed character such as Khans, Qaysariyas, Funduqs. Street markets were stretched, extending the central market into linear or prolonged markets (see Fig.84) Commercial activities overwhelmed or

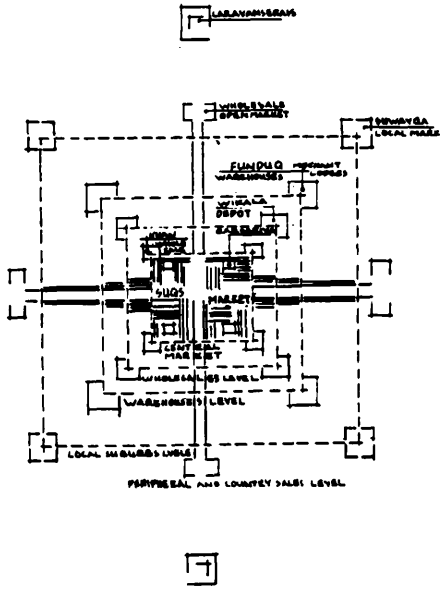


FIGURE 84
SPECIALIZED TYPES OF TRADES AND
MARKETS: FOURTH AND FIFTH PHASES

dominated the city centre and pushed the administrative practices into new areas.

In the fifth phase many extended markets reached to the city gates. Peripheral wholesales markets were built. They themselves formed the nucleus of new markets which extended in the direction of the prevailing trade routes. Special merchant depots (wikalas) were prepared after international trades or traders were added to already existing commercial establishments (see Fig.84)

Trade and commercial groupings and conglomerations, like Muslim societal grouping, formed both a main factor and a distinctive feature in the evolution of the commercial framework. Specialized trades, sales and crafts generated markets devoted to individual wares and of individual character. Representatives, provosts (naqibs), and trustees (Amin) and other leading figures in commerce or crafts were either appointed by the local governments or rulers or by commercial groups or cooperations.

Evolution in Political-Administrative Frameworks

The early administrative framework at the time of the formation of the Islamic empire was an auxiliary to the religious domain. It was designated to serve a community which was mainly composed of devout fighters. At first political and administrative practices and administrators were confined under one general framework which comprised a small number of bureaus so it was contained within one building with many enclosures. Each was designed to

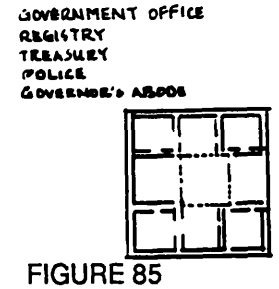


FIGURE 85
MULTI BUREAUS IN THE GOVERNMENT HOUSE OF THE ONE OPEN-COURT BUILDING: FIRST PHSE

accommodate one of the bureaus, such as the treasury, the registry, or the police, and it probably included the abode of these bureaus' attendants (see Fig.85)

In the second phase, governmental administration expanded to include more new bureaus and administrators. These evolving offices were not excluded from the religious domain, therefore their place of administration remain exclusively associated with the central mosque. Yet they acquired a sort of official rather than the openness of the first phase. Some of the bureaus, such as the police, mint house and the treasury, were relocated in separate buildings, while other offices accommodated in separate compartments, distributed around an open court or courts enclosed behind one wall (see Fig.86).

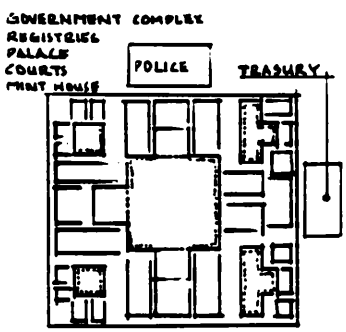


FIGURE 86
MULTI BUREAUS IN MULTI OPEN-COURT BUILDILNG: SECOND PHASE

Evolving complexities in governmental and political administration generated many new official and administrative posts and offices and resulted in a wide expansion of its framework, and subsequently of its spatial arrangements and associated buildings. Governmental or political posts or practices that were associated with religion became ceremonial formalities. Therefore in the third phase the previous intimate adjacency between the government house and the central mosques were replaced by

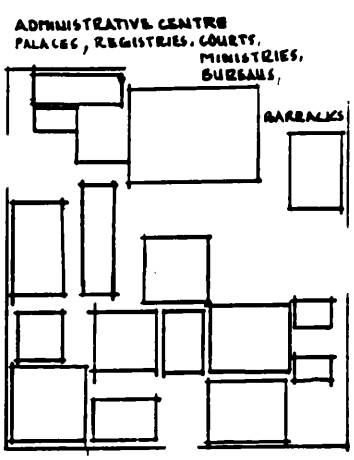


FIGURE 87
MULTI BUILDINGS OF ADMINITRATIVE-POLITICAL COMPLEXES: THIRD PHASE

ceremonial streets or spaces. Huge and complex administrative buildings and offices acquired their own centre. Separate but associated buildings such as courts, ministries, guest houses, registries, treasuries, arsenals, police posts and many bureaus were designated for each governmental practice (see Fig.87).

Further specialized independence between the administrative and religious authorities, widened the distance between the two institutional frameworks. Neither physical proximity nor direct accessibility were essential. Instead, mutual cover between both institutions was achieved. On the one hand the political administrative institution retained its religious cover by including a Friday Mosque in its nucleus. On the other, the religious, jurisprudent and endowment institutions obtained their own administration (see Fig.88).

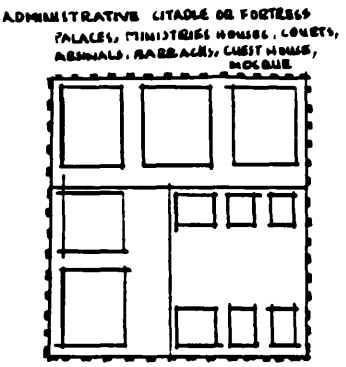


FIGURE 88
THE NUCLEI ADMINISTRATIVE-CITADELS: FOURTH PHASE

More subdivision in the administrative framework was spatially interpreted in separate buildings. While previously separate buildings were bound together in one enclave, namely the citadel, in the fifth phase, some of the newly formed ones were either placed outside but near the administrative complex or in some cases away from it. The more princes, merchants and religious leaders participated in running the non-

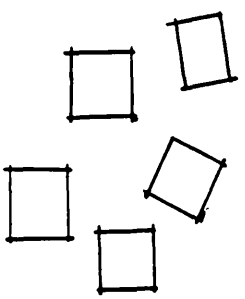


FIGURE 89
ADMINISTRATION DECENTR-EALIZED:FIFTH PHASE:

political institutions, the further the central political government was distanced from the public and communal administration. Although the new auxiliary administrative bodies formed poles of gravity and decentralized the main government, nevertheless they enriched the city fabric with huge numbers of religious as well as public buildings. Moreover they worked to fill gaps that in some cases had developed in the absence of a central government or in case of anarchy (see Fig.89).

Foot Notes: Part Two, V

1. ABU LUGHOD (1971), 32

2. LAPIDUS (1967), 46-48

3. MARGOLIOUTH, D.S. **Cairo Jerusalem and Damascus: Three Chief Cities of Egyptian Sultans**, Chatto and Windus, London (1907), 70; MAQRIZI (1987), II, 145

4. MAQRIZI (1987), II, 100

5. ABU LUGHOD (1971), 35; MAQRIZI (1987), II, 145

6. MAQRIZI (1987), II, 130

7. ABU LUGHOD (1971), 36

8. MAQRIZI (1987), II, 95; ABU LUGHOD (1971), 37

9. MAQRIZI (1987), II, 100-106; ABU LUGHOD (1971), 36

10. MAQRIZI (1987), II, 102

11. MAQRIZI (1987), II, 108

12. MAQRIZI (1987), III, 378, 406

13. MAQRIZI (1987), II, 95. It appears that one of the reasons why Islamic cities did not have open spaces as intra urban spaces was that old open spaces were frequently substituted by new ones in new open areas, thus the old intra urban ones was replaced by buildings. This attitude seems to had favoured to the functional and

practical use over the public entertainment or ceremonies.

14. SAUVAGET (1986), III, 87, 88

15. AL-FITYANI (1986), 36

16. SAUVAGET (1941), 174

17. SAUVAGET (1941), 173, 174

18. IBN AL-SHAHNA (1984), 241-2; AL-FITYANI (1980), 37; SAUVAGET (1941), 147

19. SAUVAGET (1941), 175, 181

20. IBN AL-SHAHNA (1984), 106-124; SAUVAGET (1986), III, 87, 88

21. SAUVAGET (1986), III, 88

22. AL-FITYANI (1986), 36, 37

23. SAUVAGET (1986), 88

24. LAPIDUS (1967), 46-8

25. LAPIDUS (1967), 86-7

26. MAQRIZI (1987), II, 246-331

27. WIET (1964), 67

28. GRABAR (1969), 39

PART THREE: STATIC FORCES IN THE SHAPING OF ISLAMIC CITIES

PART THREE: STATIC FORCES IN THE SHAPING OF ISLAMIC CITIES

I. Factors of Macro and Micro Influence:

Introduction

The preceding parts tackled the living and evolving factors and forces that moulded the shape of Islamic cities. They dealt too with evolving aspects of the city's urban framework and life and how such frameworks have directed and, in some cases, dictated the evolution of the Islamic city.

In the sequence of topics in the above chapters we encountered but did not plunge into some of the static factors which, from their side, imposed certain constraints and also initiated an adaptation in the setting and spatial arrangements of Islamic cities. Since our task here deals mainly with the common features found in Islamic cities, we will concentrate on the prevailing factors, which despite the cities' individual locations and other peculiarities they continued to share. However the restraints mentioned above have not prevented us from dealing with non-mutual factors where they have clearly influenced the setting of some of the chosen models.

Other factors or forces of varying influence but always present, such as climate and local environment, materials etc. are conditions which pervade all cities. But they change from place to place, and so need to be tackled in each city on an individual basis. Therefore, at least in the topic discussed below they are treated as auxiliary supportive factors rather than major ones.

Settlements Hierarchy and Concept of Communication Routes

One of the many factors and forces that shaped the general spatial setting or transformation of that setting in the traditional Islamic city is its position within the settlement hierarchy:- that is, its location in its region and probably, as in the case of Baghdad (see above p.113), its position within the Islamic empire. This general factor however cannot be isolated from other micro-forces such as orientation, site physiography including boundaries, barriers, and topography.

The settlement hierarchy, is formulated from cities and settlements, and their relative importance, or linkage and the concept of integrating the existence of many associated settlements as part of the form morphology of a new formed city. At the same time it is the adaptation of an existing city to incorporate a newly formed one[1].

This spatial integration came however in the form of the general arrangement of cities which were laid out in accordance to the main communication routes between settlements, between the settlement and its surrounding overland roads and within the settlement the lines of communications between the components of a city..

The communication routes and settlements hierarchy seem to have had no significance in the early settlements of Islam or in the settlements acquired by Muslims. However, after the formation of the Islamic empire and in the later phases, newly formed cities and spatial transformation in existing ones showed certain tendencies towards incorporating this factor as part of the cities, spatial arrangements[2]. In order to demonstrate these tendencies, beside Aleppo and Cairo, the main two models of the coming part, further examples of this application can be illustrated in Baghdad, Kufa, and Ramla.

Baghdad presents the main planned example of this application. Its cosmopolitan status within the Islamic empire was established by directing its main streets in accordance with the main Islamic regions; Khurasan and Faris in the east and north east; Ahwas and the Persian Gulf in the south and south east; the Hijaz and Najd (the Arabian Peninsula) in the south and south-west; and Syria, Egypt and North Africa in the west and north-west. Its status, the highest in the settlement hierarchy was demonstrated by the street names, called after the regional capitals (Amsar) which lie second in the settlement hierarchy such as Damascus (north-west), Kufa (south-west), Basra (south-east)[3] (see Fig. 38,39).

According to MASSIGNON's configuration of Kufa its routes of communications are shown incorporated with the direction of other settlement, such as Kawarnaq and Basra, (in the east south), Hira (in

the south), Damascus (in the west), Nukhayla (in the north-west), Kifil Hille (later Baghdad) (in the north east[4]. However this application is likely to be the result of spontaneous transformation rather than planned arrangements in which, according to early Muslim historians, Kufa's main streets were laid out according to the social structure of the tribes and clans rather than in the direction of cities (see Fig.24).

Ramla, a provincial capital (Qasaba) according to MOQADDASI, lies second in the level of the settlement hierarchy[5]. The names he gave to its main streets indicate, that these streets were incorporated in the direction of other but lesser levels of settlements in the Palestinian province, such as Jerusalem, Jaffa, ᶜAnaba. Ludd, Dajun and one higher settlement Misr Fustat (Metropolis) in Egypt[6]. They may also be in part the result of spatial transformation (see Fig.34).

In addition to, the site restraints and barriers, which will be discussed below under Factors of Micro-Influence on the Traditional Islamic City, Cairo's original layout almost acquired an orthogonal arrangement. The main street lay in the direction north-east south-west and was intended to incorporate the main route connecting the old settlements of Fustat, ᶜAskar and Qata'iᶜ with the centre of the Muslim world in the north-east and North Africa in the west and north-west (see Fig.49).

According to SAUVAGET's exercise, Aleppo's early spatial arrangements comprised one major street which ran between the Antaqiya gate in the west and the citadel in the east, and a secondary grid of parallel and perpendicular streets[7] (see Fig.20). In the long spatial growth and transformations which occurred in Aleppo under the Muslims and probably from the Byzantine era, new streets were neither parallel nor perpendicular to the grid arrangement but rather took the direction of the prevailing routes, some of which were influenced by the regional and international caravan routes or settlements, or regions such as the city Qansrin, the region of Iraq, or Nayrab (a neighbouring village of that name)[8] (see Fig.63, 68).

The concept of the communication routes, influence on the intra-urban main streets appears to work better in the centralized and concentric

composition. There, the importance of main streets can be raised or lowered in accordance with the significance of the route itself. Also their number can be increased to incorporate not only routes to near settlements of a lower level and to distant settlements which were probably of higher levels but also to the overland roads and the surrounding districts. The limits of our topic here do not allow us to cover the last two settlements in the hierarchy established by MOQADDASI[9], nevertheless we may conclude that the third settlement in his hierarchy, the town, is supposed to incorporate the nearest city in the hierarchy and the villages associated with that town. In the fourth category of settlement, the village is supposed to be connected to the nearest town in the hierarchy and to the rural lands associated with that village (see Fig.90)

The Influence of the Qibla Orientation on Traditional Islamic Cities

Long before the arrival of Islam, the spatial orientation was acquired either totally or partially under the influence of many urban centres of an east west cosmic or cardinal orientation in the Seleucid, Roman, Christian and other civilizations.

Orientation towards the qibla (the direction of prayer towards Mekka in Hijaz) took a more complicated setting and gave a religious as well as a spatial implication to the physical arrangement of many existing or newly founded cities in Islam.

The qibla orientation, like a cardinal orientation, ought to determine the direction of all the parts of the urban centre. But, unlike the cardinal orientation it does not align the different cities themselves in one direction but turns them in many directions all of which aught to meet at one earthly pole, that is the Ka^{c}ba in Mekka (see Fig.8).

The effect of the Qibla orientation either determined partially or totally the orientation of the city as a whole or its centre or was a minor influence on spaces associated with the mosques. However, since the incidents of a partial influence of the Qibla on associated spaces are numerous, we will concentrate on cases where it influenced the city as whole. The first two models are the early cities of Kufa and Basra.

For both cities our information was deduced from historians' reports and the spatial configurations proposed by modern authors such as MASSIGNON.

In Kufa for instance, the central open square as already mentioned (see above p.) was orientated towards the Qibla. This led some scholars to believe that the mosque occupied the whole square[10]. However it is unlikely that this was so because the square enclosed, besides the mosque, the government house and the market. We know that main streets originated from the square in four directions, but we do not know if they were aligned to it, but it seems likely that their orientation was affected by the orientation of the central square (see Fig.18).

The orientation of Basra, besides being influenced by the Qibla, was further affected by the site locality. The main street as envisaged by MASSIGNON ran parallel to the Qibla and perpendicular to an existing canal[11]. The considerable width of that street and of a similar street in Samarra also led modern scholars to believe it was a huge rectangular space rather than an avenue[12]. The main mosque and the other main buildings were placed directly in that space and were likely to be aligned with it (see Fig.17).

Further examples of the application of the Qibla in cities of later phases can be observed in the layout of Baghdad, Samarra, Isfahan, Cairo and Aleppo.

Baghdad's orientation presents an attempt to combine the system of communication routes described above with the orientation towards the Qibla. The main concentric axial streets were aligned with the central mosque and the caliphal palace[13]. Because the only direction within a circle is towards the centre, the qibla is only indicated by the movement in and out through the main streets. It is also determined by domes mounted on the gates of these streets and above all by the squared shape of the qibla orientated mosque and palace, which were placed at the centre of the circle (see Fig.38). Other examples of similar orientation application to Baghdad can be observed in the octagon of

Qatul (see Fig.44) and the round shape of Raqqa and Heraqla (see Fig.41, 42).

The layout of Samarra fluctuated along the bend of the River Tigris, nevertheless its streets attained a certain degree of alignment among themselves and between them, the river and the site localities. Moreover the arrangement of these main streets was incorporated with the urban elements such as palaces, public buildings, mosques, training and horse race-courses. Samarra more or less took on a pragmatic setting. The Qibla orientation was incorporated rather than imposed on the city layout (see Fig.46)[14].

GAUBE's theory of Isfahan shows that the ultimate spatial characteristic of that city was affected by a long chronological formation and transformation. The city layout was comprised of three directions. The oldest of these patterns is attributed to the first three centuries of Islamic Isfahan. It was dominated by the old great mosque and the place of the old **maydan** and incorporated the south-west, north-east Qibla direction. The later second and third patterns were the result of the later tenth and sixteenth centuries A.D. The second pattern appears to have emerged in accordance with the line of a main street which probably connected the old **maydan** and mosque with the citadel. The third directional pattern is aligned with **Shah ᶜAbbas maydan**, known as the "new maydan", and his palace[15]. Spatial intermix between the three directional patterns, is obvious in the fluctuating main **Bazaar** (Market) which extended from the old mosque to the new **maydan** (see Fig.91).

In Aleppo, fortunately enough, the pre-Islamic east-west Seleucid orientation matched the southern Qibla direction. Although this coincidence of orientation spared the remaining parts of the Seleucid pattern nevertheless that orientation was not extended to later developments. Part of the change in the pattern could be attributed to the directional routes discussed above, or to what we may term "correlative structure" that is streets or lines of communications which are structured from interrelating the urban component (see below p. 225). Yet despite this change in the street pattern, the old orientation

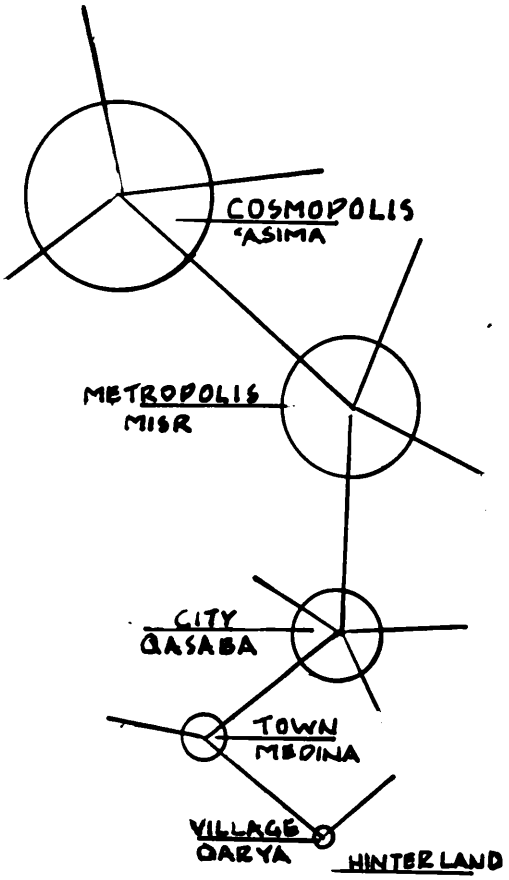


FIGURE90
SETLLEMENT HIERARCHY
after MOQADDASI (1887)

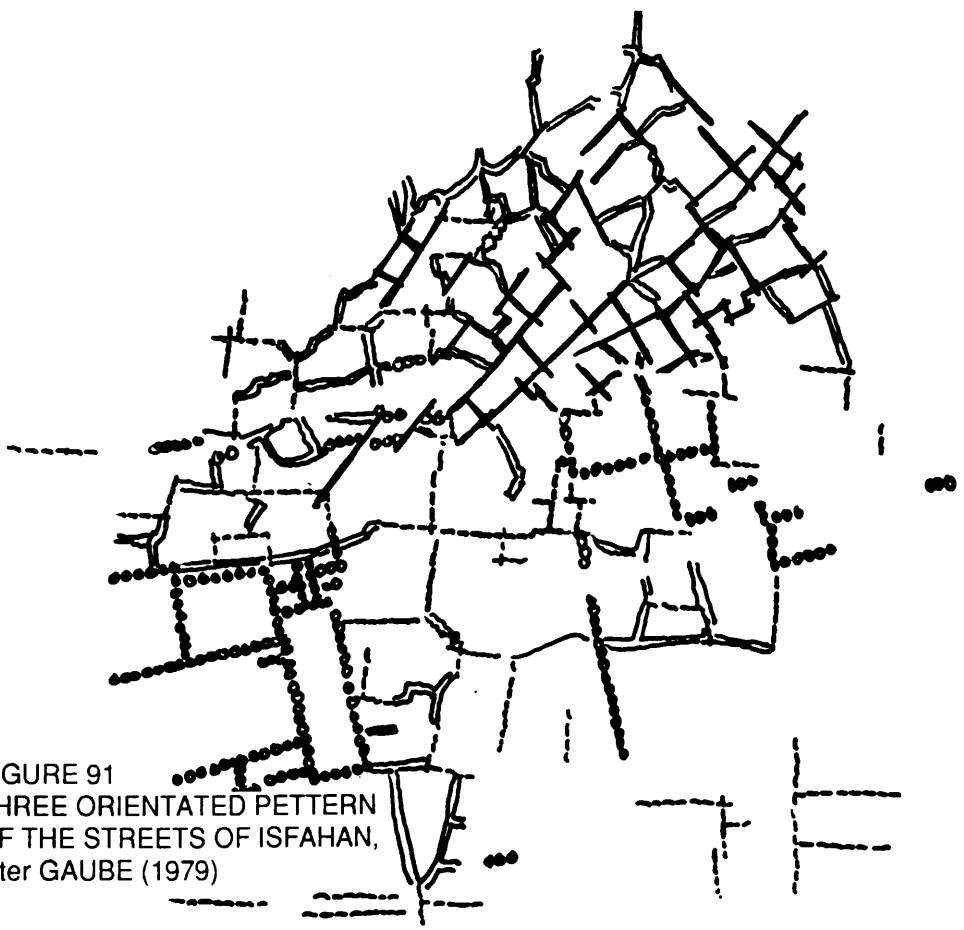


FIGURE 91
THREE ORIENTATED PETTERN
OF THE STREETS OF ISFAHAN,
after GAUBE (1979)

(but here for pragmatic and climatic reasons) remained the prevailing orientation for the court yards (**sahn**) of the houses and other religious, public and commercial buildings. The site localities termed as micro-factors did not exert any influence on Aleppo when first laid by the Seleucids, yet during the later development of Islamic Aleppo, the Quwaq River in the west and a trench excavated on the eastern side of the city formed boundary barriers, and controlled the city's expansion in their direction[16] (see Fig.63).

In Cairo, the direction of the general layout of the city was an attempt to combine the Qibla orientation with the sites localities. When the Fatimids built their administrative centre alongside the old canal (**Khalij Amir al Mu'mmin**), it turned out that the canal was orientated in the same direction as the ᶜAmru Mosque of old Fustat[17]. The whole squared shape of original Cairo and its main streets were aligned with the canal and thus with the Qibla of the Prophet's companions, which later became clear it was not in fact the actual Qibla direction. For this reason, later mosques built after **ᶜAmru**'s Mosque, such as Ibn Tulun's Mosque of **Qata'i**ᶜ, al-Hakim's Mosque near the Futuh gate and the mosques of later developments, were shifted slightly southwards, with peculiar solutions in order to overcome the orientation differences between directions of the mosques and those of the contiguous streets (see Fig.49).

However like Aleppo, development that occurred after the foundation of the squared shape of Cairo, did not follow the original direction, but was affected by other prevailing directions and these will be discussed under the section of "correlative structure" below. Other orientation measures in Cairo can be observed in the direction of the ventilators, which also fortunately enough because of the prevailing breezes came to be aligned with the main axis parallel to the canal[18].

Besides the influence of the canal mentioned above, other local influences came from what we have termed the boundary barrier. On the east side are the two mountain ridges of the Muqattan. Beyond the canal lies the River Nile. When Cairo was founded the area between the canal and the river was too narrow for major development. However

unlike the eastern fixed boundaries, the Nile witnessed successive recessions westwards, and left new spaces for new development[19]. On the north and south edges of Cairo, man-made barriers (mainly the city walls) did not however prevent the city's growth, yet controlled and influenced the shape and direction of its expansion. This also will be discussed under the section the correlative structure.

General Tendencies of the Spatial Structure in Traditional Islamic Cities

Introduction: Traditional Spatial Norms

Unlike its predecessors in Classical Antiquity and its successors in the modern period, the traditional Islamic city involved variable spatial morphologies. It developed variable patterns from the regular, uniformed, wide and organized spaces to the winding, tortuous and narrow spaces. From their early formation and throughout their different phases of transformation, Islamic cities neither followed one form nor acquired identical physical arrangements, but they still manifested a certain degree of correlative and expressive similarities.

It is not the aim of this part, however, to attempt to stress these similarities or to explore if they existed in all Islamic cities, but rather to highlight their prevailing spatial norms and spatial tendencies, from which after a long transformation Islamic cities took on their distinctive characteristics.

The enquiry we are to address will be directed towards probing the spatial norms in the context of the form and morphology rather than in the context of the style.

Traditional spatial norms, unlike traditional physical forms, would not widely conflict with modern spatial requirements, but ought to shape the process of arranging and implementing modern requirements in a way which would not alienate the traditional heritage, from modern life. This would enhance and sustain the social, religious, and communal as well as commercial, precepts and conducts[20].

> It seems as naive to believe that spatial organization through architectural form

> can have a determinative effect on social relation, as to believe that any such relation is entirely absent. The puzzle is made more acute by the widespread belief that many modern environments are "socially bad". It has become clear that a lack of understanding of the precise nature of the relation between spatial organization and social life is the chief obstacle to better design. It is the fact of space that creates the spatial relation between function and social meaning[21].

The desired spatial norms and relations are supposed to be frameworks that imbue and characterize the urban space. They are suppose to give its elements and components expressive and correlative spatial cues and paradigms, which would help individuals, groups and the community to relate and to orient themselves within the changing and evolving affiliation, ties and progression of time. They are also concepts which would fulfil the different levels of desired interaction and inclusion as much as levels of retreat and seclusion and at the same time should offer choices for a variety of actions.

Urban Spatial Development and "Correlative Structure"

Spatial structure, in the scale of a small place is a sense of how its parts fit together and in a large settlement it is the sense of orientation, or of knowing where (or when) one is, which implies in turn knowing how other places (or time) are correlated to this place[22].

According to LYNCH, city form lies under one of three metaphoric schemes, the cosmic, the machine and the organic model[23]. However the concepts of the above theory depend on the basic structural constituent of the physical fabric, that is how open space, urban elements and components or parts, and solids are correlated. Taking into consideration the above fabric constituents, the LYNCH classification could be further elaborated into four prevailing but not limited forms:- (1) a form in which open streets and spaces precede the arrangement of other constituents; that is a space- orientated structure and mainly developed in a net schema; (2) a form in which the elements (which can be a defined space or physical mass etc.) are the focus of the urban arrangement - that is an element-orientated structure, mainly developed

in the cosmic schema; (3) a form in which the solids dominated and moulded the spaces - that is a mass-orientated structure, developed mainly in a "limb" schema; (4) a form comprised of conglomerations of parts; that is a components-orientated structure, mainly developed in an the organic or cellular schema. At a glance it is more likely that the eventual form and morphology of the traditional Islamic city should be discussed as a mass structure. Here the spaces are hollowed out or excavated between the mass[24]. However it seems irrelevant to apply this schema in a generalized way to all phases of the Islamic city evolution or to all its spatial components and parts.

In the preceding part, which dealt with the evolution of the traditional Islamic city, it is obvious that different cities in different phases utilized either one or a combined schema in a single city; namely the grid and linear space orientated structure in Samarra, Cairo, and cities from pre-Islam such as Aleppo; the central or concentric, element orientated structure such as Kufa, Baghdad and other cities; the mass orientated structure of a limb pattern, as in many surviving traditional Islamic cities such as Fez, Tunis.

In early Islamic cities, space arrangement was not a per se concept, but came as a corollary interpretation to the interrelation between the various components of those cities. These interrelations were governed by a single dominant specialized but multi-purposes centre. This was a concentration of activities distributed in separate but associated areas, comprising of the central mosque, the administrative centre, and the central market. Second to these arrangement were intra-components formed by groups and subgroups of districts and quarters. Third were peripheral elements such as the feast prayer place, local country and overland markets, and cemeteries. Spaces correlating the central area with the peripheral components or destinations determined the general structure of the city. Other spaces which were of partially influential probably the result of left- over areas within the intra-components and connecting them[25] (see Fig.14).

The growth pattern of what we have termed the correlative structure can be explained in the five phases of the chronological growth of both

Aleppo and Cairo. Both cities will be illustrated in relation to the existing physical structure but expressed in a rationalized format.

Aleppo's original Seleucids layout as already mentioned was a uniform grid, made up of even sized rectangular blocks. The main open space, the market place or the agora was incorporated rather than articulated within the net orientated structure. Later the camp layout of the Seleucids was modified, with emphasize being placed on what KRIER termed an arterial street[26]. Although the newly expanded street ran through the southern precinct of the altered Agora, to the forum, that space remained dominated by an overwhelming grid layout[27] (see Fig.92).

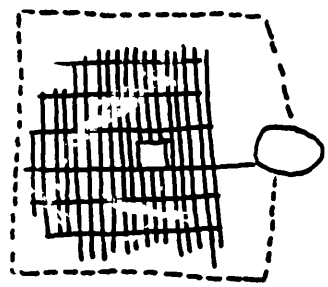


FIGURE 92
ALEPPO, THE NET ORIENTATED STRUCTURE OF THE SELEUCIDS CITY

Gradual alteration occurred when part of the open space was taken up by the Byzantine church and later when all the space was taken over by the mosque and new markets. Both of these, and other commercial and public buildings, developed over part of the main street and the adjacent residential blocks until the whole mid-area became integrated into a compacted core. Further adaptation of the net pattern occurred when parts of the remaining separate blocks in the residential areas were incorporated into residential quarters and districts.

New developments as well as the gradual transformation described above led to

changes in the grid structure. The mosque and the growing markets formed a focus point, merging blocks and blocked parts of the thoroughfares altered many uniformed spaces into limb spaces and, in turn, the blocks into intra-components. As the effect of the second stage in the city's evolution involved new areas beyond the remaining blocks, the influence of the central core became clear on the new growing areas. New streets took on the centrally orientated structure, they connected correlatively the central core with already existing and new gates (see Fig.93).

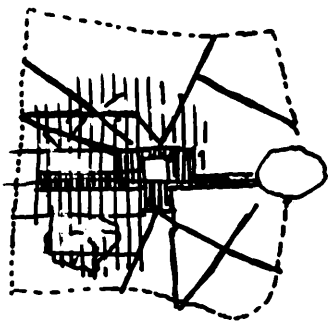


FIGURE 93
ALEPPO, ELEMENT ORIENTATED STRUCTURE AND STREETS OF SHORT-CUT

The third stage of Aleppo's developing structure occurred outside the city wall. The position of the Qwaq River west of the western wall favoured that side for a new administrative centre and new maydans. Yet the pre-imminent defensive position of the citadel in the east and the ascending topography in the south shifted later development into their direction. A new fortified palace (Qal'at al-Sharif) was built on the southern boundary. Beside the citadel it formed another focal element of the city's structure (see Fig. 94).

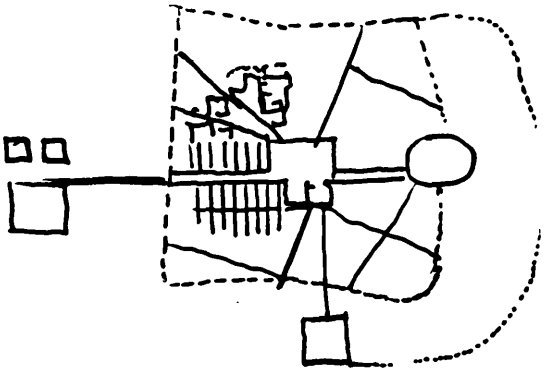


FIGURE 94
ALEPPO, NEW CENTRES

The citadel, its associated maydan and the peripheral open markets - mainly associated with gates - dominated and influenced the fourth stage of the developing structure of Aleppo. New

streets connected the citadel with new gates located on the new eastern fortification beyond the citadel. The new gates themselves were not located according to a spatial concept but on prevailing communication route (see above p.191) or in the direction of an open market, garden, bridge, or canal that had previously occupied on that site[28] (see Fig.95).

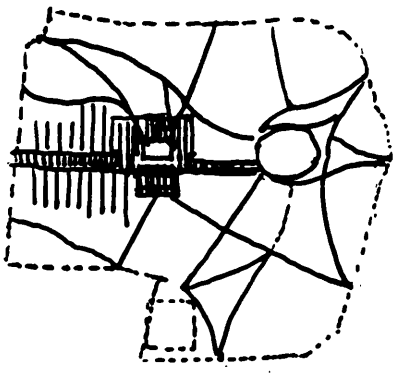


FIGURE 95
ALEPOO, THE CITADEL INCORPORATED

The last stage in Aleppo's growth structure developed beyond the previous peripheral elements and gates. Still these elements formed the nucleus of that development. Suburbs with radial streets expanded in the direction of the caravan routes neighbouring settlements, or according to the prevailing topographical gradient. A limb structure filled the areas between the radial streets. A new nucleus of local, commercial, public and religious buildings and offices took its position on the junctions between the main streets and crossing thoroughfares (see Fig.96)

A further difference between the prevailed net structure of Seleucid Aleppo and the correlative structure of Islamic Aleppo could be attributed to what we termed previously as static factors, such as differences in the site's topography. ROGERS concluded that a rectangular grid structure is appropriate only to flat terrain such as that occupied by the central area of Seleucid

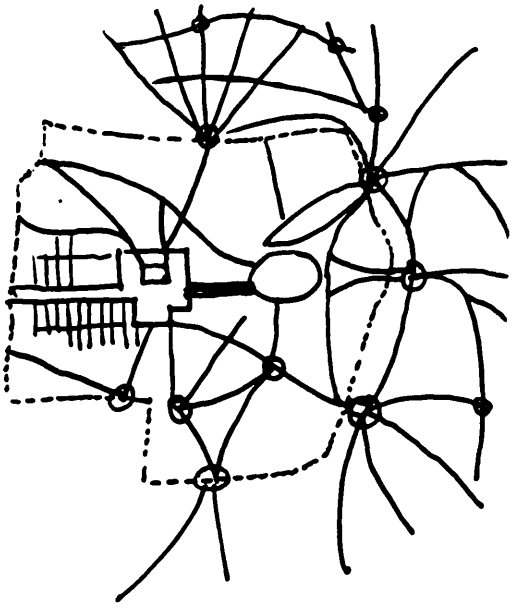


FIGURE96
ALEPPO, THE EVENTUAL "CORRELATIVE STRUCTURE " STREETS AND LINES OF COMUNICATION INTERRELATING THE DIFFERENT PARTS OF THE CITY

Aleppo[29]. Beyond the central area, new sites mainly developed under the Muslim domination tended to ascend gradually towards the north south and east. A change from flat to sloping terrain may have better suited the diagonal or triangular arrangement than the rectangular net pattern (see Fig.97).

FIGURE 97
DIFFERENT PATTERN FOR
DIFERENT TERRAIN

Unlike Aleppo, Cairo acquired less sloping terrain, here mainly inclining to the east toward the **Muqutam** ridges, but nevertheless the city manifested more or less the same "correlative structure" as had pervaded Aleppo. However it is the linearity and physiographical constraint of the site and other factors, discussed above p.219 and to be discussed below, which exerted a reasonable share of influence on the city's overall setting.

Cairo was founded at a stage when the multi-centred city like Baghdad, Samarra, Qayrawan, Fez, Cordova etc. were a common urban composition. It was itself, as already mentioned, the third urban centre to be founded in the vicinity of Old Fustat. Although Cairo succeeded the first three as the new administrative centre, nevertheless none of the four was laid in the same spatial pattern but rather each one kept to the prevailing spatial framework which pervaded many Islamic cities at that time.

Fustat was formed of a conglomeration of parts and conformed to the component orientated structure discussed above p.222[30]. ᶜAskar was the second in these centres and comprised a military camp, probably of a net pattern, incorporated around a single multi-activities centre. At the same time when ᶜAskar was founded, Fustat lost its cellular layout and probably after sometime it acquired and was transformed into a mass structure, with dead-end limb-alleys (see Fig.47).

Qata'iᶜ, the third centre, encompassed regular, preconceived arrangements probably, as mentioned, like those of Samarra of a non-identical grid orientated structure. The process of laying out Qata'iᶜ

revealed that the palace and a huge open space (**maydan**) associated with it preceded the arrangement of the residential blocks, that is, the residential grid layout was incorporated rather than adopted as an overall conceptual pattern and this too can be observed clearly at Samarra (see Fig.47).

The three centres described above, along with Cairo, were connected by a major street (Qasaba) running nearly parallel to the canal and subsequently to the Nile River.

The linearity of the site and its geographical constraints dictated a linear arrangement of the city complex. Although the general layout was affected by what we termed static micro-factors, nevertheless the spatial concept adopted in the setting of Cairo represents one of several planned arrangements employed in the setting out of Islamic cities.

Cairo's layout used an orthogonal concept. Yet this arrangement was adopted only in the main arterial streets. The residential areas were laid out in quarters and districts, and thus used a combination of the space and components' orientated structure. The quarter's inner arrangements were

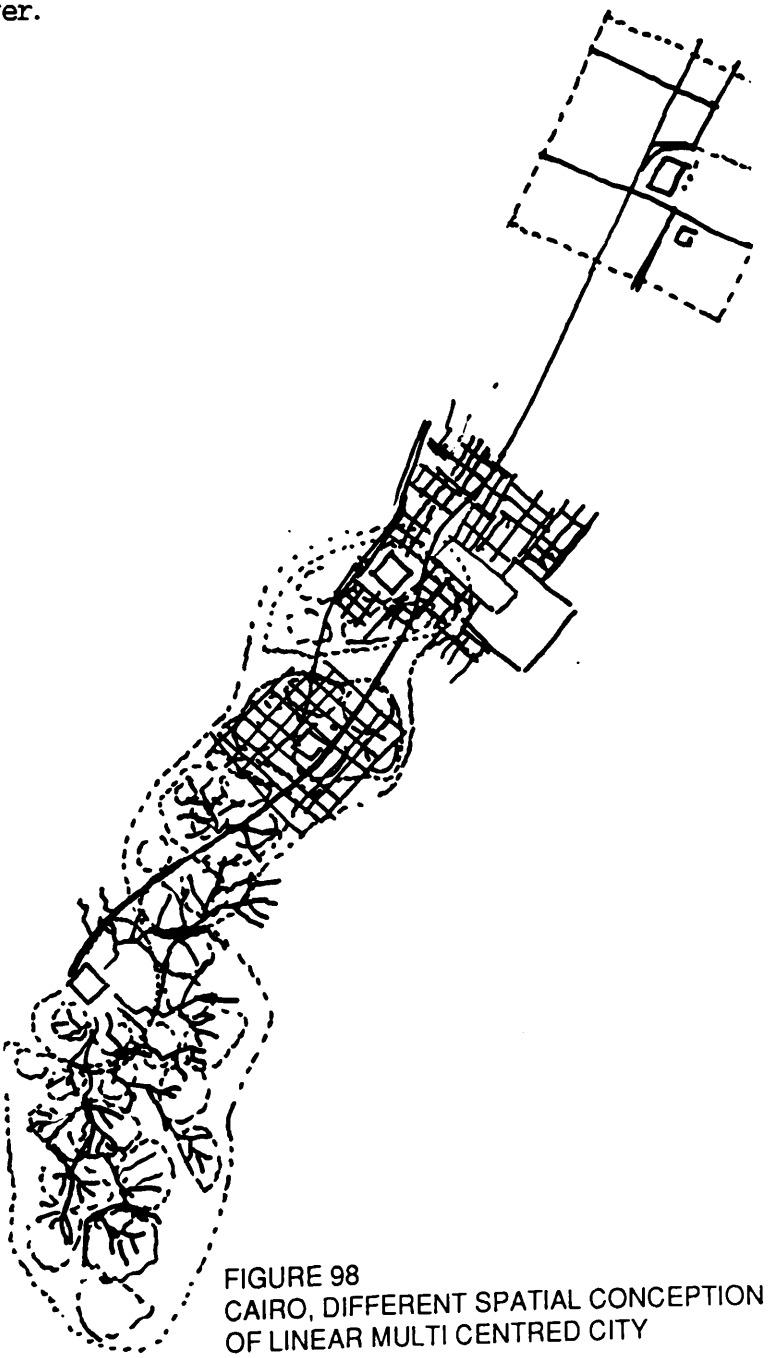


FIGURE 98
CAIRO, DIFFERENT SPATIAL CONCEPTION
OF LINEAR MULTI CENTRED CITY

left to the residents and probably grew directly into s limb structure and not a grid pattern[31] (see Fig.98).

The orthogonal layout of Cairo was employed to interrelate the inner urban component with gates and peripheral elements outside the walls. However this arrangement was not merely a functional one. Streets were to serve communal expressions connected with the Fatimid religious, military, and royal processions, and congregations. Other streets originated from open spaces and were directed east and west. The ones directed towards the east to the rocky hill of al-Muqattam were of no significance in the movement distribution, but part of the orthogonal concept. In the long term transformation, these streets were doomed to loose their importance as main streets and were probably incorporated as part of the residential quarters.

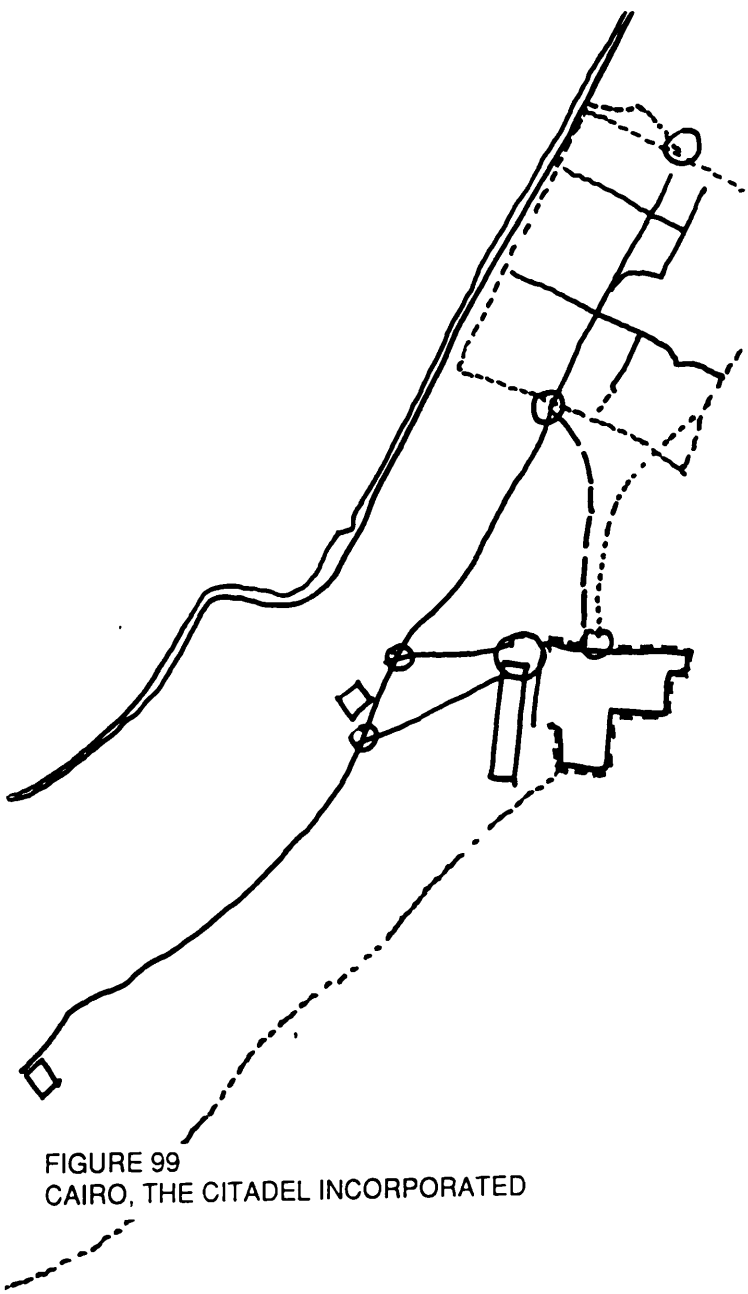


FIGURE 99
CAIRO, THE CITADEL INCORPORATED

The forth stage in the city's developing structure occurred with the foundation of the citadel, the transformation of the ceremonial streets into a mixed-use centre and the emergence of the nucleus of the suburbs on Cairo's periphery[32]. The location of the citadel appears to have been determined by defensive measures rather than any spatial conceptual one. Its position is not aligned with any of the previous or continuing developments. The newly emerging streets related the citadel to the open space associated with Zuwayla gate on the southern wall and to be Ibn Tulun mosque, and further south, to Fustat (see Fig.99).

The last stage of the development of the traditional correlative structure of Cairo took place in and beyond the city wall and in new areas annexed to the city's extent by the recession of the Nile westward. Inner development occurred either by rebuilding or

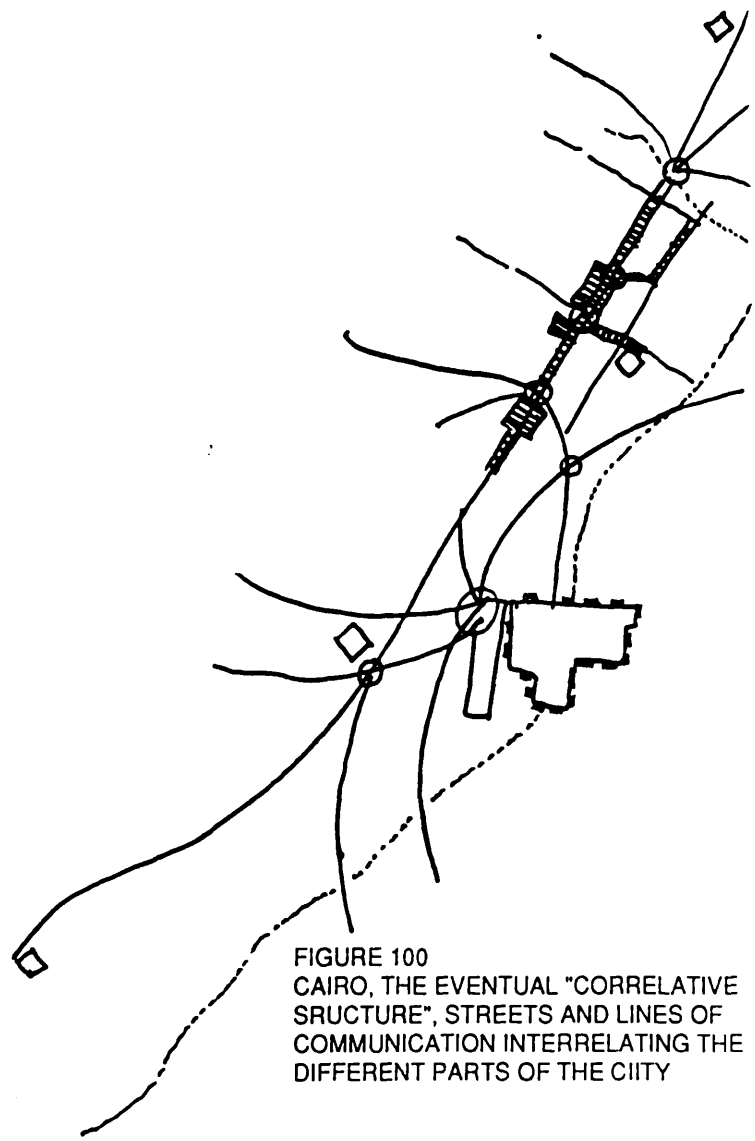


FIGURE 100
CAIRO, THE EVENTUAL "CORRELATIVE SRUCTURE", STREETS AND LINES OF COMMUNICATION INTERRELATING THE DIFFERENT PARTS OF THE CIITY

transforming previously defined urban elements, such as the maydan, the palaces, the ministry and parts of the ceremonial arteries, into a compact, mixed-use and elongated centre which encompassed mosques, schools, hospitals, market and other religious and public buildings. Outside the wall, new suburbs with radiating streets developed, like those of Aleppo, (see above) from a growing nucleus associated with Zuwayla and al-Futuh gates. Also similar to those in Aleppo these streets took on the prevailing direction[33] (see Fig.100)

In conclusion to the discussion on these stages, it seems more probable to attribute the general spatial structure of traditional Islamic cities to a correlated rather than a geometrical setting. Most Islamic cities at the time of their formation were laid out in regular arrangements but not geometrical one. Also these uniform arrangements were not employed in the city as a whole, and did not pervade its various domains. Yet cities at each stage manifested more of less the same urban development.

In the first phase, components were freely gathered around a single central component. In the second phase compactness and mass accumulation preceded the free setting. Spatial centrality grew either spontaneously or to a preconceived plan. The central component formed a fixed and dominant element in the city's structure. Proliferation from

the single central component into centres in the third phase brought with it a multi-centred composition in the one city. Each of these centres expanded into defined but associated elements. The interrelation between the different centres and between the elements of any one centre tended to appear more in a linear setting. Also linear expansion in the elongated centre would favour the linearly centralized streets and spaces rather than the concentralized arrangement (see Fig 101). Although the linear multi-centred composition was more evident in Islamic cities such as Cairo, Cordova and Samarra, that would not exclude the existence of the satellite centrality such as the case of Baghdad (see Fig.40)

A nucleus formed from existing urban element such as peripheral markets, gates, cemeteries, shrines etc. or elements such as citadels in the fourth phase extended the multi-centred structure into axial localization. Further growth in the nucleus in the fifth phase have added to the local network a radial or satellite correlated structure (see Figs.96, 100)

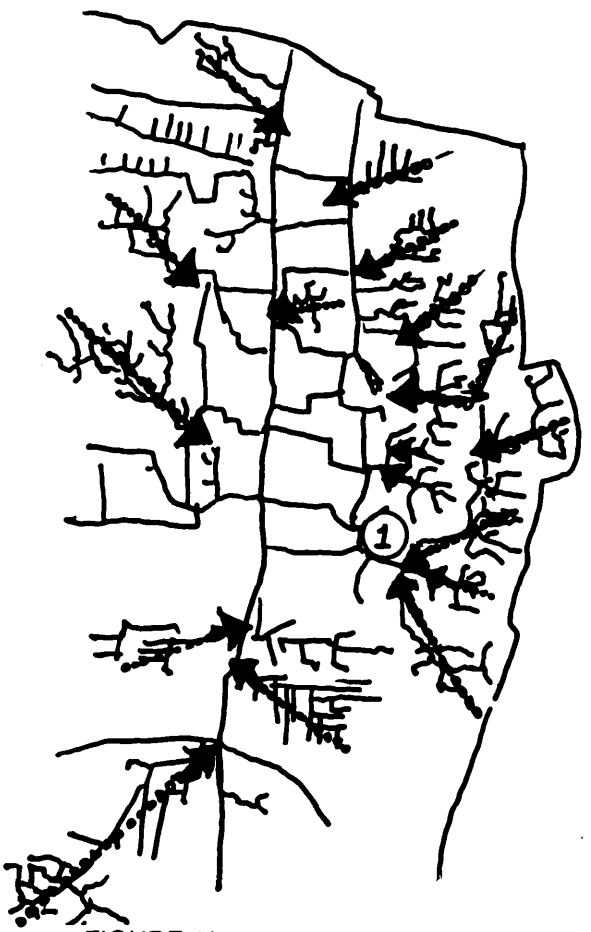


FIGURE 101
CAIRO, LINEARLY CENTRALIZED STREETS AND QUARTERS CENTRED IN THE DIRECTION OF THE AROWS THEY ARE ORIGINATED FROM THE NEAREST POINTS TO THE LINEAR-CENTRE AND DIAGONALY AWAY FROM IT, after BERGNE (1978)

Foot Notes: Part Three, I

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8. IBN AL-SHAHNA (1984), 32-45

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31. ELISSEEFF (1976), 93

32. AL-SAYYAD (1981), 20

33. AL-SAYYAD (1981), 25

II. URBAN TEXTURE AND FABRIC IN TRADITIONAL ISLAMIC CITIES

Introduction

In both the first and the second parts, social, religious, governmental and commercial frameworks were employed to explain the general arrangement of the form of the traditional Islamic city. In the first chapter of this section, natural, geographic and other static factors influential in the city's arrangements were employed to illustrate the urban development and its correlative prevailing structure. However, the context of the previous topic did not cover the special and detailed characters and features of the classical Islamic city's fabric and urban texture. That is the resultant distinctive irregularity and peculiarities of that fabric.

MONTEQUIM and BIANCA, in an attempt to explain these peculiarities, attributed the Islamic city's character to what they considered as the way of life[1]: that is the framework which brings people, their activities and conduct into physical and spatial relationship. LYNCH added another factor which he believed was due to the fancy of the individual operating on the accidental characteristic of form. Even so, he considered that common meanings do exist and are inevitably communicated , and these common meanings are the elements of a settlement's design. "One must have an understanding of them in order to analyze the impact of place on its people"[2] and vice-versa

> "The fact that the Islamic centre is a complex mass of intricate, twisting traffic ways does not impede, but rather compels the need to formulate an interpretation of it"[3].

As mentioned it is not the manifestation of style we seek to interpret but rather the correlative and expressive spatial modes. Also it is how these modes were utilized to relate the spatial patterns to the social values. In the end, we endeavour to probe the possibility of a fairly traditional process being of any value to our present time.

Although LYNCH questioned the value of the Islamic city's fabric to a modern life style, he asserted and stressed its undeniable attraction, its

repose and urban stimulus and the quality of its spaces[4]. ABU LUGHOD and MONTEQUIM on the other hand were not only optimistic but rather convinced that the pace of change in the modern city would more or less favour the revitalization of traditional spatial concepts as manifested in the Islamic city and cities of other traditions[5].

> "...Islamic principles singled out could be the basis for contemporary city-building, not in a retrogressive fashion but in highly innovative way"[6].

The quotation cited above is from one of many monographs, studies and theses written to analyze the Islamic city and to try to understand the many forces and factors behind its spatial concepts and to deduce guidelines and principles for city buildings. The first, and second parts as well as the preceding chapter are a further step towards extending that understanding and to highlighting the various impulses and frameworks that formed and transformed the constituents of Islamic cities. Yet the previous topic and the many monographs would remain futile schemes of abstract illustration unless based on and extracted from an actual exercise.

To assume on the one hand that the intended study would open the way to a method of reproducing the traditional concepts would mean our task would be more complicated than the traditional concept itself. And on the other reproducing the exact fabric or a mirror image of it without knowing the underlying grammar that would lead us to mindless plagerism. However to bring this study to a tangible reality, and to present the traditional fabric and its underlying concepts into modern language, in innovative fashion as urged by ABU LUGHOD and the quality extolled by LYNCH, the next part will be conducted under the following guidelines.

The context of the remaining study should be presented in the form of a pragmatic exercise implemented and applied to real and surviving cases with supporting examples from available schematic materials; the study should combine schemes of two dimensional illustrations with perspectival three dimensional images; it should be directed towards emphasising the correlative and expressive concepts rather than the style; it should produce a relative measuring device that can be used

in detecting and evaluating the various spatial modes that existed in the Islamic city; ultimately the study should be employed to present correlative spatial guideline which was deduced from traditional modes but is compatible to modern spatial requirements.

Within the above guideline, the following chapters will be organised in two steps: (i) to analyse the way in which the Islamic city's fabric texture and spaces are correlated; (ii) to examine these analyses by observing the quality of the space and its importance as an element of expression; (iii) to highlight its significance to the Muslims way of life.

The analysis will be carried out in integrated sectors chosen from Aleppo and Cairo with various levels of space. Its aim is to point out the prevailing spatial tendencies which connect the various spaces of these sectors to each other and to the whole; to define the components of the same sectors, with some examples from other cities, and to attempt to elucidate how the parts of these components correlate between themselves and the associated spaces. However in order to correct a deficiency arising from its flat conceptual representation, the same sector will be illustrated and examined in its visual context, that is in its three dimensional form.

Set of Criteria Referred to in Choosing the Two Sectors

The choice of the two areas, one from Aleppo and one from Cairo, was the result of a somewhat complicated process, but the major criteria considered were: (1) the areas chosen should involve different phases of the traditional Islamic city's evolution and development; (1) the sector, especially in Aleppo, should include typical "spontaneous fabric"; (3) the areas should involve as much as possible different levels of space, which one would expect to find in a traditional Islamic city; (4) the spaces should either have had different functions, or most functions existed in traditional periods, including accommodating residential, commercial and religious activities; (5) the area should spread between at least one side of the city to its central area and include streets or spaces of major, secondary, tertiary and of other significance; (6) and finally the sector should if at all possible not be altered or disturbed by modern streets or development.

Both areas were chosen from within the precinct of the original walls and adjoined other areas developed beyond these walls. In Aleppo the area extends from the city centre, from the central mosque and markets through Jallum quarter, **Sahat Bizza** quarter and Dakhil Bab Qansrin to Qansrin gate in the south; and from **Bab Qansrin** through **Sahat Bizza** quarter and **Qal'at Ash-Sharif** quarter to **al-Maghazila** quarter and **Dakhil Bab al-Maqam** quarter and gate further to the south east (see Fig.102).

Relief roads were planned to cross through the various sides of the city fabric and have been implemented in the north and part of the southern half. Fortunately enough, the extent of this assault on the traditional texture was not yet implemented in the south-western quadrant from which the above sector is therefore chosen (see previous Fig.102).

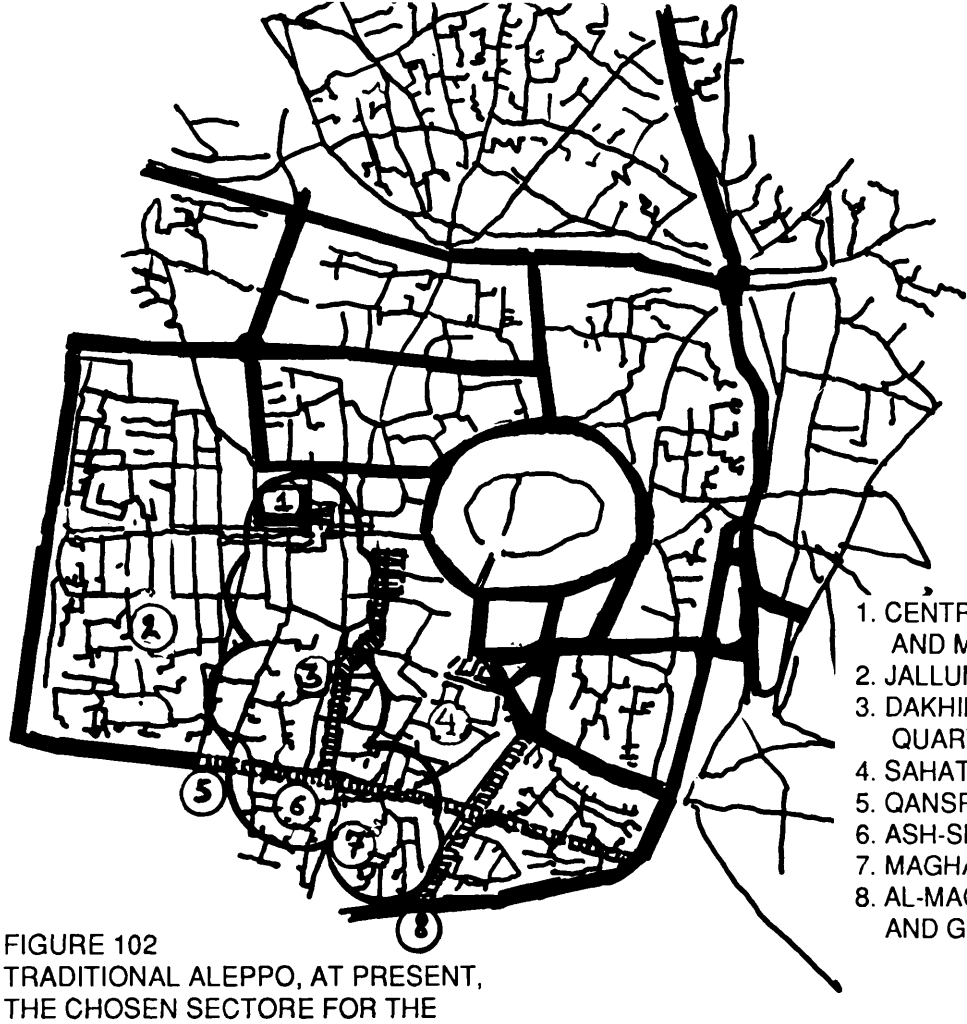
In Cairo, the chosen sector embraces a linear slice of streets and open spaces extending from near **al-Nasr** and **al-Futuh** gates, from **Jamaliya** quarter, through Jamaliya's street and the **Qasaba** (**al-Mu'iz** and **Bayn al-Qasraya** Street) to Zuwayla gate and the Khayaniya Street further south. Nearly the two-thirds of the distance away from **al-Futuh** gate, the sector expands to include further spaces toward **al-Azhar** Mosque in the east and from the quarter which replaced the Ikhshidi garden in the west, and the Rum quarter in the area to the east just before the Zuwayla gate (see Fig.103).

The conducted observation in Cairo, unlike that of Aleppo, was inevitably disturbed by two rather modern streets, **al-Muski** and the new Azhar street (see previous Fig.103)

Complexity and Variety: Two Main Conductors of Nature and Chaos

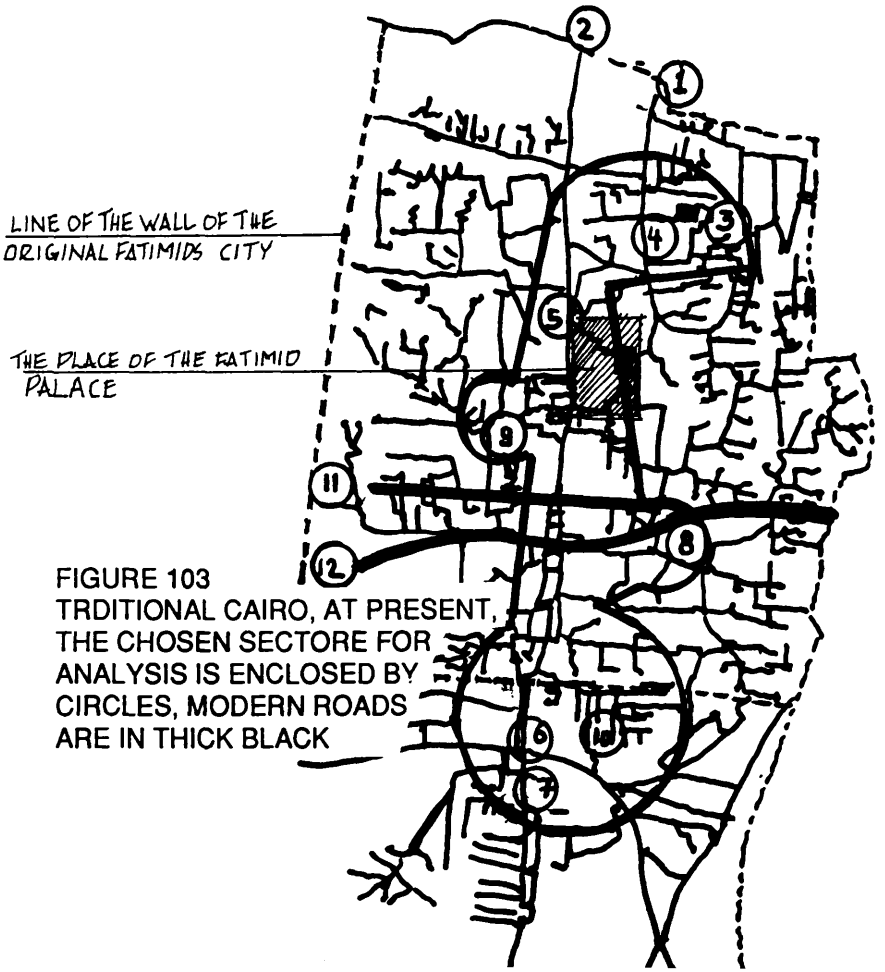
Complexity and variety of levels of space are apparent in the traditional Islamic city. To understand these patterns it is first necessary to learn its language. A language of pattern is a communication mode adopted by each culture in a way that it is significant in order to express itself. At the same time it is the way by which each culture perceives other cultures differently in a way distinctive to its own.

> "Something which distinguished the traditional cities of the Muslim civilisation



1. CENTRAL MOSQUE AND MARKET
2. JALLUM QUARTER
3. DAKHIL BAB QANSREEN QUARTER
4. SAHAT BIZZA QUARTER
5. QANSREEN GATE
6. ASH-SHARIF QUARTER
7. MAGHAZILA QUARTER
8. AL-MAQAM QUARTER AND GATE

FIGURE 102
TRADITIONAL ALEPPO, AT PRESENT, THE CHOSEN SECTORE FOR THE ANALYSIS IS ENCLOSED BY CIRCLES, EMPLEMENTED RELIEFE ROADS ARE IN THICK BLACK, PLANNED BUT NOT EMPLEMENTED ARE IN DOTED LINES,



1. AL-NASR GATE
2. AL-FUTUH GATE
3. JAMMALIYYA QUARTER
4. JAMMALIYYA STREET
5. THE QASABA STREET
6. ZUWAYLA GATE
7. KHAYYAMIYYA STREET
8. AL-AZHAR MOSQUE
9. QUARTER IN THE PLACE OF THE IKHSHIDI GARDEN
10. RUM QUARTER
11. AL-MUSKI STREET
12. THE NEW STREET OF AL-AZHAR

FIGURE 103
TRDITIONAL CAIRO, AT PRESENT, THE CHOSEN SECTORE FOR ANALYSIS IS ENCLOSED BY CIRCLES, MODERN ROADS ARE IN THICK BLACK

> is their similarity. This pan-Islamic resemblance can be perceived from the Atlantic Ocean to the Arabian Seas.
>
> In no other culture it is possible to find such strong sense of urban homogeneity. Greek and Roman cities, for example, were different amongst themselves. There appear to be certain basic deep structure to the language of Islamic expression in space"[7].

To be familiar with a spatial language like that of literature, it is first necessary to understand its grammar. However the Islamic city pattern at times is regarded as a grammarless language, with no rule except the rule of chaos[8]. If we accept chaos as a governing rule still "there is order in chaos: randomness has an underlying geometric form. Chaos imposes fundamental limits on prediction, but it also suggests causal relationships where none were previously suspected"[9].

In a different approach but more or less the same concept, the Islamic city was regarded as a product of natural growth[10]. Both chaos and nature share randomness, to which they owe part of their quality, as their apparent rule. However order in nature does not correspond to that missconception which accredits order to clear geometrical language. The principles of order in the nature of the Islamic city - metaphorically speaking - lie in certain spatial modes that developed within the general urban theme.

General Urban Theme and Spatial Grammar in the Language of the Traditional Islamic City.

A major urban theme that persisted and pervaded the Islamic city is hierarchy.

> "The idea of hierarchy is persistent in planning. It seems to be a natural way of ordering things, although this may be a consequence of ways in which our minds work[11].

Hierarchy as an urban theme developed as early as the emergence of the Muslim community. It developed as a tool of societal as well as spatial organisation and persisted throughout the different phases of

the Islamic city evolution. Most studies or monographs have dealt with, hierarchy as part of the Muslim activity, relationships, conduct and framework, that is to say they dealt with it as a notion of urban organization more than a mode of spatial arrangement[12]. Its existence as a major theme was traced throughout the previous sections, but the extent of the various detailed spatial articulations on the city's fabric is still to come.

Hierarchy as a Mode of Spatial Articulation

As presented by LYNCH, hierarchy requires an end probably more than a single beginning[13]. Yet hierarchy cannot be achieved with only two contrasted states. With a view of transforming the "contrast" into a hierarchy, "crescendo" levels (metaphorically borrowed by FATHI) should work with the two states and both levels conform to an overall rule of order[14].

Spatial hierarchy can either be discerned as one of crescendo such as successive change in width, or as inter-related modes, including a successive change in width with a progressive change in depth, and a corresponding transitive change in direction, function, use and information.

A change in the process of the articulation of various spaces in most cases are perceived as separate from their correlated patterns but ultimately all are recognised in their expressive pattern[15]. So to present the various hierarchical processes in what seem to be similar sequences, each mode will be dealt with as a separate case but in the end will be treated as a mutual entity.

The Correlative Dimension:
Successive Changes of Width as a Mode of Spatial Hierarchy

Change in the width of streets or spaces formed the primary tool in the manipulation of space in the classical as well as the modern period. To work as a hierarchical arrangement, it still has to operate in a successive mode. However this mode succeeded better in patterns which depend on the spatial flow, which is more obvious in natural, features than in the arrangement of artifacts[16] (see Fig.104). In the two cases

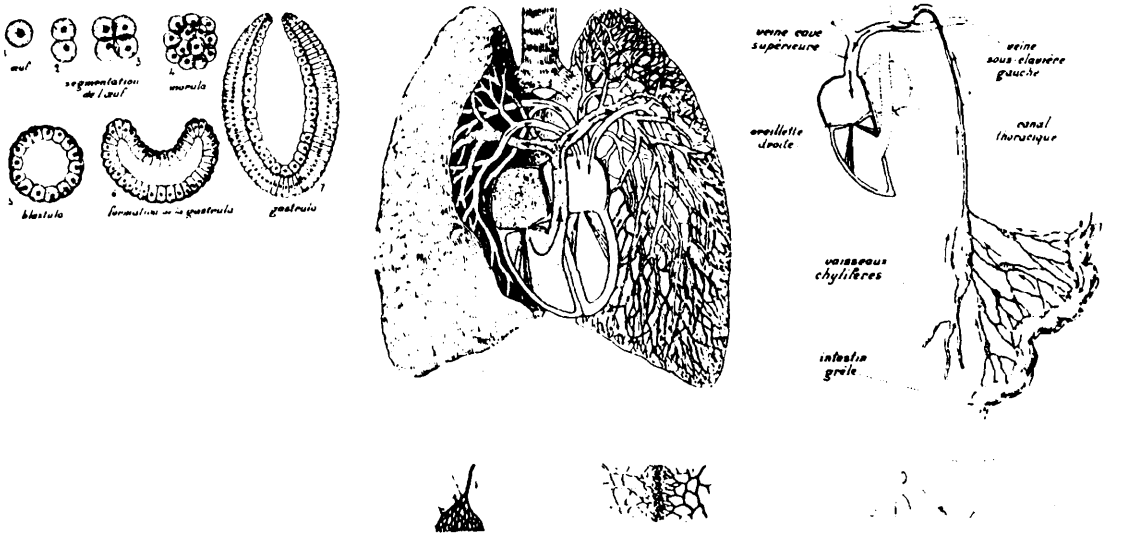


Figure 1. The delta of the Colorado River on the Gulf of California resembles a huge "decision tree." The innumerable branches in the coastal area are caused by the movement of tidal ebb and flow. (Scale 1:250,000. This illustration is used with the permission of the Aero Service Corporation. Philadelphia. Pa.)

FIGURE 104
SPATIAL FLOW IN NATURAL FEATURES,
after EIGEN (1981); VIDLER (1968)

drawn here and in the majority (but not all) Islamic cities, change in the width of streets and spaces were brought about in both the planned and natural or spontaneous notions.

In Aleppo and Cairo the width of streets varies in relation to their role in the traffic's accessibility and distribution rather than to their type. For instance dead-end alleys or cul-de-sacs vary depending on how close one is to the end. This appearance led BLUMENFELD to liken the pattern of the Islamic city to blood vessels feeding a piece of tissue[17]. The ruling factor of these streets as described by LYNCH lies in a successive capillary motion in which one is contained in the different parts of the city, from the city itself to its centre, quarters, local clusters, cells and the open courts of the houses[18]. In other words, the width of spaces or streets works as a spatial tool in which one can visualize and compare one's position in relation to other places, and could thus obtain information to determine in which part of the city's fabric one is. The flow of space corresponds to the flow of movement, and vice-versa. So if the width of space were determined on the basis of density of movement it could be employed to offer a sequence of introductory devices with which to control the flow of movement, and at the same time be a tool by which the road user could be guided[19].

HAKIM demonstrated that the width of streets, specially thoroughfares, are manipulated to allow two loaded animals to pass freely without obstruction[20]. The relative dimension of 3.5m was reduced to a final approximate 1.5m. of the end of dead-end alleys which was confined to human movements, enough to allow two persons to walk together or pass in different direction. However the use of movement as a determining force is the application of only one factor. Yet width can offer other sensory perceptions and will be discussed below under the expressive dimension of the spatial pattern in the traditional Islamic city.

Although a successive hierarchy, as already mentioned, works better in a bifurcating natural pattern, it was employed in the grid arrangement. Nevertheless mere change in the width in grid arrangements would not fulfil the requisite successive crescendo which is usually disturbed steadily by protruding crossings.

GERKAN deduced that "grid iron arrangements would look like a nightmare to anyone who would think three dimensionally. It would have been a rat's maze of blank walls, since all Greek houses were walled, bare of any compass orientation or ornamental identification features, and indifferent to spectacularly beautiful location"[21]. However the same observation is applicable to Islamic cities such as Samarra and Aleppo if they fully remained in the original grid arrangement. Still hierarchy can be enhanced in grid arrangements when a combination of the other spatial modes such as crescendo repetition of timed or distanced crossings and manipulation of the crossing direction, are used with a successive change in width. These will be discussed under the use of grid or crossing arrangements in the central domains of Islamic cities.

Considering a flat two dimensional space as two variable factors - X for width and Y for length - visually the Y dimension is a relative distance where one's vision travels in the Y dimension until contained and embraced in a picturesque frame (see Fig.105). It is also a relative distance where one's vision travels before being obstructed or attracted by an influential element of space similarly the X dimension is a relative distance measured only when one's cone of vision is bracketed by the sides of the space. However in the correlative dimensions discussed here we will refer and use those true dimensions.

In the two cases discussed below, the width of spaces or streets at each level changes around an average width. That average width would be more obvious were it perceived in relation with other levels. In general in Aleppo these average widths are constantly less than those of Cairo. The average width of main streets, or what we have termed the public space, in Aleppo is between 4.0-5.5m, while in Cairo, the Qasaba and al-Jammaliya or other main street's form is between 6.5-8.0m. Similarly while the average dead-end alleys in Aleppo reach 1.5-2.0m., in Cairo they are between 3.0-3.5m. The difference between different levels almost increases or decreases in both cases relative to the same variance, that is about 1.0-1.5m. (see Figs. 106, 107)

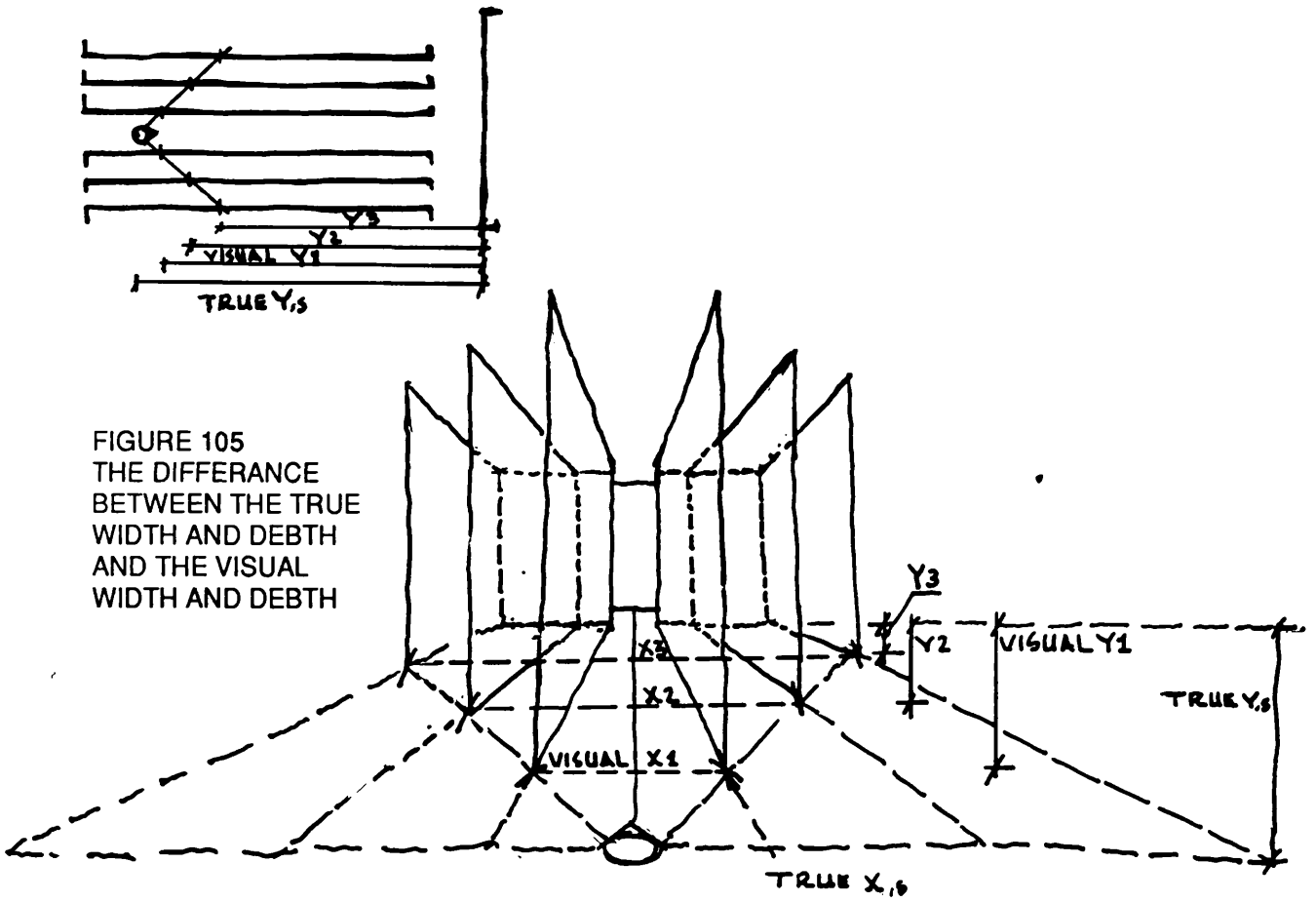


FIGURE 105
THE DIFFERANCE
BETWEEN THE TRUE
WIDTH AND DEBTH
AND THE VISUAL
WIDTH AND DEBTH

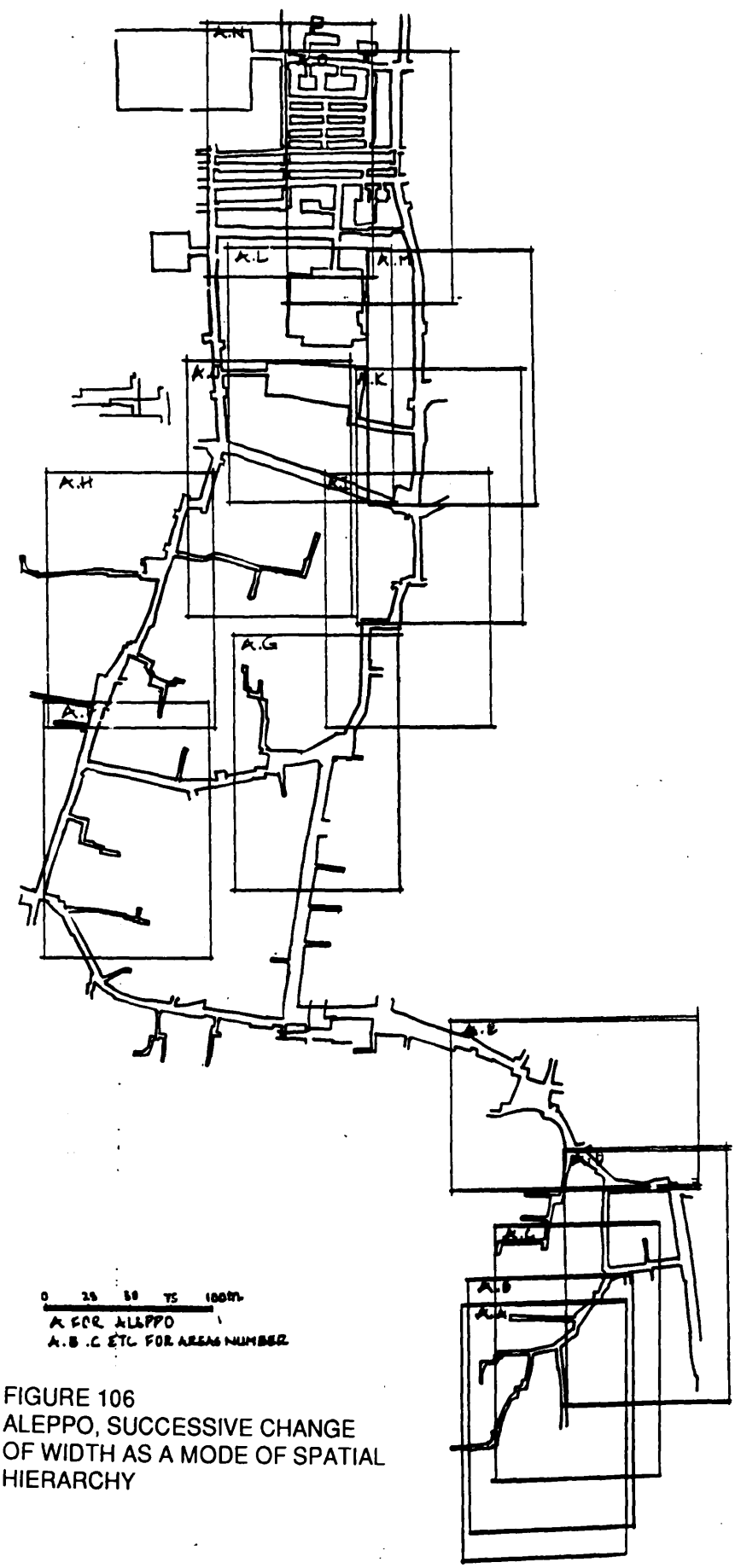


FIGURE 106
ALEPPO, SUCCESSIVE CHANGE OF WIDTH AS A MODE OF SPATIAL HIERARCHY

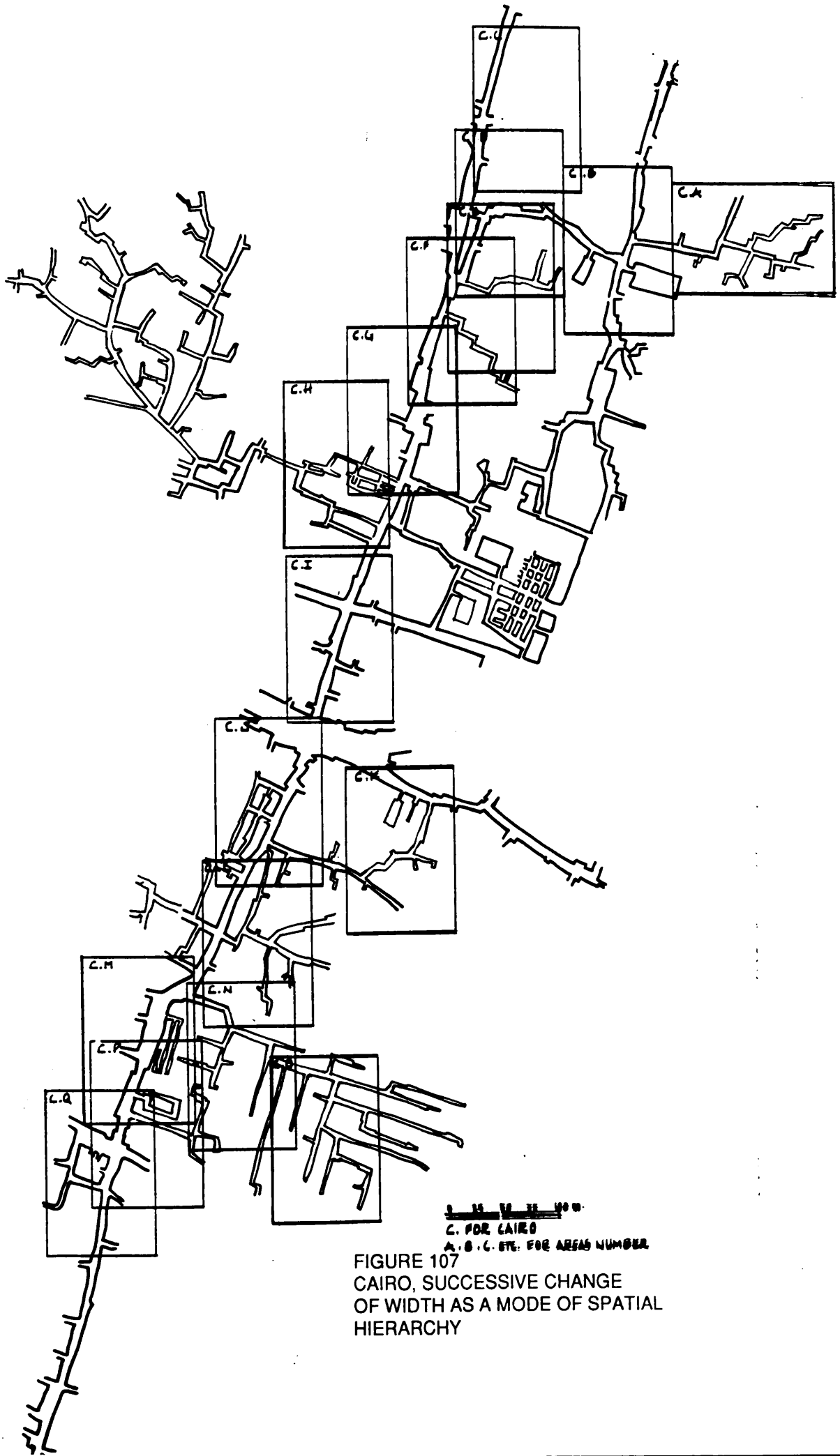


FIGURE 107
CAIRO, SUCCESSIVE CHANGE OF WIDTH AS A MODE OF SPATIAL HIERARCHY

Progressive Change of Visual Depth as a Mode of Spatial Hierarchy

Time distances in the width's successive hierarchy can be retained as constant, but a hierarchy can still be achieved. A different time scale in the depth hierarchy is an associated factor, hence this mode is termed the progressive mode. Here, time scale can be affected by visual elements, which do not obstruct the visual depth but rather divert one's vision. This would thus associate a psychological factor with the sensory one and create a visual transition beside the physical progression. To explore each of these modes' prevailing tendency, we will tackle each as a separate case and later, in the conclusion, deal with their mutual affect.

Winding streets or spaces are one of the special characteristics that pervaded the various levels of spaces in Islamic cities. Nevertheless, and as the two cases to be discussed will demonstrate, the degree of that meandering mode varies relative to in the different components and spatial parts of the Islamic city. Straight streets found little favour in private and semi-private spaces, but became more prevalent as one progresses towards the public spaces and the centre. At all levels an infinite perspective barely existed. All spaces are contained within a certain visual depth. The Y dimension in streets or spaces of higher levels in both Aleppo and Cairo (see Figs.108, 109) reaches in some cases 300m long. This does not, however, exclude cases where the visual depth has been altered radically by a median mode or element. This will be discussed below under spatial elements of physical-mental transition and spatial elements of mental procession. The depth of streets at lower levels varies in the semi-public areas between 80-100m and the semi-private areas between 40-60m and in private spaces could become as small as 10m long (see previous Figs.). However the figures mentioned above show a relative visual straightness between the different levels which do not always exclude streets of greater or lesser depth than those stated, yet a gradual progressive increase is obvious as one proceeds from one level to another.

To avoid an argument which would attribute the concept described above to the influence of the original grid and the orthogonal layout of Aleppo and Cairo, the chosen sectors (as mentioned) are taken from

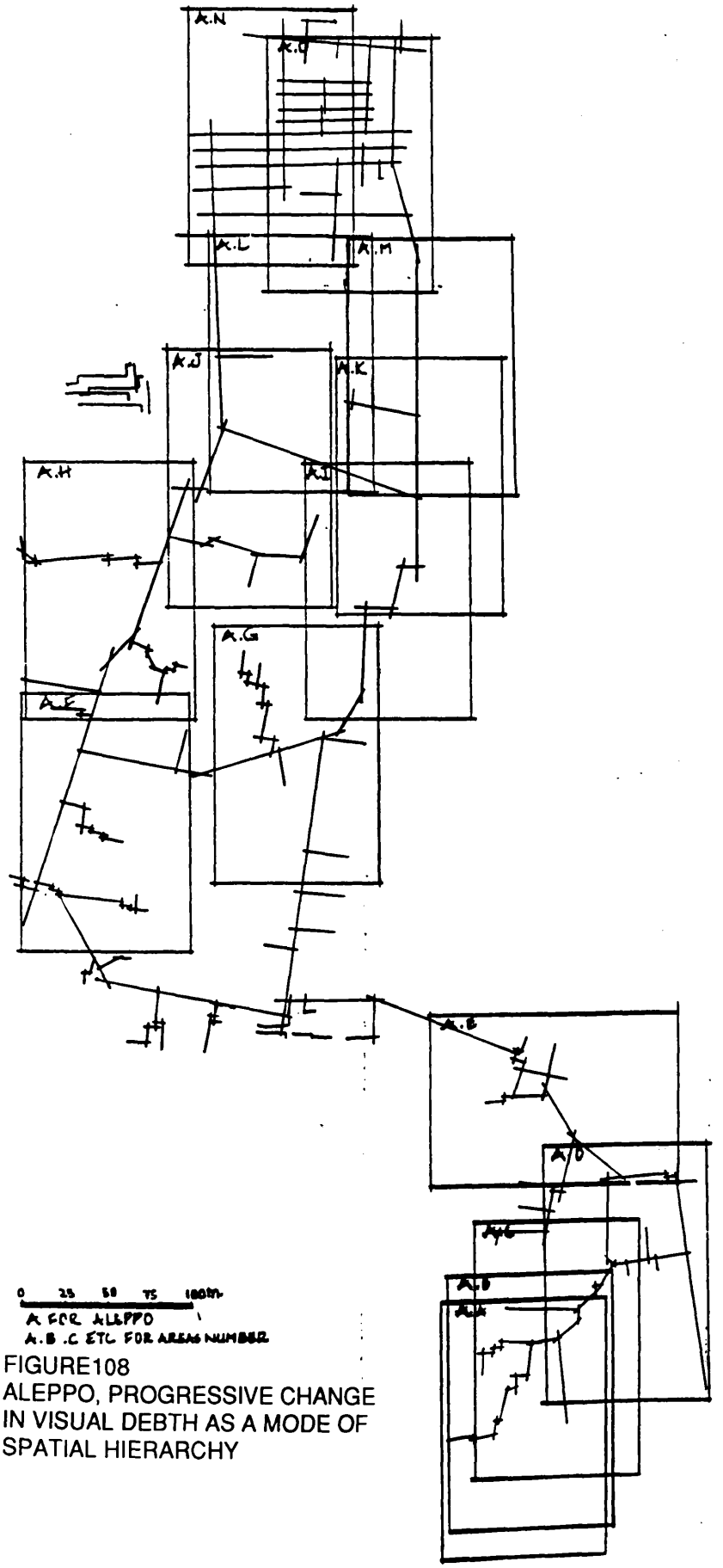


FIGURE108
ALEPPO, PROGRESSIVE CHANGE IN VISUAL DEBTH AS A MODE OF SPATIAL HIERARCHY

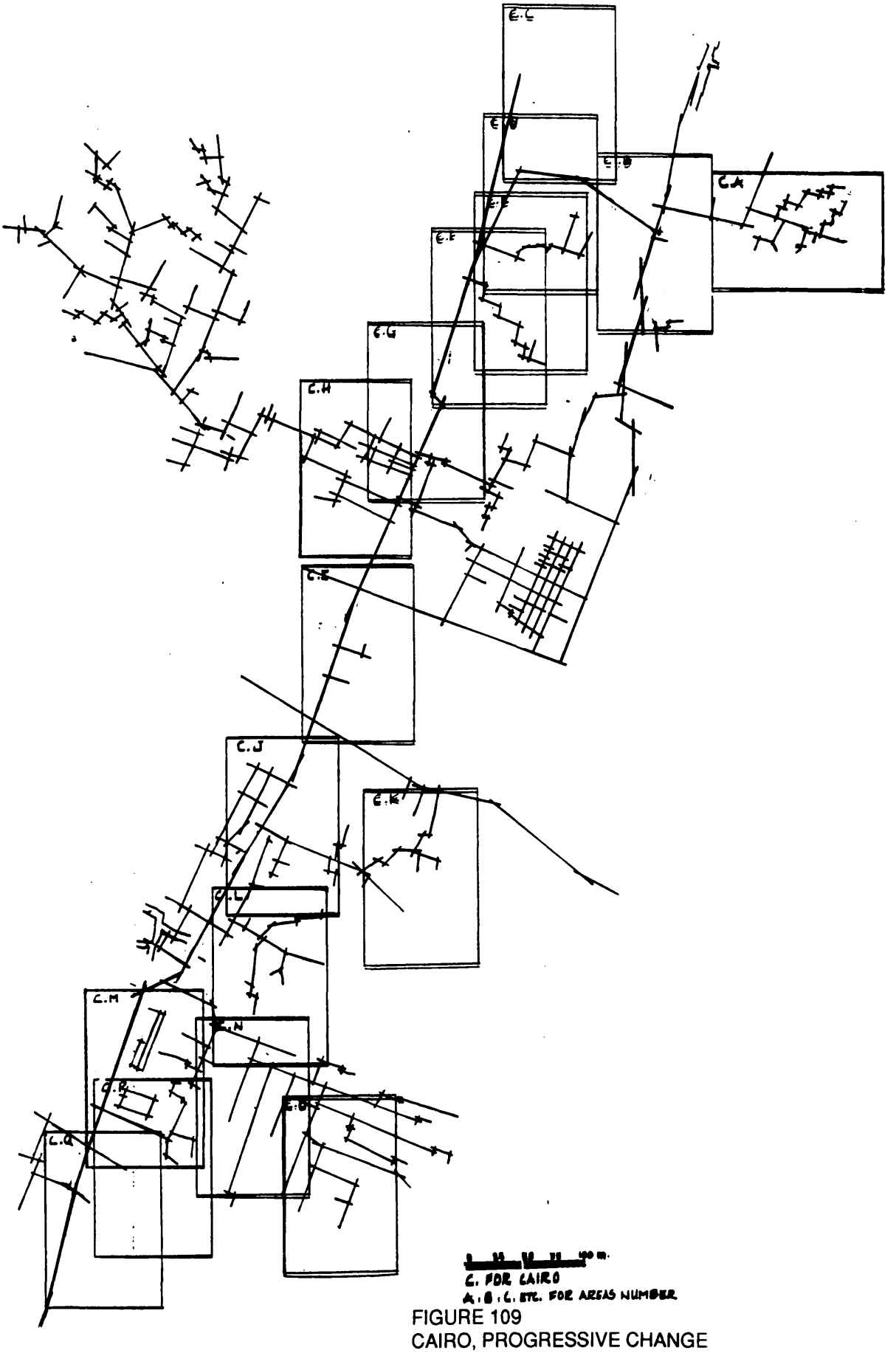


FIGURE 109
CAIRO, PROGRESSIVE CHANGE IN VISUAL DEBTH AS A MODE OF SPATIAL HIERARCHY

areas where a spatial transformation has substantially altered the original layout. Yet a partial influence by the original layout is inevitable, so to sustain the progressive hierarchical concept outlined above a third case is presented from one of the well know extempore layouts that is Fez (see Figs.124,125)

Transitive Change in Direction, Features and Information

A hierarchical change in depth, as mentioned, can only be achieved when synchronized with a progressive change in the time scale, which itself needs to be achieved by a certain spatial displacement within the one space or between different spaces - that is to say, the way the elements of that space are disposed and the way the different spaces are connected and manipulated.

The progressive modes described above are characterized by two approaches; the first is mainly obtained through a transitional change in direction and a change from one space to another by means of space links, junctions, divisions, crossings etc; the latter does not depend on an alteration in movement but is rather gained by a merely visual and mental process. It could be attributed to a change in the shape of the space or part of it, and the influence of its inter-mediatory feature such as nodes, elements of focus etc. In other words, the first approach combined physical as well as a mental transition, while the second depended only on a mental process. To attempt to convey these changes in modes of descriptive illustration, each type will be presented as a separate symbol which will allow us to detect immediately the change in the various modes.

Physical-Mental Spatial Transition

In the first approach, a change of direction could be obtained from and discussed under the following spatial manipulation:- (1) hinged or articulated transition, that is a bend in the street or the direction of the space which would create two spaces, such as the L-shape, or more than one defined enclosure; (2) thrust transition, that is a shift in the street alignment but no change in direction; (3) sheer transition, that is stepping from one space to another by the means of an angular T-junction or triangular ⊀ junction; (4) bifurcate transition, the same as

above but in the shape of a Y division; (5) cross transition, that is a change in direction by a right angle or an X crossing. The last three space arrangement are presented as cases where one steps from one space to another, thus changing direction and hence called a transition. But if one passes through one of these spaces but does not change direction, these spaces will be referred to as nodal processions and we will deal with them under the mental-spatial procession.

We will now examine an actual example. On the route of the chosen sector in Cairo (see Fig.110), the schematic transition starts from a dead-end alley at Jammaliyya Quarter Area C.A.[22]. The alley's presumed here to be a private space and is articulated into eight defined spaces by means of seven hinged transitions in only two directions The route from that private street to a semi-private and again into semi- public and public streets is successively attained through three sheer transitions, thus each transition places an emphasis on the changing levels between the three spaces. A hinged transition in the semi-public street changes the direction in that street but nevertheless does not alter its level. In the public streets from areas C.B. to C.J., they are differently arranged either mainly in a bifurcate transition or in a crossing transition. But when they connect with different levels, such as semi-public or semi-private streets, they are mainly connected by sheer transition. The first of these transitions occurs as an option in direction either towards the central part of traditional Cairo or to the right towards the edge of the city and thus to the gate of al-Futuh. A slight curve in the main public street areas C.B., C.D. has here transferred a < junction into a bifurcate transition. Further spatial transition is due to the curve itself which gradually directs the movement towards the centre. Close to the central part in areas C.F., C.G., just on the northern edge of the original open space between the two once existing Fatimid palaces, the main Qasaba street has a bifurcate transition that causes the main street to branch towards the gate of al-Futuh and the gate of al-Nasr. In the middle of the above mentioned space area C.G., a thrust transition drastically shifts but does not change the direction of the main street. Along that same street, further to the south in areas C.E., C.J., a cross transition transfers the movement from the central spine to another main street now replaced by

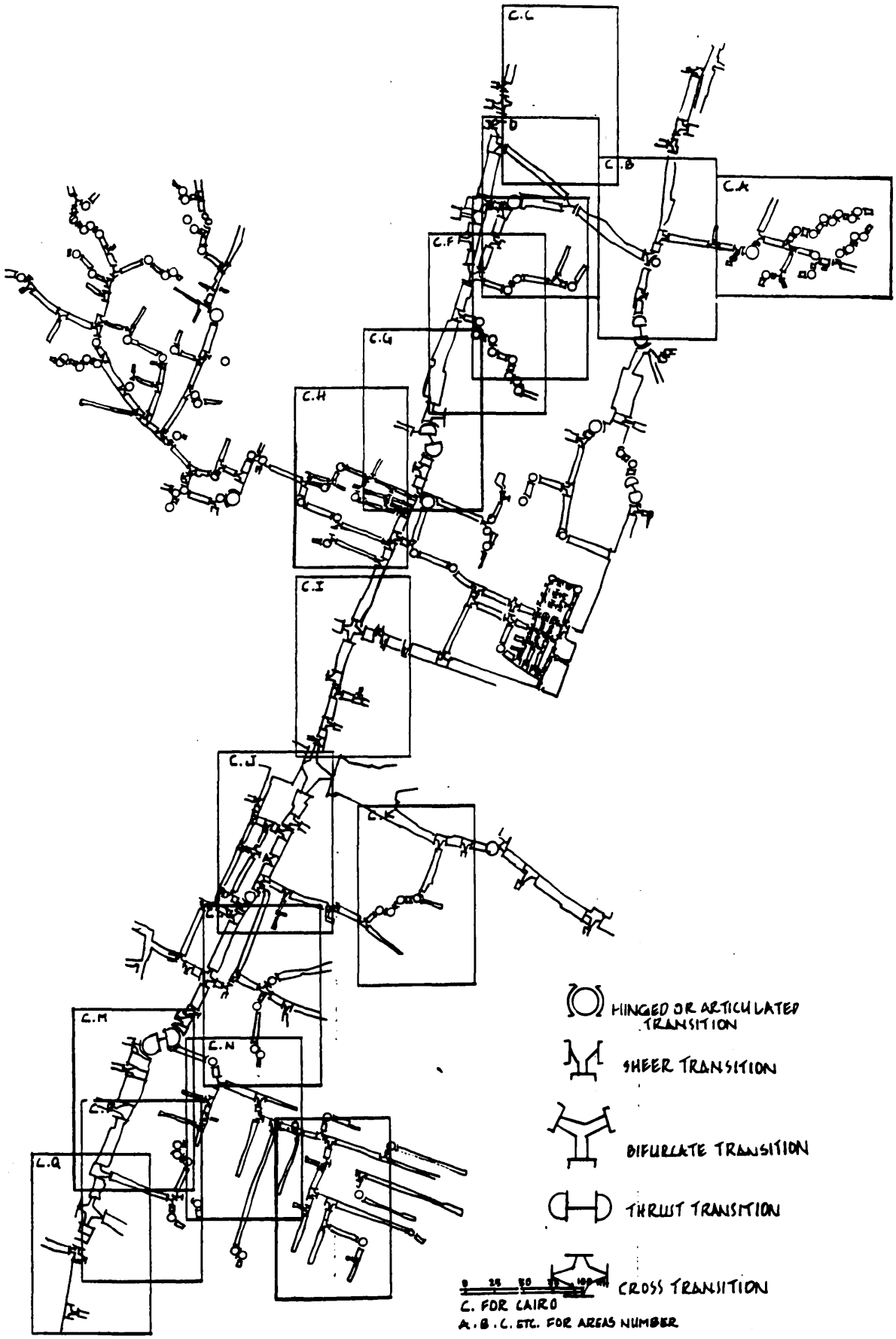


FIGURE 110
CAIRO, TRANSITIVE CHANGING DIRECTION AS A MODE OF PHYSICAL-MENTAL HIERARCHY

a modern one, al-Azhar street, leads to the Azhar Mosque and a gate previously in the east and another gate near the old canal in the west.

To return to the spine known as the Qasaba, the street remains straight until another thrust transition occurs on the site of the old first Zuwayla gate, which shifts the street's alignment but keeps its direction towards the second existing Zuwayla gate. On that transition our route enters the Rum quarter areas C.N., C.O. There the whole quarter is manipulated by 17 sheer transitions disposed between 9 dead-end alleys. These transitions mainly serve to distribute the movement between private and semi-private streets. Yet the whole area as it appears is regularly organized with a clear straightness, rare in Islamic cities. There is no crossing transition and only a single bifurcate transition in the area. The bifurcate transition equally distributes the direction between two dead-end alleys but it does not give any importance to the right alley which leads to the majority of the quarter's streets and spaces.

In Aleppo (see Fig.111), as in Cairo, our route starts from a dead-end alley but this time from the southern edge of the city. The alley area A.A., A.B. is articulated in six defined spaces by means of five hinged transitions. From that private street we emerge into a semi-private street through a sheer transition. There the semi-private street leads to another private dead-end alley. The alley is also articulated into six defined spaces through five hinge transitions. The semi-private street itself area A.C. is also manipulated into more than one space but nevertheless a straight line of movement can be obtained with no alteration in direction. Its effect therefore is a mental procession and will be discussed later below. This street ends in a higher level attained through a bifurcate transition leading towards two directions presumably of the same importance yet a particularly expressive arch arrangement gives emphasis to the branch heading to the east towards a main street. This lead to the Maqam gate further south, and that will be discussed later under the three-dimensional expressive dimension of the spatial pattern of the traditional Islamic city. Both semi-public branches are connected to a public street, which extend between the Maqam gate mentioned above and Qansrin gate area A.F., in a clear

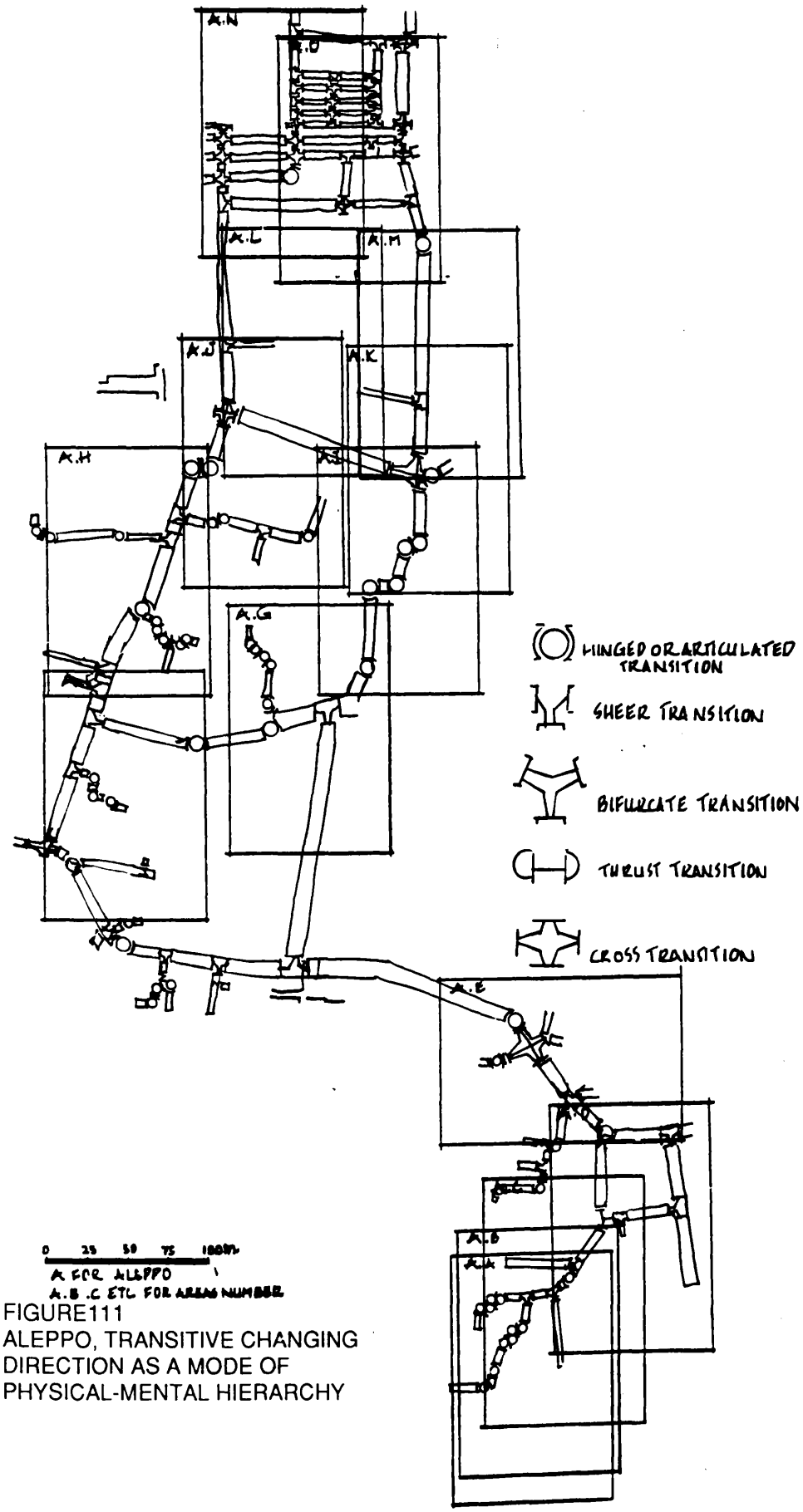


FIGURE111
ALEPPO, TRANSITIVE CHANGING DIRECTION AS A MODE OF PHYSICAL-MENTAL HIERARCHY

sheer transitions through two T junctions. The public street spreads out to a single but not in fully straight line, its direction being gradually curved to include the position of an open space, Sahat Biza area A.E., and subsequently the Qansrin gate and from there towards the central part of Aleppo. The shape of the street itself and its frequent alignment change will also be discussed below under the mental procession.

Near Qansrin gate a cross junction transfers our route's direction to the right towards the city centre. From this gate to the central markets and the front gate of the central mosque a major street almost extends in a single direction but it is not fully aligned. Along this street two thrust transitions and a cross transition shift the alignment of the street so it can include the position and direction of an old Seleucid Street (see Fig.111), areas A.H., A.J., A.L., A.M.

It is rather obvious as demonstrated in the above two exercises that the changing direction is a mode which occurs more frequently in private and residential and hybrid streets than that of the public and central parts. Thus a person moving from a dead-end alley to the central mosque or the centre of the city will notice that his procession goes hierarchically from the articulated transitions in dead-end streets to sheer, bifurcate and crossing transition when going towards the centre.

Mental Procession

The exercise described above as already mentioned, engaged in mere physical change which resulted in a change of movement and direction. As we pass through the transitional route, we have ignored various influential visual features, elements or non directional arrangements. These features or elements however, would have mentally enhanced, or reduced the psychological perception which is referred to in future as elements of procession.

To limit the confusion which would arise from slight differences between the various influential elements, they will be classified under three general modes; (1) elements of focal procession - that is elements which

dominate one's movement until they are passed, such as Domes, Minarets, Gates, Towers etc.; (2) elements of nodal procession - that is elements which one does not detect until having almost reached them, including space crossings, junctions, dilations etc.; (3) elements of threshold procession - that is elements which frame the movement and can be detected from a far or when reached, but their influence reaches a culmination only when passing through them, such as archways, bridges, bright or shadowed spaces etc.

In applying the above elements of mental procession to the sector chosen from Aleppo (see Fig. 112) it is demonstrated that, at the start of our route, successive dispositions of threshold processions dominated the various dead-end alleys, and enhanced some of the space definition which arises from the hinged transitions mentioned above (p.254). Yet it addeds a new dimension which defined the first alley over three processional spaces instead of seven hinged transitions. In the semi-public street area A.D. the space dilated and contracted in a way which visually subdivided the space over four major spaces by means of three nodal dilations. Beyond that space a nodal junction, along with a threshold transition in the middle of area A.D., distributes the movement between its four associated streets, two semi-public streets leading east and north and the above mentioned semi-private street heading southwest and yet another semi-private street heading south. Another nodal junction leads us from the semi-public street to a public one. Along the mentioned public street from area A.D. to A.F. there are 10 nodal junctions three of them leading to semi-public and seven directly to semi- private and private streets. Unlike their sheer influence in the previous physical transition, here they are barely influential. There also the street contains two nodal crossings. One of them is a major node known as Sahat Biza, and the other occurs on the middle of that street at the end of an unusual dilation. This does not conform to the general spatial pattern we have passed through, but still it imposes a strong mental influence in our movement. Leaving that space, we encounter a focal element in the form of a minaret associated with a shift in one side of the street, developing by means of alignment difference between the mosque's **qibla** orientation and the street. From area A.F., at the end of the above mentioned public street we turn to

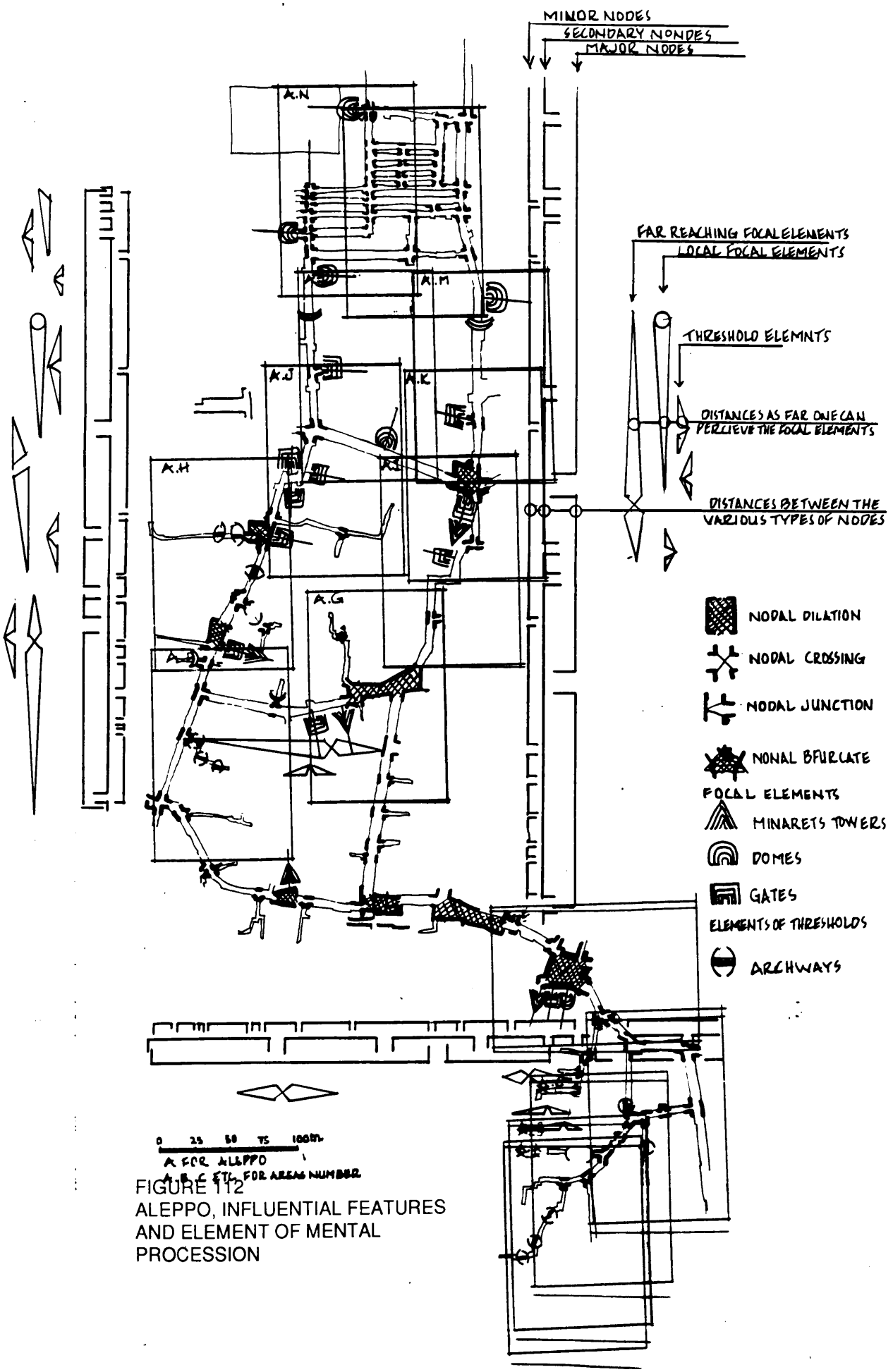


FIGURE 112
ALEPPO, INFLUENTIAL FEATURES AND ELEMENT OF MENTAL PROCESSION

another main street which leads to the central area of Aleppo. After two nodal junctions, the first a private alley, the second a semi-public street with a tall minaret which thus reveals the importance of that street, another minaret of a medium size dominates our procession. Just after leaving the minaret, a nodal dilation follows directly a threshold archway in a processional sequence adds more emphasis to the influence of the minaret .

Further to the north, another nodal dilation (this time to the side) creates spatial relief to the elaborate Bimaristan gate which lies in front of that space. Before entering the area of the market, a cross nodal procession and an intermittently shaded streets, leads us towards a fully covered market. There our movement is not controlled by nodal crossings which lies between the different street markets but by threshold gates, which in turn indicate changes in the types of markets. Within the covered market, features like a shaft tower or domes placed over a nodal crossing, or a space in front of an important building (such as the central mosque or wholesale markets), reveal part of the importance of these buildings and work as negatives for those, covered parts which occurred in the open streets and spaces discussed at the beginning.

On the whole route of about 1km long, apart from the markets, we passed through only three crossings and about 24 T junctions, five of them leading to semi-public streets, while inside the market in a distance of about 75m we passed through 5 crossings. Similar to the route described above, another route can be followed through another side public street embraced within areas A.G., A.I., A.N. (see Fig.112)

In Cairo (see Fig.113) elements classified under mental procession differ widely between the different space levels. While in private and semi-private streets elements of mental procession rarely occurred, except through a threshold gate, known as bab al- Mubaydiya, when passing from the semi- public street to a public one in area C.B., the public streets are vigorously dominated by many such elements. Stepping out at that gate into the Jamaliya street area C.B., the street is dominated by a minaret in each of its opposite directions. However the northern

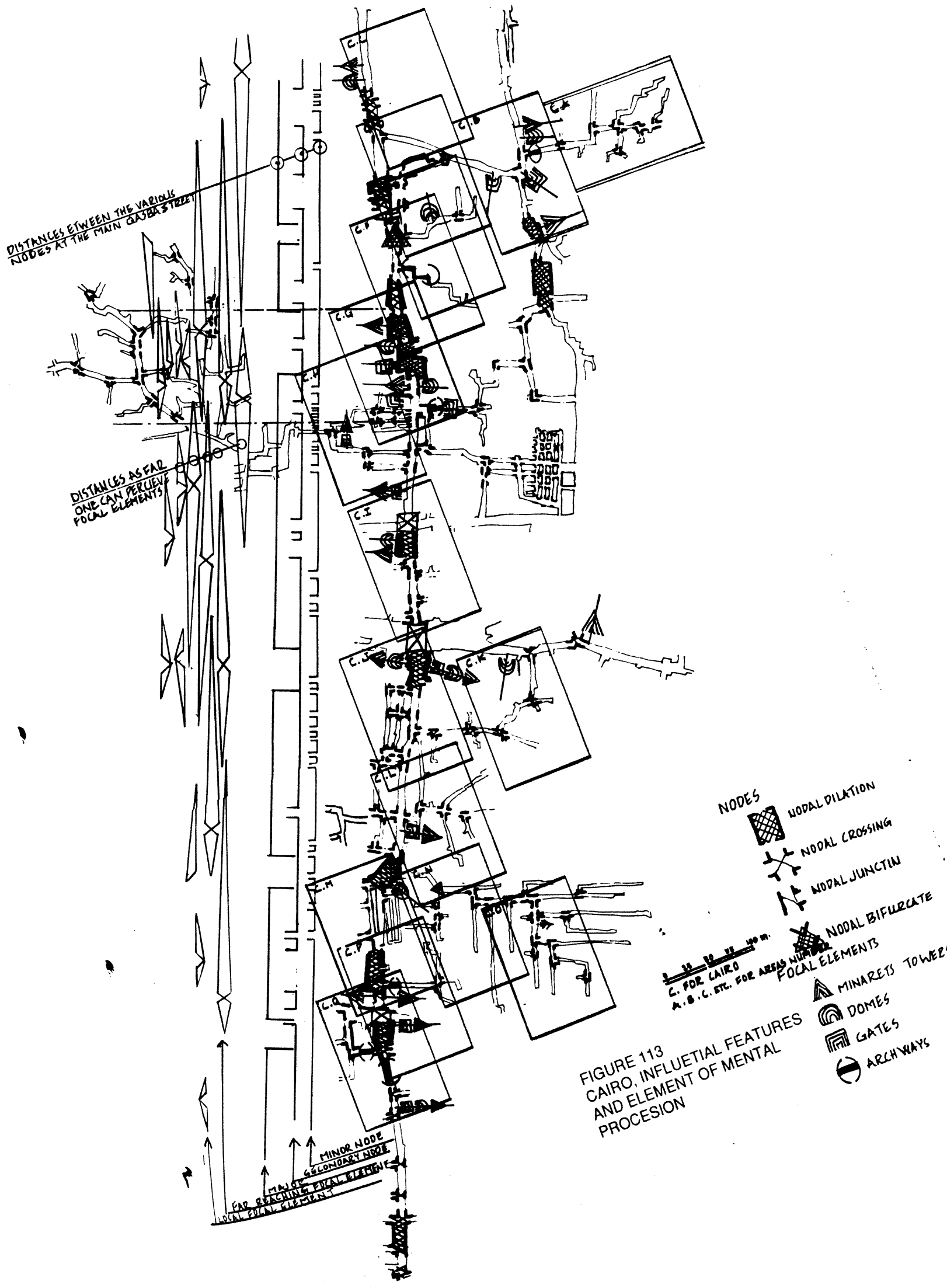


FIGURE 113
CAIRO, INFLUETIAL FEATURES AND ELEMENT OF MENTAL PROCESION

minaret associated with an elaborate gate lies clearly within one's vision, and thus places more emphasis on that direction than the other where the minaret is seen from beyond a shift in the alignment of the street see below p.310). Through Tambakshiya street area C.B., C.D. another elaborate minaret and gate followed by a succession of dilations and contractions and eminent elements, gradually transferring ones appreciation of the procession towards a higher street level, that is of the main Qasaba street.

The Qasaba street is dominated by a main node, falling in the place of the space between the two Fatimid palaces of old Cairo. That node was evolved to be the main visual as well as the psychological climax in the whole of traditional Cairo. It also forms a significant element in the movement transition from the northern side of the city to its southern side. Alternate disposition of major focal elements such as domes, minarets and gates provide further transitions within the node itself. This will be discussed later in the expressive dimension.

Minor nodes formed from space junctions appear unnoticeable except for three relatively modern cuts in the traditional tissue which have disrupted the coherence of the traditional procession. The first occurs in the middle of the mentioned node. However, here the wide street junction to the node has disturbed the formation of the spatial coherence, yet it adds to its influence. The second classified here as a crossing node lies in area C.I. known as al-Muski street and creates another strong crossing transition. The third, another modern street, al-Azhar, area C.I., C.J., lying in place of part of an original street has highlighted the influence of the space cross, yet disrupted the sequence of what was once a traditional procession. Further to the south two minarets disposed along the chosen route (areas C.J., C.L.), define visually and subdivide the length of the street and prepare an anticipation for its unseen context. Moreover it leads to another nodal transition (area C.M). There a dome on top of the curved wall of a drinking fountain spatially conforms to the shape of the node and slides one's vision to other space which lies further to the south. Part of the chosen route goes from the bent node, mentioned above, inside the Rum quarter east (areas C.N., C.O.). Unlike Aleppo's chosen quarter, which

is full of threshold transitions, in the Rum quarter the whole area is regularly arranged by 17 nodal junctions, except for two focal transitions which lie on our approach inside and outside the quarter.

Out of that quarter, through the previous node, towards the south (area C.L., C.O.),is highlighted by the elaborate gate of the Mu'ayd Mosque, its dome and its two minarets placed on top of the Zuwayla's gate towers and above all the threshold influence of the archway, clear influential transition between the inner city and its suburbs. Just outside the gate a nodal crossing is followed directly by another dilated space leads us to a complex of covered markets, which themselves form an introductory transition to the southern part of the city.

The processional sequence of the space nodes as well as the local features in both cases discussed above indicates that the distances between, and the types of these elements varies from a private street to a public one, that is then densities of and the occurrence of these features increases as one moves towards the centre. Here while the true depth of the public streets increases their visual depth decreases and separately extracted by the influence of the spatial features lying on its sides.Thus despite their prolong length they remain visually short, and goes shorter towards the centre culmination. On the opposite direction, while few local features occurs in private and semi-private spaces, they are already articulated into short-depth spaces.

Informative Transition

Spatial meaning, by which one initially reads a space and eventually defines its level, is more than three-dimensional blank walls. Awareness of space depends on an accumulation of messages and information within one's subjective space. However apart from the two dimensional physical information discussed above, levels of spaces can be manipulated by sensory information which may be visual, acoustic, olfactory, thermal or whatever. Since our concerns at this stage are mainly directed to those physical and visual aspects of the space, its correlative arrangement and expressive appearance, the different space levels will be further studied in the context of their informative transition, that is information necessary to interpret the contextual

transitions between spaces. In our case here these informative signs are the available cues from permanent architectural elements such as windows, screens, doors, gates, etc. The main role of these elements is to communicate with and to transfer information to other spaces which lie beyond the circumference of the open spaces, and these are therefore termed elements of informative transition. These elements are facilitated by a number of design cues with which the person has learned to associate them and thus the act of interpreting the meaning of these elements as transitions to different internal spaces of different types of buildings also applies to the open spaces these buildings inhabit.

In the Islamic city these elements are revealed and arranged in accordance with one's desire either to display, or screen, or completely hide related events or information. However the variable ideas termed previously as the Muslim way of life are the result of various codes of conduct such as privacy, modesty, seclusion, interrelations, and integration, rather than to any classified decree. The interpretation of these ideas can be classified under behaviourial conduct attributable to Islamic precepts (see above p.15) and practical or functional conduct, related to communal and public activities. These conducts when interpreted into elements of sensory information come to affect not only the arrangement, size and location of these elements but also the external spaces closely associated with them. These external spaces, referred to as **Fina'**, are provisional parts of the open space or street which are usually associated with openings. However, the owners of the openings of the buildings do not own these areas outright but they have a first claim to use them for their own purpose, privacy or other means which would not contradict or endanger others' rights or interests.

In the following study of the chosen sectors of Aleppo and Cairo, we will discuss these elements in their collective arrangement while individual cases will be illustrated. In Aleppo, as in the Islamic city in general, doors, gates and even windows were highly manipulated between the different levels of space. Doors for residential use (see Fig. 114) were strictly located on side streets or dead-end alleys. In

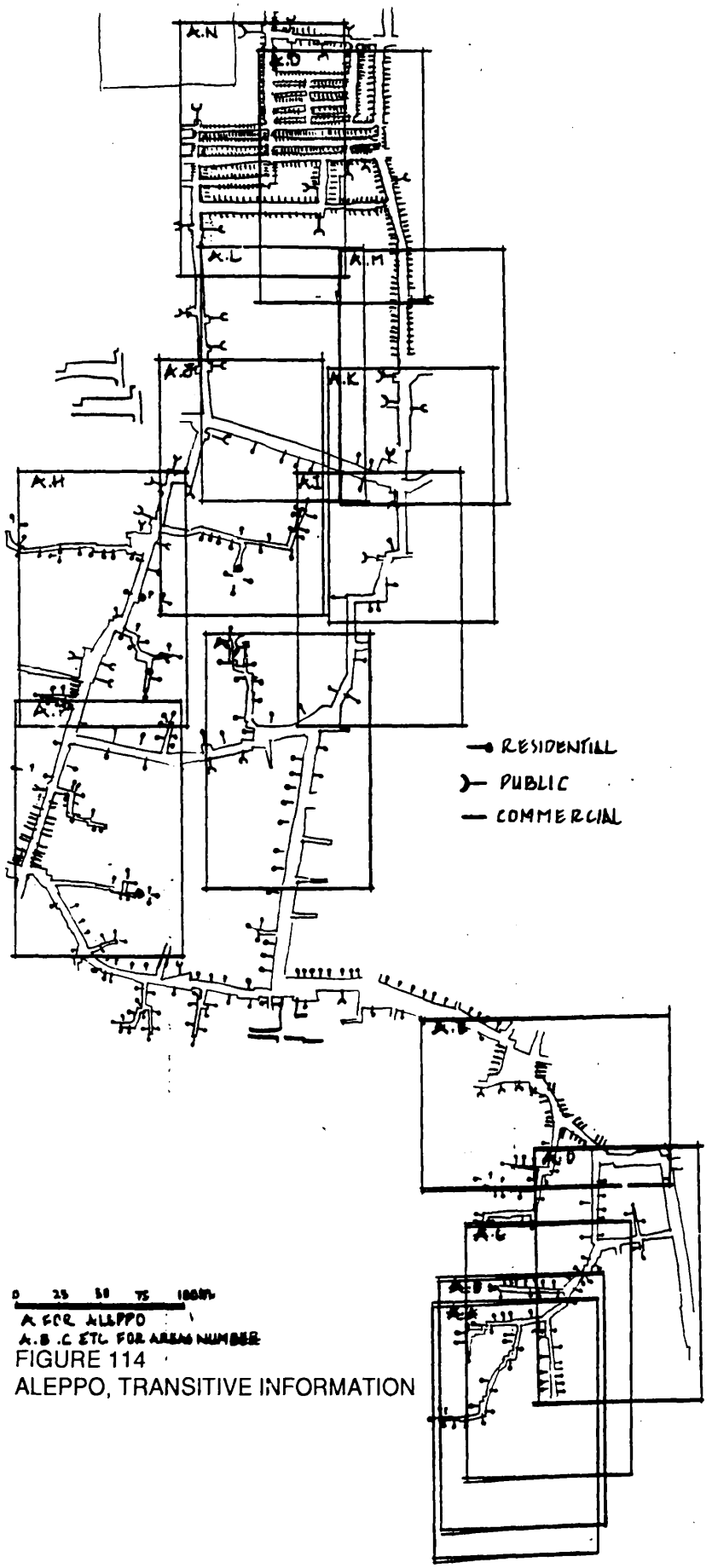


FIGURE 114
ALEPPO, TRANSITIVE INFORMATION

the case however where a residential unit is located on two streets of different levels, doors were located on the lowest level. Along with this notion, dead-end alleys and the furthest reaches of these streets were preferred to thoroughfares or streets with a clear openness.

Further on, the number of doors giving access to residential units increases relatively as one proceeds towards lower levels and dead ends. While only three residential doors are located in the public street between Qansrin gate and the central market, a stretch of about 300m, on two dead-end streets, 6 and 12 residential doors were found respectively in a distance of about 20 and 40 meters. Similarly but in the public use, shop numbers and density increase as one proceed from lower levels to higher ones. This will be further explored under the spatial domain later. The distribution of doors was manipulated not only between the different space levels but also within the one street and between the houses. Special doors located in the courtyards of the houses and used by women and near relatives and neighbours, gave access between the associated houses and created counter movements to the outer streets. External doors were incorporated between themselves in a way that the one door was not placed opposite to another. This arrangement on the one hand resulted from concern for privacy and on the other prevented conflict of interest between the use of the opposite **Fina**'s. The concept of the **Fina'** pervaded throughout the various space levels. In public and semi-public streets all public and religious buildings as well as shops etc. have had preemptive of use over the areas near their openings, while in the public spaces the **Fina'** gave shop-keepers external places in which to display their merchandise and products. In private and semi-private streets it provided the owner of the houses not only with external provisional spaces to manipulate the surroundings on the ground level but also with opportunities to extend their houses and windows over the external spaces. Both practices furnished the various streets and spaces with different informative transitions, and thus contributed in part to the distinctive character of the Islamic city, its markets and residential quarters.

Apart from the information obtained from the doors of the houses, private spaces and semi-private spaces in Aleppo are nearly always

surrounded by blank walls. The number and size of windows on ground floor levels were kept to the minimum and if they were used, they are placed in positions that were hardly seen or in inexposed surfaces and above the level of the vision of the passer-by. Bigger windows but still relatively small in size and number on upper floors were arranged to prevent exposure of inner information or intrusions on opposite houses or other windows if any existed. In wider and higher levels of streets, other types of window projecting in the form of latticed screens appeared frequently and give hints of a mixture between private and public use.

In Cairo (see Fig.115) relatively modern private and public buildings, although constructed on the property lines of the traditional spaces and streets, yet radically changed and transformed the image of these spaces. Comparing the new image of the few remaining traditional buildings with the new ones it is obvious that the information obtained in these spaces is drastically changed so that it would not convey a true picture of the traditional context. For this reason when new images are discussed they will be presented in comparison with traditional ones.

In general, the informative transition in Cairo received from doors, gates and shop openings almost corresponded with that discussed in Aleppo (see Fig.114) yet unlike the largely blank walls of Aleppo, window openings occurred repeatedly in private and semi-private streets and breached the needs of a restricted informative transition between external and internal spaces. Modern multi-storied residential buildings with no open courts have intensified the level of information in these spaces into chaotic images. Nevertheless in areas where traditional buildings and images have survived modern changes, the information is screened behind lattice windows (Mashrabiyas). Windows on ground floor levels are scarce and if present they were kept like those in Aleppo above the vision of passers-by. The size and number of windows increases from the lower levels upwards and also the projection of the oriel windows tended to increase from lower levels to upper floors.

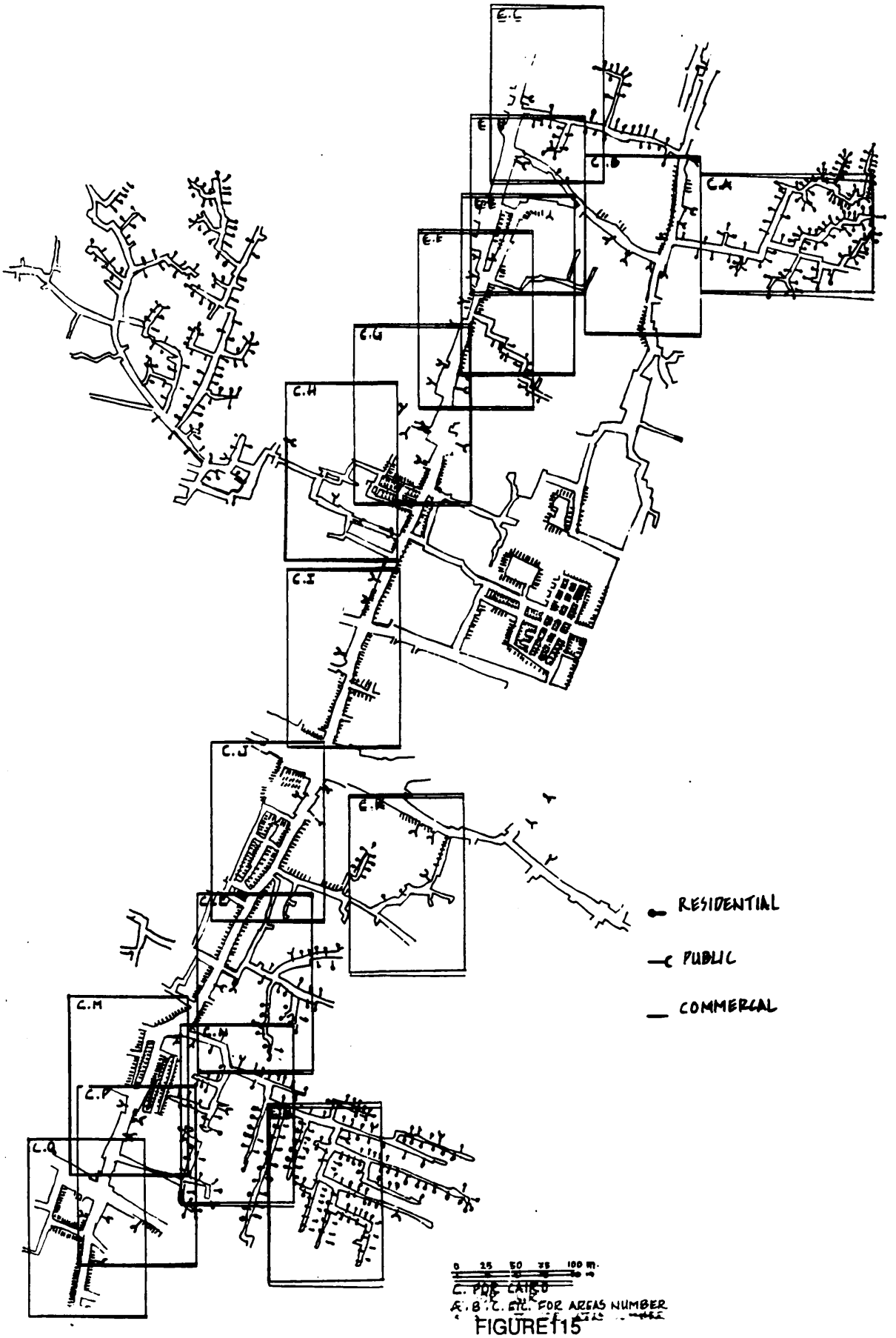


FIGURE 15
CAIRO, TRANSITIVE INFORMATION

In summary, the amount of information in different space levels increases as one proceeds towards the centre of the Islamic city. This change can be observed in the increase in size and elaboration and design of windows, doors, gates, porches, domes and minarets, which imbue each space level with cues of meaning and stimulus. Although the transition between elements of information and arrangement leads one hierarchically from one space to another, nevertheless spatial domains and urban components are another characteristics arrangement in traditional Islamic cities.

Spatial Domains and Urban Components

The previous exercise tackled the Islamic city fabric as consecutive spaces rather than a set collection or composition of parts or elements related to each other. However it is not the intention here to present a separate exercise but rather to analyse further the city's fabric from another approach.

MONTEQUIN concluded that the Islamic city lies in the middle between the public city of the Greek *polis* or Roman *civitas*, of the so called Classic Antiquity, and the "domestic", ruralized settlements of Northern Europe[23]. The Islamic city presents a combination, integration and at the same time differentiation between the public and private domains. The concept of bringing the contrasted two domains within the one composition persisted and evolved throughout the Islamic city's evolution. In the city as a whole it created distinctive and controlled domains - the central area or possibly areas; the intra-urban cellular parts and the peripheral components. Yet at the level of the elements it particularized an outer (**zahir**) and the inner (**batin**) domain.

Central and the Market Domain

The central component of most cities in traditional and modern times is the area or areas mainly manipulated by commercial and public activities. The Islamic city is not an exception, yet the concept and organization of its markets and its spatial arrangement is unprecedented.

However, in the first, second and most of the third phases of the Islamic city's evolution, the central areas had included administrative buildings. It is in the fourth phase and thereafter when those buildings were replaced by others located in citadels and fortresses. For this reason the central part in nearly in all Islamic cities in later stages became mainly comprised and dominated by the markets, and commercial and religious buildings.

> "The Bazaar (market) is the most distinctive characteristic of the Islamic city. It is the control centre of the city's economic as well as that of the hinterland. There was nothing like the Bazaar in pre-Islamic times or in other civilizations. Here, wholesale and retail trade, the crafts and industry as well as banking are concentrated. All of this is arranged as a spatial contiguity and organizational whole. The Bazaar can developed linearly, that is along the intra urban main axes or it can spread over the centre of the city. In most cases we find a combination of both types. Behind the shops and workshops of the Bazaar there are the caravansaries, the establishment of the long-distance and wholesale trade, the courtyards for the craft and industry warehouses and offices" [24].

Products and retail activities are exhibited concentrically, in an arranged hierarchy fanning outwards from the centre of the markets usually where the Friday Mosque is located, to the edge of the markets and in some cases outreached as far as the urban outskirts [25].

The spatial organization and underlying hierarchy in the market depended on:- the size and location of the trades, merchandise and products; the size and location of shops accommodating this merchandise; the length and width of the spaces and streets between and in the markets; the type of junctions and successive repetitions of these streets.

Hierarchy in Trades and Merchandise and Products Distribution

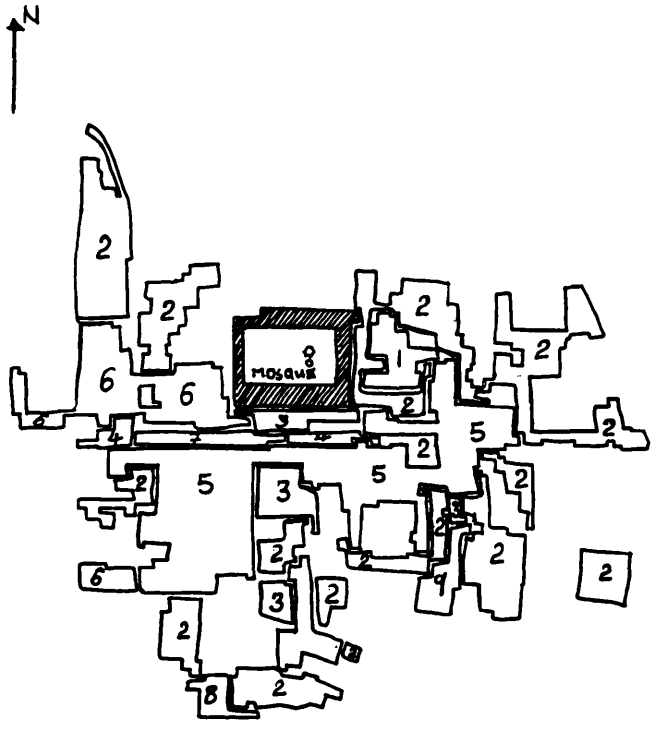
The central markets in Aleppo present one of the living examples of the disposition of a hierarchy according to products and trades. Although the contemporary distribution does not represent exactly the exact controlled arrangements applied in the market in traditional times, yet it does reveal a good deal of the underlying hierarchy implemented in previously.

Hierarchy in Size of Products and Types of Trades

Near the central mosque of Aleppo, products and trades of small size such as gold smith and jewellers, leather products and book sellers and binders, perfumes and religious accessories comprised the first level in the hierarchy. Next in size and location were raw silk materials, cloths, textiles and clothes, food products, kitchen and household goods. Next, raw cotton and wool, carpets, and furniture , carpenters and woodwork, then animals and horses markets and accessories, followed by soap-makers, coppersmiths, blacksmith, and at the edge of the markets, that is at the city periphery, were the space-consuming and unpleasant industries such as pottery, dyeing and tanning (see Fig.116).

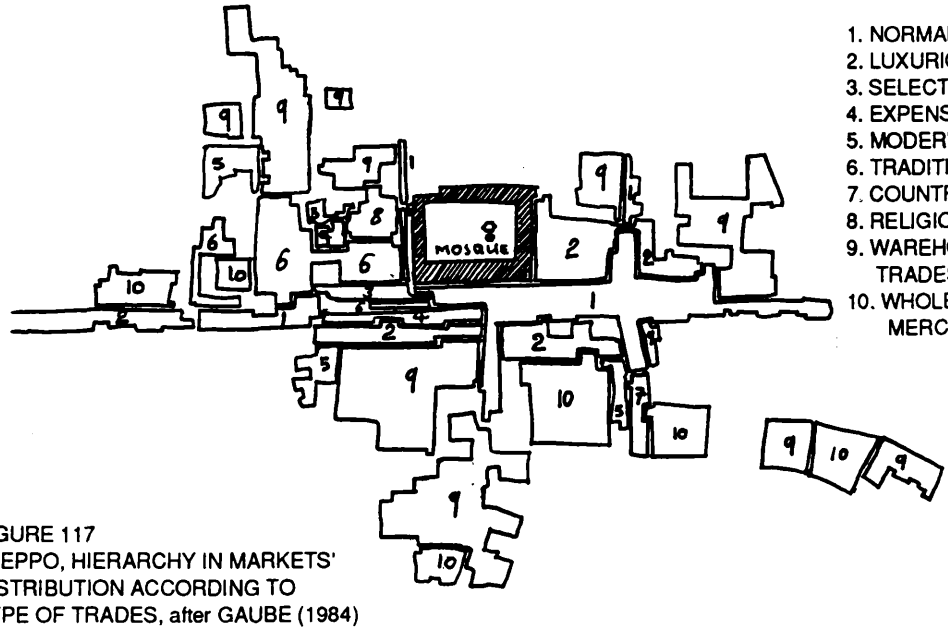
Similarly types of trades and crafts were arranged in hierarchical arrangements. Prestigious and expensive retailers and artisans acquire the central areas second warehouse and crafts, third whole sale and assembly workshops and forth country and national trades and industries (see Fig. 117).

Radical change in the distribution of trades and craft and the arrangement of market in the last decades in old Cairo, do not allow us to implement a survey similar to that of Aleppo. However, modern trends of touristics industries in the old city show a revitalization of such hierarchical arrangements; yet the markets are not really the same as the traditional ones. To backup Aleppo's example, two other case studies will be presented from traditional Fez and Tunis (see Fig.118).



1. GOLDSMITH PRODUCTS
2. DRESSINGS PRODUCTS
3. LEATHER AND FOOT WEAR PRODUCTS
4. KITCHEN PRODUCTS
5. TEXTILE AND CLOTH PRODUCTS
6. SACKS PRODUCTS
7. FOOD CONSUMING PRODUCTS
8. SOAP PRODUCTS
9. RAW COTTON AND FLAX

FIGURE 116
ALEPPO, HIERARCHY IN THE MARKETS' DISTRIBUTION ACCORDING TO THE SIZE OF PRODUCT, after GAUBE (1984)



1. NORMAL RETIAL TRADES
2. LUXURIOUS RETIAL TRADES
3. SELECTIVE TRADES
4. EXPENSIVE RETIAL TRADES
5. MODERN CRAFTS
6. TRADITIONAL CRAFTS
7. COUNTRY TRADES
8. RELIGIOUS BUILDINGS
9. WAREHOUSES FOR LUXURIOUS TRADES
10. WHOLESALE TRADES AND MERCHANTS DEPOTS

FIGURE 117
ALEPPO, HIERARCHY IN MARKETS' DISTRIBUTION ACCORDING TO TYPE OF TRADES, after GAUBE (1984)

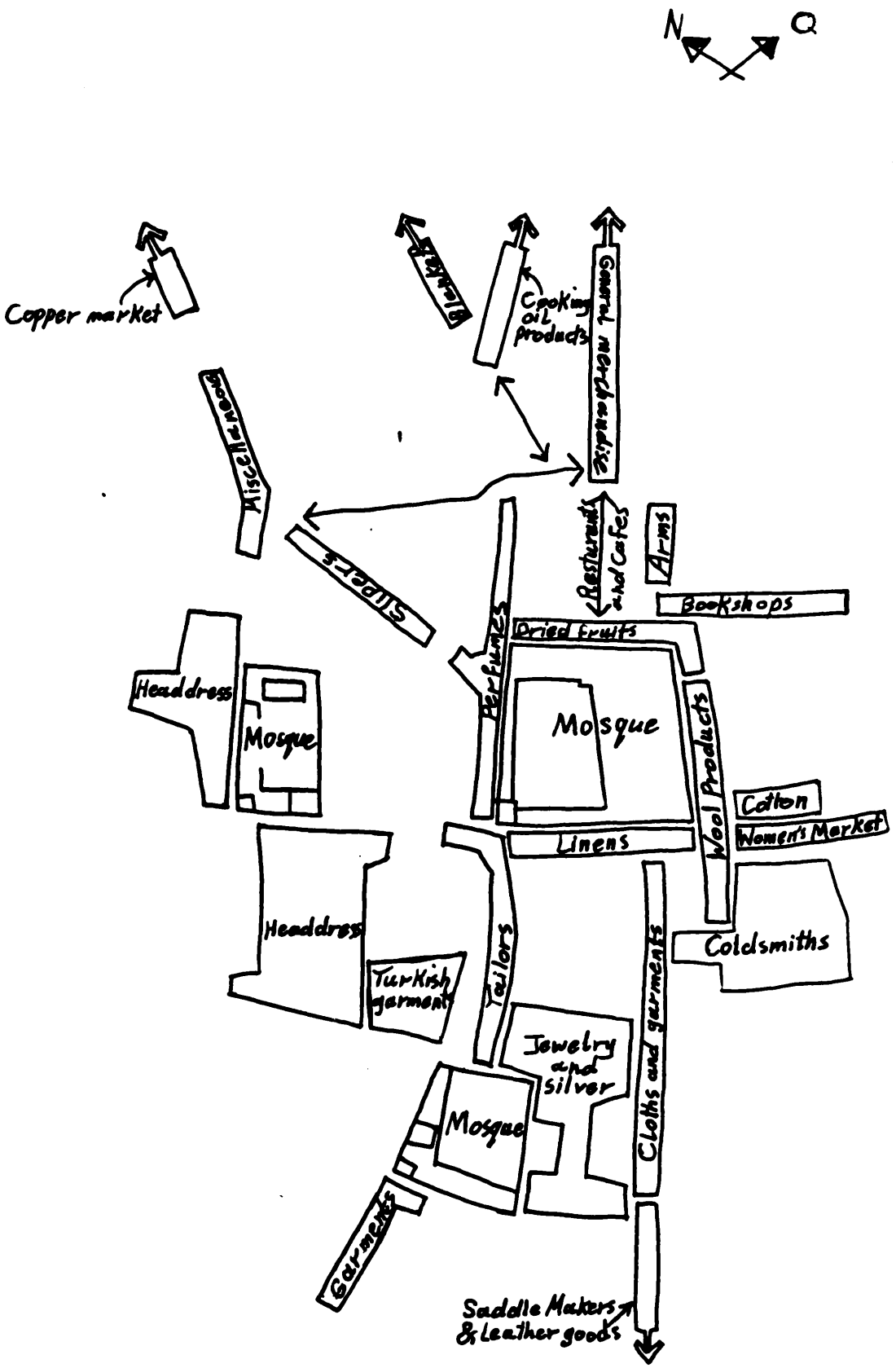


FIGURE 118
TUNIS, MARKETS DISTRIBUTION
ACCORDING TO TYPE AND SIZE OF PRODUCTS,
after HAKIM (1986)

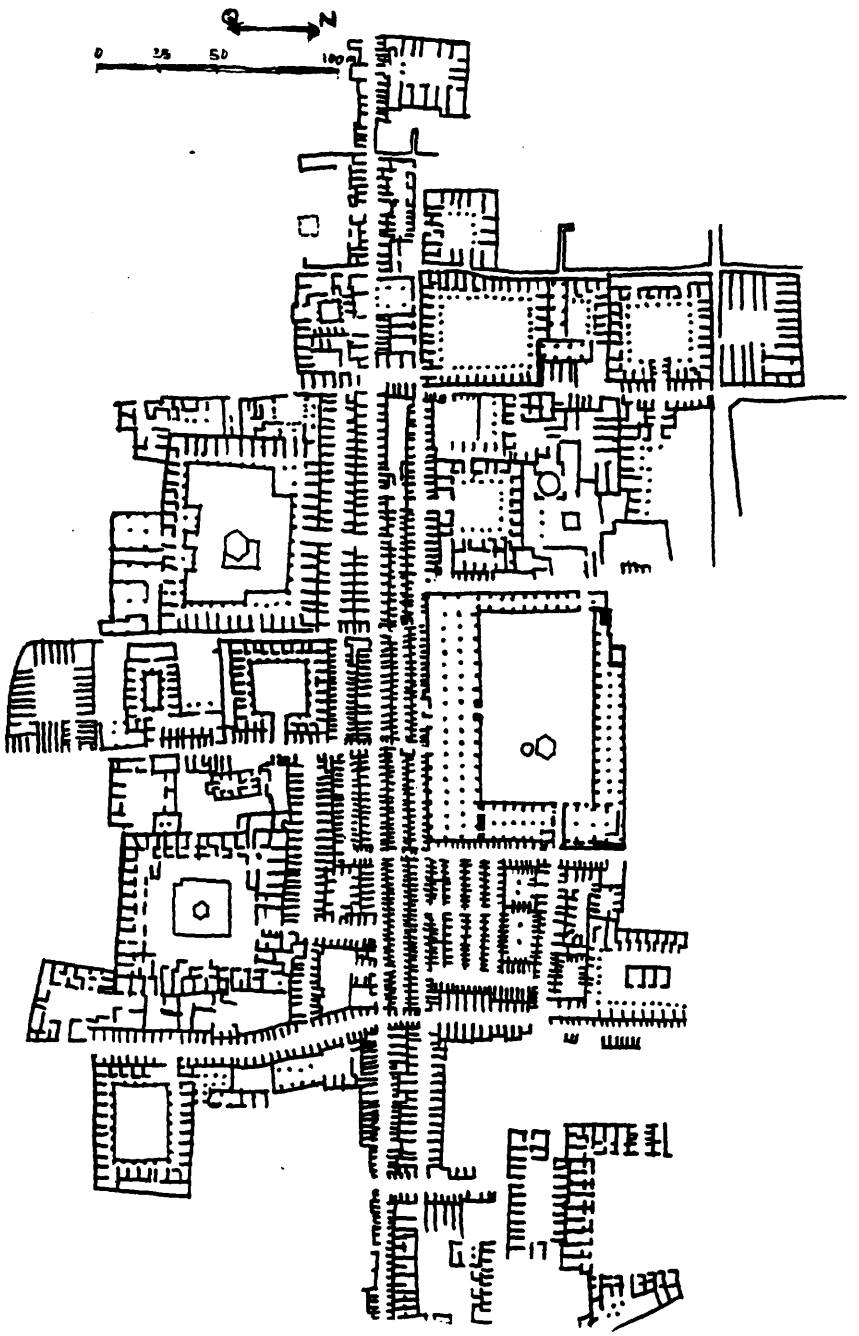


FIGURE 119
ALEPPO, HIERARCHICAL DISTRIBUTION OF SHOPS ACCORDING TO THEIR SIZES,
after GAUBE (1984)

Hierarchy in Size and Distribution of Shops

The size of shops and distribution, corresponded to the size of the products and trades. In Aleppo (see Fig.119) small size shops of about 2.0m x 2.0m overwhelmly occupied in areas surrounding the mosque. These were mainly distributed in lines of the same approximate size, that is 5m - 30m long. Shops of about 3.0m x 5.0m came next in size and location. Shops of variable but bigger size, about 5.0m x 5.0m - 15.0m, were allocated to shops selling raw materials, carpets, furniture and warehouses and wholesale markets, and were located at the edge of the central markets and on the periphery of the city.

Similarly but not as clearly as that of Aleppo, the sizes of shops in Fez ranged from 2.0m x 3.0m near the Qarawanian Mosque to 3.0m x 6.0m and 5.0m x 16.0m on the edges of the markets (see Fig.120). In Tunis the tendency of size gradation gradually increases in areas and not in lines as in Aleppo. From the southern corner of the Zaytuna Mosque of the qibla side, shops of 2.0m x 3.0m - 5.0m gradually increase to 5.0m x 15.0m on the western corner of the mosque. Medium sized shops of about 3.0m x 5.0m - 10.0m were allocated to the northern and south-eastern sides of the mosque and beyond. (see Fig.121) In Tunis different sizes of shops do not encircle the mosque hierarchically but are rather distributed in groups. Thus distribution of products of similar or related sizes are arranged in groups rather than in lines.

Hierarchy in Streets and Spaces between the Markets

Spaces in the markets of the traditional Islamic city are either linearly distributed in street markets or encircle a courtyard as an enclosed market. However spaces between the markets, like the shop sizes tended to correspond to the hierarchical arrangement of the products and trades. Thus a tendency towards a spatial hierarchy in the streets and spaces in the markets can be detected in the width, length and repetition of street-markets and the size of courtyards.

In Aleppo, the width of streets between the shops increases or decreases according to their position near to or of far from the centre (see Fig.122) also the junctions or repeated crossings between the different street-markets increase relatively in size and number towards

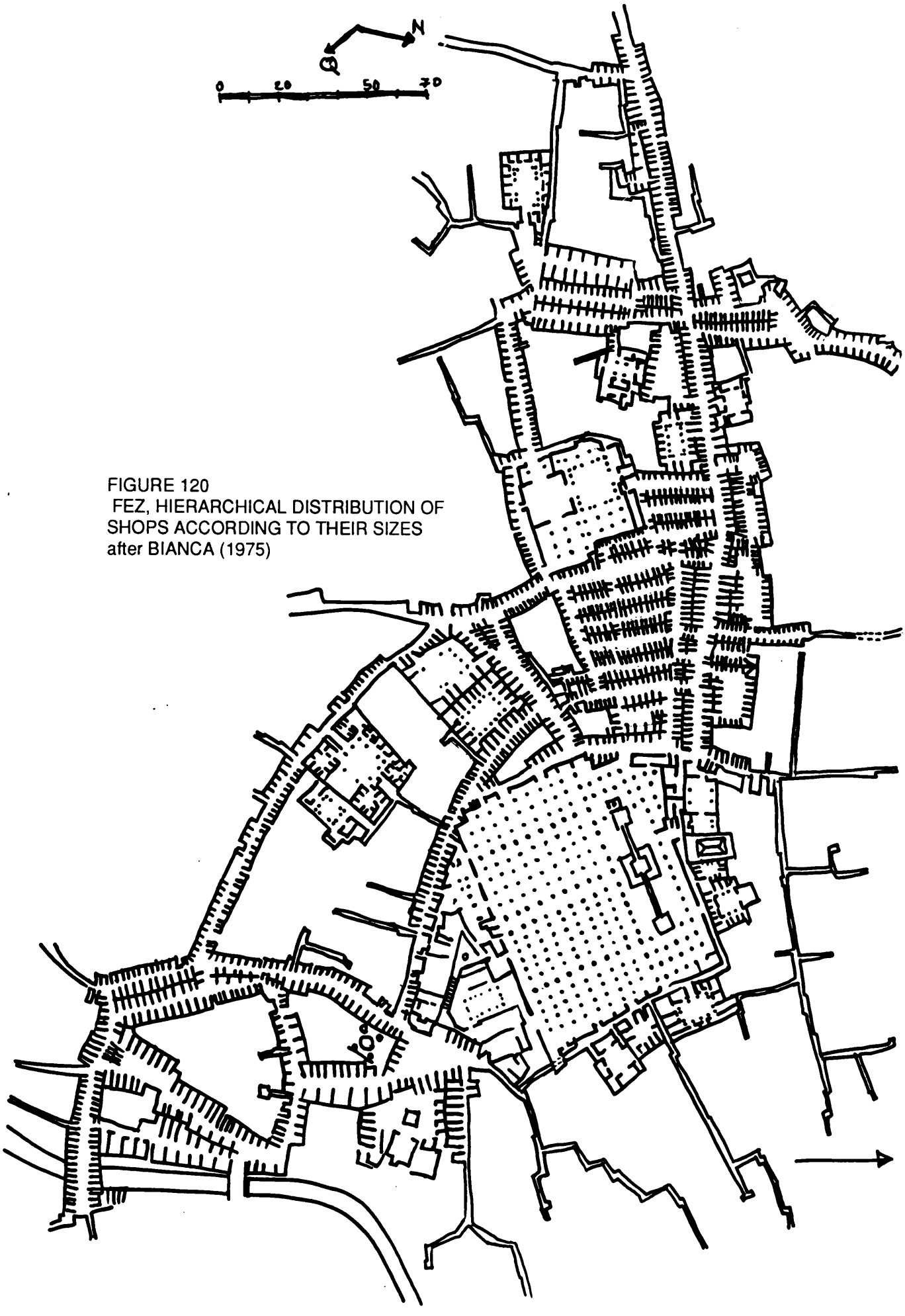


FIGURE 120
FEZ, HIERARCHICAL DISTRIBUTION OF SHOPS ACCORDING TO THEIR SIZES
after BIANCA (1975)

FIGURE 121
TUNIS, DISTRIBUTION OF SHOPS
ACCORDING TO THEIR SIZES,
after HAKIM (1986)

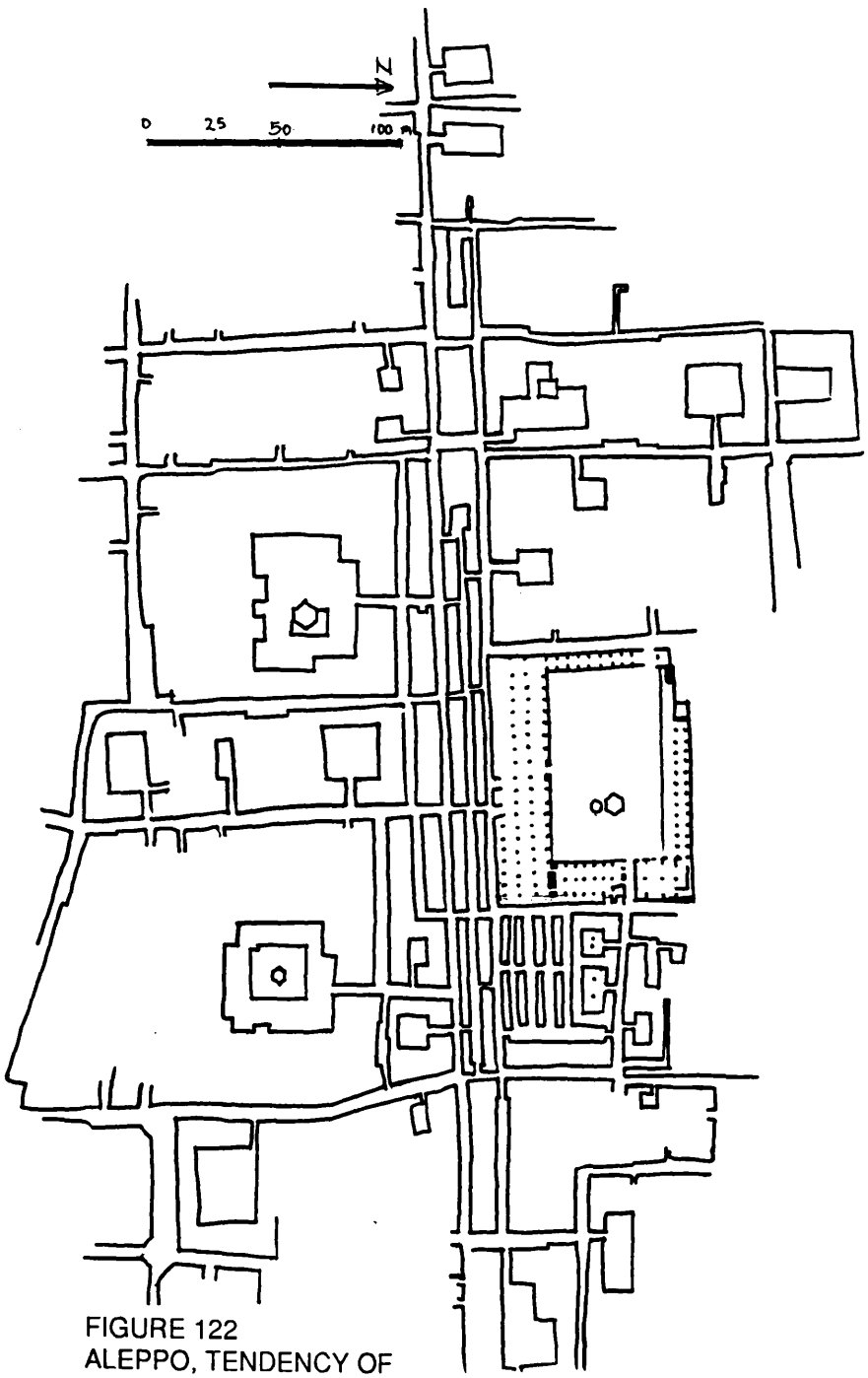


FIGURE 122
ALEPPO, TENDENCY OF HIERARCHY IN THE WIDTH AND SIZE OF STREETS AND COURTYARDS BETWEEN AND INSIDE THE MARKETS

the centre. Also the length of these streets between the junctions decreases towards the centre and is correspondingly longer further from it. Similarly were the sizes of the enclosed courts of the Qaysariyas, Khans, Wikals and Funduqs as small as 9.0m x 9.0m in areas near the mosque and in the centre of the market. The exception is the court of the mosque. The size of the courtyard increases to 30.0m x 30.0m and in some cases 50.0m x 50.0m further from the centre. However that does not exclude the possibility of having small sized courts in local areas far from the centre. But the general tendency, is that they gradually increase or decrease in accordance to their location near or far from the centre (see Fig.123).

In Fez and Tunis, the tendency of a hierarchical increase and decrease in street widths, and the length of street-markets in between junctions is not as clear as that of Aleppo yet it can be detected. Also a change in the size of the market's enclosed courts can equally be detected (see Figs.124, 125, 126, 127).

In the three models discussed above, as in Cairo, a tendency is apparent towards an orthogonal and grid arrangement of spatial regularity, simplicity and regular repetition corresponding to the nearness to the central part of the city and its market. There also is a gradation in the sizes of products, trades, shops, and the spaces between these shops which almost coincides and corresponds to the other arrangements. To generalize about the hierarchical concepts in the majority of Islamic cities, however, needs thorough investigation. Further models of similar arrangements are presented here in the form of plans but with no discussion (see Fig.128).

In an attempt to explain the spatial concepts of the markets in the Islamic city in general and in Aleppo in particular and how they came to possess these forms SAUVAGET synthesized a hypothetical illustration in which he referred these concepts to gradual encroachments on the Roman public street system (see Fig.129)[26]. However from the evolution of the commercial framework p201-2. and the markets distribution discussed above, which included markets built by Muslims with no pre-Islamic foundations, it is rather obvious that these concepts and

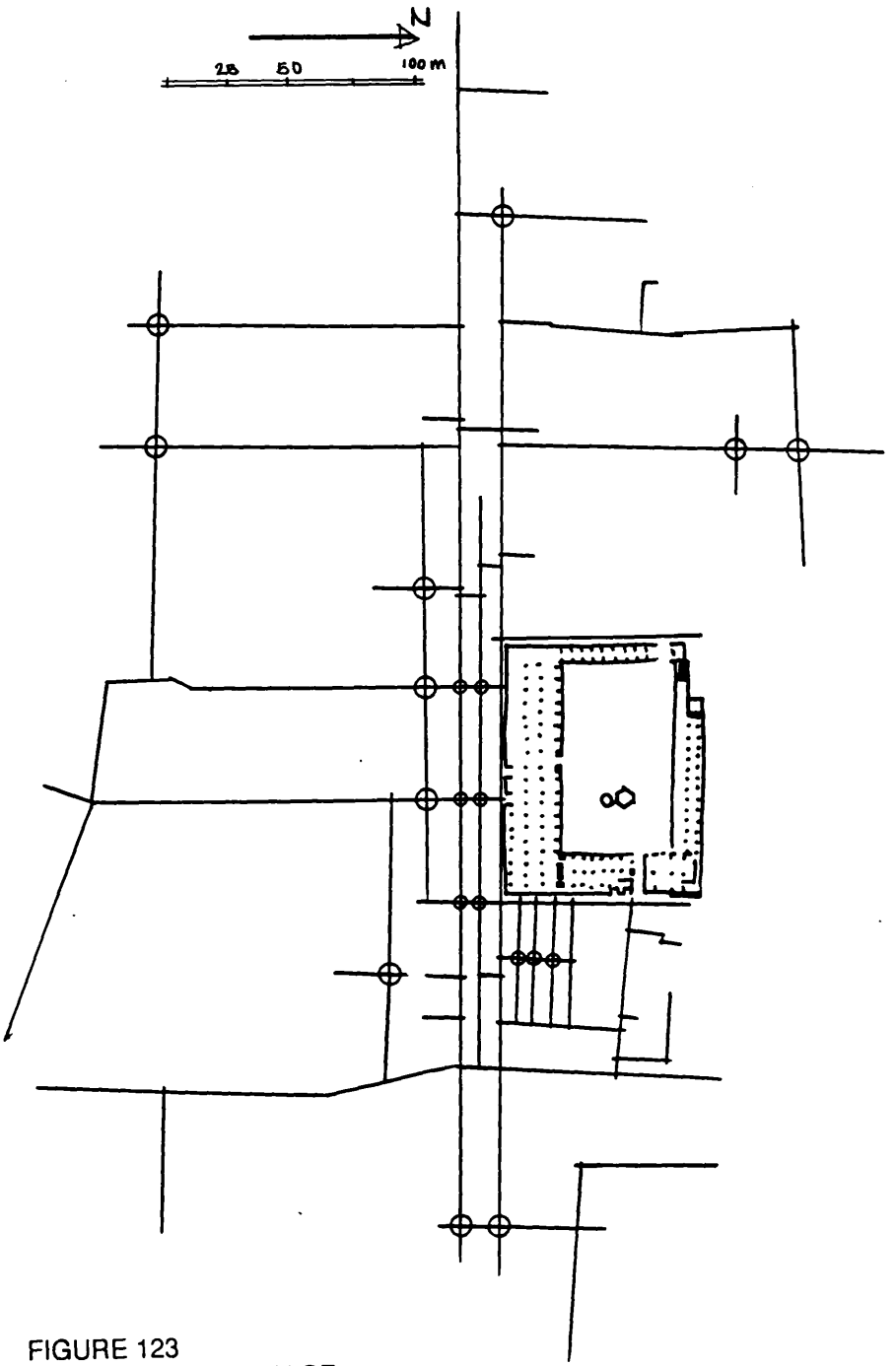


FIGURE 123
ALEPPO, TENDENCY OF
HIERARCHY IN THE LENGHT
OF STREET-MARKETS BETWEEN
THE CROSSINGS OR JUNCTIONS

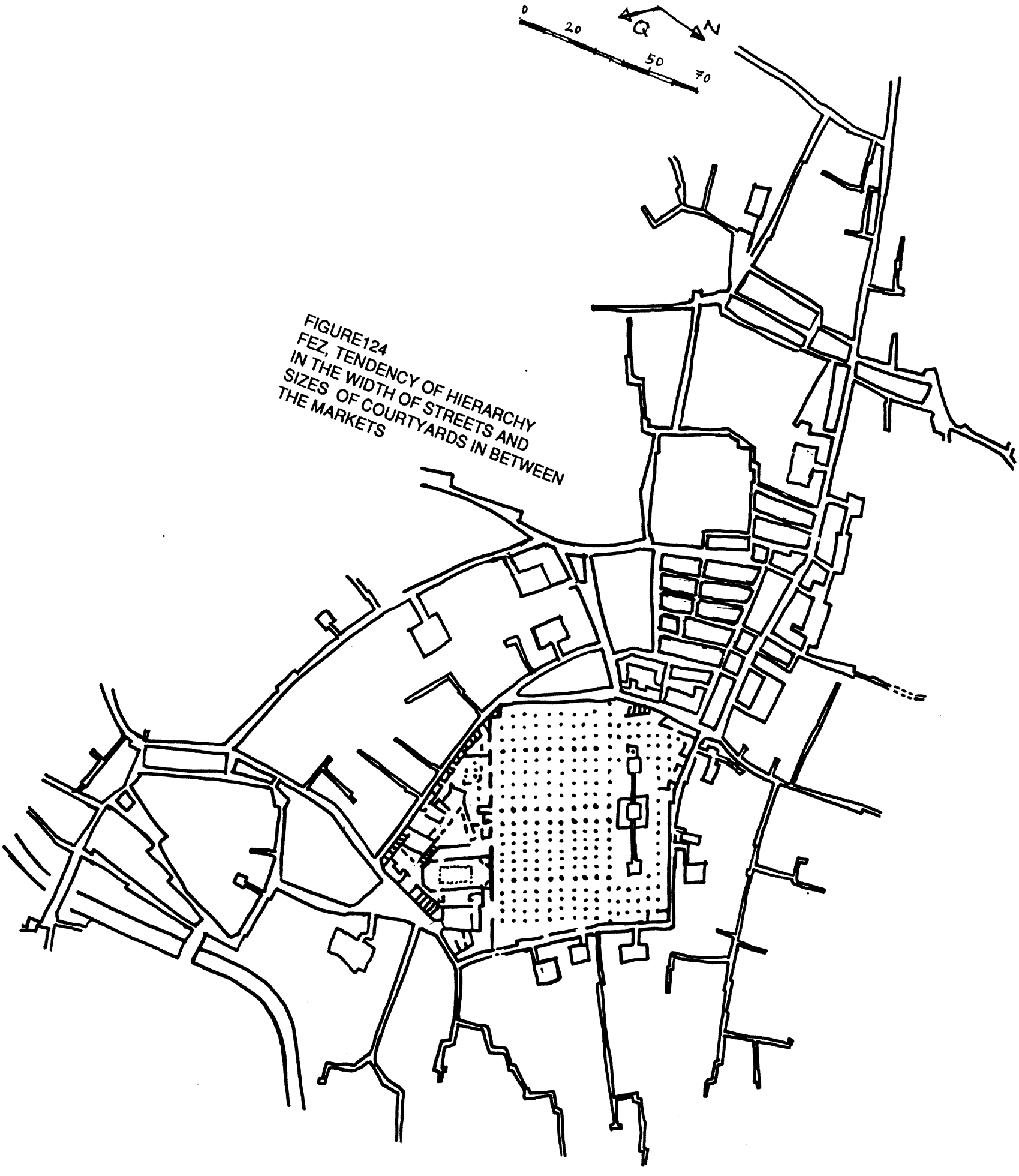


FIGURE124
FEZ, TENDENCY OF HIERARCHY IN THE WIDTH OF STREETS AND SIZES OF COURTYARDS IN BETWEEN THE MARKETS

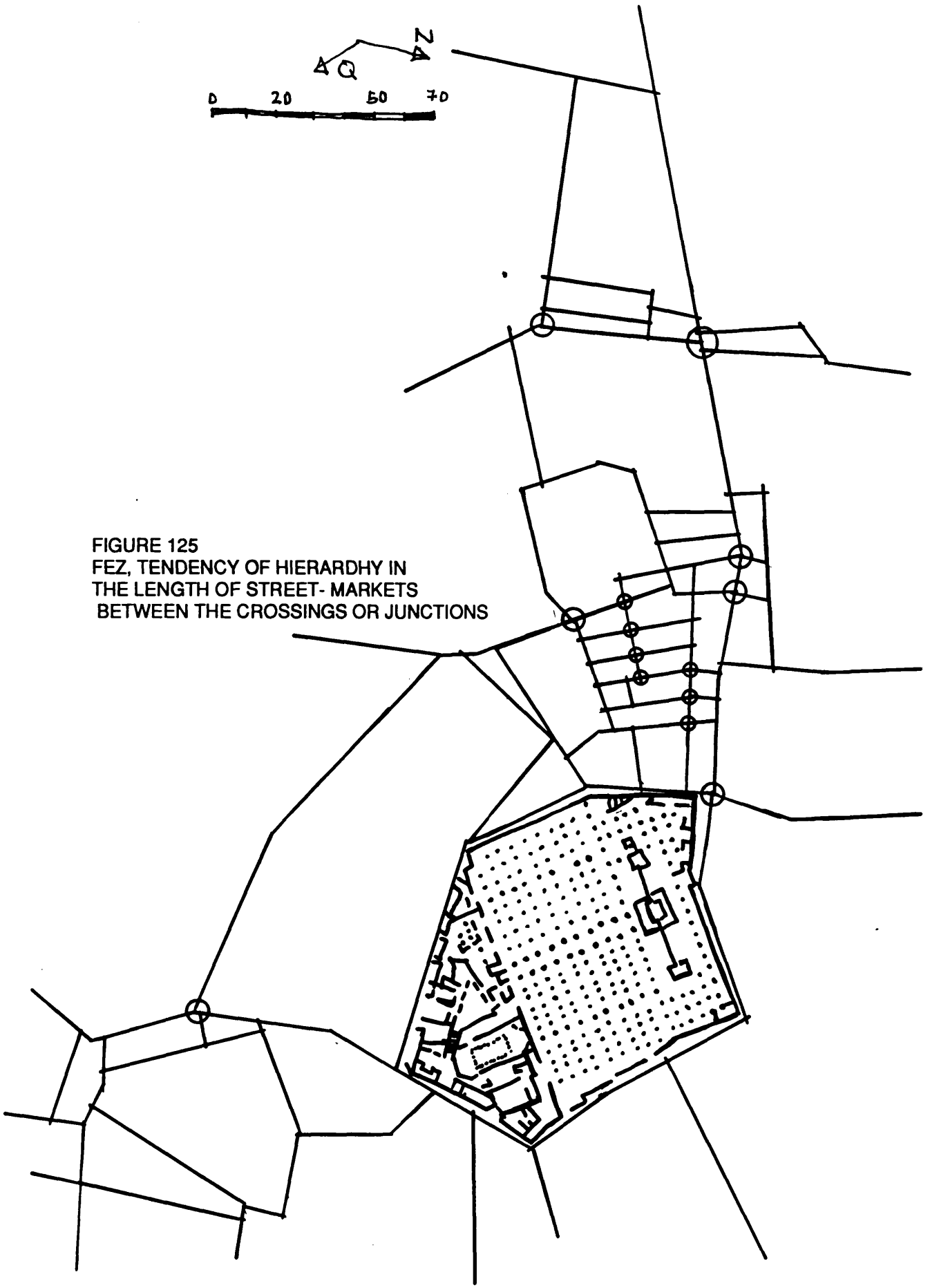


FIGURE 125
FEZ, TENDENCY OF HIERARDHY IN
THE LENGTH OF STREET- MARKETS
BETWEEN THE CROSSINGS OR JUNCTIONS

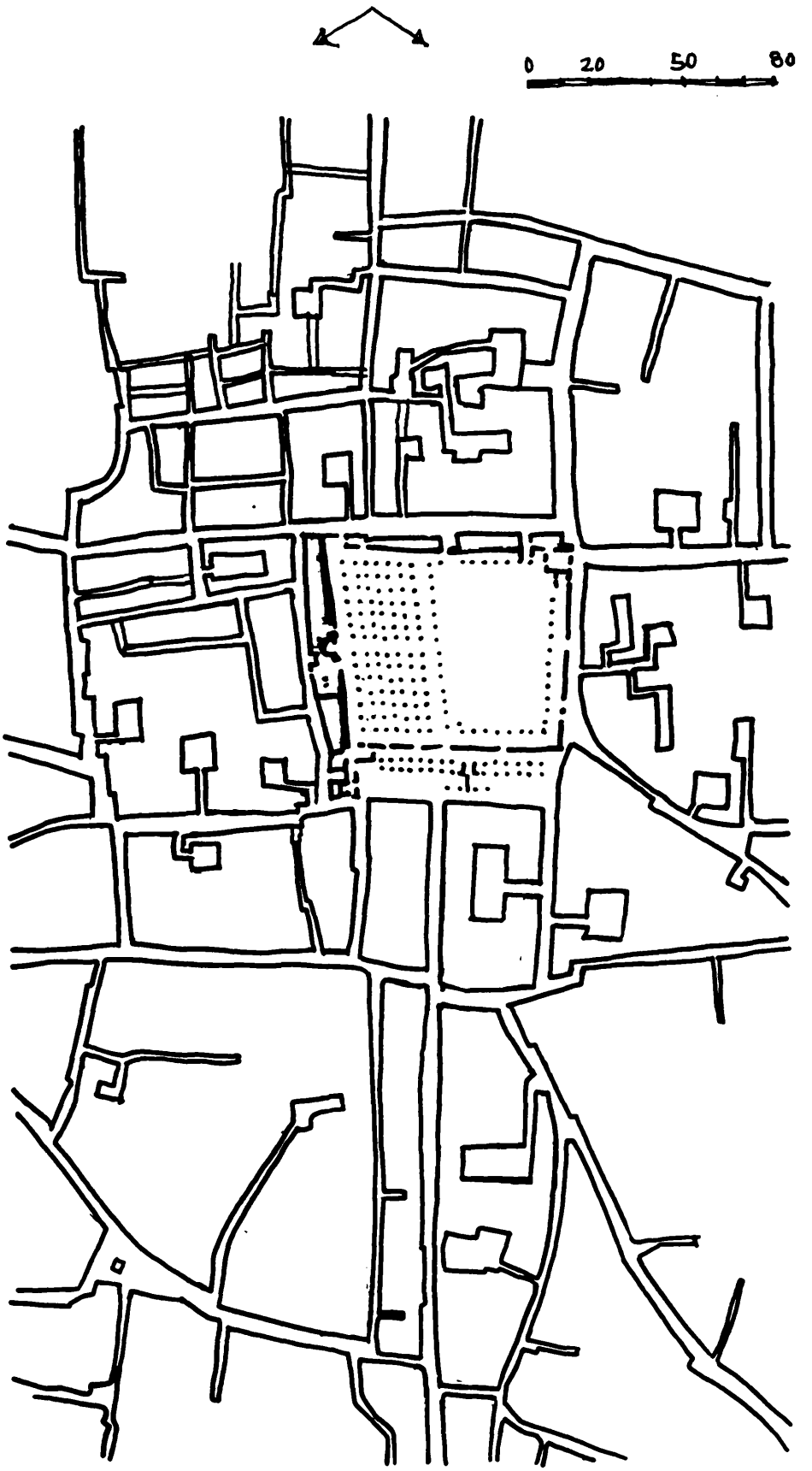


FIGURE126
TUNIS, TENDENCY OF HIERARCHY
IN THE WIDTH OF STREETS AND SIZES
OF COURTYARDS IN BETWEEN THE MARKETS

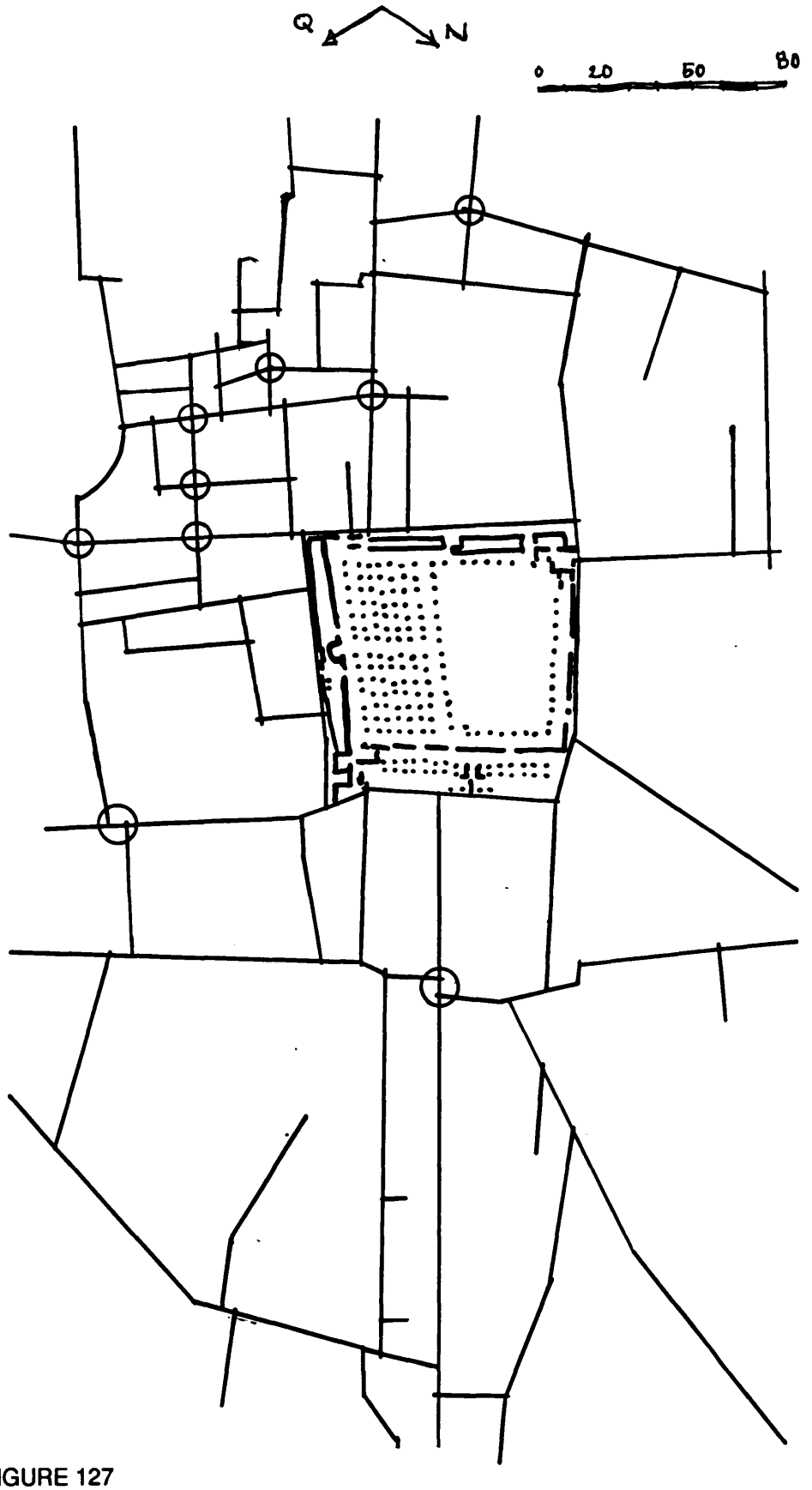


FIGURE 127
TUNIS, TENDENCY OF HIERARCHY
IN THE LENGTH OF STREET-MARKETS
BETWEEN CROSSINGS AND JUNCTIONS

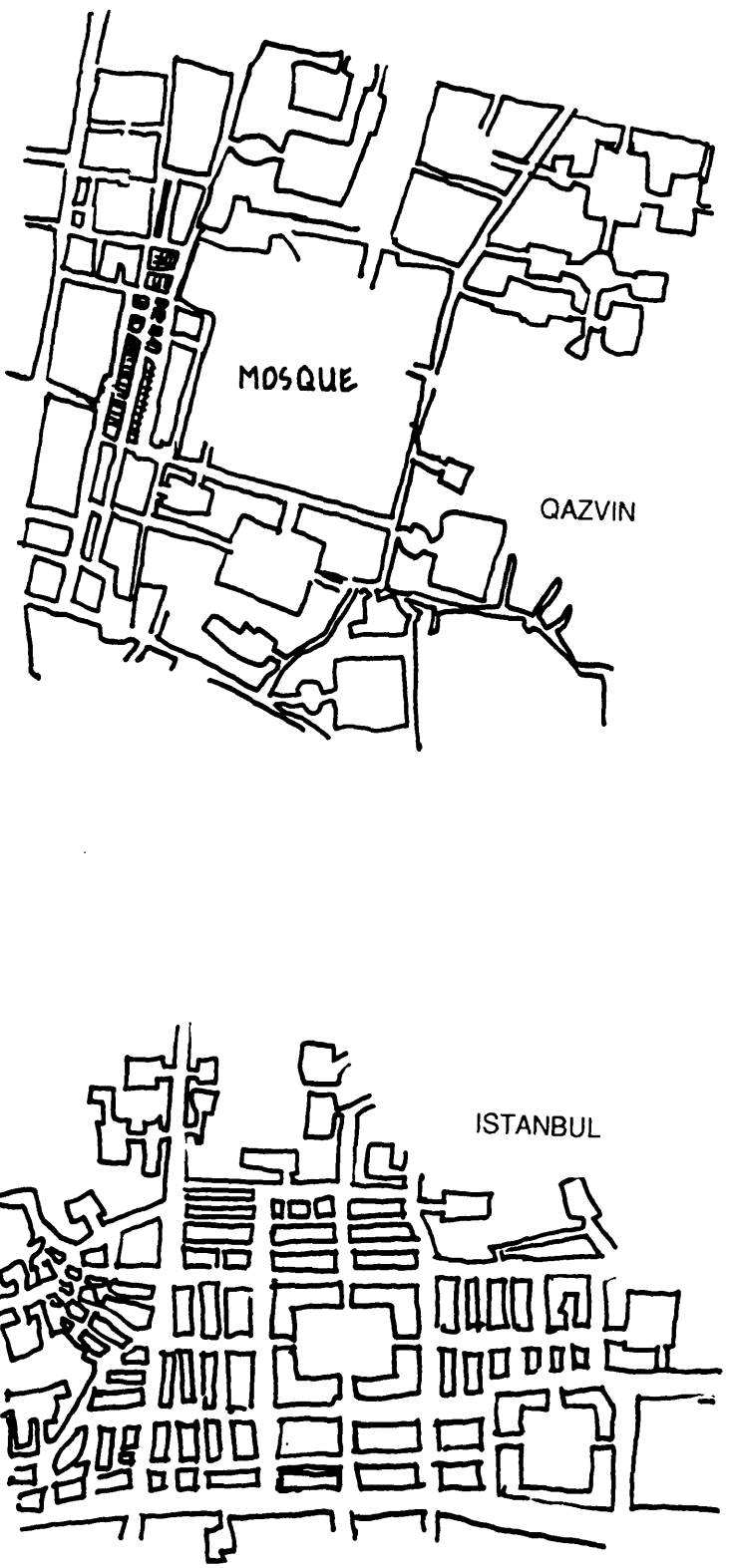


FIGURE 128
QAZVIN, AND ISTANBUL MARKETS
after WIRTH (1974,1975)

arrangements are neither limited to the modest observation presented above nor as simple as Sauvaget's hypothetical conclusion. In addition, any elaborate study needs systematic and precise measurements which are beyond the scope of this study.

The Centre of The Centre

Within the compositions of the centres, apart from the overwhelming markets and commercial buildings, the central mosque was the prime focal element of this centre arrangement. The importance and significance of the mosque in the Muslim way of life and the life of the city was in the fluctuation of the Islamic city's evolution, the main impetus behind the survival of many of these mosques. What concerns us, however, is the concept of the internal and external spaces associated with the mosque rather than its architectural concepts. Part of the influence of the mosque on the external space is attributed to the many ways of access to and from the mosque's different directions. In addition, increasing more influence came from the successive enlargements to the size of the central mosques to certain degrees until they have consumed considerable parts of the areas surrounding them and they became embedded in the central urban tissue. Thus new doors were opened to relate the mosque with the new streets and spaces it incorporated. In other cases streets originated from the mosque gates openings towards other parts, markets or destinations.

Continuous expansions in the size of the central mosques, which were made necessary to cater either for the real or anticipated growth in the numbers of the city's inhabitants, have promoted a new type of mosques. Beside the inner open courts, a provisional or supplementary open space (**ziyada**) was reserved by means of an additional outer wall on all sides of the mosque except the qibla side. These walls kept the main inner wall and its surrounding spaces free of public construction, physical obstruction, and acted as a freeway for movement between the outer sides of the mosque. Beyond the main inner wall, a three sided portico (**riwaq**) and an open court (**sahn**), provided ample spaces for prayers, free movement. The elongated sides that flanked the mosque sides especially those of huge dimensions, were more flexible, offering

a possibility to incorporate many entrances or exits between the internal and the sub-external and the external spaces (see Fig.130).

The Concept of Intra Open Space in Traditional Islamic City

The concept of the open court persisted throughout the Islamic city's evolution. However court space is not bounded to the Islamic city neither did it originate there. Nevertheless courts were employed on a wide scale in nearly all urban elements and were widespread as early as the emergence of the Islamic city and were probably in widespread use by the Arabs before the coming of Islam.

Open courts, called here "intra open spaces", in contrast to most external spaces, achieved regularity and simplicity on the whole and at the same time became the core of all types of buildings from the lowest private house (see Fig.131) to the communal space of the central mosque. Intra open space was and remained a prime element in the mosque's composition and one of its main characteristics that survived intact. From early mosques, these spaces furnished as mentioned, a location for many communal activities and in many cases served as substitutes for the absence of external open spaces within the city's fabric.

In other urban elements such as enclosed markets, palaces, houses, etc. the courtyards provided an inward and internal facade and thus afforded an alternative to blank external walls. Above all, they afforded the possibility of contiguous and clustering constructions, and thus contributed one of the most distinctive characteristics of the Islamic city's fabric. Further more, these intra-spaces acted as internal distributers within the urban elements themselves and between them and the external spaces.

While in the case of residential and private houses a winding access between the external and internal approach is a desired solution, in the public and religious and commercial buildings it came only as a solution where the intention was to relate the court with a favoured position within the external space. Thus while the winding access allowed public buildings which do not lie on public streets access to these spaces, it

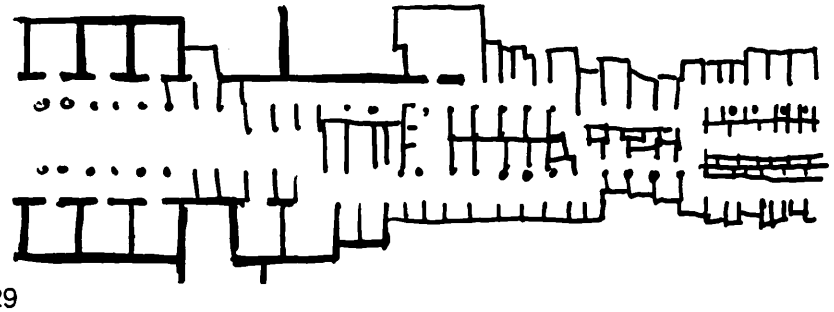


FIGURE 129
ALEPPO, THE EVOLUTION OF THE
MARKETS AS CONFIGURATED BY SAUVAGET(1941)

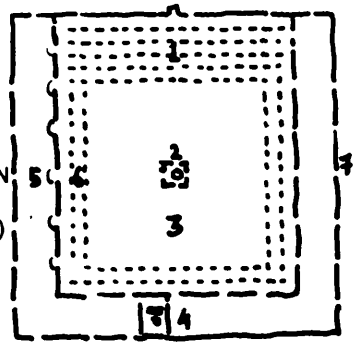
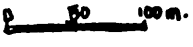


FIGURE 130
CAIRO, IBN TULUN'S MOSQUE,
after STOCKS (1985)



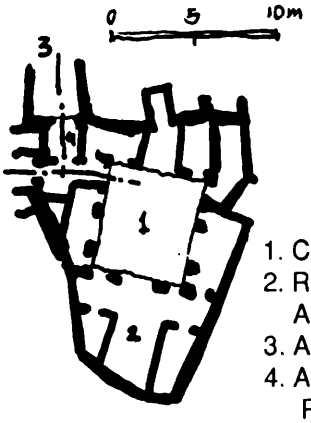


FIGURE 131
FUSTAT, COURT HOUSE,
REGULARITY ACHIEVED WITHIN
SINUOUS SURROUNDING, after
SCANLON (1970)

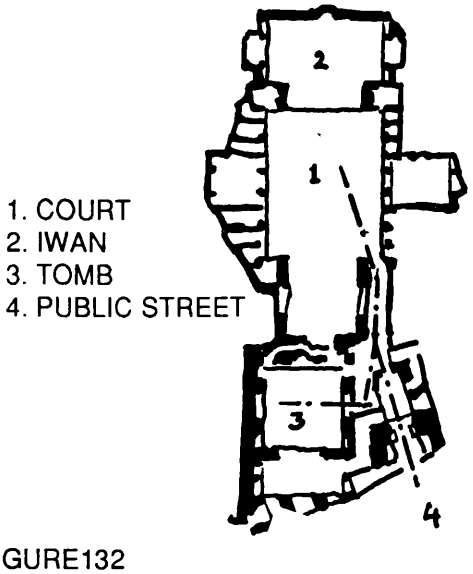


FIGURE132
CAIRO, KHANQA AND
WINDING ACCESS,after STOCKS

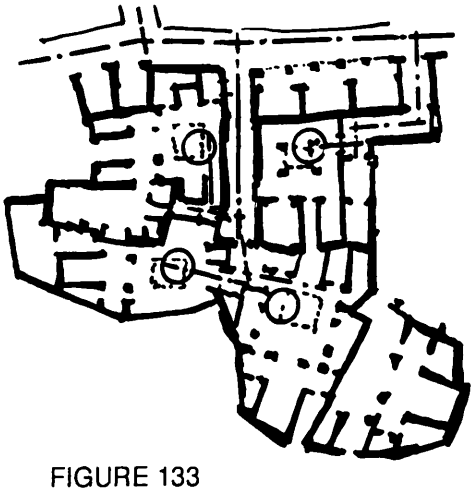


FIGURE 133
FUSTAT, COURT HOUSES, POSITION
OF FAVOURED ACCESS

provided houses that lie on public street accessibility to private ones (see Figs.132, 133).

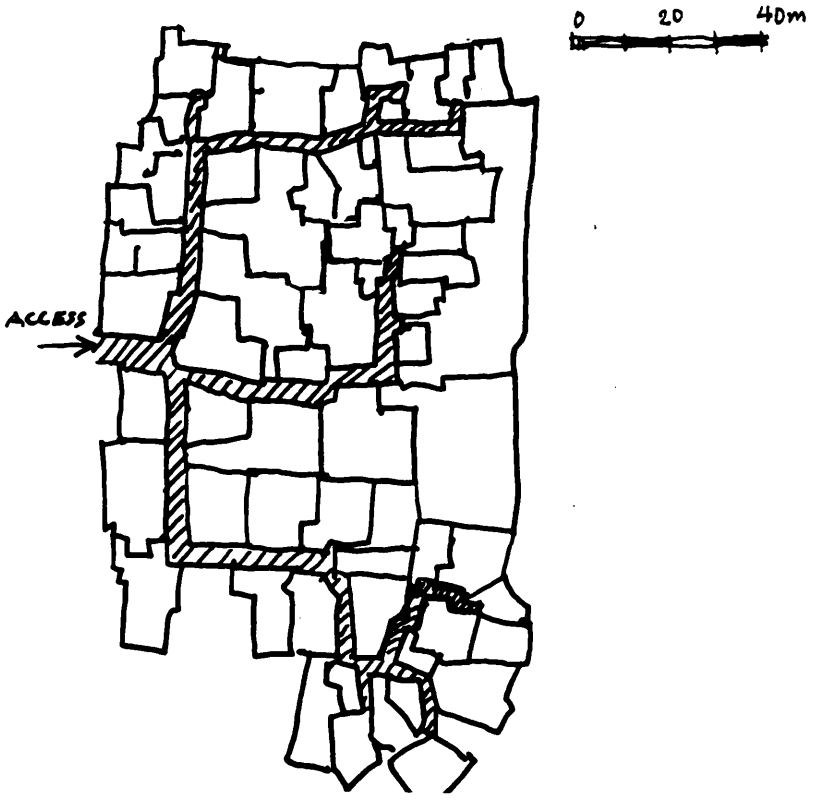
Intra-Urban Components

The Concept of Quarters and Districts and Wards in Traditional Islamic City

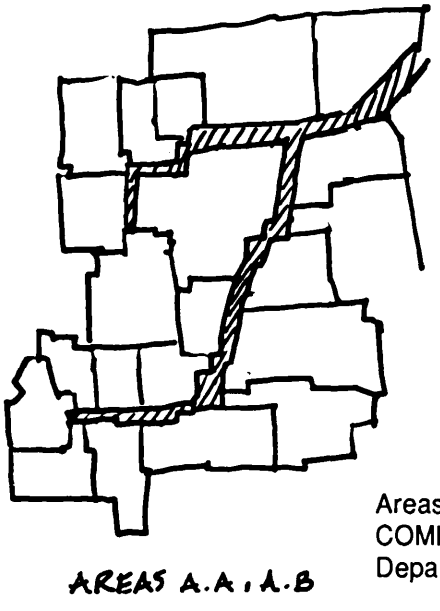
Whereas in the public and central areas there is a degree of reasonable traffic circulation, continuity, and less complexity in access and in movements, in residential areas the accessibility is strictly controlled; it is limited and intricate, and eventually terminated, and the grouping of its spaces are similarly more visually articulated.

In the examples presented below, the distribution of the residential units -a unit is a property which can in the case of Aleppo be a one- or two-storey house with a courtyard and in Cairo a multi-storey court or modern slab house - decreases in size according to their location on the edge of the quarter- or semi-public streets - towards the inner streets and to the farthest end of the terminated ones. In the examples presented below, while the size of the units decreases in relation to with the width and depth of streets or alleys, their number increases towards the termination of many alleys, thus keeping the number of units which share a part of a street, alley or visually defined space, relatively small at about 7 - 5 units.

In the first example, see Fig.134) the whole quarter is confined to one access, leading to about 70 units divided over three main alleys, termed here as "wards-branches". These are themselves articulated into smaller visually defined spaces. Similarly the alleys area A.A, A.B, of the chosen sector of Aleppo are articulated nearly in similar tendencies (see Fig.134). In Cairo the first example is drawn from area C.A from the chosen sector (see Fig. 135). There the alley leads to about 25 units - comprising mainly from modern developments of flat slabs - and divided over 8 articulated spaces, that is an average of about 4 units for each space. In area C.N, C.O (see Fig.136) the whole Rum's quarter comprised of about 175 units confined to two access, one from al-Muʿiz street area C.M, and the other from al-Darb al-Ahmar in the south. Streets inside the quarter are articulated in 15 parallel and



A quarter confined to one access and distribuyed into three branch-wards, after SAUVAGET (1941);



Areas A.A, A.B from the chosen sectore,
COMMISSION DE DELIMATION
Department of Survey Aleppo (1927)

FIGURE134
ALEPPO, QUARTERS AND OFFSHOOT ALLEYS

perpendicular branches that give an average of 12 units on each branch or visually defined spaces. In another examples also drawn from Cairo (see Fig.137) the residential quarter replacing the Ikhshidi gardens gain access through two junctions from two sides. Inside, like the second example chosen from Cairo discussed above, the streets follow the branching pattern, but not in the previous regular mode. However they are defined into articulated spaces and blind-alleys which give visually a lesser number of people sharing each grouping units.

The concept of the distribution of space or streets in residential areas of traditional Cairo and Aleppo was in part shaped in ways to give access to the residential units. These either developed by the accretion and aggregation of new and unbuilt areas or by the subdivision of large units into smaller ones. As a result, residential quarters and "wards" proliferated branching out in certain area in directions that were preferred or practical in many cases the result of short-cut movements (see Fig.107).

The alley way in areas A.A, A.B in Aleppo show a tendency towards a zig-zag articulation, from whence it reaches out diagonally to far corners (see Fig.106). The same tendency can be observed in Cairo area C.A. The trend to grow in a branching out way in Cairo in general can be seen in that streets start from positions nearer to the central trunk and headed into the direction of the corners and far side (see Fig.101).

In the exercises described above, units confined to a street or alley are those ones which share access through that street. Yet, as we demonstrated sharing access does, not necessarily mean, visually speaking, sharing the same space. Similarly a quarter does not necessarily include units which lie on thoroughfares encircling the quarter. Therefore quarters formed from blocks of residential units, spatially speaking, does not imply an inclusive quarter but rather a physical , spatial parts or areas which can be multiplied or divided. This can be schematically defined but not easily confined or controlled as can those which are obtained in the limb-branching pattern expressed in the traditional Islamic city.

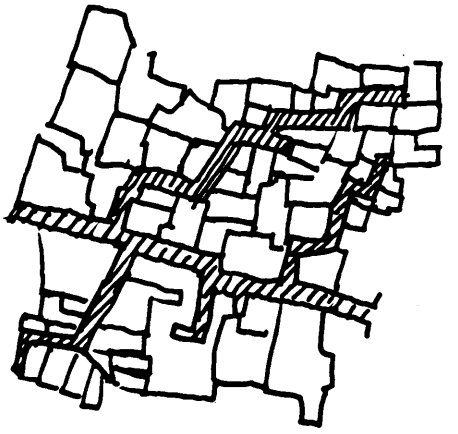


FIGURE 135
CAIRO, VISUALY DEFINED SMALL GROUPINGS
IN ONE LINE ONE CLUSTRE AREA C.A
after SILSILAT AL-MUDUN cairo (1939)

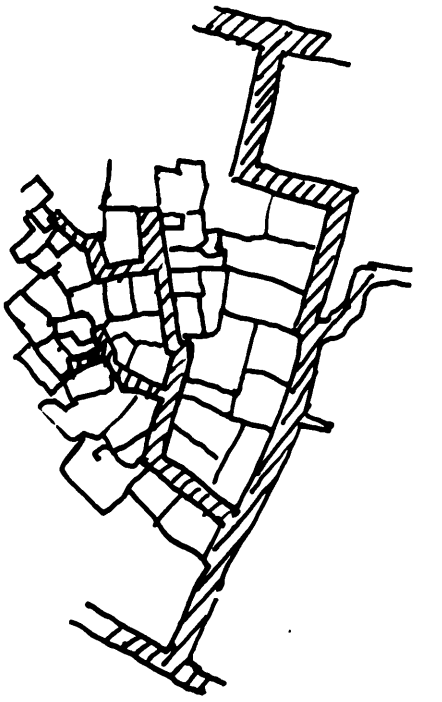


FIGURE 137
CAIRO, ARTICULATED GROUPINGS
QUARTER IN THE PLACE OF THE
KHSHEEDIS GARDEN, after SILSILAT AL-MUDU
Department of Survey, Cairo (1939)

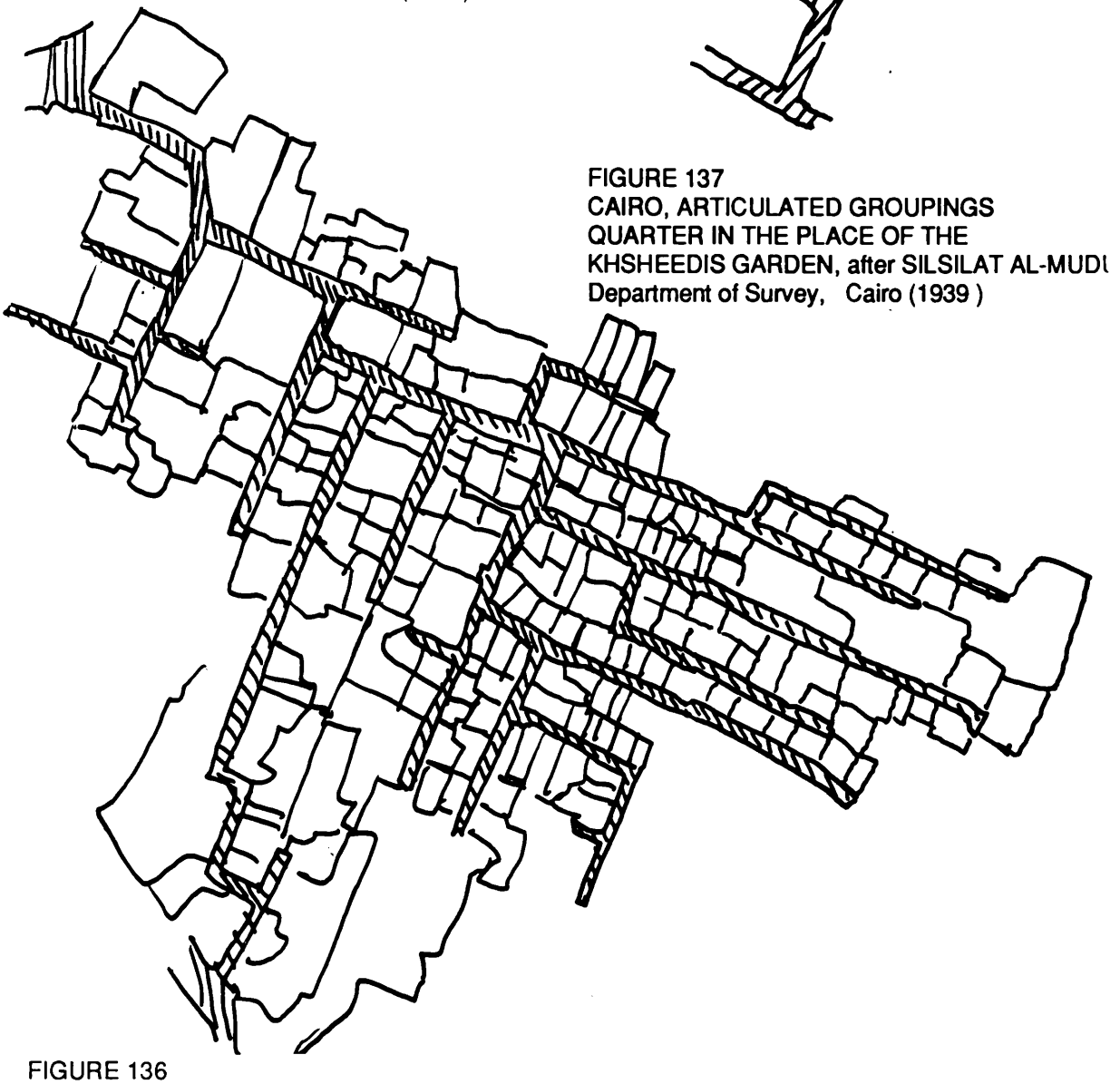


FIGURE 136
CAIRO, REGULAR OFFSHOOT BRANCHINGS
AND GROUPINGS , THE RUM QUARTER AREAS
C.N, C.O, after SILSILAT AL-MUDUN,
department of survey, cairo (1939)

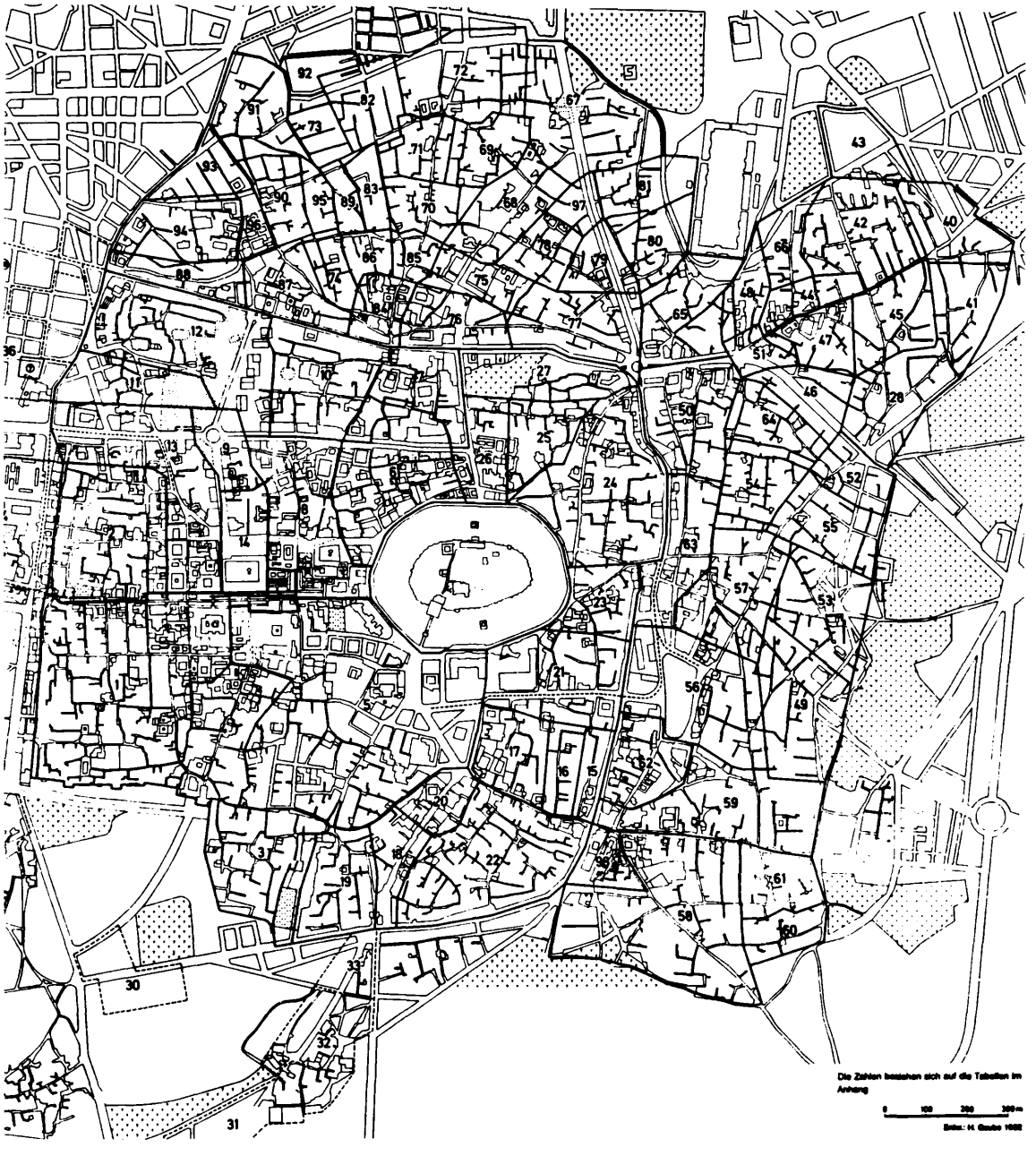


FIGURE 138
ALEPPO, GRADATION IN THE SIZE OF DISTRICTS
AND QUARTERS FROM THE CENTRE TOWARDS
THE CITY'S FRINGES, SUBSEQUENTLY FROM
EARLIER TO LATER PHASES OF THE CITY EVOLUTION
after GAUBE(1984)

The concept above, however, can be demonstrated in the distribution of quarters in Aleppo which shows (see Fig.138) that first quarters; are not confined in blocks; and secondly that their size gets smaller from the centre towards the edge; successively from earlier to latter phases of the city evolution.

Foot Notes: Part Three, II

1. BIANCA, S., "Traditional Muslim Cities and Western Planning Ideology. An Outline of Structural Conflicts" in **The Arab City**, Medina, (1982), 43; MONTEQUIM (1983), 48

2. LYNCH (1981), 142

3. MONTEQUIM (1983), 48

4. LYNCH (1981), 384

5. MONTEQUIM (1983), 58

6. ABU LUGHOD (1983), 68, singled out four basic principles which she believed constituted the deep grammar of the Islamic city, and commented that these principles do have a remarkable congruence with some modern principles of city buildings.

7. MONTEQUIM (1983), 44

8. STERN, S.M., "The Constitution of the Islamic City" in **The Islamic City**, A.H. Hourani, S.M.Stern (eds.), Bruno Cassirier, Oxford (1970), 25-6

9. CRUTCHFIELD, J.P. and others, "Chaos" in **Scientific America**, Dec.,(1986), 38

10. BLUMENFIELD (1949) VIII, 7

11. LYNCH (1981), 369

12. WHEATLEY, P., "Levels of Space Awareness in the Traditional Islamic City", in **Ekistics** (1976), XLIII, 354-66; ABU LUGHOD (1983), 65-67; MONTEQUIM (1983), 49; ANSARI, J.H., "A Strategy for Planning an Arab Town" in **The Arab City**, Medina (1982), 277

13. LYNCH (1981), 369

14. FATHI, H., "Constancy, Transposition and Change in the Arab City" in **From Medina to Metropolis**, L.Carl Brown (ed.) The Darwin Press, Princeton, New Jersey (1973), 324

15. CRITCHLOW, K., "The Pattern of Meaning", in **The Zodiac**, 17 (1967), 40

16. EIGEN, M., **Laws of the Game**, Alfred A. Knopf, New York (1981), 8, see Figure 1, the delta of the Colorado River on the Gulf of California resembles a huge "decision tree".

17. BLUMENFELD (1949), VIII, 7

18. LYNCH (1981), 381, 426

19. GUTHEIN, F., "Urban Space and Urban Design" in **Cities and Spaces**, Lowdon Wingo (ed.), Johns Hopkins Press, Baltimore (1964), 108

20. HAKIM (1986)

21. MORRIS, A.E.J., **History of Urban Form**, George Godwin Limited, London (1979), 27, this quotation is cited by him after A.Von Gerkan.

22. The chosen sectors from Aleppo and Cairo are schematically divided into areas. Each area is drawn in plan on one page and referred two by two capital letters. The first letter indicates that first letter of the city's name hence C. for Cairo and A. for Aleppo. The second letter is the area number. For instance A.M. and C.M. are successively area number 13 from Aleppo and area number 13 from Cairo.

23. MONTEQUIN (1983), 43

24. GAUBE (1979), 19-20

25. WHEATLY, P., (1976), XLII, 362

26. SAUVAGET (1941), 104

III. THE EXPRESSIVE DIMENSIONS IN THE TRADITIONAL PATTERN OF ISLAMIC CITIES

Introduction

The previous exercises discussed the context of the space in its abstract and two correlated dimensions. It involved changes in scale, rotation and other flat spatial arrangements. Yet the eventual spatial context involves transferring the above correlated dimensions into their sequential three dimensional, and thus into expressive images.

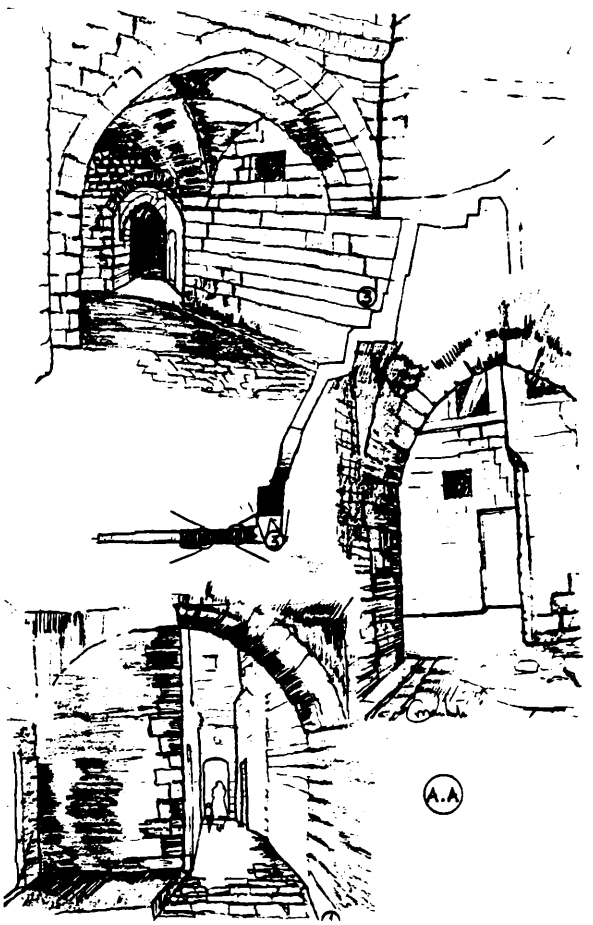
In continuity of the above exercises which were mainly carried out in sectors chosen from Aleppo and Cairo, and in order to relate them with their true context, the same sectors will now be elaborated into true images. These images are not arranged in a serial vision of a single line direction, but in sequential perspectives in a meandering pattern - that is like a person observing the different spaces. Therefore images can be taken from opposite and side directions of the same space. Each image is located in the best way possible on the side of its related street, alley or space of the associated plan drawn on the same page. Each will be referred to as a serial number related to the area in which it lies. Thus for example the second view within Aleppo area D is stated as A.D.2. Further more each case of spatial expression will be discussed in a classified mode also in the best way possible in the sequential layout of that sector. Similar cases from Aleppo and Cairo will be presented, as well as examples from other cities if used. For the sake of comparison and to avoid repetition of ideas, these will be presented under one single title.

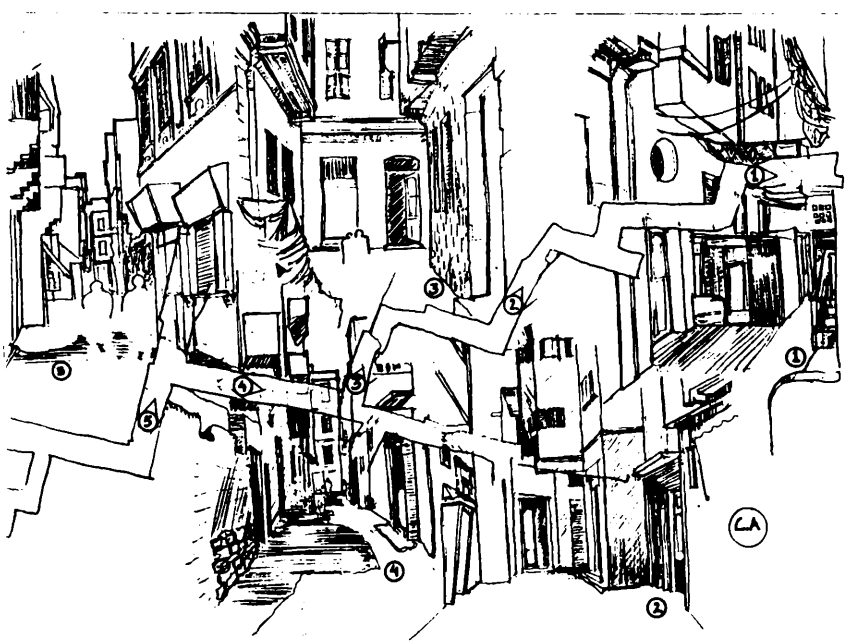
Spatial Articulation

Variety in a Zig-Zag Disposition

In areas A.A, A.B, and C.A (see Figs.106, 107) intricate alley way in both examples reveals a repetitive spatial disposition, yet non of the many images available are identical. Each distinctive image is the result of mutual variation in:- the disposition of the side walls as it is in

both examples; and in the covered parts of the open spaces and archways as seen in the case of Aleppo or the projected windows or part of a room as it is in both cases. In Aleppo about 35m of the 80m length of the alley is covered by cross vaults and arches. These vaults and arches similarly are disposed in a zig-zag arrangement. Relatively low, they are always apparent to the passers-by and subsequently enhance the change in the street's direction (see A.A.3, A.B.2.)*. In Cairo, although there is similar zig-zag arrangement the alley is not covered by permanent construction but rather is covered by temporarily cloth shades (see C.A.1). Also a relative narrowness in the width and depth in view C.A.1, C.A.2, C.A.3 puts not only the skyline out of one's vision but also the upper floors are barely seen. In Aleppo the existence of covered spaces has added to this visual restraint, but at the same time they define and add distinction to the various views and will be discussed later under spatial filtration. The lack of





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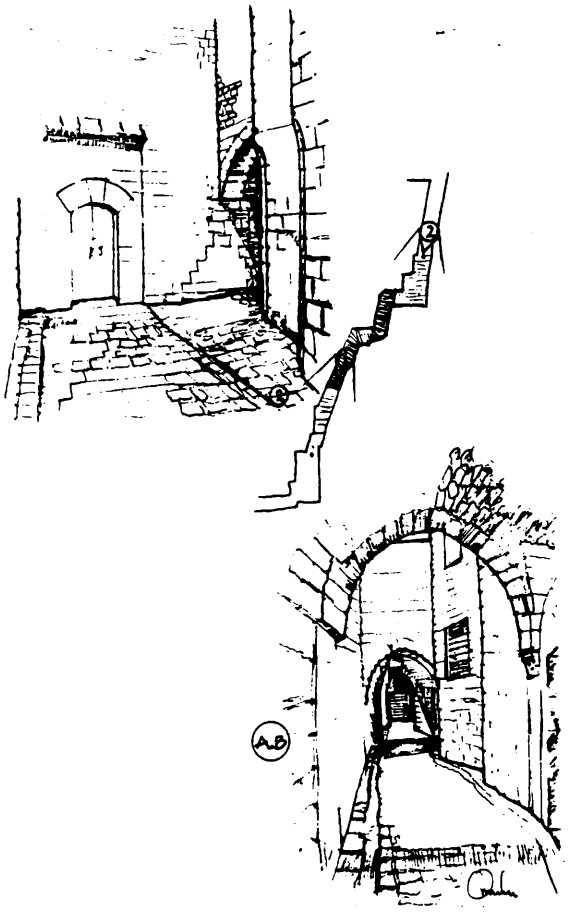
* see eclosed Album for all images are in larger size

similar features in the relative area in Cairo, however, have not created a similarity between the different spaces but left them in a confusingly variable state (see previous views).



Chaplet of Archways

From A.A.1, to A.D.2 the successive disposition of archways overwhelming dominate one's movements in a way that no sooner does one pass under a cross wall or arch that another arch catches one's eye. In some cases one would see more than an arch at one time as in views A.A.3, A.B.1, A.D.2, still deviation in their disposition is in accordance with the zig-zag meander, and diminishes the systematic repetition and induces an idea of successive expectation in a repetitive mode.

Spatial Fluctuation

The middle street areas A.C, A.D at a length of about 45m is composed of a total of 9 deviated walls on each side. Yet a straight line of visual depth can be obtained from both sides (see view A.C.4). Furthermore, alignment and parallelism between parts of the opposite side-walls which fluctuated (see Fig.139) around the above mentioned line, gives a hidden and dispersed orientation appropriate for manipulating privacy between the opposite sides and at the same time gives windows more openness in a width which only varies between 2.5m - 5.0m.

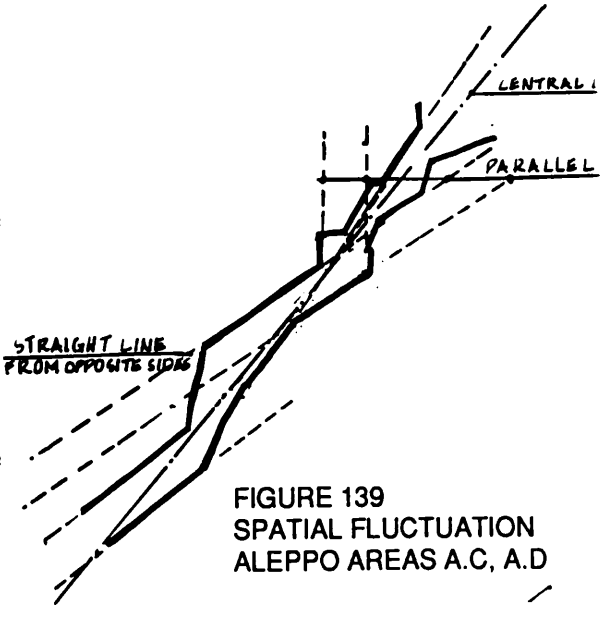
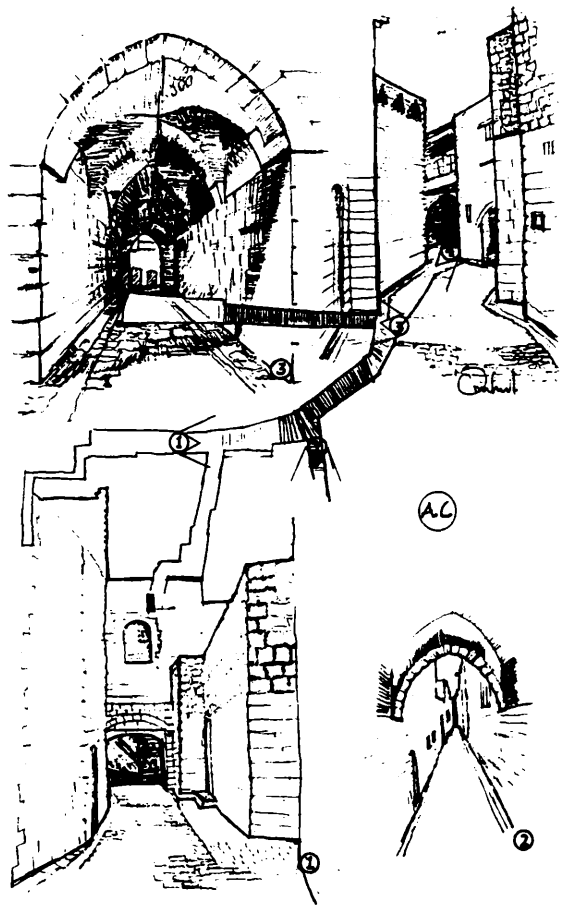


FIGURE 139
SPATIAL FLUCTUATION
ALEPPO AREAS A.C, A.D

Illusion of Visual Spatial Depth and Physical Length

Contrary to the deviations straightness discussed above, views A.C.2, A.C.3 show a clear prospect of about 40m and 70m long. There, while the true depth of the first 25m of covered part of A.C.2 is visually prolonged by the repetitive cross arches and a slight dilation in its width, the true depth of the last 15m open part is visually diminished by a sudden expansion of the side walls that conceals them just beyond the last arch.

In the second view an arch-way in the mid-distance of the straight alley, and a slight slope in the ground level, visually bring the ground visually close to the arch, and so diminishes the infinite openness and the perceived depth of the street.



Spatial Deflection

The direction and flow of movement, through junctions, shifts and articulations between the different streets and spaces in both Aleppo and Cairo are highly manipulated. Still the angles of some cases are deflected towards higher levels or the centre, see view A.D.1. Similarly a slight curvature in the streets of the higher levels, where they connected with lower levels gives continuity of direction and movement into the preferred direction or towards an important element or components (see Fig.140).

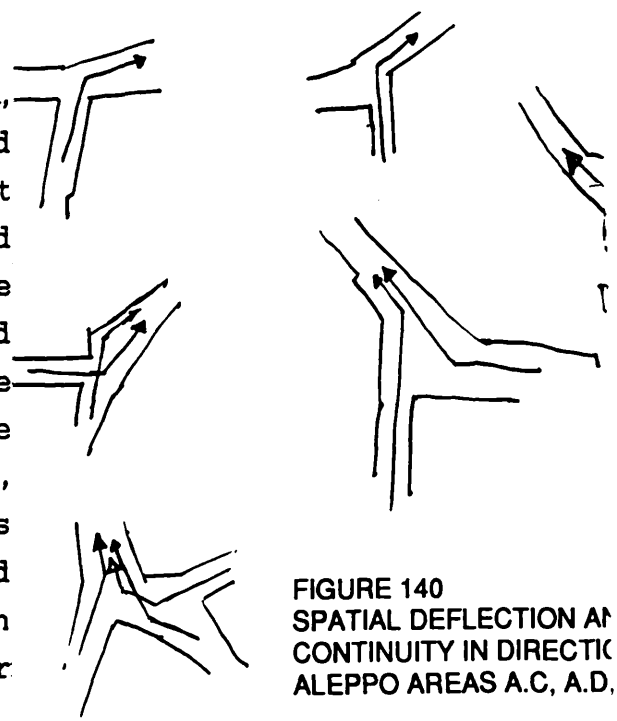


FIGURE 140
SPATIAL DEFLECTION AI
CONTINUITY IN DIRECTI
ALEPPO AREAS A.C, A.D,

However the main concept is of a successive spatial deflection by change of angles which visually terminates spaces but at the same time it creates anticipation of the existence of spaces which cannot be seen, see view A.H.1.

A change in direction in most of the views discussed in areas A.A, A.B, A.C are attained through deflection in the side walls. Such a deflection would transfer movement gradually between successive spaces in the single street, see views A.A.3, A.B.1, A.C.1 and in continuity between different streets or spaces connected by junctions. It also works to guide movement towards a certain direction.

Further directive ideas are obtained from rain gutters running on the two sides of the streets. Despite the hidden walls or junctions which views A.A.2, A.C.1 do not show, the gutters reveal the continuity of direction. Other minor emphases of the changing direction can be observed in the chamfered corners of the walls that lie on junctions or on bent streets (see view A.B.2, A.D.2). The above models shows examples of what GULLEN termed "many here and there"[1]. Still from beyond the streets-walls the whole area discussed above in Aleppo reveals no information of the residential houses, either their distributions, their sizes or their in between arrangement. The only information available is on the

number of houses and their density in the various spaces, which can be deduced from the number of the doors and their correlations.

Spatial Filtration

Filtration is used here as a spatial expression, intended to explore and interpret those visual and spatial elements and models which would influence the one's subjective space in a way that would sieve and diminish intrusion, transitive information or movement. But at the same time it would not prevent a normal associated application from taking place. For example, a wide closed door does not work as an element of filtration while a small open door will allow access only to those of its relative size or smaller.

In Aleppo in area A.A, the end of the alley way is half covered and half open. The open space is also half of the width of the covered one, which makes it look as if it is a confined space or an open court for the four doors which open on to it. In the covered part only one door belongs to the house which is extending over that space, makes it more related to the house and at the same time a filter of movement to the other four houses beyond. A wall, probably encroached upon the open part, reaches the centre of the inner arch of the covered space (view A.A.1) and further stress the

spatial definition between the two spaces.

More openness in areas A.C, A.D, C.A, C.B reveals more information about the walls of the streets and some information from the inner walls in between the houses.

There are other types of filtration elements such as wall parapet of cylinder of hollow clay allows air vent these prevent visual penetration from both sides (see view A.C.4.) In the same view and also views C.C.1, C.B.4, C.F.1, C.L.5 and others, lattice windows and oriels, filter the light and prevent visual penetrations from outside. At the same time these allows those inside visual accessibility in the depth of both sides of the space and to the events taking place below. The protrusions of these windows over the side parts of the space reduces its upper width and in consequence reduces the vision vertical angles (see Fig.141). Hence the visual filtration from below to above is enhanced and the light from above to below is reduced. Modern balconies however have echoed the traditional oriels yet they are less effective in terms of infiltration (see views C.A.1, C.A.2, C.D.1, C.0.4 and others). In another examples but from Tunis, buttressing arches, beside their structural application, work as visual breakers not only to the passers-by but

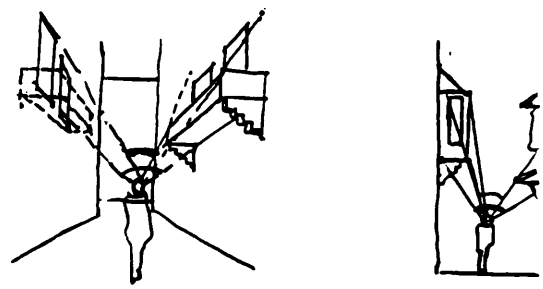


FIGURE 141
VERTICAL VISUAL- ANGLE REDUCED BY THE PROJECTION OF ORIELS OR BALCONYIES

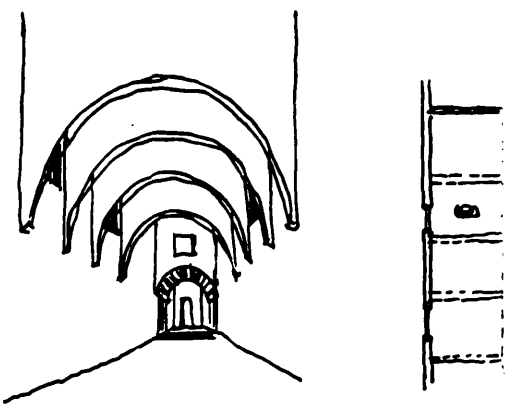
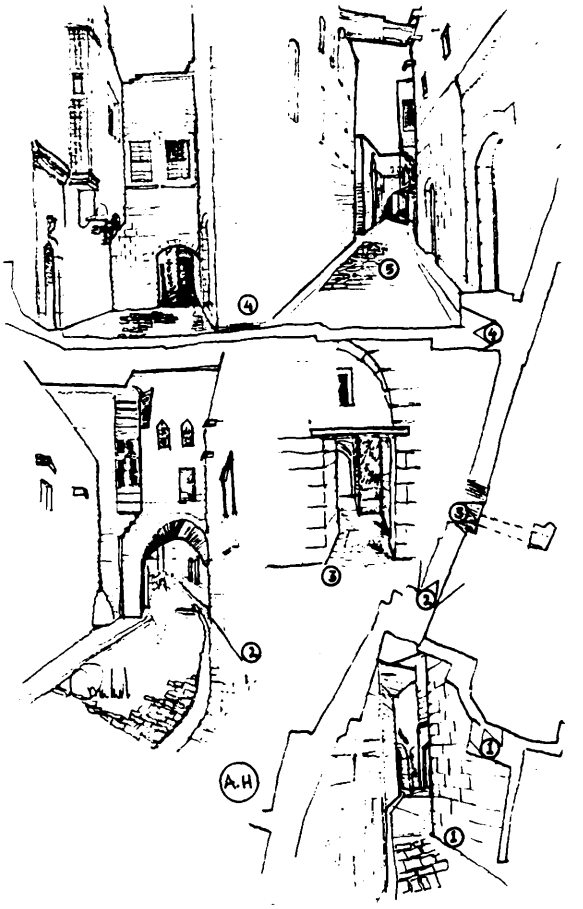
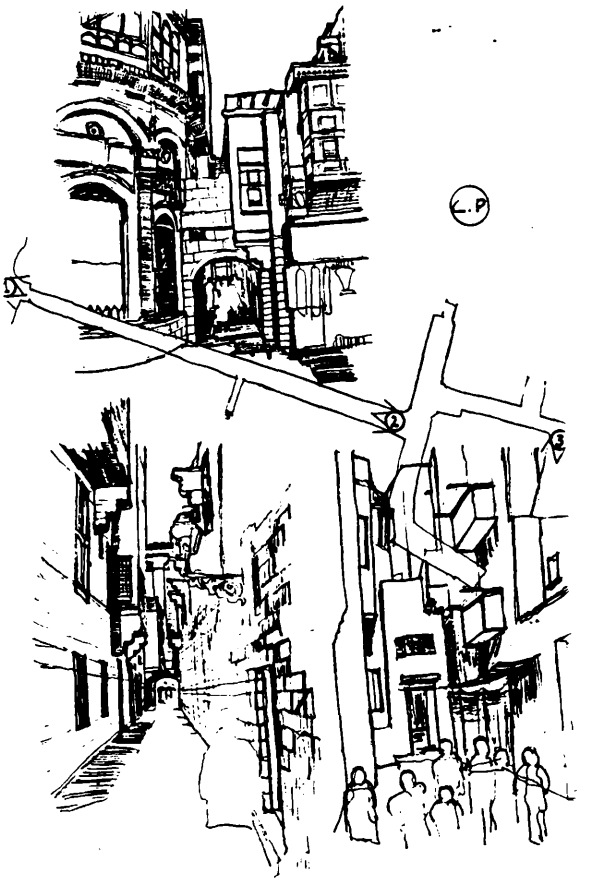


FIGURE 142
VISUAL BREAKERS AND BUTTRESSING ARCHES, after HAKIM(1986)

also between windows of opposite and adjacent houses (see Fig.142).



Under the correlative dimensions discussed above (see p.241), a gradual change occurred in street types and levels within a hierarchical progression, yet direct junctions without median levels between private and public spaces in some cases which happened were resolved. The effect was diminished by deliberate consideration in the form of low and relatively narrow arches placed at the mouth of the junction. These arches, termed as threshold transitions work to sieve the unwanted traffic. A spatial sign informs the uninitiated of no entrance except for access (see views A.F.2, A.F.3, A.G.2, A.H.3, A.H.4, C.E.1, C.J.2, C.P.1, C.P.2).



Further filtration elements can be observed in the differences in the characteristics of the spaces which are attached to the types of buildings' facades which inhabits that space. They can also be seen in the different considerations taken in the layout of windows and doors discussed above (see p.301)

Spatial Dynamics

The dynamics of space are usually attained of course not by moving areas of space but by the subjective movement of the space users. Still many static shape arrangements of space hold

certain degrees of dynamism within parts disposition which promote, direct, discourage or prevent local movements.

This dynamism is more apprehended when spatially dramatized:- a cross is more recognized than the bifurcate, the junction, the angular bend, the curve, the straight etc.

Both sectors presented here included, as demonstrated under the correlative dimension, variable modes of dynamism not only between the different spaces and spatial modes but in the one space or mode. However below we will discuss these codes that hold distinct dynamic expression.

A cross junction is a spatial characteristic which scarcely occurred in arrangements of space in residential and intra- urban spaces in traditional Islamic city. Yet that does not exclude the existence of such cases in public and important parts of the city. A cross junction by itself is a key position in any spatial arrangement, thus its occurrence in any part increases the importance of that space. However such a position has to be justified in accordance with the general layout and the type of space levels and even buildings allocated on that junction.

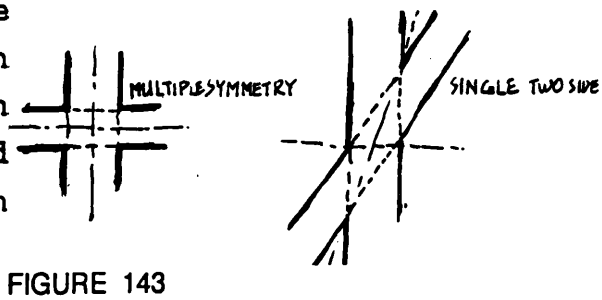


FIGURE 143
RIGHT ANGLE AND TRANGULAR CROSSING

The size of square that is created by a cross depends only on the width of the

two streets if they clearly crossed at right angles. An increase in that space and the loss of the multiple symmetry can be achieved by decreasing or increasing in the crossing angle between the two streets,which thus hence places more emphasis on both the narrow and wide corners (see Fig.143). They would thus become more preferable for major or important buildings.

Diagonal Crossing

Within this concept an example drawn from Aleppo, area A.E, where an important space known as Sahat Bazzeh occurred on the crossing between streets connecting the southern gates, the citadel and the central part. The space although formed from diagonal crossing of lines of streets, yet has taken a squared shape. The square is created by projecting parts of the buildings which has probably encroached upon that space. These imminent sides (see Fig.144) formed significant side walls which were occupied by public buildings such as a drinking fountain, a bath, a mosque and local shops. Beyond the rectangular sides (see view A.E.1), the bath's dome dominates the background of the south side. On the side of the fountain,

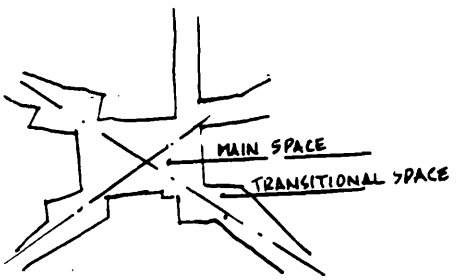
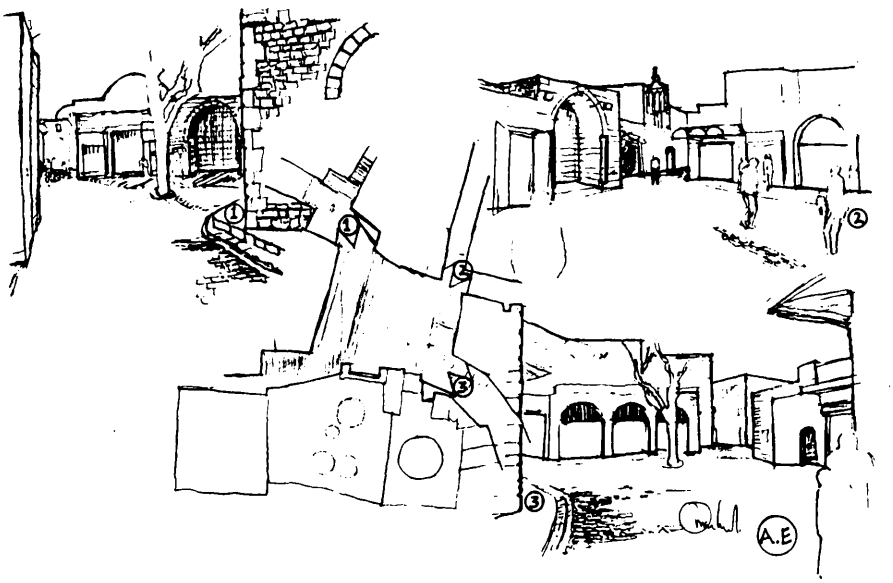


FIGURE144
DIAGONAL CROSSING



(see view A.E.2) a relatively small minaret dominates the south west-corner of the space and preludes any movement through the street.

The whole movement in and out of the space is manipulated by a series of recognizable visual images. Minor transitional spaces just on the mouth of the streets form distinctive asymmetry of routes. These transitions, while retaining the sense of progression, they visually enclose the space into terminated square see previous Fig.).

Shapeless Junction

A shapeless open space, area A.G is formed from an inflated part of a traverse thoroughfare rather than a mutual space between incoming streets. However this space, like the space discussed above area A.E, do not visually extend beyond its circumference. All the streets mouths, where they meet the space before opening into the main thoroughfare (except the southern, modern shaped, right angle and directly adjoining street) are articulated into transitional spaces (see Fig.145).

A drinking fountain located in the western transitional space is directed towards the line of the street rather than the space. This peculiar disposition of the fountain seems to be incorporated with a mosque, which lies on the street and not on the space

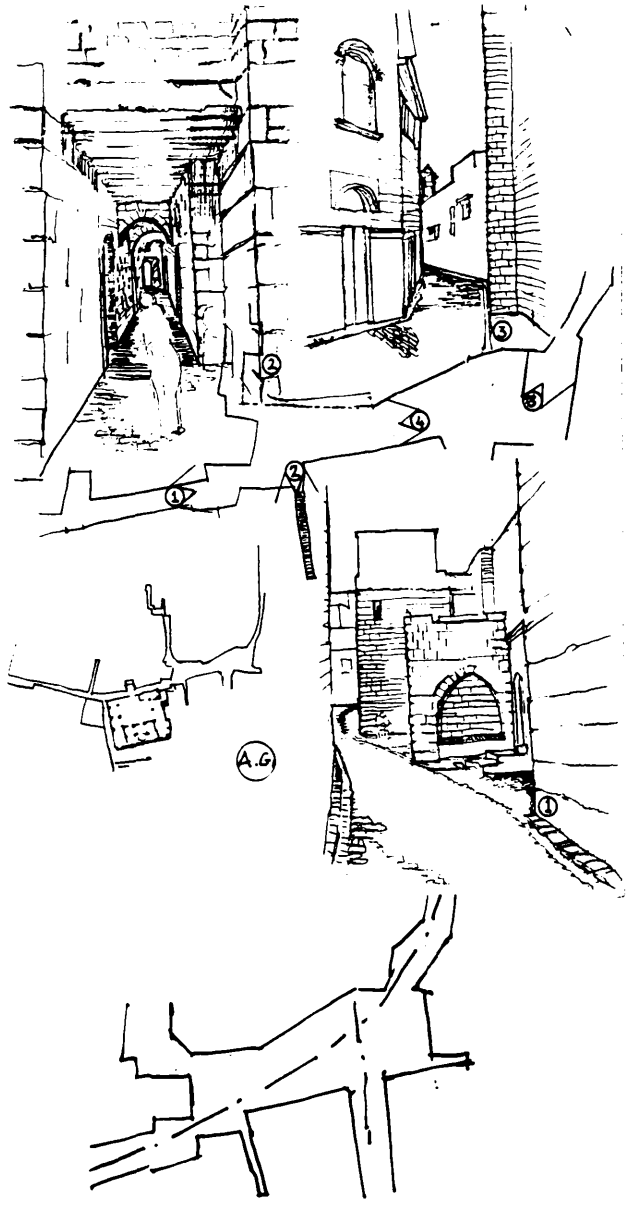
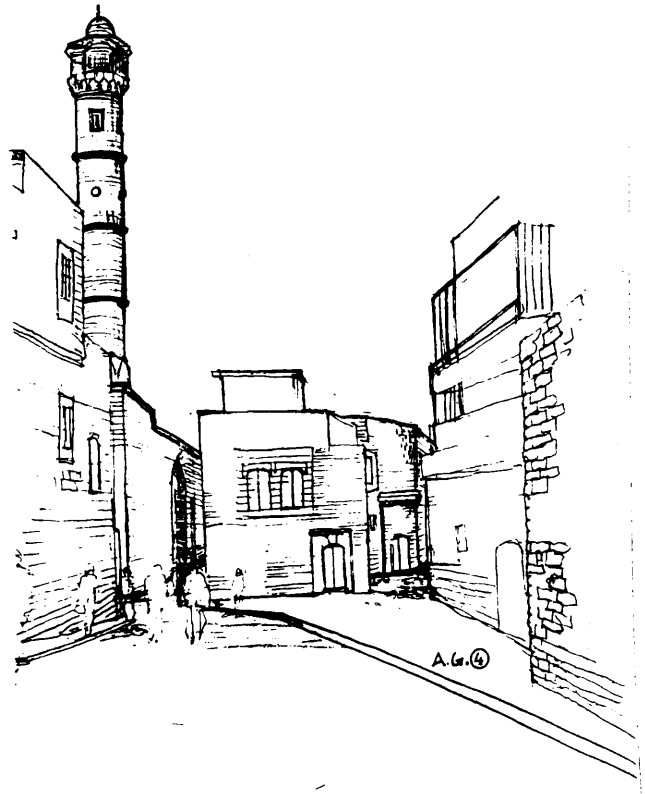
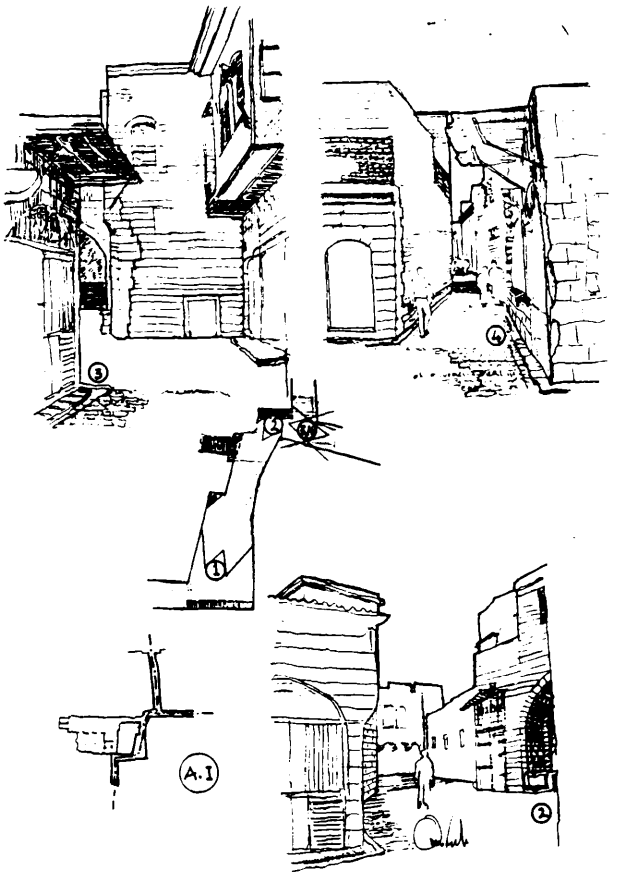


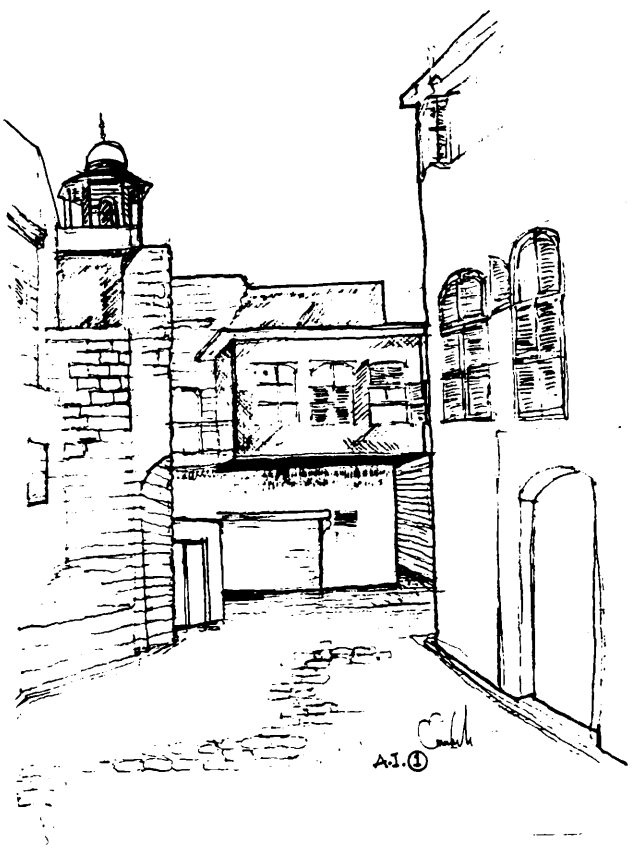
FIGURE 145
SHAPLESS JUNCTION



itself. Here the mosque known as the Rumi, has two gates. The main faces a recession in the opposite side, which gives a minor spatial (but not visual) relief to that gate (see view A.G.4.). The second gate is placed near the fountain and probably served as an auxiliary door for women.

To the north of the junction described above, a bend in the line of the street area A.I., weakens the continuity and the importance of the street, but at the same time dilates the width of the original street, thus changing a side wall into a street front. This break provides possible places of visual and spatial importance where porches or entrances of main buildings can be easily approached or departed from. Also it provides relatively wide distances, where projecting windows can be placed without intruding on others privacy (see view A.I.2, A.I.3).





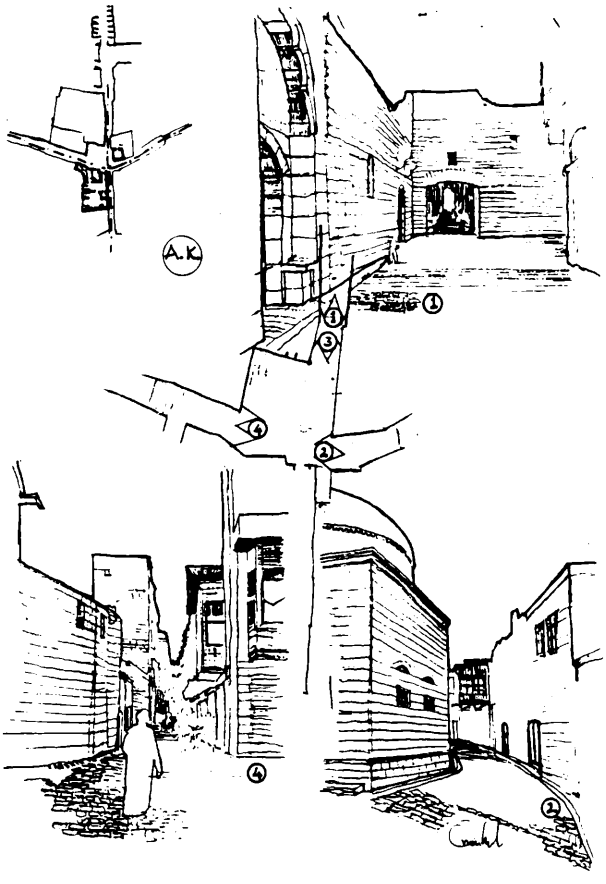
The Bow and Arrow Crossing

A different form of space to that found in Sahat Bazzeh discussed above, in area A.K, a space is developed by omitting a square in the north-west corner front to Saffahiya Mosque. In general, the south-west corner of the space is allocated to, the Saffahiya Mosque, marked by an elaborate porch and minaret (see view A.K.3), al-Mikhan bath on the north-west corner, a Mausoleum distinguished by its dome (see view

A.K.C) and a drinking fountain on the north-east corner. The cross itself (see Fig.146) is composed of a straight road crossing at the bend of a traversing perpendicular street. The bend creates a difference of importance and further distinguished the direction of each street. The straight north-south road connecting the central market with other streets toward Sahat Bazzeh and al-Maqam gate in the south is more directionally important that the western part of the angled street. The western part of the bend street lead backwards in the directions of another main street and from there to the central market. The eastern part also leads backward in the opposite direction towards the citadel.

Unlike Sahat Bazzeh the streets leading to this space are more visually incorporated with the open space. That is to say, the space closure is not visually terminated at the mouths of the streets but far beyond. However none of these streets have an infinite openness. Almost at the end of each street a distinctive element terminates that street and leads on to another space.

A further difference between the directions of the streets can be detected in the angular difference in angles between the bent street and the houses'



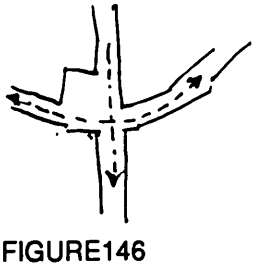
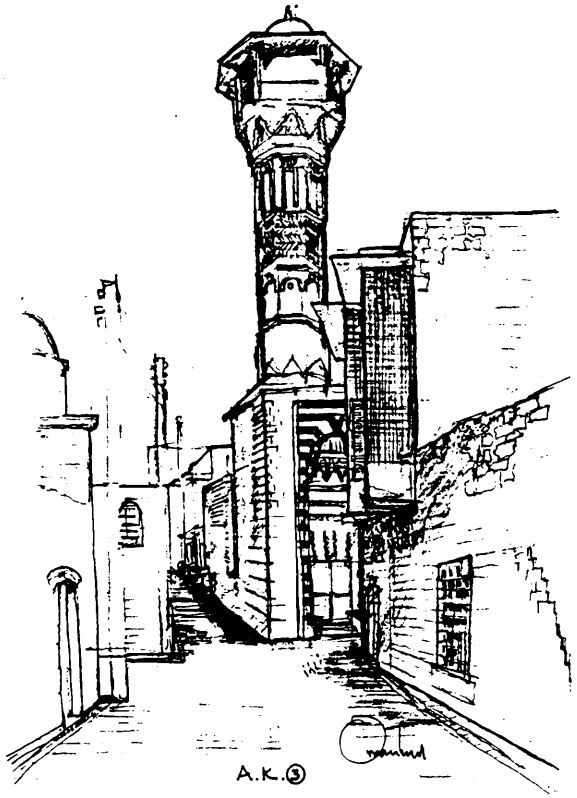


FIGURE146
THE BOW AND THE AROW CROSSING

triangular lattice-windows, projecting above that street (see view A.K.2, A.K.3).

In other cases where the direction of the houses matches that of the street. These protruding lattice windows form rectangular projections, (see view A.K.4.). Therefore, keeping in mind that most houses in Aleppo are more or less at a one prevailed direction, the triangular window projections would form an external cue of the general change of direction between non-aligned streets.

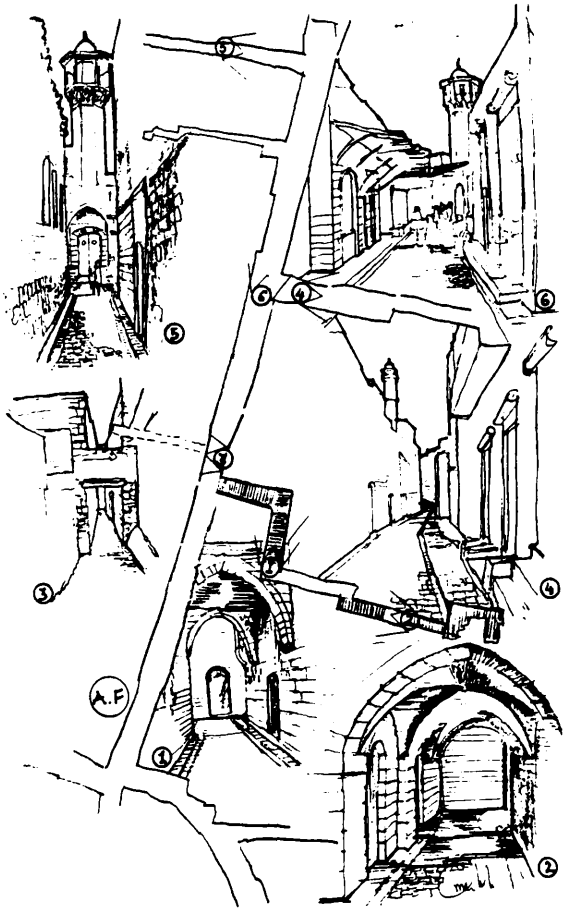


Facing the Saffahiya Mosque, a slight bend in the mouth of the northern part of the vertical street where it meets the open space (**rahba**), probably a deliberate spatial arrangement, reveals the mosque's porch and minaret (see view A.K.3.

An echo of the above model can be observed in Cairo area in C.Q and will be discussed when reaching that area.

Butterfly Cross

The regular cross facing to Bab Qansrin area A.F is a mere functional arrangement, intended to transfer movement between the central area and the above mentioned gate and between the wings of the two quarters lying on either side of the gate. The cross itself reveals an equilibrious arrangement with no preference of direction. Yet beyond the cross space the east-west road is



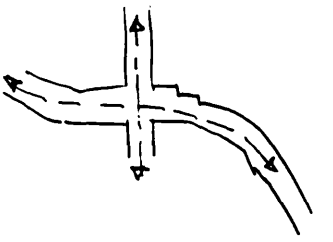
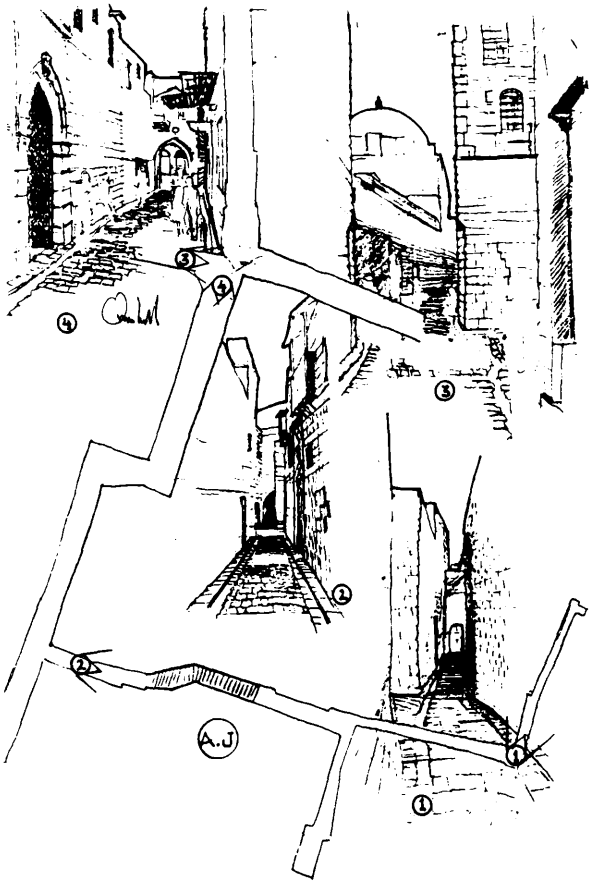


FIGURE147
BUTTERFLY CROSSING

bend into a butterfly shape (see Fig.147) and, visually terminates the street into two progressive directions.

Touch Cross

Just before the central market in area A.J another cross occurs on the position of a shift and bend where the main street coming from Qansrin gate takes on with a different direction to one of the original streets of the Seleucid layout. The cross also occurs on the position of another slight bend and shift in the traverse street coming from Sahat Jami^{c} al-Saffahiya (see above under the Bow and Arrow cross). However the cross took the shape of a touch junction between two corners, each formed from an angular junction of two streets (see Fig.148). Thus the space is rather a crossing junction than a true cross. Here none of the four streets align with any of the others, so the space also functions as a distributer or collector rather than a cross.



As observed by GULLEN[2], this cross is different to the remaining right angle cross in the Jalum quarter of Seleucid's Aleppo which, looks the same from every approach thus confusing, (see Fig.148). The example presented here has different visually terminated images when approached from all directions (see view A.J.3). Similarly as one departs from it, the terminations are differently marked, such as the dome of a mosque

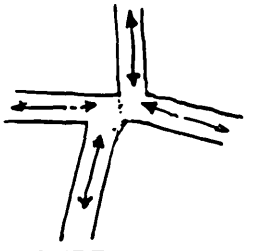


FIGURE 148
TOUCH CROSS

(see view A.J.3), an arched gate (see view A.J.4), the gate of the central market in the north (see view A.L.1) and another gate arch in the south (see view A.L.4).

In the chosen sector of Cairo spatial crossings are more limited than in Aleppo, yet further expressive spatial statements can be deducted from the few existing crossings and other spatial arrangements.

The concept of the general layout of original Cairo as mentioned is arranged as one major avenue, a main street running parallel but second in importance to the avenue, and traverse main streets running on right angles with the major one. These as well as other thoroughfares act as distributors and feeders when they join to main ones and collectors when they join to dead-end alleys (see Fig.49).

Touch Junction

Outside area C.A, in the public spaces area C.B, the first noticeable change in the layout of the streets is about 20m south of the T junction between a semi-public and a public street (see view C.B.1). Here at the second supposedly T junction, was altered in shape by a shift in the full width of Jamaliya street where it meets a traverse street heading west towards the Qasaba avenue. Similarly to the Touch Cross discussed

above, but here of three branches, the space took the shape of a touch between the upper, north part of Jamaliya street with a corner formed from the southern part of Jamaliya street and the traverse street (see Fig.149). However this presumably spontaneous arrangement, although it weakened the continuity of the Jamaliya street, nevertheless enhanced the direction towards the Qasaba avenue in the west, and created another side to the junction which afforded an open and strategic position which is utilized as an access gate for a warehouse (see view C.B.3). This arrangement, which allows an easy access to and from the warehouse, became common in Aleppo (area A.J. see view A.J.4.).

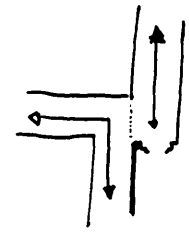
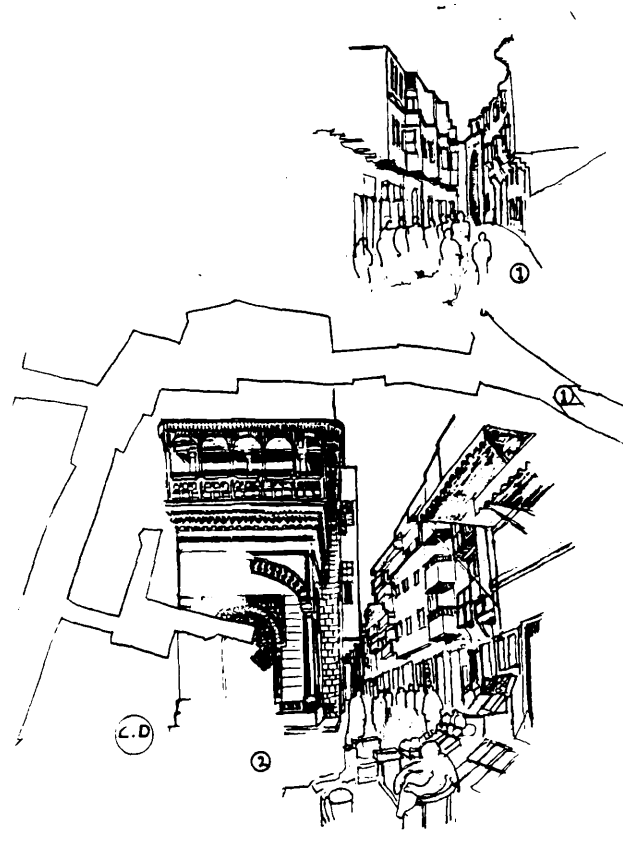


FIGURE 149
TOUCH JUNCTION

Spatial Tangent

The traverse street mentioned above (area C.D), heads in the direction of the major street almost forming in a curved spatial line towards the central area. In the middle of that curved line, another street, also heading in the direction of the major street, emerges in a bifurcated shape but northwards towards al-Futuh gate. Since the upper branch touches the highest part of the main line, it forms an equal branch to the rest of the curve. However the main street maintains its continuity by its wider width. The presumed curve mentioned above is a perceived spatial curve but not in fact physical. The facades of the



buildings overlooking the street are not curved but rather recessed and projected in volumes which coexist with the curve (see view C.D.1).

Bifurcate Junction

A main junction, probably dating from the time of the foundation of Cairo, is originally formed by a junction between the traverse street mentioned above and the Qasaba avenue. Here a slight shift in the alignment of the Qasaba avenue at the position where the branch originated (see Fig.150) has spatially manipulated and created a balance between the upper part of the major street, known as the Coppersmith street and the branch, which is known as the Tambakshiya street.

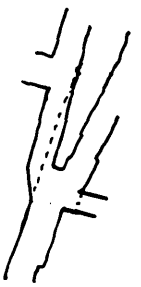


FIGURE 150
BIFURCATE JUNCTION

So instead of a simple junction between the avenue and a branch the space turns into bifurcate junction. In addition instead of having a marginal angled corner, the corner is placed in the middle of an equal balanced symmetry. Thus attains more importance so that it becomes a major focal point, proper for a public building. There a school and a drinking fountain called after their founder, ʿAbd al-Rahman Katukhdha which dominate the position (see view C.D.2, C.F.1).

Staggered Crossing-Junction

Another two crossings between the avenue known at this area as al-Muʿiz

street and two traverse modern streets, the first known as al-Muski street (area C.1) are reminiscent of those of the Seleucid Aleppo described earlier as a confusing right angle cross. The second crossing however is not straight as the first but much wider.

The second cross lies in part on the position of an old traditional cross. From some part of the remaining traditional buildings and an old 1880 map, we may be able to reconstruct a proposed shape for the cross (see Fig.151). The lower southern mouth of the cross is deflected by a difference of direction between the qibla direction of two mosques - each on one side - and the main street. To overcome a resulting shift in the alignment of the street, the lower part is gradually shifted backwards in a staggered fashion to rejoin the original line, see view C.J.1.

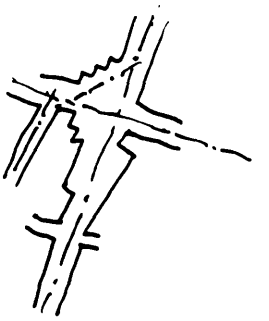
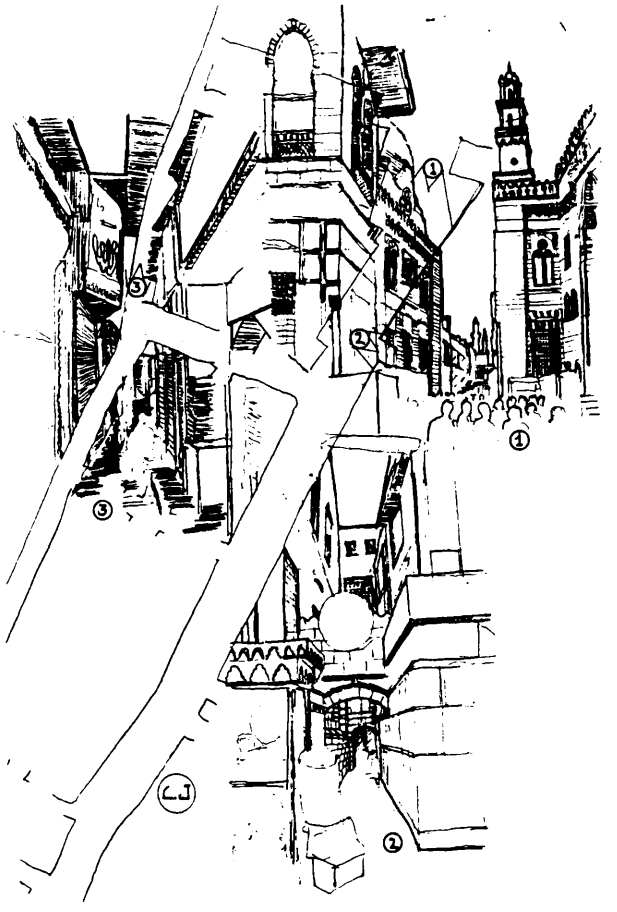


FIGURE 151
STAGGERED
CROSSING-JUNCTION



Also in response to a side street on the left hand side of the main one, the old map gives indications that the upper part of the cross of al-Muʿiz street is also staggered toward the west so it would gradually reveal part of the side street and gives it more importance.

Balance of Directional Thrust

In area C.M, a diagonal shift in the alignment at al-Muʿiz main street has expanded the width of the street. This

probably occurred on the place of the first double gate known by the same name as the second existing Zuwayla gate (area C.Q). It has also widened the lower, southern, flank which thus affords a thrust shift from a one-line street into two-line streets (see Fig.152). Different to the T junction, the shift has here transferred part of the street sides into deflected fronts and so in a balanced transition and inclined notion conveys the main vertical direction of the main street to three horizontal or traverse streets placed on the junction between the vertical, horizontal and diagonal lines (see Fig.152). The shift also provides strategic focal position which could be utilized by an important building or spatial elements. As view C.L.1 shows, a drinking fountain of a segmented cylinder with a dome known as Sabil Mohammad Ali is placed on the southern side of the diagonal shift.

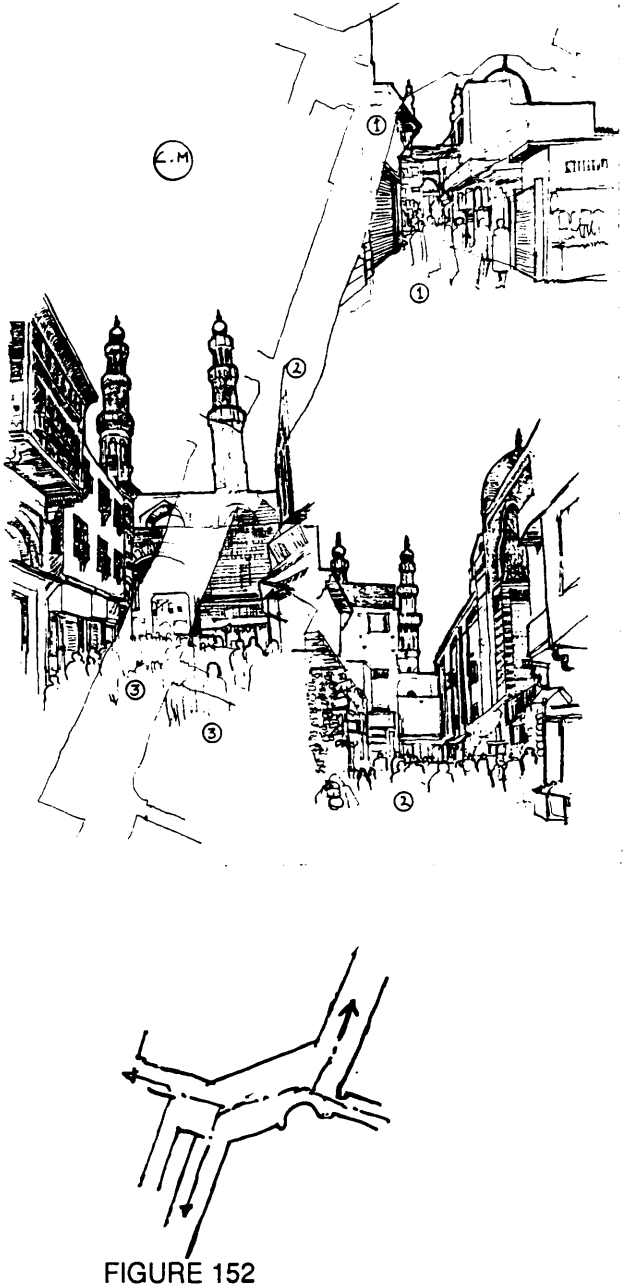


FIGURE 152
DIRECTIONAL THRUST

The Bottleneck and The Cone Collection

Outside Zuwayla gate, area C.Q a major cross, is reminiscent in shape to the cross discussed above in Aleppo under the Bow and Arrow cross, and also works as a directional distributor or collector between the four major parts of the city, more than as a mere cross.

On the northern upper mouth of the cross the Zuwayla gate and its towers works as a bottleneck for movement in and out. However that is not the only

architectural and spatial element which diverts movement. Facing the gate the lower southern part of the open space of the cross is deviated into the shape of a funnel which works not only as a space receiver from the gate front but also from both sides. On the narrow end of the cone another cross (see Fig.153) formed from the continuation of the avenue of al-Muʿiz (called here shariᶜ Qasabat Radwan and further to the south as Khayamiya street), and a secondary street to the right and the market street of al-Qamarbiya to the left. This cross is manipulated by the deviated wall of the eastern mosque, created also by the difference between the qibla direction and that of the street. This bend which controls the flow to the mouth at Qasabat Radwan market, conceals the secondary right hand street and at the same time with a slight shift in the front left hand wall, opens the direction towards the side market street. Upper wall protrusions on both sides of both markets while contributing extra internal spaces, for the upper floors of the market, it reduces the structural distance of the roof, like the arcaded sidewalks, they embraces the movement below but without columns and thus create a tunnel of focus which frames and enhances the elements in between, such as a dome (view C.Q.3).

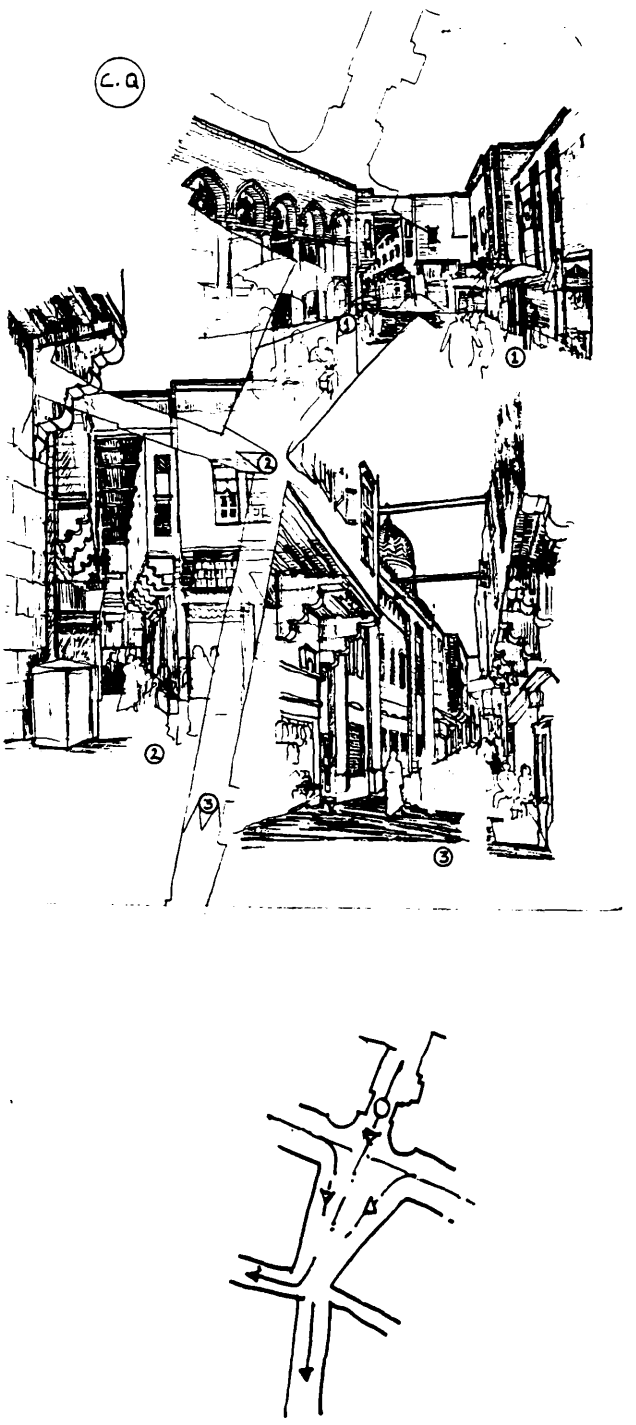
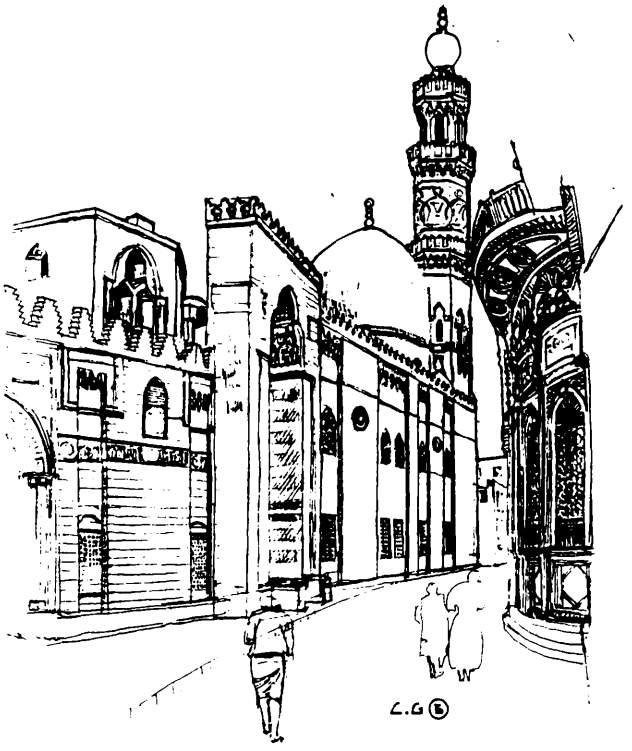


FIGURE 153
THE BOTTLENECK AND THE CONE COLLECTOR CROSSING

The porch approach to the market discussed above is different to the arch approach of the market in Aleppo, (see view A.K.1 and A.L.4). It is more receptive as a threshhold transition than Aleppo's arches. However in Aleppo's central market, not only is the main access to the central market manipulated by arch gates but all the different entrances to the different markets inside are controlled and distinguished by gates, domes, uncovered crosses, shifts and bends in the markets alignment and by differences in width (see view A.M.3, A.O.1 and A.O.2).

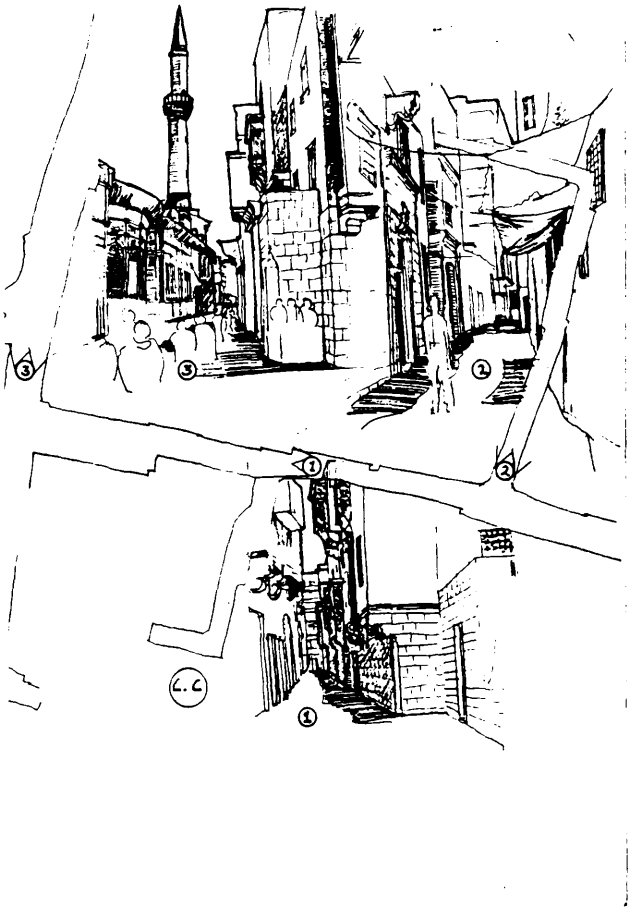
Pattern of Architectural Emphasis

While open spaces and streets in Aleppo are lively characterized and enhanced by covered passages and arch ways, in Cairo the spaces feature is the cantilevered projections of windows, parts of the rooms and shades. Yet in Cairo projections on both side of a space in some cases leave only narrow spaces in- between and more or less create an impression of fully covered space.

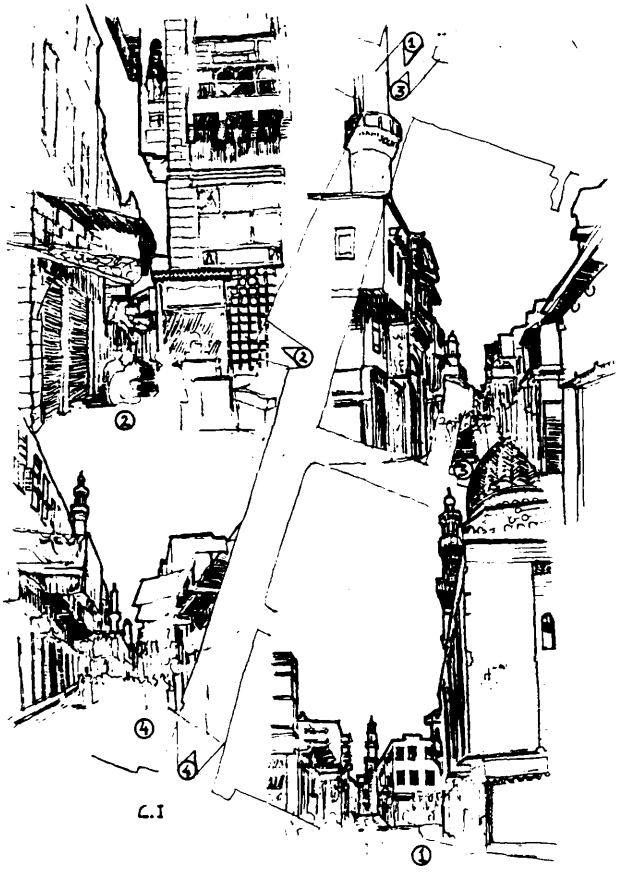


Not all projections or protrusions, however, are above the movement of the people. A common practice is that, parts of the facade at ground level, and in some cases reaching the skyline, protrude in order to accommodate a porch gate (as in view C.B.2, C.G.5) or external steps (as view A.B.4) or a combination of volumes protrude or

recede in a curve as demonstrated under the "spatial tangent" above. The last architectural arrangement was used as an alternative to avoid using a curved structure which, it appears, until the time of the Ottoman caliphate, the Muslims either did not favour or were not conversant with. Other expressive architectural - spatial patterns were the result of alignment differences between the qibla direction and the outer space alignment. These differences, mainly found in Cairo and Isfahan, created particular and imaginative solutions between internal and external spaces and afforded provisional open spaces (see views C.B.3, C.I.1, C.J.1, C.Q.1).



More architectural emphasis took the form of convex protrusions, employed in later stages by the Ottomans, which were intended to accommodate drinking fountains. Here a statement of the importance is manifested by the use of cylinder segments for public building or services (see view C.C.3, C.G.5). Before employing this arrangement, drinking fountains (as we have seen in view C.D.2, C.J.1, A.E.2, A.K.2, A.G.1) were placed on strategic positions or protruded elements, or exposed parts.



Contrary to the convex encroachment on the external street, porch recessions were mainly employed in mosques, religious and public buildings which were endowed with a semi-external space

provision for outdoor space (see view C.B.3, C.B.4, C.G.5, C.L.2, C.M.2, A.F.1, A.K.3). Another difference between the two is that while the concave recession reveals the farthest side and act as a visual receiver, the convex protrusion reveals the nearest side to the viewer and acts as a visual reflector.

In many of the above cases lack of alignment in the space arrangements generated an ample and fertile background for spatial articulation with favourite locations and special layout were utilized for functional practices as well as for artistic spatial expressions.

However many of these functions and expressions could not be achieved in regular arrangements, with uniforme layout, clean alignment and above all systemized pattern.

Prominent Disposition

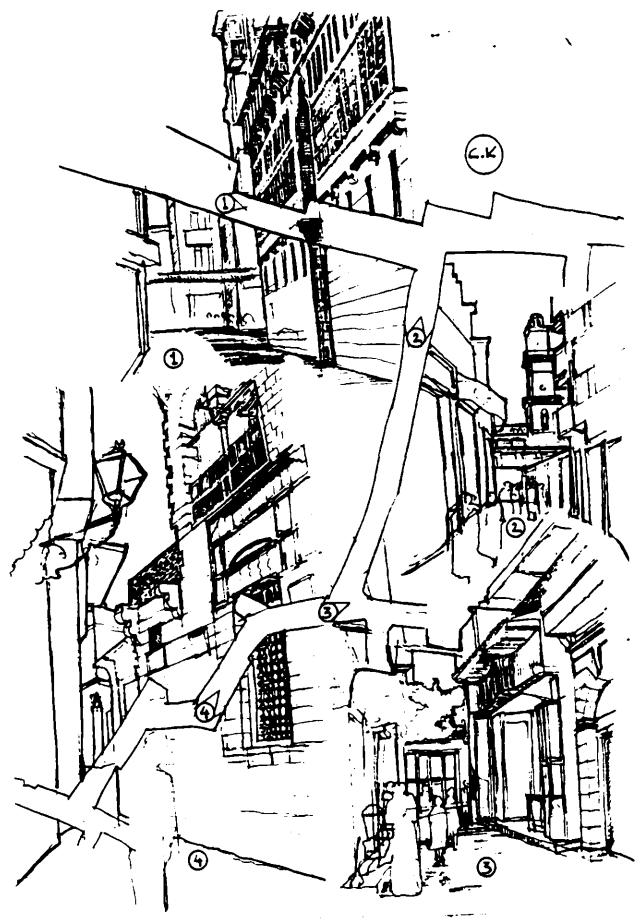
Minarets, domes and porches in Cairo, Aleppo and in the Islamic city in general attained visual as well as an audible prominence not only in height but also in disposition within the building arrangement and within associated spaces and the surrounding setting. In the case of the minaret, audible prominance was also vital. For instance BURCHARDT [3], demonstrated that distances between minarets in relation to quarters, the areas they serves and the surrounding streets are systematically

disposed in accordance with the voice range, of the summon's of prayer (Azan) about 70m radius. Therefore an average distance between every two mosques is about 140m (see view C.I.4, C.J.1).

However the fact that minarets were originally intended to have an audible function as well as serving as elements of religious manifestation does not eliminate their role as elements of visual expression.

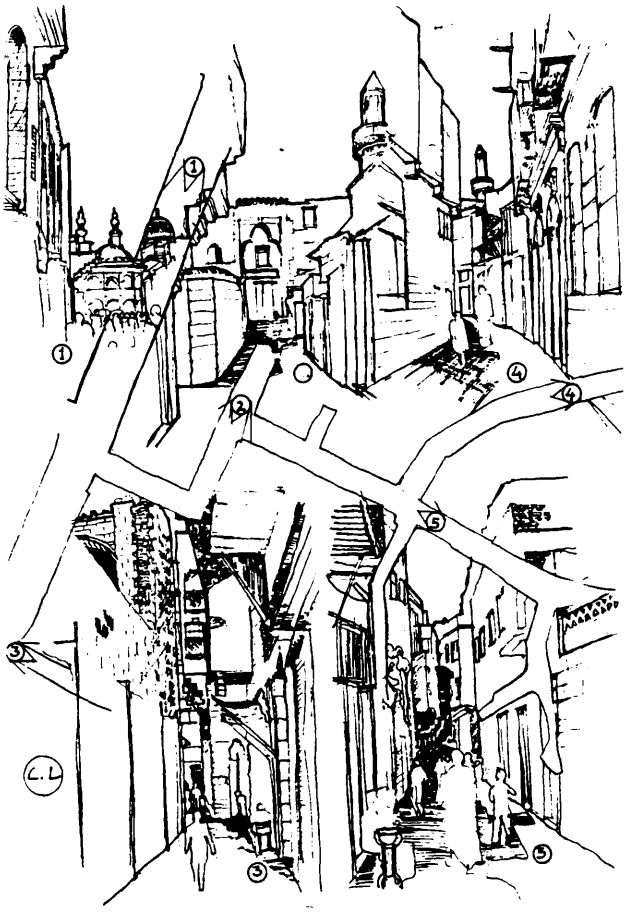
Alternate Prominency

In area C.G, the original place of the old maydan was between the two palaces, while the whole of the remaining space is manipulated visually and in movement by alternate protrusions of buildings, mainly the mosques, on opposite sides. By placing minarets, domes or porches on these protrusions they were turned into elements of competing prominance (see views C.G.2, C.G.1, C.G.5). Another example of this model can be observed in view C.J.1 and C.K.2. However, not all minarets are successively placed on opposite sides. Nearly all main streets in Cairo are dominated by a considerable number of such elements. Many of them appear in successive distances on one side, yet they still compete in their architectural as well as visual prominance (see view C.I.1, C.I.4, C.J.1).



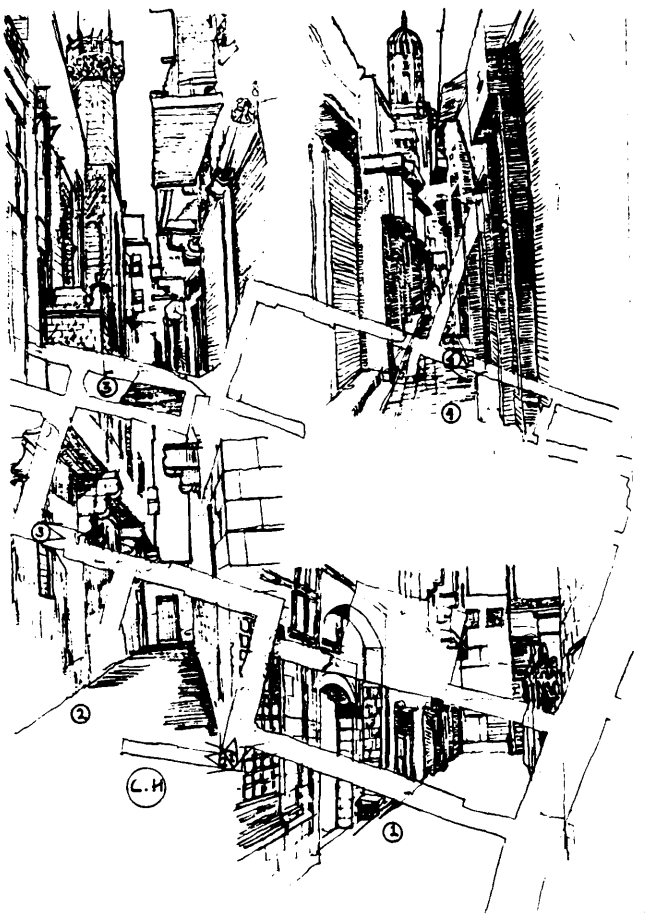
Symmetrical Emphasis

At Zuwayla gate (area C.Q), two minarets, that belongs to the Mu'ayd mosque were not placed on the mosque itself, but on the two towers of the gate (see view C.M.3). The above case provides another arrangement which clearly illustrates how minarets in the traditional Islamic city are employed not only as religious elements of expression but also as elements of urban as well as spatial articulation. The effect of the two minarets however is not visually confined to their immediate surroundings but reaches out as far as 250m away from their enclaved space (see view C.L.1). Placing the minarets on the gate further emphasises the architectural prominance of the two towers; they frame the street leading from and to that space (see view C.M.1); they embraces and emphasis, the location of other spatial elements such as the drinking fountain (Sabil) of Mohammad Ali (see view C.L.1, see above also under Balance in Thrust Shift).



Axial and Central Emphasis

In most of the previous models, with the exception of the one discussed above at Zuwayla gate, minarets are disposed on the streets, side-line or projected from the side line forward into the centre of the street. In other cases minarets or porches are incorporated and axially centred on the lines of side streets which lie perpendicular to the street on



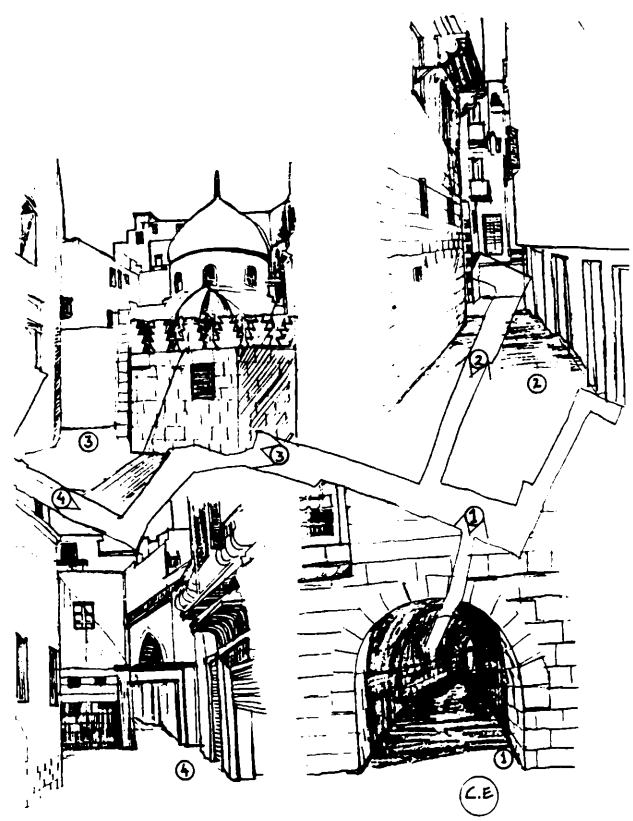
which the mosque is placed on, (see A.F.5, C.H.4, C.L.2). In view A.F.5, the minaret is centrally disposed on the porch of its mosques. In other cases on an archway gate as that of C.H.4 but not seen in that image so both elements are incorporated simultaneously with facing side-streets.

Visual Infiltration and Outreach

Placing the above elements of eminence on strategic positions within the city layout not only enhances their position within their surroundings but, as demonstrated, also from far away. Views C.L.4, C.F.4, A.G.3, A.F.4, show that minarets visually infiltrate enclave spaces in private and semi-private areas, and thus give clues as to the importance of a direction as well as an important domain.

Space Censorship

A relative increase in the projection of windows or rooms overlooking a narrow street or space in certain cases (see view C.C.1, C.I.4, C.J.3, C.L.3, C.N.3, C.O.6) decreases the openness to top and front and intensifies the original visual effect of original narrowness. Contrary to the above visual control, an archway (see view A.C.2) which embraces both sides of the narrow street, visually fixes its true width despite a relative narrowness which appears at its end.



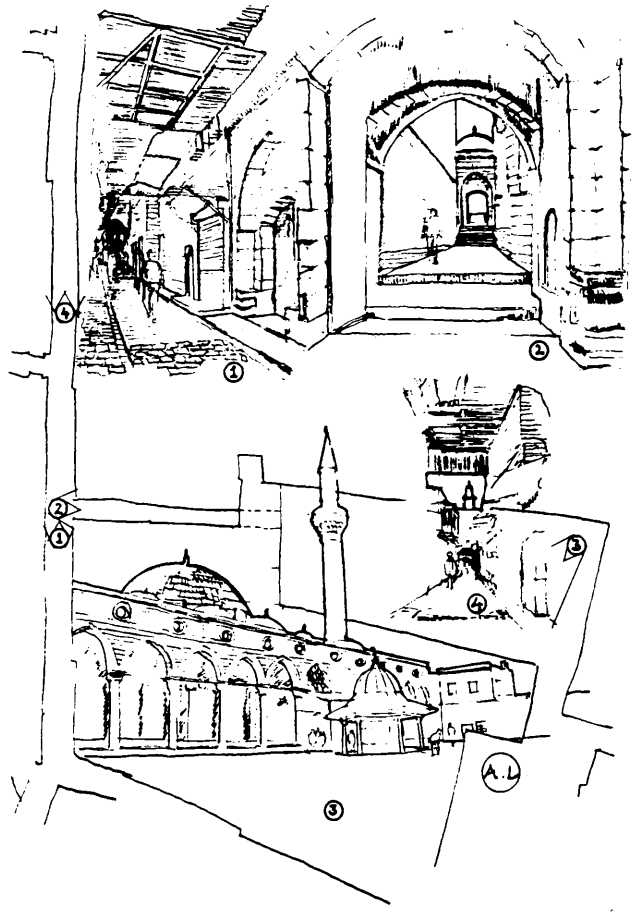
Auxiliary and Affiliated Spaces

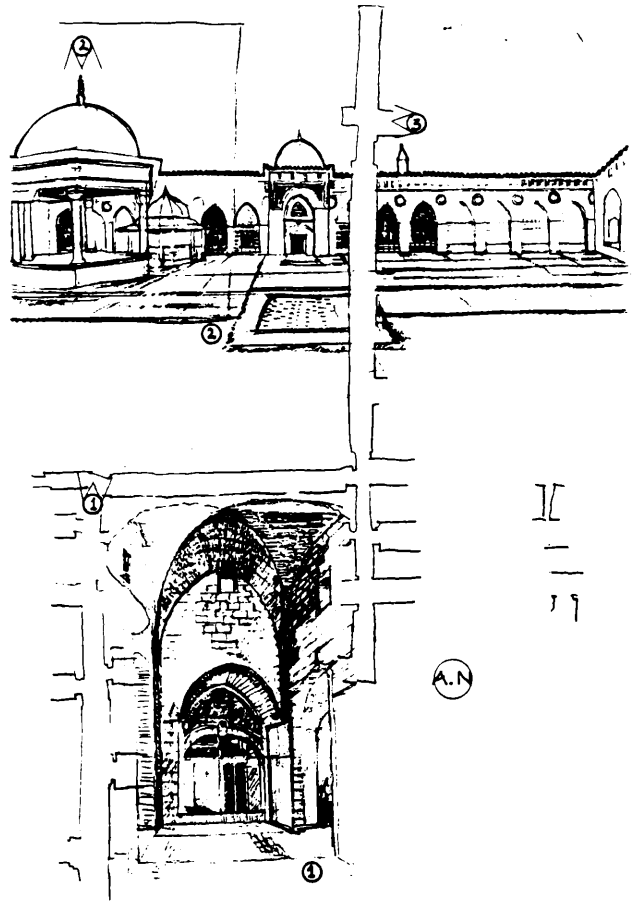
Areas A.L and A.N enclose two open spaces. The first is associated with a main mosque, while the second is associated with the main central mosque. Both spaces function as an open court. Yet the second one is encompassed on three sides by porticos. The fourth, where is the main prayer hall, is also formed from a portico but its arched openings are partitioned by wooden screens and doors. Spatial intermix between the open court and the internal open sides gives a high notion of affiliation between the covered and open parts (see view A.N.2).

Differently, the open space associated with the other mosque (area A.L), is flanked on three sides by almost blank walls. The fourth side is formed from the open portico of the front of the prayer hall. Thus the space here is more or less related to one side only and thus forms an auxiliary space (see view A.L.3).

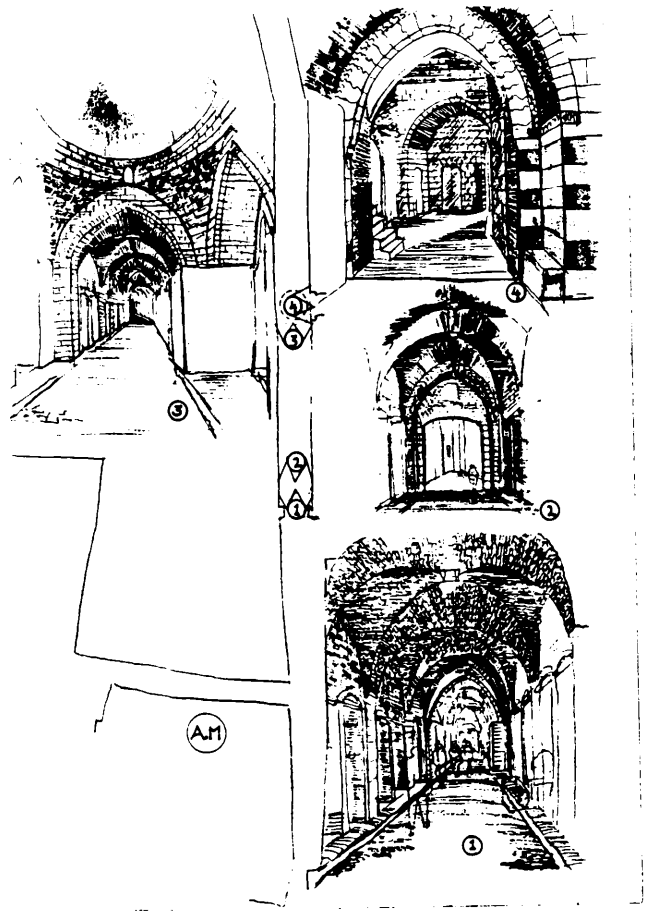
Public and Communal Domains

Access to the mosque (area A.L) is only gained through the open space which itself is approached by means of entrances from two side alleyways. Both alleyway entrances, placed on the main two streets leading to the central mosque and market, incorporate a balanced transition between the streets and the open space. Each, with its two





side gates (see view A.L.2) emphasises a sheer transition. A typical persistence of pattern of the separation of domains, between the public realm, represented here by the noisy vigorous markets (the place for everybody but with varying interests) and the communal domain, represented here in the open space of the mosques (the place for everybody but with mutual interest).



Spatial and Building Signs

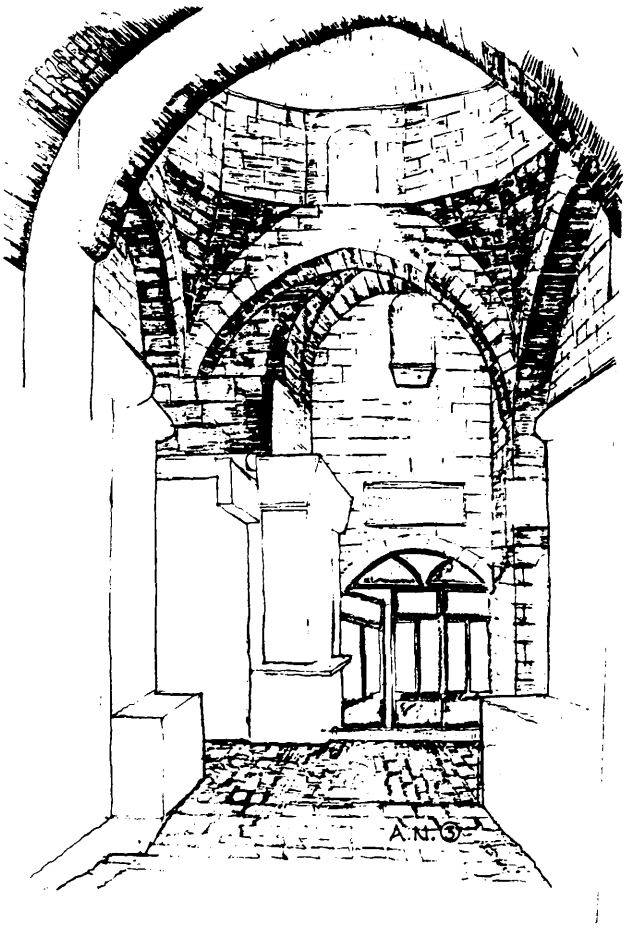
The left hand alleyway (see view A.L.2) runs between two successive gates. The first gate on the main street is about 27m away from the inner gate which open directly on to the open space. It is architecturally articulated by a porch, a pointed arch, a segmented arch and two stone seats (see view A.L.1). The two stone seats are usually associated with the gates of religious buildings and are permanent architectural features; they thus give cues as to the type of building, which lies usually unseen behind a blank facade.

Short of length and relatively narrow, the alley is visually and physically manipulated. A number of steps, a dome surmounting the inner gate and the two sides embracing the dome prepares for the importance of the unseen space and mosque (see view A.L.2).

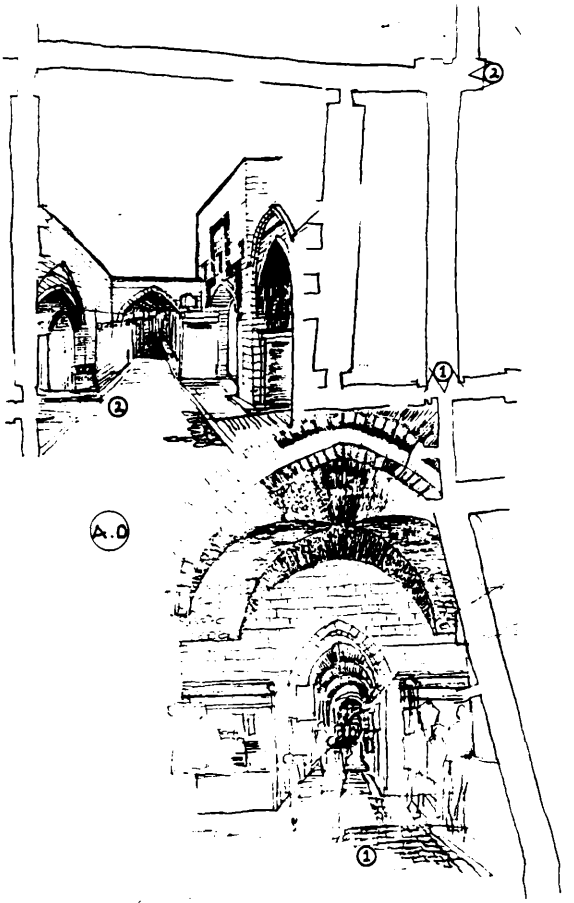
The right-hand alley (area A.K), offers a similar approach but has a different

architecturally articulated gate (see view A.K.1) and is a level covered alley.

Inside the covered market (area A.N), the importance of the gates of the market and the central mosque are expressed by their positions. Within this spatial disposition the front door of the prayer hall, faces on to the main street and, the right-hand gate, faces another main but side- street. Further emphasis of the importance of both gates can be observed in the raised roof of the cross space in front of each gate. There are on the side gate (see view A.N.3), an elaborate dome, four side double archways, four window slots on the base below the dome and the same on the lower walls supporting the arches below the dome. These all accentuate the human-scale door and lead the passers-by to the side portico of the central mosque.

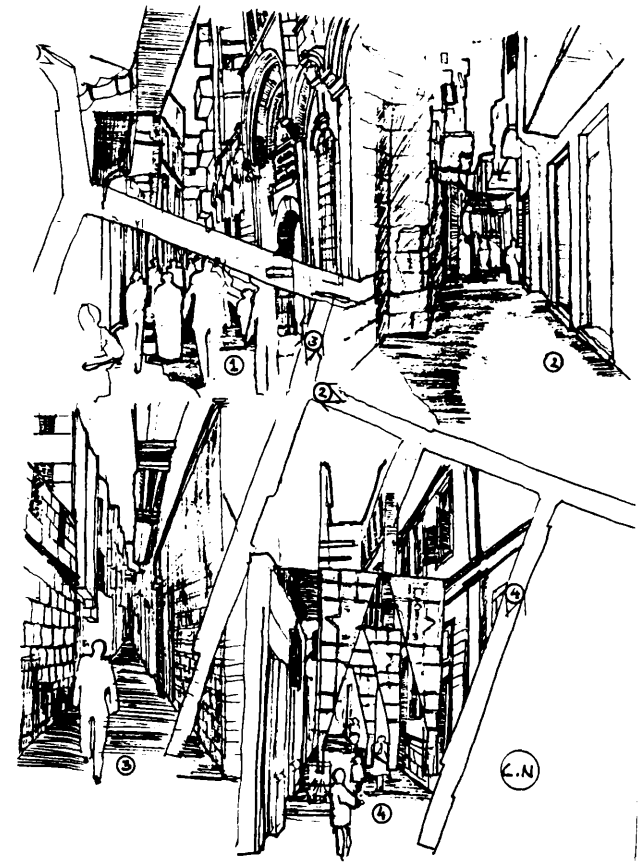


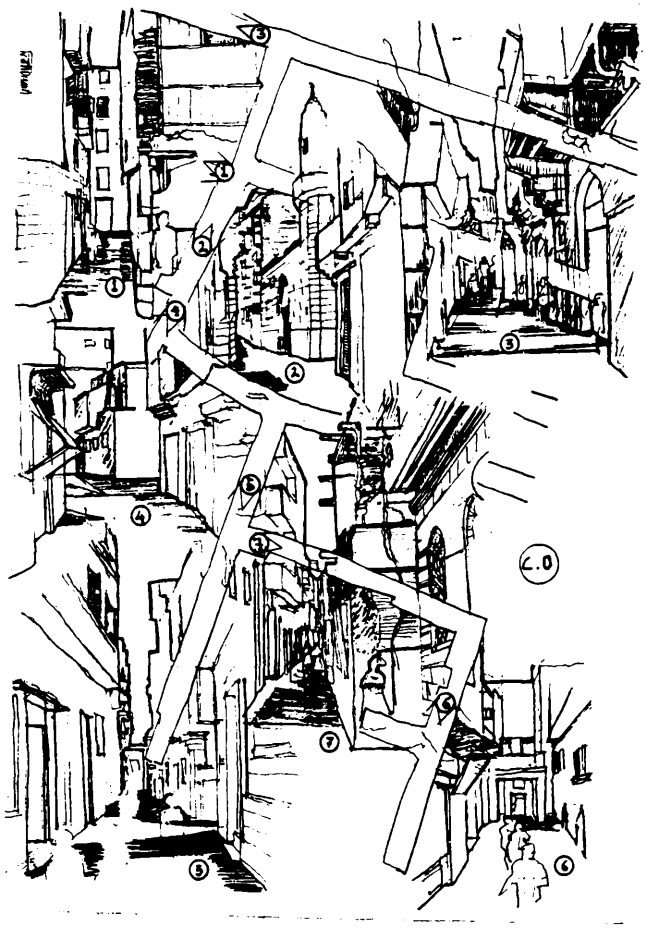
A similar arrangement but, a cross vault with slot windows instead of the dome, (see view A.N.1), highlights the difference in the roof levels and stresses the direction in the junction in front of the gate. It also draws attention to the dim and shady passages of the market by providing focal light.



Internal Concept of External Space

At the beginning of this chapter and at the end of the previous one, we demonstrated that external private and semi-private spaces were physically, and visually, manipulated in a way that would suffice and serve the nearby occupant as well as giving them pre-emptive use. Streets and external spaces in areas C.N, C.O have in their way conformed with and in other ways varied from, those areas discussed above. Apart from the straightness and regularity manifested in the two areas discussed here, the whole distribution and arrangement of the streets conformed with the limb branching pattern that pervaded most parts of the residential quarters. Also, like most private spaces, these spaces are visually terminated and confined but do not manifest the same continuity and flow of space as than in Aleppo. The inclusiveness of many spaces create the feeling of affiliation between the houses overlooking and associated with the confined space.





In view C.N.4, a dead-end alley was transferred temporarily into intra-space (similar to the courtyards) by a canvas structure (Siwan). The space is enclosed by three successive diagonal arches and is utilized by one of the houses overlooking the street for weddings hall or funeral receptions. However except for a few distinctive

elements such as; a mosque and its minarets (view C.O.2); traditional wall projection and corner chamfers (view C.O.3); an elaborate gate porch and windows probably of a modern renaissance style (view C.N.1); and the above temporal arrangement, the whole views shows a wide panorama of architectural transformation from traditional into a mixture of confusing images.

The Use of Terminology as Verbal Elements of Spatial Expression

During the various parts of this topic, several terms were used as references to certain spatial arrangement, shape and type. Inconsistency in the use of these terms is not only obvious between the different Islamic cities in different regions, but also in the one city. However, differences in some cases could be either ascribed to local dialects terms between the regions or in part to the transformation in certain arrangements, types, shapes and use of spaces that did not coincide with transformation in names or descriptive terms. Many of these spaces which retain their original names or were called after them, and when applied to the existing space contradict the meaning of the old name. For that reason the terms referred to below should be regarded in their original context and not in their existing application. Also variable terms of different applications will be chosen from different regions and cities if equivalent terms do not exist in the cases discussed previously.

In general, the terms used depend on the physical shape of a street or space such as the narrowness, wideness, ascent or descent, curvature, continuity, termination, enclosure, definition or shapelessness. However different spaces and streets will be presented as much as possible in their chronological type and evolution.

Khatt pl. Khutut is the earliest term engaged in the spatial arrangement of earlier cities. It indicates a continuous line but of no precise shape.

A khatt can be a line of communication or route between cities, centres, elements or a of space between two areas quarters etc. Also it can comprise a number of streets which would form a quarter, district or suburbs[4].

Tariq pl. Turuq, a main road secondary to the khat. It indicates a passage or track way which later turned into a defined road.

Nahj pl. Nuhuj or Manahij is a defined more or less straight line. The term used usually indicates a process or procedure, hence in the spatial concept it is a main line generated from the centre towards its outskirts like those of Kufa[5].

Shari^{c} pl. Shawari^{c}, the term is spatially used as early as the time of the foundation of Baghdad[6]. It indicates, like those presented in Samarra, a major, relatively straight, physically defined street. This type of street only existed, unlike the above three, in a built-up environment.

Darb and Darab pl. Drub, both terms used as early as the second phase of the Islamic city's evolution. The term is originally borrowed from a mountainous way. Hence it indicates an ascending, or of course, descending level. Darb indicates a wide through-road second to the shari^{c}. Darab, also a wide road, it indicates a dead-end character[7].

Sikka pl. Sikak, third to the shari^{c}. It is more or less a side road of controlled in and out approach[8].

Zuqaq pl. Aziqqa, fourth in level after the shari^{c}. It indicates a narrow possibly a through or dead end alley way.

^{c}Atfa pl. ^{c}Atfat, similar to the Zuqaq but here it indicates a curved or a bend character. This type of expressive street mainly persisted in Cairo.

Zanqa or Driba, fifth in level. It literaturely indicates a tight dead end alley. Mainly used in the western part of North Africa[9].

Other spaces, other than the communication lines discussed above, also took several shapes but not a wide range of names. Of these expressive open spaces go back to the early cities of Islam. They are either physically parametered spaces or free, not enclosed but spatially defined spaces.

The term **Rahba** pl. **Rihab** indicates a spacious or vast area and was used in general to describe a physically parametered space. Auxiliary terms were used to express the space shape such as the square (**Muraba'a**) in Kufa, round (**Mudawra**) in Baghdad , prolong and probably rectangular (**Maydan**) shape. However not all **Rahbas** are of regular or uniformed shape.

Other open defined, but not enclosed, spaces are mainly peripheral spaces such as the place of the feast prayers (**Musalla**), open markets (**Marbad**) and training and horse courses and animal-preserve ground (Hayr).

Conclusion:

Figure 156 in the enclosed Album represent a schematic conclusion of both the correlative and expressive dimensions of the eventual spatial pattern of the classical Islamic city (see Fig.156).

Foot Notes: Part Three, III

1. CULLEN, G., **Townscape**, The Architectural Press, London (1961), 89
2. CULLEN (1961), 106
3. MAVRAKIS (1984), 200, cited T.Burchhardt
4. MAQRIZI (1987), II, 23-36
5. TABARI (1987), II, 479
6. YA'QUBI (1957), 11, 26
7. AHMAD (1917), 73
8. YA'QUBI, (1957), 10
9. HAKIM (1986), 99

CONCLUSION AND RELEVANT APPLICATION

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I. Conclusion, Part one:
Precepts of Islamic Urbanization

Islam as a religion aimsat cementing the bond of belief and faith and achievement into a close unit of Muslim community. As a doctrine, precepts and values, Islam furnished the foundation of the societal structure of the Muslims at different levels, as a community (**Umma**), as the populace (**ʿAmma**), neighbours (**Jira**), extended family (**Qurba**) and as a family (**ʿA'ila**). As a practice and conduct, Islam supplied various knitting threads in the societal fabric. These threads, interpreted spatially as lines of communication, synchronized with ties and relations and worked as a framework in bringing together and organizing Muslims in successive groupings.

Muslims were assembled hierarchically, temporally, socially and spatially five time a day at the level of the family, extended family and neighbours in prayer in places prepared in houses, between the houses or local mosques; once a week, at the level of the city's inhabitants, in prayer in the central mosque; a month a year, at the level of the whole community, in fasting and in celebration, at the level of the city's inhabitants in prayer places prepared specially for the feast; once in the life time of the Muslim, at the level of the whole Muslim community, in Mekka on pilgrimage, and again at the level of the city's inhabitants in the feast prayer place.

Islam has persisted as a powerful manifold religious force since its inception. However in the last few decades, a separation between the religious dimension and other temporal dimensions, and the partial failure of other alternatives that were intended to fill the resultant gap, meant not only a break up in the societal institution but also a breach in the natural organic whole, in the sense of community, citizenship, neighbourship, kinship and family, and subsequently the loss of many lines of social communication.

> Recent Islamic resurgence is making it quite apparent that inhabitants of Muslim societies have a strong desire to see their

environment is imbued at all levels with Islamic tradition and heritage[1].

Relevant Application: Part one

Regular and frequent congregation to practice collective religion at the various levels of the Muslim community afford a contemporary scope for family, neighbourhood or community assemblies, and thus provides centres with interior forces of a self-regulating and administrative social structure. The adoption of such a supportive system of local administration would on the one hand ease the pressure on the central government and, on the other, by reviving the shared values, religious consensus and precepts, would restore the social interdependence between the members and groups of the community and to coordinate the individual decisions in a natural and flexible way. This eventually would produce an organic whole out of a set of individual acts.

In realizing such hierarchical local organization, certain processes and guidelines derived from the Islamic precepts and law should achieve degrees of flexibility that would allow various local groups to be involved in conceptualizing and in shaping their built environment. Such guidelines should tackle the pre-emption of use and the organization of outdoor spaces, the **Fina'** concept; the expansion over the outdoor spaces known as the **sabat** (air right structure), air rights, fragmentation of spatial right and the right of the way, and other guidelines that will be discussed later and many more which are beyond the topic of this dissertation. Such processes should be implemented in a number of pilot local projects, with social measurements so devised that they would allow the opportunity to amend and to adapt the general guidelines in the context of their eventual success or failure.

II. Outline Conclusion, Part Two:

Frameworks of Islamic Urban System

Measures of urbanization throughout the various stages of the Islamic city's evolution corresponded closely to the patterns of formation and transformation in the religious, societal, commercial and administrative

frameworks. Moreover evolution in these frameworks in five phases was not only synchronized between the frameworks mentioned above but also between them and the five phases of the evolution of Islamic law (Shari'a). Thus in conclusion the Islamic city evolved in a way compatible with the various aspects of its urbanization. As demonstrated, resemblance in the urban frameworks and their pattern of evolution, while coinciding between cities in the one phase, came to be differentiated between cities in different phases. Similarly, while spatial patterns or arrangements between different cities corresponded to their relevant frameworks, they did not, even in any one phase or city, attain a single one identical spatial arrangement see Fig.154)*. Thus Islamic cities in their five phases of evolution, although sharing an urban framework in any one phase, were not limited like some other civilizations to one spatial conception. Thus in the context of these frameworks when applied to cities' design, Muslims experimented and developed from their experience variable spatial arrangements which both previous and later civilizations have adopted. Thus when we have encountered the resultant spatial pattern we intended to tackle them in terms of their spatial framework rather than their per se spatial arrangement. For this reason it is essential that here when we speak about or refer to cities founded by Muslims or from the pre-Islamic period, as Islamic cities, we define them in the context of their urban framework rather than spatial arrangement see Fig.155).

In this context, the spatial pattern of the traditional Islamic city has been viewed as a continuous process of evolution rather than as a classified model. Since the evolution of the Islamic urban system encompassed cities already existing from before, and at the same time included cities and urban centres founded at different times, the evolution has been designated in a two-fold processes:- first a transformation process, that is changes that occurred under the

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* For Figs. 154, 155, 156 and for a full size of all images, see enclosed Album

influence of the Islamic urban system in existing fabric; and second, a formation process, that is new urban fabric or an urban centre founded in association with an existing one or on a genuinely virgin site.

In the Islamic city, a variety of spatial patterns were employed within the Islamic urban system and innovations or elaborations were continuously introduced into the newly founded cities or existing ones. But nevertheless they kept within the urban frameworks that persisted in each phase.

III. Conclusion:
The Constituent of the Islamic Urban Theme

A. The Concept of the Focal Attraction

Urbanization in the early stages of the formation of the Islamic civilization, was established over a few modest units and elements, namely: the centre including the mosque, market and government house; intra-urban components including residential districts and quarters with local mosques and open spaces; the peripheral components including the open market or possibly markets, cemeteries, feast prayer places.

Measures of urbanization in these centres were controlled by one condition, that is the affiliation with a Friday Mosque. Such a dominant affiliation has profound consequences. The central mosque was the focal centre of communal, political, intellectual, cultural, and judicial activities. The institution of the central mosque was elemental in the formation and the integration of the Islamic urban system.

In the first and second phase of the Islamic city's evolution, the dominant status and size of the central mosque along with its associated open spaces both indoor and outdoor and its relation to other urban elements consisted the general theme of the early Islamic city.

The later proliferation of Friday Mosques was one of the principal urban parameters behind the evolution in later phases. In the third phase

about three to four Friday Mosques determined the urban framework of the multi-centred city. In the fourth phase, Friday Mosques which were founded in citadels along with new ones in the suburbs, underlay the framework of the multi-nucleate city. In the fifth phase, an unlimited number of Friday Mosques determined the cellular fringe of the Islamic city.

B. The Concept of Grouping

The grouping system was another basic framework in the Islamic city's formation and evolution. Employed hierarchically, grouping was elemental to the societal, commercial, military and administrative organization. The process of these groupings was not constant or limited, groupings grew or shrank in size and in number closely corresponding to the change in the relevant framework in the different phases.

Relevant Application:

Parameter of Regenerating an Islamic Urban Theme

Two of the essential principles, focal attraction and grouping, which governed the urban system of traditional Islamic cities, not only persisted throughout these cities' evolution but were also employed in the west and the Muslim world in the planning of new towns. However difference remains in the criteria adopted by each.

Measures such as the educational, commercial and utility facilities have been employed in an attempt to create a hierarchy of "self-contained" groupings, called here the "unit". While each of these facilities served its particular field in the urban system - some were used as the focus of the unit, some were used as thresholds of its grouping or growth - they have partially failed to revive other lines of social and cultural communications[2].

Both parameters, the focal attraction and the hierarchical and grouping affiliation, remain generally valid. They would afford a contemporary scope for directing and at the same time containing city development

and growth. However the form in which they were traditionally applied or are to be applied now should remain dependent on a compatible combination of religious societal, commercial and administrative frameworks.

a. One Centred Grouping

Social affiliation and mosques capacities, that is to say acts of communication which assemble people in the urban levels either singly in different actions or collectively in one action, should be the parameter behind the division or the integration of the various groupings. In the one-centred grouping, mosques at communal level and the feast prayer place should endow the inhabitants of the Islamic city with a sense of community. However the vastly increasing numbers of inhabitants in new metropolises or cosmopolises make the aim of bringing the city's inhabitants together in one place difficult if not impossible to achieve - although, unlike in traditional times, modern technology such as telephone, radio, T.V., can now provide the means by which to promote the levels of communication and to raise the number of congregations, that does not mean promoting or retaining the sense of community or the "quality of life".

However the impossibility of collecting all the inhabitants of the city in one mosque remains valid, as it was in the third phase of the traditional Islamic city's evolution. The size of the communal collective prayer in both the Friday and the two Feast cermons could function as a parameter to control the excessive growth of the one-centred city, and at the same time as a measure which controls when the one centred city of the single Friday Mosque and Musalla is to be expanded into multi-centred city of many Friday Mosques and Musallas. Hereafter, even when the whole inhabitants have not had the opportunity of attending the original mosque and musalla at one time, that mosque and musalla should remain the ones associated with political and administrative celebrations and activities, thus retaining the sense of communal unity.

The figures upon which to calculate the optimum size of the one central mosque and thus the one-centred city remain debatable and cannot be solved within the limits of this thesis. Yet we know that even within the periods of comparatively humble earlier technology central mosques in Baghdad, Samarra, and Cordova were of a size that allowed 30-40 thousand people to gather in collective prayer. We may thus conclude that new central mosques and musallas could allow, of course with the aid of modern technology[3], up to 100 thousands to congregate. However that huge number does not necessarily have to be all accommodated in a fully built masalla and mosque. Internal and external open space and streets can be organized, as in traditional and even modern times, in a way that could accommodate up to half of that number. Still that application will be further tackled under the section dealing with orientation and direction below. Presuming that one person in five from each household attends the midday Friday Prayer, the one centred city could accommodate up to 500 thousand inhabitants.

b. Multi-Centred Grouping

The generation of mosques that could cater for a collective Friday Prayer and the promotion of one-centred city into a multi-centred city should be achieved under the traditional formula. That is, each of these urban centres should acquire the status of a specialized and independently built environment. In order to establish that parameter, clear unbuilt open spaces with natural boundaries should function as buffer zones between the centres. There a Musalla, place for feast prayers, provides another parameter for preserving these zones. An open communal park within that zone should not only be prepared to cater for the feast prayers, but also should include facilities for the whole city's community to celebrate together and to enjoy the feast entertaining activities. Further, each of the generated centres of the city should be dominated by a specialized single purpose, such as commercial or administrative, governmental or cultural. However that does not exclude other local activities of a lower profile from overlapping between the specialized centres.

c. Nucleate Grouping

Nucleate groupings and mosques in the same third level of the urban system, are:- sub-centres when they are of built independent and serve an independent urban element; suburbs (**Arbad**) when they are dependent on an urban centre and associated with a peripheral urban element or activity such as an industry or trade or an immigrant or ethnic grouping etc; and districts when they fall within the periphery of the urban centres. The parameters of such considerations should remain within the context of the status attributed to the grouping's nucleate mosque. While mosques in the independent sub-centres are independent Friday Mosques, those in the peripheral suburbs and districts should not function as Friday Mosques although they should remain important and with the function of bringing the members of that grouping together in mutual interest. Thus, while independent nucleates have the prospect of becoming a specialized full urban centre like those discussed above, the other nuclei should remain dependent on the urban centre with which they are associated.

The size of such groupings continues to depend on the capacity of their mosques to bring the members of the community it serves into frequent contact for mutual interest which would involve religious, communal, social, administrative and political decisions and frameworks.

d. Cellular, Cluster and Enclosed Groupings

The nucleate grouping discussed above, as it was in traditional times, is to be constructed over successive hierarchical groupings. Cellular grouping and mosques at the same level come fourth in the urban system. The parameters of such a grouping are cooperative and neighbourly interest between associated residents, merchants, shopkeepers, craftsmen etc. Mosques incorporating these groups are at a local level and should bring their members in regular and direct contact for local, social and administrative decisions and interests.

Clustered and enclosed groupings are of purely social dimensions. The parameters for such frameworks lie in the intimate relationship and care

such groupings should uphold. The focal attraction in these groupings are outdoor open spaces. A prophetic saying which extend care and intimate relations to encompass the "near neighbour" according to the closeness of their doors, would suggests a parameter for such clustering[4]. The enclosed grouping parameter lies in the familial grouping of a number of households. Such grouping, as previously indicated, should be extended to include the pre-emption of use, right of way, etc.

IV. Conclusion, Part Three:

Nature Preserve, Respect and Restraint

An awareness of and incorporation of natural features, boundaries and restraints in the various levels of the urban grouping in the traditional Islamic city in general and in particular in the first three phases of its evolution were more obvious or fundamental in the general layout. Rivers, canals, or open lands were taken as the natural edges by which a built environment obtained status of an independent urban centre. As mentioned, a Friday Mosque could thus be allocated to that centre. The same concept applied when founding a new urban centre near an existing one.

Later, many of the examples of the Islamic city already discussed showed that the general layout of the various urban centres with in the one city were incorporated rather than imposed on the natural features, the locality, topography etc. These will be discussed further under Orientation and Direction later.

Observation:

Superiority of Modern Technology

For the sake of new development, modern technology is employed on a vast scale to break natural boundaries, expanding the built environment over many of the natural restraints that man would never have imagined he could achieve.

The recent crisis in nature is making it quite clear that by conquering these natural limits man ill respected and ill treated his natural environment and contributed to its decadence.

Relevant Application

Nature as a Pro-Urban Parameter

Natural constraints should support urban parameters in dividing or integrating the various urban centres and other hierarchical groupings. Their application should be closely implemented in accordance with the status of mosques, musallas and grouping guidelines discussed above under the focal attraction and the hierarchical grouping in the urban system. However in some cases in the absence of clear natural limits or constraints, minor ones should be highlighted or artificial ones should be developed. Within the one urban centre, mounds, hills, valleys, steppe and topographical gradients or terrains should be taken as guidelines in local urban arrangements. Mountains, rivers, canals, and open lands should be taken as natural urban parameters in the general layout of the city and inbetween the multi-urban centres or the multi-nucleate centre.

V. Conclusion:

Lines of Communication and Channels of Traffic

The circulation system was the resultant rather than a determining factor in the traditional Islamic city urban system. The sequence corresponded closely to the societal groupings discussed above. Due to this close correlation the Islamic city was not only provided with a circulation device but also with a system of lines of communication. It was a network, used to correlate the groups and the parts in the urban fabric. It developed as a clear reflection of the different levels of interaction between the various groups and members of the community. It grew shorter and tighter wherever and whenever relationships became closer and more inclusive, and expanded and overlapped wherever and whenever relationships were relaxed and more wide.

Observation:

Space Dividers and Island Generators

A break in the natural communication lines means not only a split between the urban components and the loss of the religious societal context but also the introduction of high traffic levels in order to reestablish the lost communication. Eventually transport will dominate the urban system and in the end lead to a total divorce between the built environment and its human application and activities. Thus while various parts of modern cities are highly organized with orderly streets and traffic which mainly function as methods of space divider and island generator and are endowed with little interspace for variable or mutual human interaction. However the lesson already learned from expanded proportion which such motor traffic has acquired in many urban centres of the western world should not be forgotten. Even in modern cities, the day will arrive when, of necessity, the use of automobiles in many areas and especially down- town will be drastically curtailed if not outright prohibited. By allowing for the creation of islands devoted to human interaction the traditional system of the lines of communication would be revitalized[5].

The Integration of Streets and Lines of Communication: Relevant Application

The incorporation of the human dimension into the traditional circulation system, termed here as the (line of communication), together with the mobile dimension of the modern street pattern, should be used under the formula that the system is primarily a network of lines that brings people together in an act of communication and secondly, that it is network of utilitarian streets that allows access for the various systems of transport, and not vice versa.

In other words, streets should be designed in relation to the urban level and element they serve. They are outdoor living space when they serve residential groupings. They are outdoor markets when they interrelate commercial groupings and activities. They are prayer places when they are associated with mosques or religious building. And they

are communal places when correlate to the central Friday Mosques etc. Finally these spaces are temporal streets when and where they provide motor access.

VI. Conclusion

Orientation and Direction

In the discussion of the topic, orientation and direction were either used in their global conceptual framework, where they deal with the cognitive interrelation between one's existing place to other unseen places or other urban centres, or in their local perceptual context, that is how one's own place is perceived in relation to either near or associated places. A further distinction is that, here, when the word "orientation" is used, (of course not in its original meaning of towards the east), it indicate how the qibla arrangement (orientation of mosques or prayers towards Mekka), provides a global conception and a local perception. "Direction" is used at both global and local levels in its general meaning.

Spatial orientation and the direction of streets and buildings at both levels are dealt with under one general theme - that is the static forces that shape the Islamic cities. However these forces are viewed as factors of macro influence when streets, spaces and buildings are either directed in accordance with the Qibla orientation or when streets are directed towards other urban centres. Or they are seen as factors of micro influence, either when streets and spaces are directed in relation with local natural features, such as climate, topography and physiography, or when streets and spaces correlate the urban component and element together. Thus labelled and dealt with as correlative structure.

Each of the spatial concepts described above either worked as an independent theme or overlapped with one or more of the other concepts. It is apparent that such concepts (except the correlative structure) were developed under an intentional and preconceived arrangement.

Qibla Orientation in the Global Dimension

In the global dimension, **qibla** orientation varies from one urban centre to another except when they are in one line with Mekka. Thus while it interrelates the various Islamic cities to one pole, in relation with the constant cardinal orientation it distinguishes the one from the other.

Within the one urban centre, it has been totally or partially instrumental in establishing the basic spatial framework of most of the cases tackled under this subject. Main streets that interconnect the central mosques or spaces surrounding it with other urban elements or the city gates were aligned with the **Qibla** direction.

However attempts to incorporate the Qibla globally with local natural features or with streets directed towards other regions or urban centres was not accurately implemented. But nonetheless it presents a spatial conceptual challenge which some traditional Islamic cities have witnessed.

Orientation in Local Dimension

Under the same subject, but in the local dimension, we tackled the spatial implication of the orientation of air vents, breeze catchers and open courts. Since this application varies from one place to another we dealt with it briefly under its conceptual dimension and not its climatic practical application. The underlying spatial dimension of orientating these elements contributed more to regulating open courts, termed as "intra-urban spaces", and interiors within buildings. Its subsequent effect on outdoor spatial arrangements nevertheless remained valid but was not as obvious and influential as that of the **Qibla** orientation of the mosque on the surrounding spaces and streets. Here while the main gates in some cases of central mosque defined the direction of main roads, the rectangular shape of the mosque determined the alignment of the surrounding streets. However the absence of such an alignment in other cases provided many spatial expressions which were discussed later.

The Global Dimension of the Street Direction

Concerning the global dimension of the directions of streets, perhaps the most influential factor in this concept are the routes of communication existing between different cities or within the various levels of settlement in the settlement hierarchy. In some Islamic cities we considered under this subject, such an application have attained a high level of influence in shaping the overall structure of these cities. However our approach to this concept lies in the name of main streets which were called after a region, city, village etc. In traditional times and underline traditional system these names were not applied in as abstract way but indicated the direction of the nearest or more important city that the main street or gate led to.

Within that approach we may conclude that the main streets joining one urban centre with other urban centres in the traditional Islamic city remained valid but their extent was not fully applied in all designed cities. When they occurred in other cities of it was partly rather the result of a natural or the so-called "spontaneous conception".

The Local Dimension of the Streets Direction

Intentional streets and space directions were more obvious and persistent as a local dimension in the spatial arrangement of the Islamic city than of the global one. Spatial concepts in such applications, although many were employed in a designed arrangement, but were not awkwardly pursued in a single per se concept. If happened, they were neither limited to one formal component or arrangement nor imposed on the different parts or urban levels of the one city. The extent of such an attitude was more apparent in the spatial transformation that occurred in these arrangements or concepts in later phases of the evolution of the traditional Islamic city.

In both the chosen models of Aleppo and Cairo, it became clear that the spatial transformation and new development that occurred in both cities in the five phases conformed to the prevailing urban frameworks. In Aleppo many of the original grid streets disappeared or were blocked

to create enclosed areas, clusters or quarter groupings, which the original layout do not offer. New or developed main streets, while negating the original layout, correlated the focal attraction generated by the central mosque directly with the old gates or with new ones opened in the direction of another urban centre, village or peripheral urban element. Other streets that developed in later phases transferred these spatial correlations further towards the prevailing direction or the new urban element that been founded in new areas.

Similar processes of formation and transformation occurred in Cairo except here the system of grouping as it appeared was directly adopted in the original layout. However, of course, the spatial result was not identical to that of Aleppo or any other Islamic cities, but nevertheless conformed with the same natural conception discussed above under what we have termed the correlative structure.

In this process, perhaps again the most influential factor was the lines of communication between the groups, elements and parts. Streets and spaces correlated - of course not in the neat schematic geometrical concepts presented in Figs.96, 100, 155 - new and earlier urban elements and components to themselves and to natural features. In other words, in the traditional application in Islamic cities, streets and spaces while they correlated the urban elements together were incorporated with natural features and ran parallel or lined up with rivers, canals or meandered according to the terrain and topographical gradients. Eventually this natural conception was far more influential in the long term transformation and far more rational in terms of tradition than that of the dogmatic or preconceived arrangement.

Observation:

Car-Orientated Structure

Vehicular movement has been the main determining factor in shaping the spatial organization of modern cities. It has organized all aspects of the modern system including spatial orientation and urban components and natural features. All became incorporated within the street system

and not vice versa. Repetitive and geometrical pattern has been applied regardless of topography. Yet all have been highly dependent on modern technology and the car-orientated structure. However not all planning theories that been adopted or developed to suit the west are as abrupt as many of those adopted in or adapted to the Muslim world. Certainly the peculiarities of such theories would remain applicable perhaps if not originally developed to be compatible with the traditional urban framework. However these applications, if an Islamic environment worth its name's is to survive[6] would remain futile if not examined and developed within that environment.

Relevant Application:

Qibla Orientation, Routes of Communication and Street Direction as an Urban Trait and Spatial Parameter:

While **Qibla** orientation was and would remain one of the Islamic city's peculiarities, routes of communication and direction of streets were and will remain a universal contributor to city design. However **Qibla** orientation should be employed, in both its global and local dimensions, not only as a religious trait of Islamic cities but also should be adopted as one of the urban design parameters. Streets and spaces associated with the central mosque in particular and other mosques in general should conform with the mosque orientation and if not, because of other constraints or priorities, the difference of alignment should be manifested in favour of the **Qibla** orientation. At the same time these streets and spaces available should be prepared to be used for midday prayer on Fridays. Thus bye-pass and side streets should bear the burden of the vehicular and pedestrian movement.

Consideration of other measures of orientation such as prevailing winds for wind towers and sun direction for courtyards and open spaces, where they deal with climatic and natural aspects, when not aligned with **Qibla** orientation, should not be sacrificed to the **Qibla**. But at the same time they should not distract its pre-eminence.

All orientations - and not only the **Qibla** one - should be part of a spatial parameter of which the Muslims in particular and the Islamic city inhabitants in general should be aware. This vocabulary and other factors which will be discussed later should assist the inhabitants to orient themselves within the one centre and to relate themselves to the Muslim world in particular and to the globe in general.

Application of the route of communication is of no less importance in directing people and in contributing to the awareness of their position within their cities and in relation to others. However this arrangement, although mainly affecting the structure of one urban centre in its application in relation to other settlements, is part of a regional policy and planning.

At the local level the direction of streets and open spaces are to be monitored in close relation to the urban framework. As a component of the Islamic city they should also be revived in close relation with the natural features, topography and focal and grouping parameters discussed above and the spatial peculiarities and vocabulary that will be pursued below.

VII. Conclusion:

Urban Fabric and Texture:

So far we have dealt with precepts, frameworks, parameters and structure. Still the remaining issue is one of the main spatial features that distinguished the Islamic city, its urban fabric and texture - that is the infilling vessels, capillaries and tissues. Under this issue we have endeavoured to address the underlying dimensions that governed the pattern of such fabric.

Pursuing that aim, fabrics from existing cases were approached first as consecutive and correlated spaces as a whole, secondly as domains in the whole, and finally as solo subjective spaces.

Regarding the first approach, tackled under the term of the spatial hierarchy in the traditional Islamic city, the hierarchy between spaces is obtained (i) by successive change in width (ii) by progressive change in visual depth (ii) by transitive change in direction and the space connection influence on one's physical progress (iv) by transitive change in the disposition of influential features in one's mental process and (v) finally, by transitive change in information. Under the successive changes in width and progressive changes in visual depth, it is apparent that the spaces become narrower and visually shorter as one reaches the end of the lower space in the hierarchy, considered as private. Here while movements are of low density and overwhelmly terminated, relationships and care are near and tight. In the opposite direction, where movements are of a higher density and relations are less intimate than those at the private level, ties are governed by citizenship or neighbourliness. Streets and spaces become wider, straighter and more continuous and longer in visual depth.

The gradual change in these two modes of hierarchy is recorded under four levels, private, semi-private, semi-public and public. These changing levels become more obvious when interrelated with the change in the type of junction and connection between the spaces.

Here transitive change in one's physical direction is obtained by a change in the type of connection or junction. While in private streets and spaces of the same level it is mainly derived by articulated junctions termed as hinged transitions, the change between these levels and the higher level of semi-private spaces is attained through modes of T junctions termed as sheer transitions. At higher levels in this hierarchy, a hybrid connection of Y junctions termed as bifurcate transitions occurred not systematically but frequently between thoroughfares, while space transitions between public spaces and streets tended to occur in crossing junctions. Therefore the level of spaces is derived from and at the same time determined by the importance or influence of the space articulation and junction. That is to say crossing junctions are more important as well as more influential than

the Y junction and both are higher than the T junction. And they all are more influential than the bent L junction (see Fig.156).

Within this exercise tendencies show that the cross junction is rare between streets in residential areas. Similarly, while the bend or the hinged junction is a trait of the private space and streets, its occurrence is in public ones. A combination of these two modes and the T and Y junctions appears frequently in the hybrid semi-private and semi-public levels and streets.

The same space connections and junctions, which were dealt with above as modes of changing direction, here act with other spatial elements, as features which mentally rather then physically influence one's progress.

Hierarchy here is obtained through change in the type of features and the level of concentration of information. These features and information are cues which a person interprets. So to be aware of them as a spatial language, a cultural background is a prerequisite.

In public streets and spaces, the number and disposition of spatial and local features which occur frequently increase in number and decrease in distance towards the city centre, thus revealing tendencies towards the processional climax. In the opposite direction, while their number decreases and their distance disposition increases, they are gradually superseded by features of threshold and more manipulated spaces.

The amounts of information, type and concentration obtained within each level in the hierarchy varies. While domestic information is strictly concealed and controlled and becomes less and less towards the public spaces and the city centre, levels of public information grow higher and higher towards the centre and are intentionally made manifest.

In an overall conclusion, a change of idiom is the essence of streets and movement in the traditional Islamic city. There while spatial complexity, articulation, manipulation and exclusiveness grows greater towards

private levels and streets, levels of information become less and less. In the opposite direction towards public levels and streets, while levels of information grow higher, spatial tendencies veer towards simplicity, inclusiveness, straightness and repetition. Inbetween, while levels of information intermix, spaces overlap (see Fig.156).

The above spatial hierarchy is recorded under a spatial tendency and not a fully designed arrangement, so cases that may contradict these findings can arise although the tendencies remain valid.

Observation:

The One Mode Conception

> Too many designers today seem to be yearning for the physical and plastic characteristic of the past instead of searching for the abstract ordering principle which the towns of the past happened to have, and which our modern conception of the city have not found, what is the inner nature, the ordering principle which distinguished the artificial city from the natural city[7].

A modern system of articulation of streets and spaces follows a number of patterns, the grid, the radial or radio-centric, the axial, the linear etc. The upholder of each system has attempted to apply, promote and sell what they believe is the best answer to modern urbanization. Obsessed by one system many have attempted to apply it on various levels and domains. However while each system partially or properly serves a part or parts of the urban system, it confuses, or disturbs many others. For instance, the multiple mode hierarchy, which originally developed under what we have termed traditional or natural conception, was employed again but in a one mode arrangement. T junctions and successive changes in width, became elemental only in the vehicular circulation system.

Relevant Application:

Grammar of Variety of Modes

The variety of human ties and relationship along with the variety of space levels of circulation in traditional and modern systems without

doubt require a variety of solutions and applications. Within this context the above findings afford a reasonable prospectus for a contemporary spectrum of a spatial grammar.

> We are convinced that hierarchical organization is an important feature of any complex form whether natural or technical, and is therefore germane to the urban problem of the modern world today[8].

Therefore hierarchy in the traditional Islamic pattern remains valid in the modern system.

To apply a hierarchy, it first requires a spatial grammar of which the city inhabitants, wether pedestrian or driver, should be aware. Within this grammar a hierarchy of changing width should overlap with a changing visual depth, a changing type of connection or junction with features and information. Such a grammar should be distinguished on each level. It should be able to guide the inhabitants between the various levels, to make them aware in which part of the city they are located. Thus it should be implemented in relation to levels of interaction, retreat, inclusiveness, exclusiveness, relaxation, manipulation, and so on, to provide whatever space is desired.

In public spaces and streets, where multiple interests and a variety of communication, interaction, vocation and services etc. are desired if not necessary, straightness and a lattice layout, with repeated crossings of decreasing distances afford matrix movement, inclusiveness and repetitive and variable sizes of groupings.

In private spaces, on the contrary to the above, bending and terminated meandering streets and threshold transitions should afford exclusive and clustered and possibly enclosed grouping, and a controlled movement which can be applicable to vehicles. Inbetween, hybrid spaces with relative straightness, bifurcate and T junctions and movement should offer median overlapping-spaces. They should gradually manipulate, tighten movement and traffic, and reduce sizes of groupings when going towards lower levels in quarters, and gradually

upgrade these modes when going towards the centre or nuclei. Such hybrid arrangements should achieve a degree of flexibility. Thus they can be transferred either to public or private domains when that is needed.

VIII. Conclusion:

Domains and Urban Infilling:

Domains conceptualized as a land use pattern is another approach by which the city in a modern system is designed. The traditional city is not an exception and presents one of the examples of such a system[9].

The concept of grouping treated under the Constituent of an Islamic Urban Theme, forms the prelude to this subject. However here we dealt with the subject in terms of central, intra-urban and peripheral grouping. Here what we will be concerned with is to describe their spatial useability in terms of domains, such as central markets and mosques, residential, districts, quarters, wards and local mosques and markets and open spaces. In considering each domain as an entity, it appeared, as we demonstrated, that the grouping within each domain by itself is organized in a hierarchical tendency. Concerning the central market, the domain tendency of hierarchy in the size of products and merchandise corresponded to a spatial hierarchy in the size of shops, size of in- between streets, the number and distance of crossings or junctions between these streets, and size of open courts in the enclosed markets. Further on this hierarchy co-existed with the type of prestigious and practical commodities of specialized retail and crafts, at the level of the central markets and the warehouses, and wholesale and industries at the level of the urban centre. The arrangement of these commercial activities were either incorporated in lines encircling or stretching from the central mosque or in areas near or far from that mosque.

Concerning the residential domain, termed previously as intra-urban component districts, were subdivided into quarters and in turn into "wards" and enclosed spaces. That arrangement was echoed in branching thoroughfares which developed into bye-ways and into alleys which themselves area articulated into offshoots limbs and secluded

spaces. This hierarchy co-existed with a tendency towards a decrease in the width and the visual depth of these alleys which appears to have corresponded to the fragmentation in the residential lots. The sizes of these lots appears to become smaller towards the shortening end of the alleys and bigger and longer towards the beginning of the streets. In consequence this would keep almost the same number of lots sharing a visually defined space of street relatively small, about 5 - 9 lots.

An intermix between residential and commercial domains was determined only by necessity. Accommodation in the central markets was available in travellers' and merchants' lodges, and commercial services in residential domains were available through local markets selling daily commodities.

Concerning open space as a domain, apart from the open courts that pervaded and persisted in the various urban elements, open space as an independent domain hardly existed in traditional Islamic cities that survive to the present day. However, as demonstrated, that was not the case previously. Many of them existed with variable domains and use, but it appears that many were substituted with spaces founded on the city's periphery. Old spaces in changing of circumstances and phases, were built over under the pressure of other urban necessities which appear to have ousted their ceremonial, open commercial, training and entertainment uses.

Observation:

Modern Language for Traditional Concepts

Many of these patterns of domains that evolved in the traditional Islamic city as natural conceptions, the west is now trying to build into its own cities. Not only physical forms but techniques for giving life an emotional content and security in a basically anonymous larger system were the achievements of the medieval Islamic city.

The Islamic city provided the **Hara** or **Khita** now called the neighbourhood, the **Arbad**, called suburbs, the communal responsibility and local autonomy and self-management, the concentration of compact function, the specialization of groupings, the rationalized land use. It

also provided, pedestrian downtowns and symbols of communal solidarity[10].

Relevant Application:

Traditional Idiom in Modern Spatial Language:

> The integrity of domains and the efficiency of transfer between them is the crucial issue in organization, barriers and locks. The condition where the integrity of each of the adjoining domains must be preserved at all times inspite of traffic between them[11].

The spatial variation indicating the hierarchic domains of various groupings, components, elements, spaces, and areas can be subtly expressed by change and variation in the scale and the articulation of the spatial pattern[12].

The condition and variation expressed by ALEXANDER complies with many of the spatial modes indicated above. If we accept these variations and conditions, the hierarchy of the domains discussed above offer not only guidelines but idioms for modern spatial arrangements. Yet many overlapping modern traffic systems, services, and economic forces which are beyond our subject should be incorporated, which would add many restraints and dimensions to such an application. Nevertheless many would rather comply with than contradict these restraints.

Here gradation in the size of products and shops and the sizes of the streets in between on the one hand means high useability of the built-up area, a concentration of prestigious and valuable merchandise in valuable areas and vice versa. Which on the other hand it would mean a parallel gradation in the size of the transport vehicle needed to serve each level and a fragmentation in the size of such services. But above all it would lead to more variation in the one spatial pattern which means more distinction and a code of location not only within the urbanarea as a whole but also within each domain.

Contrary to the matrix pattern and groupings of the central market, in the residential domain, controlled accessibility, meandering streets and

articulated spaces provide a system of variation of branching pattern and grouping. It provides break points of spatial autonomy, reduces crossing traffic and car speeds, and unnecessary intrusion.

Enclosed open courts remain a valid practice to provide affording provisional unbuilt areas for various specialized activities. However that would not be an alternative to not having free open spaces specifically prepared for religious, communal, administrative and political ceremonies and other free spaces, prepared for temporal activities such as open markets, and training fields, which could form a provisional spaces for later development.

IX. Conclusion:

Traditional Spatial Expressions, Subjective Spaces:

The final remaining issue we are to deal with is the most inexhaustible aspect of many of the traditional natural concepts. The same spatial pattern we considered as an abstract two-dimensional space was again dealt with as real subjective space with three-dimensional expressive images. However when we speak about expressive and correlative tendencies, these tendencies are not independent modes but two phases of the same process.

It would be a task of unreasonable magnitude to attempt to cover all possible spatial expressions. First if we did, we would need to consider each as a separate case; secondly we would have to exempt many other expressions which the chosen sectors have not include. Therefore all the cases discussed previously will be covered as part of a general vocabulary that needs to be developed from and within the traditional and modern context.

Relevant Application:

Idiom for Modern Vocabulary

A **variation of images** is one of the essential vocabularies that enriches traditional spatial patterns and which many of the modern concepts are unable to achieve. However within this observation which we derived from the existing traditional spaces, it is clear that not all these expressions were just haphazard plans of architectural forms, and even

where they happened to be so, there was a deeper meaning behind their form.

Irregularity versus **systematized** conception is the fertile background for many of these expressions. Here **irregularity** provide ample solutions and variations for limited cases. **Spatial definition** is without doubt another idiom behind the variety of images in a traditional concept. These definitions however were not spatial constraints. Arch-way **disposition**, walls' **fluctuation**, **deviation** and **chamfering** worked not only as signs of spatial continuity and direction but also offered variable sides which could be employed in placing, concealing or manipulating various architectural elements. Also, worked as modes of spatial **filtration**, they provided **thresholds** of traffic and information. Variations of **straightness** and **gradations** of scale afford another vocabulary that is not lacking in the traditional concept. Straightness was created within absence of alignment, and at the same time, differences of alignment provided, signs of **changing orientation**, and a prospect for dilating outdoor spaces and above all an important contribution to **spatial dynamics**. Many of the spatial modes already discussed, while working as modes of **correlating** static physical elements within the space and with other spaces at a distance, worked also as space dynamics in directing and curbing movement and information. They are a vocabulary of **balance**, **symmetry**, **transition**, **inclusion**, **seclusion** and **priority** that induce, stimulation and repose, encouragement and discouragement.

Additional codes acquired from architectural **protrusion** and **prominence**, **concave** and **convex** forms co-existed and intentionally disposed within the space arrangement, have transferred, filtered, or controlled information within the one space or between the various spaces. **Expressive names** given to types of streets and spaces are additional spatial vocabularies, and should be employed, and Muslims should learn to be aware of them in directing and orienting themselves.

These vocabularies and many others which this study did not engaged with, would clearly demonstrates that each space was and is to be dealt with and designed under two processes. First each space is to be

arranged in correlations with other spatial elements, patterns and other modes discussed previously. Secondly, the same space is to be designed as a solo subjective space with indicative expressions.

Points of Consideration for Future Research

Finally, in reality the city is not a two-dimensional flat plan but a three-dimensional embodiment of architectural proportions and masses. One significant point one must now observe and later consider is that in the traditional natural conception, design was developed on site and not on paper and thus their natural validity is unquestionable. Therefore whatever designs and works were generated through this natural conception, they must be true expressions of a way of life. Superficially looking upon things however would undoubtedly leads to direct adoption of traditional spatial patterns, which were unfortunately unfitted for our age. But by going deeper into the matter - into the inner meanings behind the outer forms the situation is different. Throughout the whole period of the Islamic city's evolution these inner meanings emerged from contemporary, humanistic, natural demands and conditions and frameworks and not dogmatic concepts.

In the preceding parts, it was demonstrated that the traditional Islamic spatial pattern, evolved according to precepts, frameworks and parameters, and attained an underlying grammar, idiom and vocabulary which must be considered fundamental if an Islamic urban system is to be revived.

Foot Notes: Conclusion and Relevant Application

1. ANSARI (1982), 281

2. ANSARI (1982), 277

3. The use of modern technology afforded the possibility to bring together up to 100 000 persons in football matches and up to 200 000 audience in pop concerts.

4. HADITH, cited by HAKIM (1986), 153; QUR'AN [IV, 36]

5. MONTEQUIN (1983), 58

6. BINCA (1982), 44

7. ALEXANDER, C., "A City is not a Tree" **Architectural Forum**, 122, i, (1965), 58

8. CHERMAYEFF, S. and ALEXANDER, C., Community and Privacy, U.S.A (1966), 119

9. ISMA'IL (1969), 176-182, The Concept of the Medieval Urban Land Use Pattern and Pattern of Urban Growth of the Islamic City is the main topic of this dissertation

10. ABU LUGHOD, J.L., "Comments on the Form of Cities: Lessons from the Islamic City in **Janus** (1975), 129

11. CHERMAYEFF and ALEXANDER (1966), 251

12. CHERMAYEFF and ALEXANDER (1966), 119

GLOSSARY

ᶜAbbasids	Caliphate Arab Dynasty, named after al-ᶜAbas. The Uncle of the Prophet Muhammad, reigning (132/749 - 650/1258).
Aghlalibids	Arab Dynasty, reigning as Governors of Qayrawan and North Africa from the mid of the 2nd. century A.H/end of the 8th.century A.D to the end of the 3rd.century A.H/mid of the 10th.century A.D.
ᶜA'ila	Family
Akwam (sing.Kawm)	Mounds
ᶜAmil	Agent
Amin	Trustee
ᶜAml	Precinct, the term used here is referring to the upper and lower parts of Fustat Egypt.
ᶜAmma	Populace
Ansar	Adherent, supporters: the Madinan followers the Prophet Muhammad
ᶜAqida	Islamic Ideological Belief
ᶜArafa	A group of people, about 20 to 40 men with their families, comprised the basic groups in the early Islamic Cities.
Arbad (sing.Rabad)	Suburb
ᶜArif (pl.ᶜUrafa)	Representative
ᶜAsabiya	Tribal affiliation
Ashab al-Rayat	The Banner Holders
ᶜAskar	Army or Camp
ᶜAtfa	Turning street, an alley way or dead-end street
Baqiᶜ	A large site.
Barid	Mail
Bayt al-Mal	Treasury
Bazar	Market, mainly used in the eastern part of the Islamic world.

Bimaristan	Hospital
Dar al-ᶜAmma	The Populace House
Dar al-Hikma	The Wisdom House or Library
Dar al-ᶜIlm	The House of Science
Dar al-Imara	The Government House
Dar al-Khilafa	The Caliphate House
Darb (pl.Durup)-Nafiz	Thoroughfare or Ghayr Nafiz. Dead-end.
Dhimmi	Christian of Jew
Dhiraᶜ	Hand - Cubit
Dihliz	Porch
Diwan	Registry
Diwan al-Jund	Army Registry
Diwan al-Khatam	Seal Registry
Diwan al-Khiraj	Taxes Registry
Diwan al-Mustaghalat	State Property Registry
Diwan al-Nafaqat	Expenditure Registry
Diwan al-Rasa'il	Correspondence Registry
Diwan al-Tiraz	Regalia Registry
Fada'	Open space or unbuilt area
Faqih (pl.Fuqaha)	Legal Scholar, Jurist
Farsakh	League, about 3km.
Faseel	Clear space or Intervallum
Fatimids	Caliphate, Arab Dynasty, named after Fatima the daughter of the Prophet Muhammad.
Funduq	An Inn or Lodging for Merchants or Travellers.
Hadith	Prophetic Saying
Hamadanids	Arab Dynasty reigning Aleppo and North Syria (317/929 - 394/1004)
Hijra	Migration

Hajj	Pilgrimage
Hara (pl.Harat)	Quarter mainly used in Cairo
Haras (sing.Haris)	Guards
ʿIbadat	Worships or Religious Observances.
ʿId al-Adha	The Feast of Sacrifice after Pilgrimage.
ʿId al-Fitr	The Feast of the Fast Breaking at the end of the month of Ramadhan
Ijmaʿ	Consensus of opinion
Ijtihad	Reasoning
Imam	Religious Leader
Jamiʿ	Congregational Mosque
Jamiʿa	University
Jihad	Holy war
Jizya	Tax levied from non-Muslims
Jumʿa	Friday
Kaʿaba	The Sanctuary built in place of the previous Sanctuary built by Prophet Abraham.
Khan	Warehouse
Khanqa	Hospice, for devout religious grouping, such as the Sufis
Khatt (pl.Khutut)	a line-street, it can be a number of streets forming a quarter.
Khitta (pl.Khitat)	Land delineation forming a quarter.
al-Khulafa' al-Rashidin	The Rightly-guided Caliphs, the first four Muslim Rulers who came after the Prophet Muhammad (11/632 - 40/661)
Madina	The Prophet City originally known as Yathrib
Madrasa (pl.Madaris)	School
Majlis	Chamber-court
Maktab (pl.Makatib)	Office or a School for teaching Qur'an for children

Mamaleek. Mamluks	Two Dynasty of Freed slaves reigning in Egypt, Syria, Palestine, Iraq, the first (648/125 - 791/1389), the second (784/1382 - 922/1517)
Manahij (sing.Nahj or Mannhaj)	Usually a process or a way, here it is more or less a straight street spreading from the centre towards the city periphery
Manzil (pl.Manazil)	Stopping place, Ascending Place, House
Maqbara (pl.Maqabir)	Cemetery
Marbad	Halting Place
Marinids	Arabized-Berber, reigning in North Africa (610/1213 - 931/1524)
Masjid	Mosque
Mawali	Vassels, Clients: means by which a non-kin individual could be brought into a tribe
Maydan (pl.Mayadeen)	Esplanade, training open square usually take the rectangular shape, it can be used for the Feast prayer sermon and other communal celebration or open market.
Mazhab (pl.Mazahib)	Islamic Doctrine
Mohads	Berber Dynasty reigning in North Africa and Andalusia, Spain (544/1149 - 668/1269)
Moravids	Berber Dynasty reigning in North Africa and Andalusia, Spain (453/1061 -544/1149)
Muʿamalat	Worldly and public affairs, Code of Behaviour
Mufti	Official expounder of legal and Islamic Law
Muhandiseen (sing. Muhandis)	Engineers
Muhtasib	Inspector of the Markets and the Public affairs
Murabaʿa	Squared open-space
Musalla	Open air place for the Feast Prayer
Nahiya (pl.Nawahi)	Outskirt quarter
Naqib (pl.Nuqabaʾ)	Provost
Qadi	Judge
Qalʿa (pl.Qilaʿ)	Fortress

Qarya (pl.Qura)	Village
Qasaba (pl.Qasabat)	Avenue; citadel or the centre of a city
Qata'i^{c} (sing.Qit^{c}a)	Land plots
Qaysariyya	Enclosed Markets for prestigious retails
Qibla	Prayer direction towards the Holy City of Mekka in Arabia
Qiyas	Analogical reasoning
Rahba (pl.Rihab)	Vastness, expanse, open space surrounded by buildings
Ra'y	Personal opinion
Ribat	Convent for Religious-Militant devout groups
Riwaq	Portico
Sadaqa	Pious donation
Sahn	Open court of a mosque
Salibiyyeen	Crusaders, the word is derived from the name Cross (Salib), associated with the crusaders who conquest Palestine and Jerusalem (493/1099 - 690/1291)
Saqqa'een	Water carriers
Seljuks	Turk Dynasty reigning in Iran, Iraq, Syria, Palestine, Egypt (429/1037 - 619/1222)
Shahada	Utterance of the intent of becoming a muslim
Shari^{c}a	The Islamic Law
Shuhud	Witnesses
Shurta	Police
Sijn	Prison
Sikka (pl.Sikak)	Side street
Siwan	Reception Hall constructed of canvas
Sufis	Mystic Movements
Suq (pl.Aswaq)	Market
Suwayqa (pl.Suwayqat)	Local small-market
Taqat (sing.Taqa)	Windows; vault, arches with gates

Taqrir	Decision
Tariq (pl.Turuq)	Way, Track
Teen	Mud or clay
ʿUlama	Expert in the various sciences
Umayyads	Caliphate Arab Dynasty reigning over the whole Muslim world (40/661 - 132/750) and over Andalusia and part of North Africa (138/756 - 421/1031)
Wali	Governor
Waqf	Property and estate endowment for a religious cause
Wikala	Merchant Depot
Zakat	Alms-giving
Ziyada	Auxiliary or additional open space accreted with a mosque
Zuqaq (pl.Aziqa)	tight alley-way or lane

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ALBUM

FIGURE 154

ISLAMIC CITIES, CHRONOLOGICAL EVOLUTION AND RELEVANT SPATIAL PATTERNS

DATE SCALE, A.H.

YEARS: 35, 70, 105, 140, 175, 210, 245, 280, 315, 350, 385, 420, 455, 490, 525, 560, 595, 630

CITIES FROM PRE-ISLAMIC PERIOD

DAMASCUS — DAMASCUS

ALEPPO — ALEPPO

JERUSALEM — JERUSALEM

ISFAHAN — JAYY; YAHUDIYYA; KHUSHINA; ISFAHAN

CORDOVA — CORDOVA; MEDINAT AL-ZAHRA; MEDINAT AL-ZAHIRA

BASRA — BASRA

KUFA — KUFA; MEDINAT RHUBAYRA; AL-HASHIMIYYA

CAIRO — FUSTAT; AL-ʿASKR; AL-QATAʾiʿ; CAIRO

QAYRAWAN — QAYRAWAN; ʿABBASIYYA; RAQADA; MANSURIYYA OR SABRA

WASIT — WASIT

RAMLA — RAMLA

BAGHDAD — BAGHDAD; AL-KARKH; RUSAFA; DAR AL-KHILAFA

SAMARRA — QATUL SAMARRA; MUTIRA; AHSNAS; JAʿFARIYYA

FEZ — FEZ; FEZ; FAS AL-JADID

MAHDIYYA — MAHDIYYA; ZUWAYLA

MARRAKESH — MARRAKESH

RABAT — RABAT; RABAT

EVOLUTION

PHASE ONE — ISLAMICIZATION

PHASE TWO — ASSIMILATION

PHASE THREE — GENERATION

PHASE FOUR — STANDARDIZATION

PHASE FIVE — MANIFESTATION

NO PLAN AVAILABLE

FIGURE155

SPATIAL CONFIGURATION OF THE EVOLUTION OF THE SOCIETAL, RELIGIOUS, COMMERCIAL, ADMINISTRATIVE AND SPATIAL FRAMEWORKS IN TRADITIONAL ISLAMIC CITY

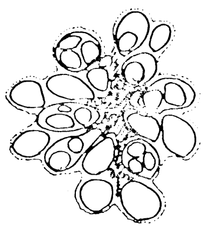
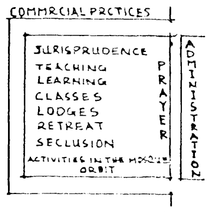
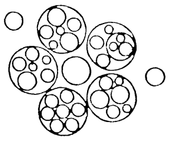
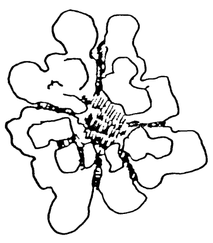
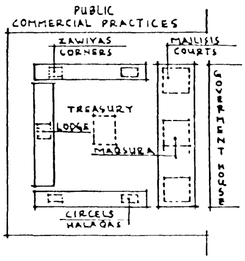
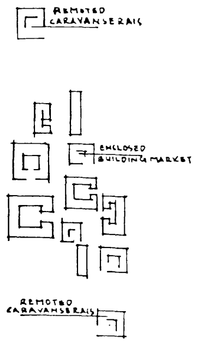
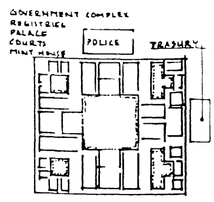
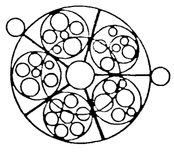
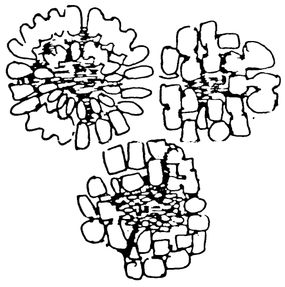
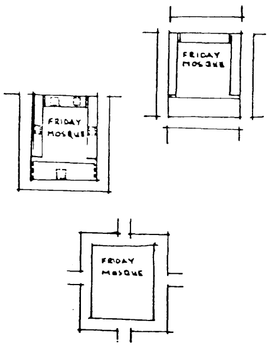
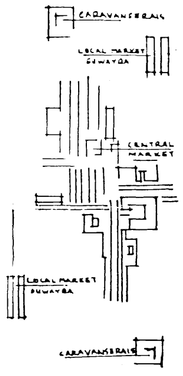
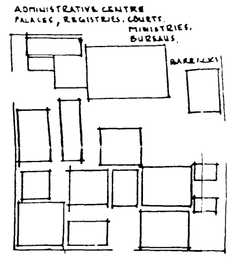
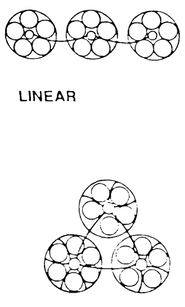
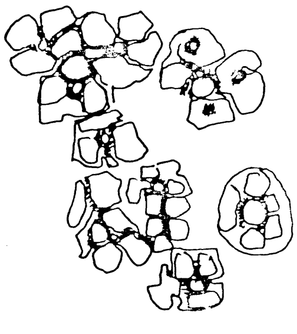
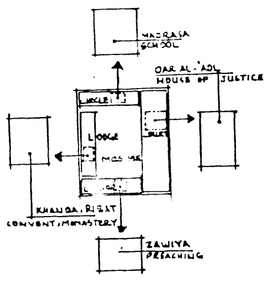
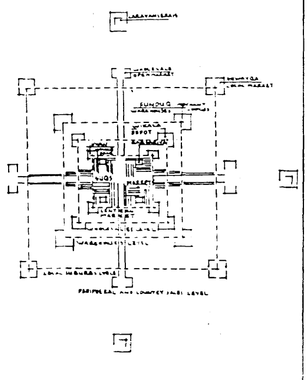
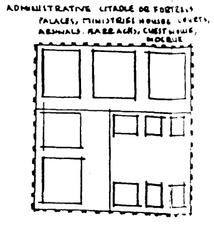
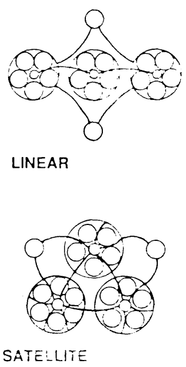
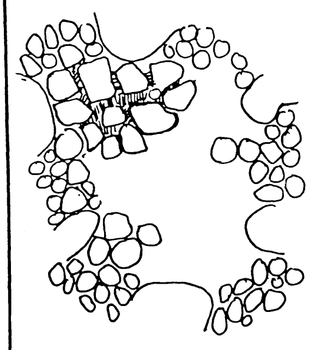
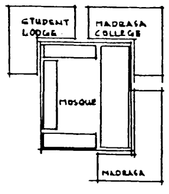
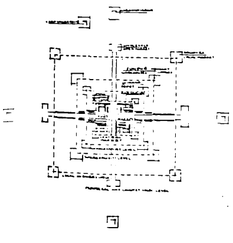
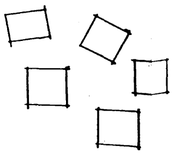
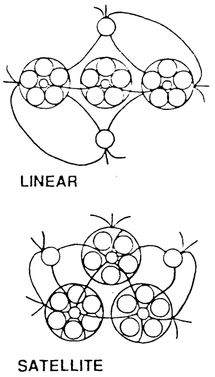
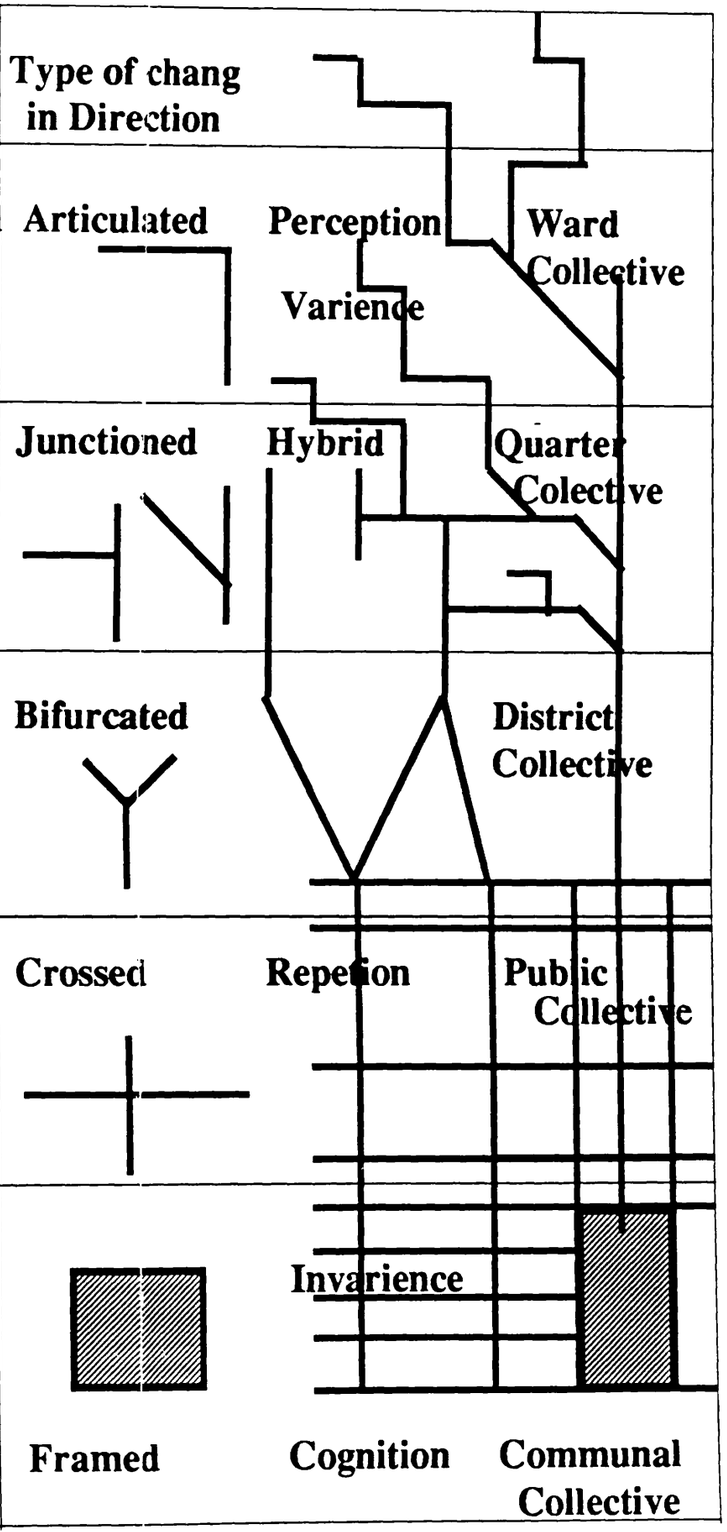
	SOCIETAL FRAMEWORKS	RELIGIOUS FRAMEWORKS	COMMERCIAL FRAMEWORKS	ADMINISTRATIVE FRAMEWORKS	SPATIAL FRAMEWOKS
ISLAMICIZATION					
	FREE ORGANIC CONGREGATION	THE ONE SPACE MOSQUE	GROUPING IN OPEN MARKET	MULTI BUREAUS IN GOVERNMENT HOUSE OF ONE OPEN-COURT BUILDING	FREE CENTRED
ASSIMLATION					
	COMPACT CONCENTRIC - GROUPING	THE PROTOTYPE SPACE-DISTRIBUTION OF THE FRIDAY MOSQUE	ENCLOSED MARKETS	MULTI BUREAUS IN MULTI OPEN-COURT BUILDING	COMPACT CONCENTRIC
GENERATION					
	MULTI-CENTRED GROUPING	FRIDAY MOSQUE PROLIFERATION	ENCLOSED AND EXTENDING STREET-MARKETS	MULTI BUILDINGS OF ADMINISTRATIVE-POLITICAL COMPLEXEAS	MULTI CENTRED
STANDARDIZATION					
	NUCLEI GROUPING	RELIGIOUS INSTITUTION PROLIFERATION	SPECIALIZED TYPES OF TRADES AND MARKETS	THE ADMINISTRATIVE NUCLEUS-CITADEL	MULTI NUCLEI
SELF MANIFESTATION					
	CELLULAR GROUPING	THE JAMI^{c} MOSQUE AND CONCEPT OF THE JAMI^{c}A (UNIVERSITIY)	SPECIALIZED TYPES OF TRADES AND MARKETS	ADMINISTRATION DECENTRALIZED	RADIATING

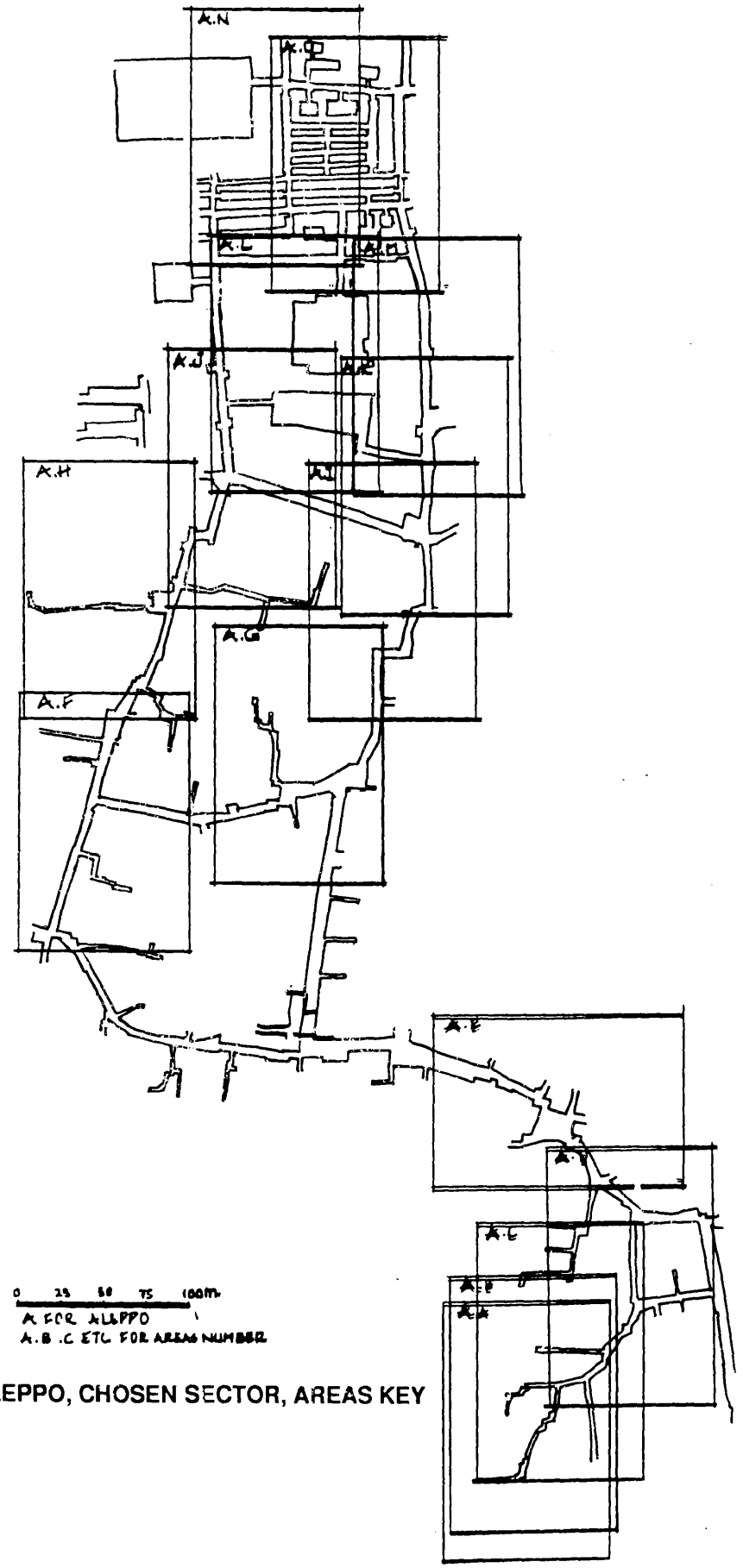
FIGURE156

VOCABULARY AND MODE OF HIERARCHY IN SPATIAL PATTERNS OF TRADITIONAL ISLAMIC CITY

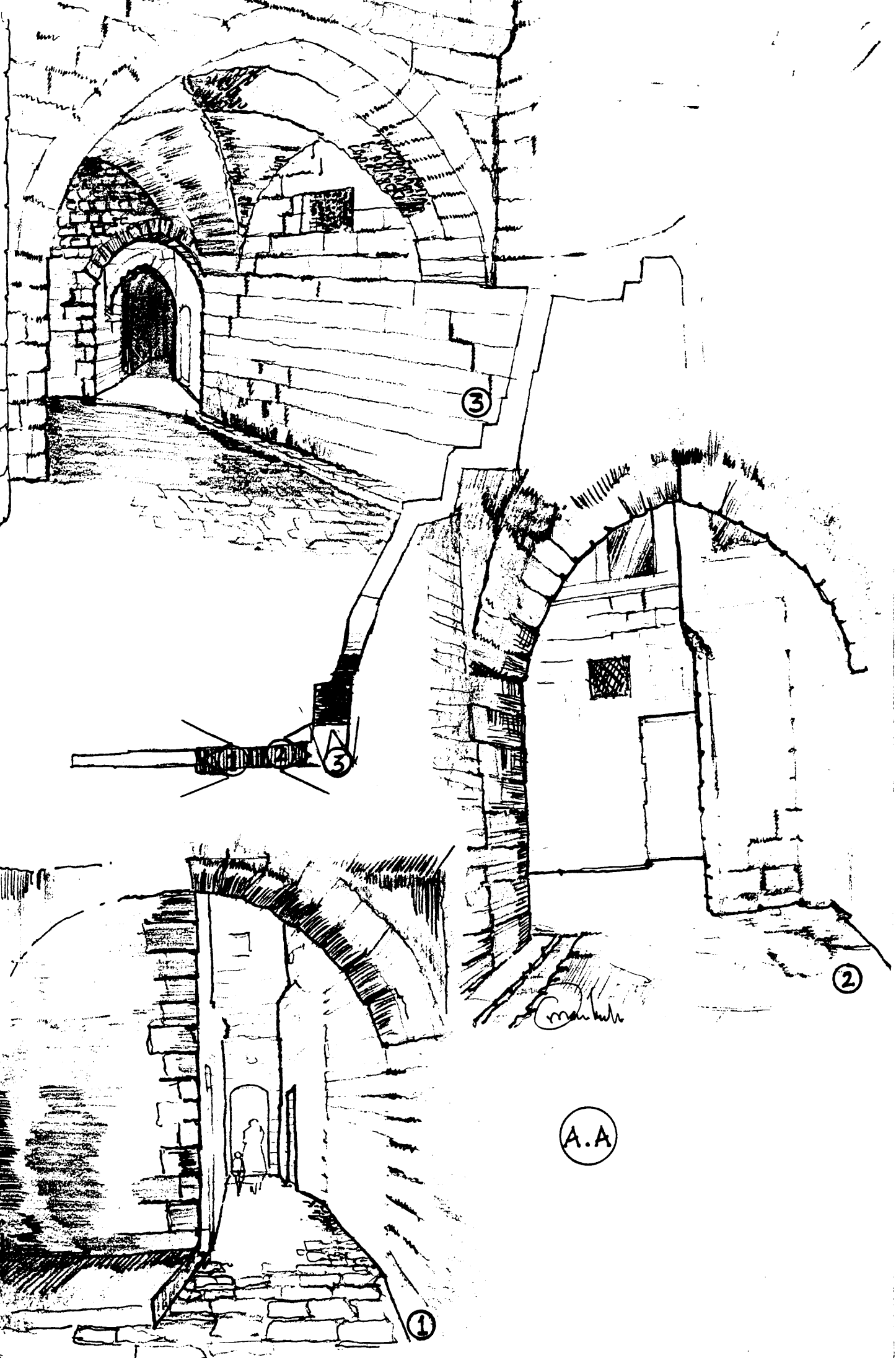
Conduct	Behaviour	Visual Length	Width	Spatial Arrangement	Level of Information	Type of Space	Type of chang in Direction
Private	Retreat	Short	Narrow	Complexity	Low	Terminated	Articulated
Semi Private	Seclusion					Enclosed	Junctioned
Semi Public	Cluster					Continued	Bifurcated
Public	Interaction		Wide			Extending Exposed	Crossed
Communal	Inclusion	Prolong	Narrow	Simplicity	Concentrated	Contianed	Framed



ALEPPO



ALEPPO, CHOSEN SECTOR, AREAS KEY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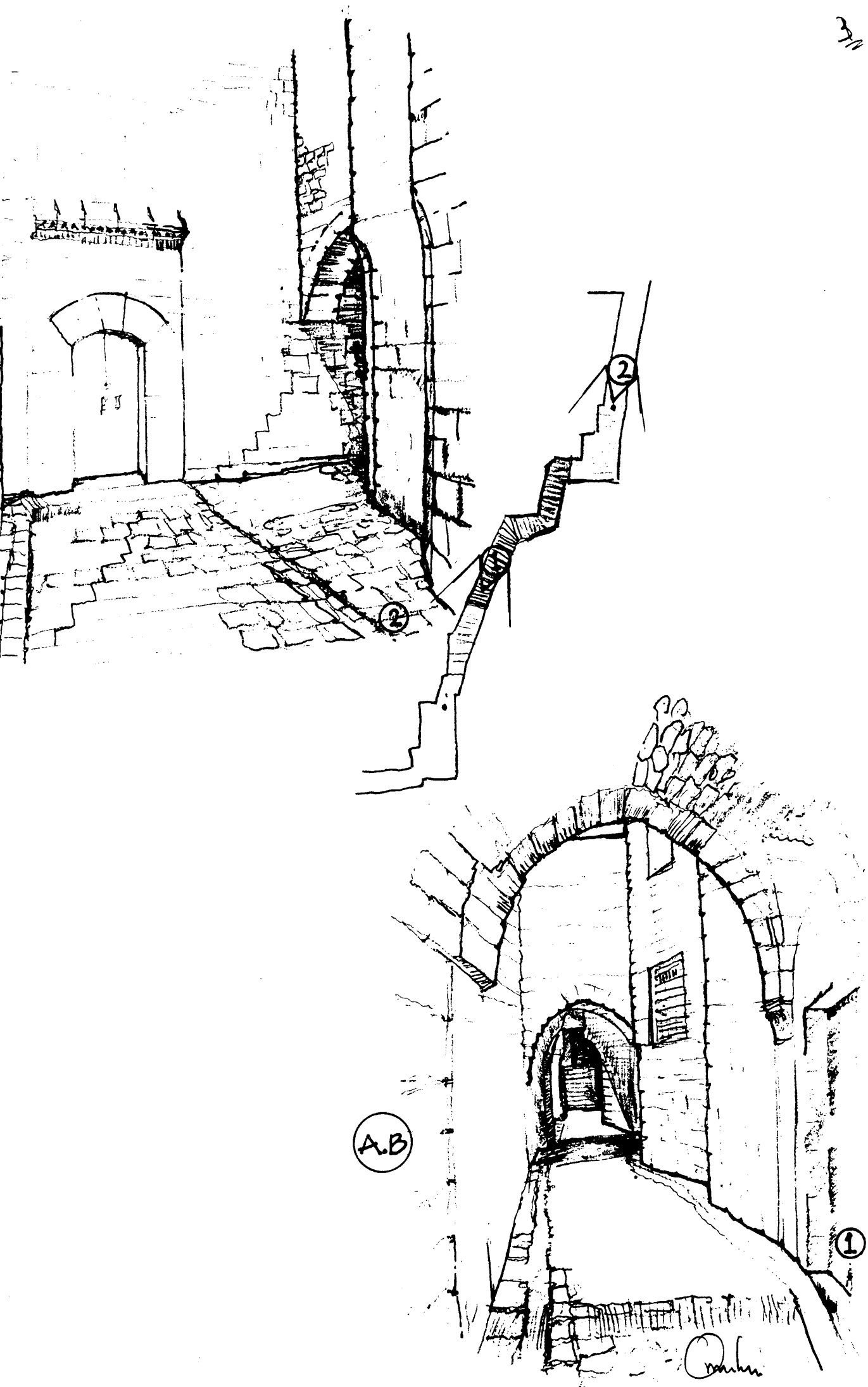
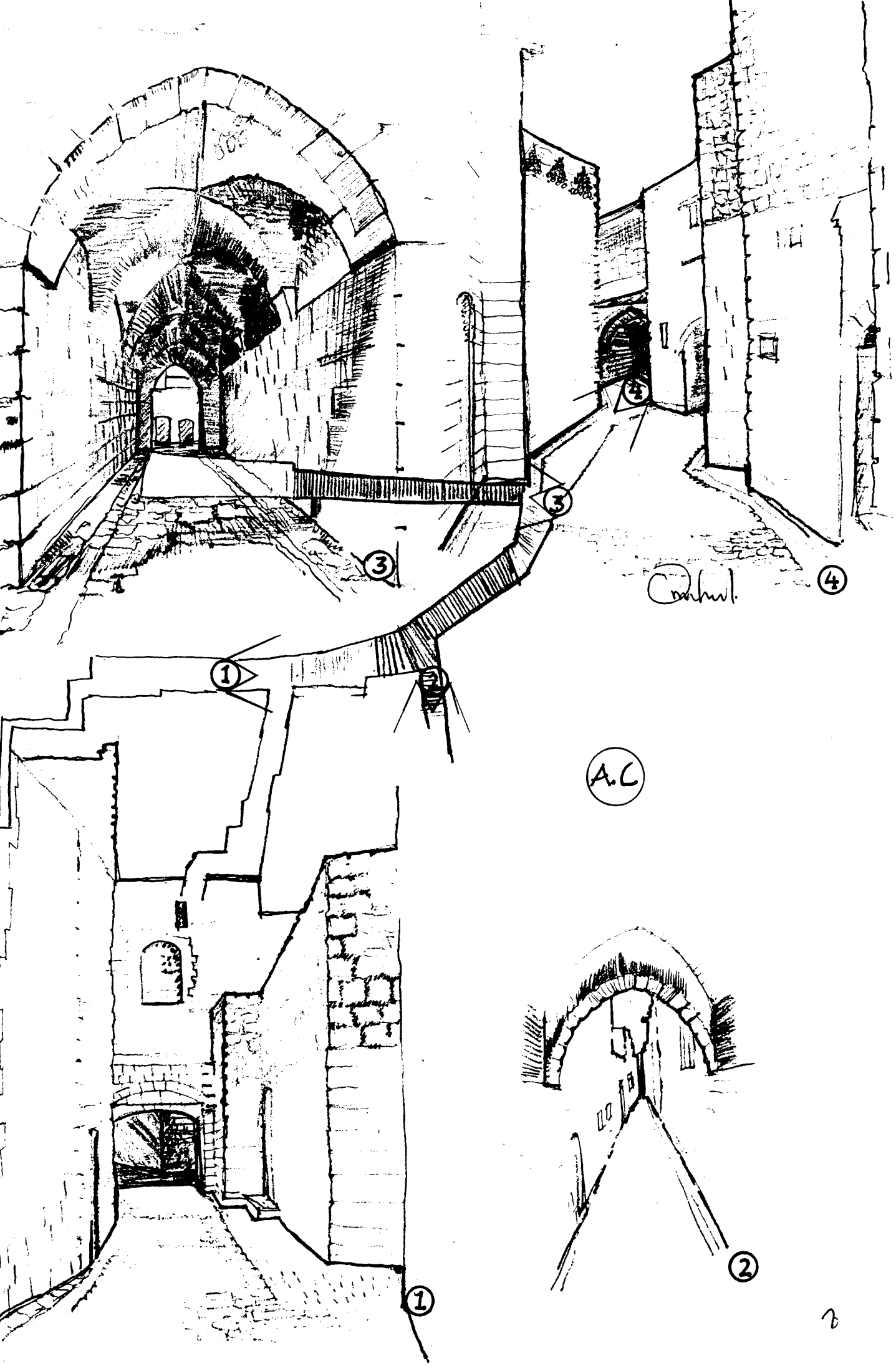
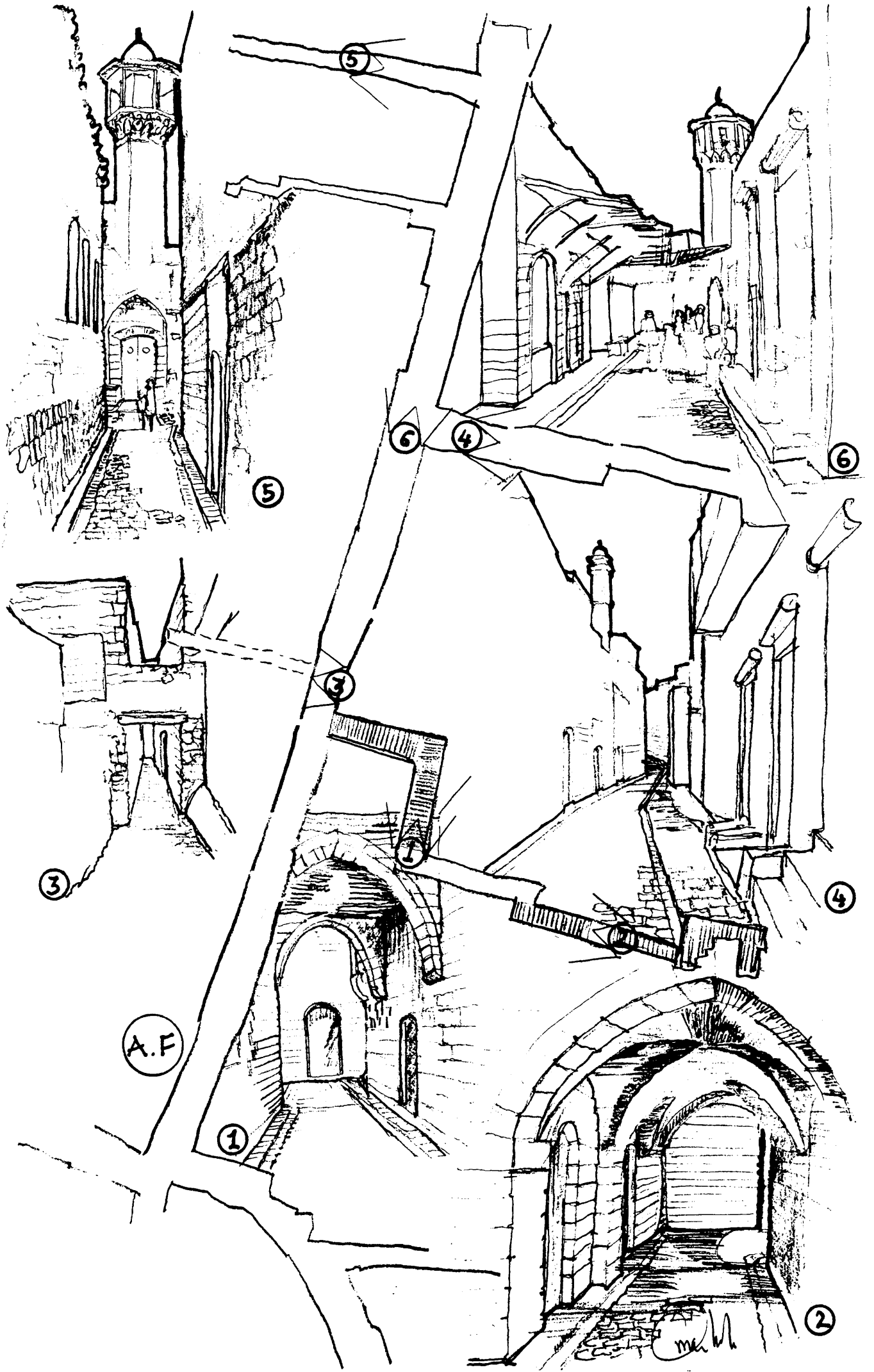
A.A


2
2
A.B
1


1
2
3
4
A.C


5
5
4
4
2
3
1
2
1
A.D
3

1
1
2
3
3
A.E
2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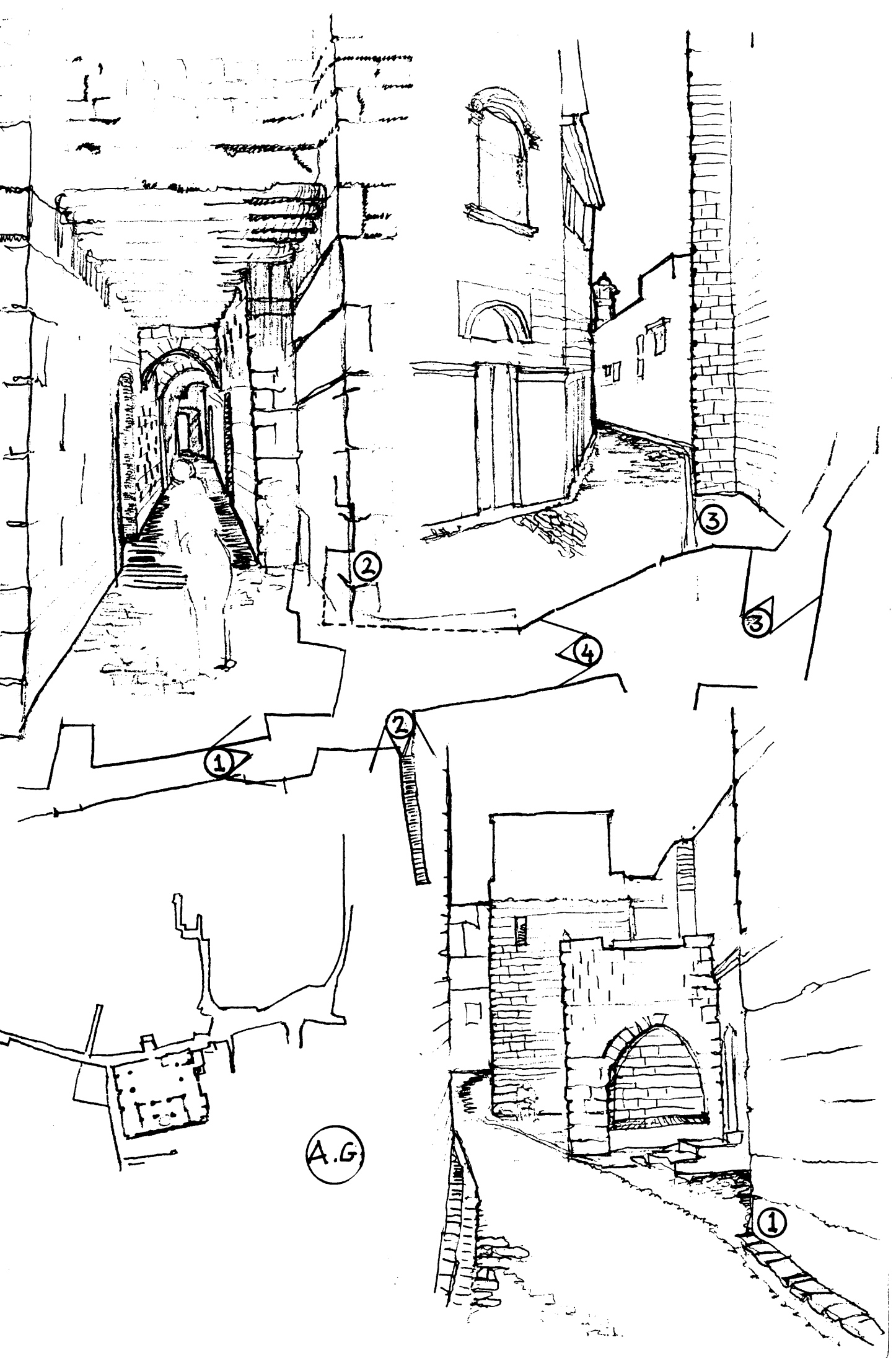
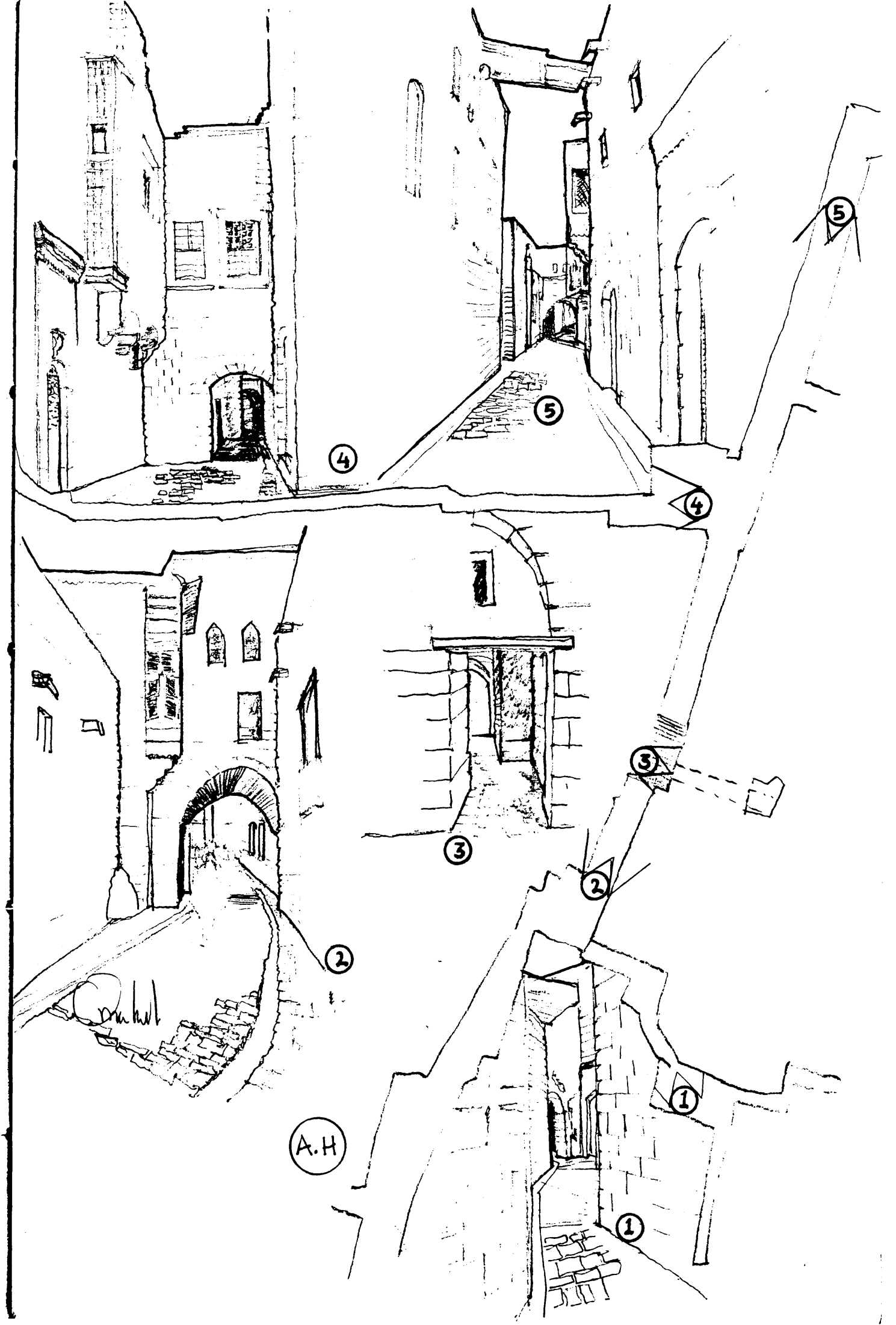
6
4
6
3
3
1
4
A.F
1
2


1
2
3
4
A.G


A.G.④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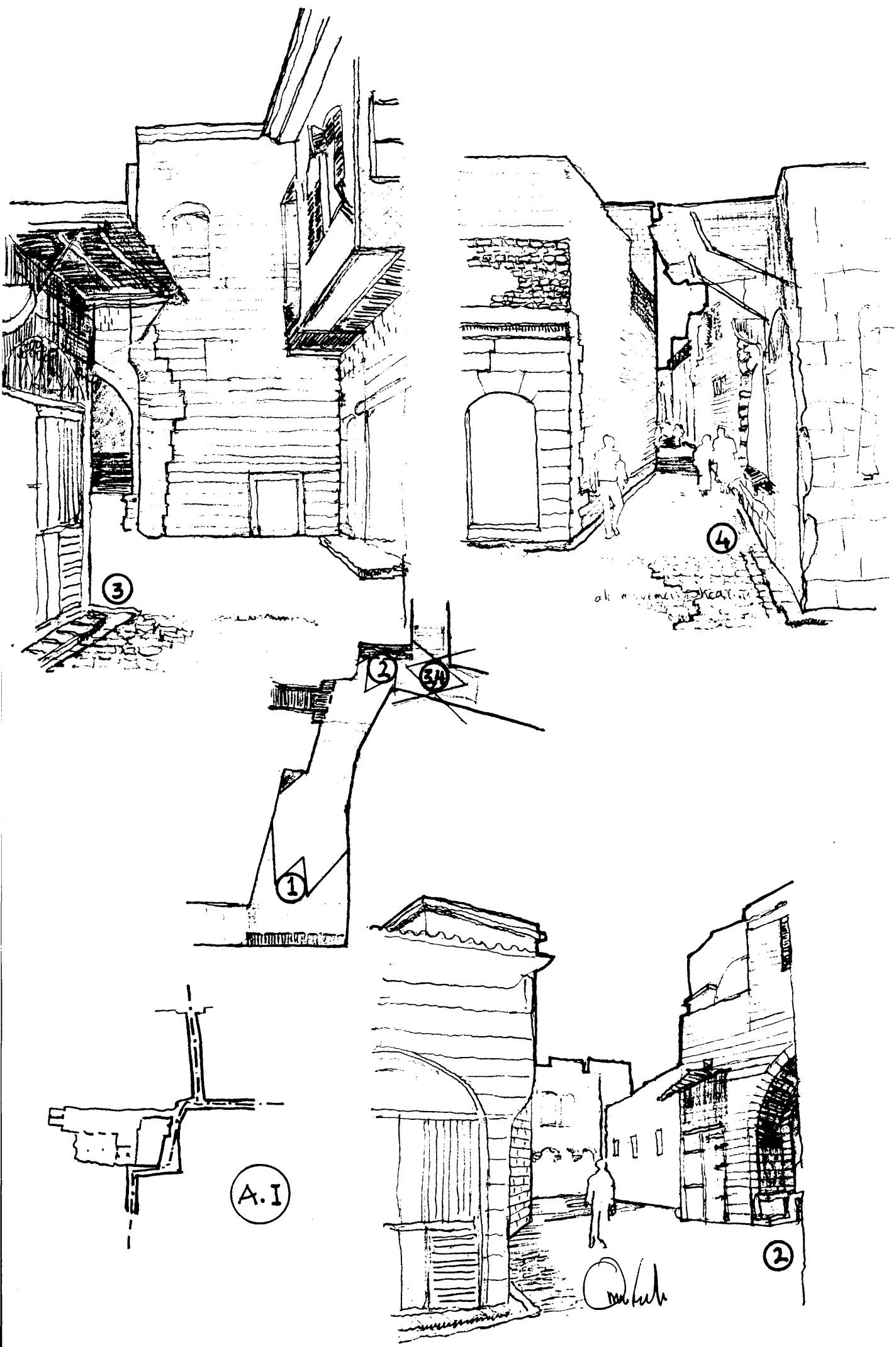
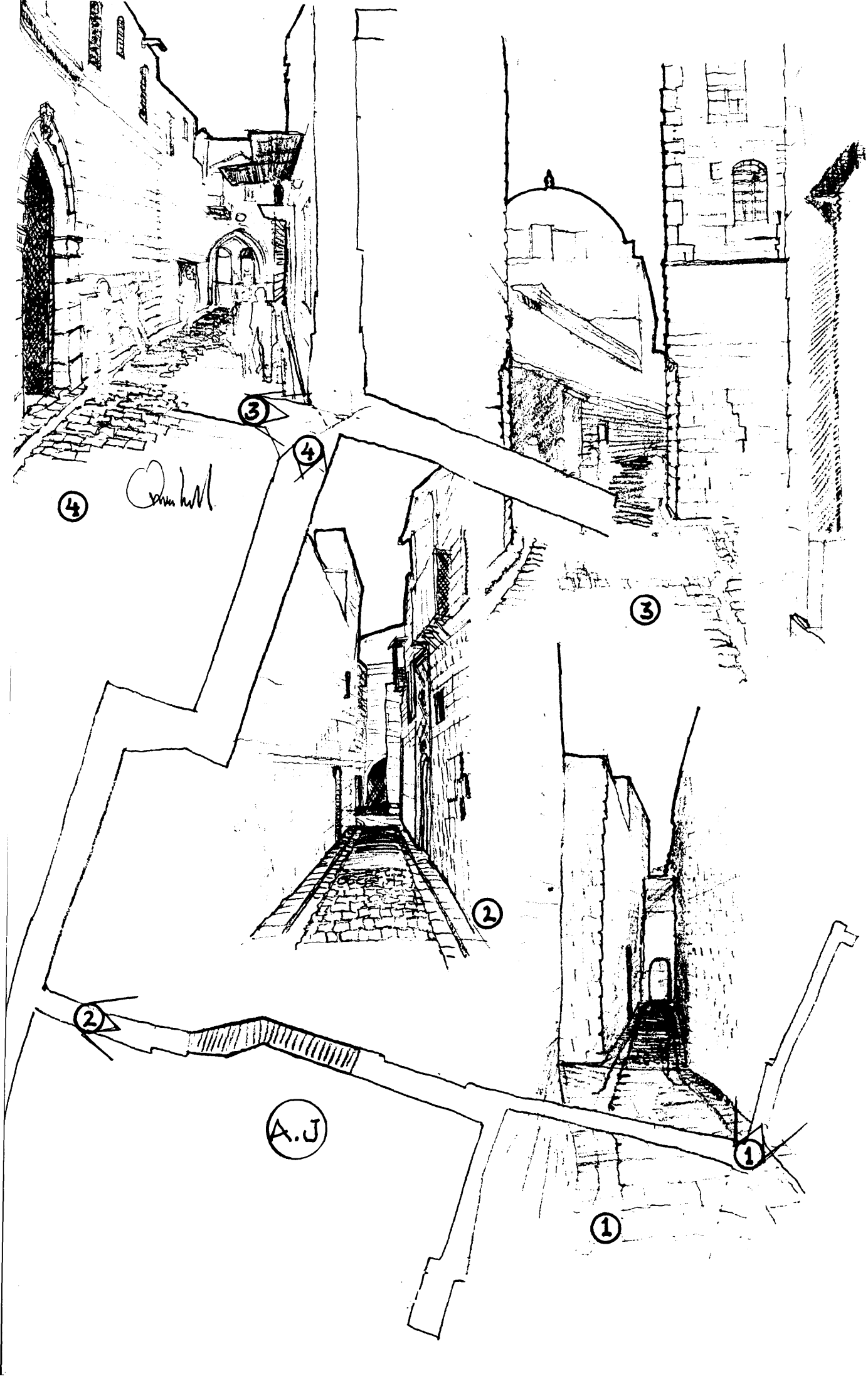
4
4
3
3
2
2
1
1
A.H


3
4
2
3,4
1
A.I
2

A.I. ①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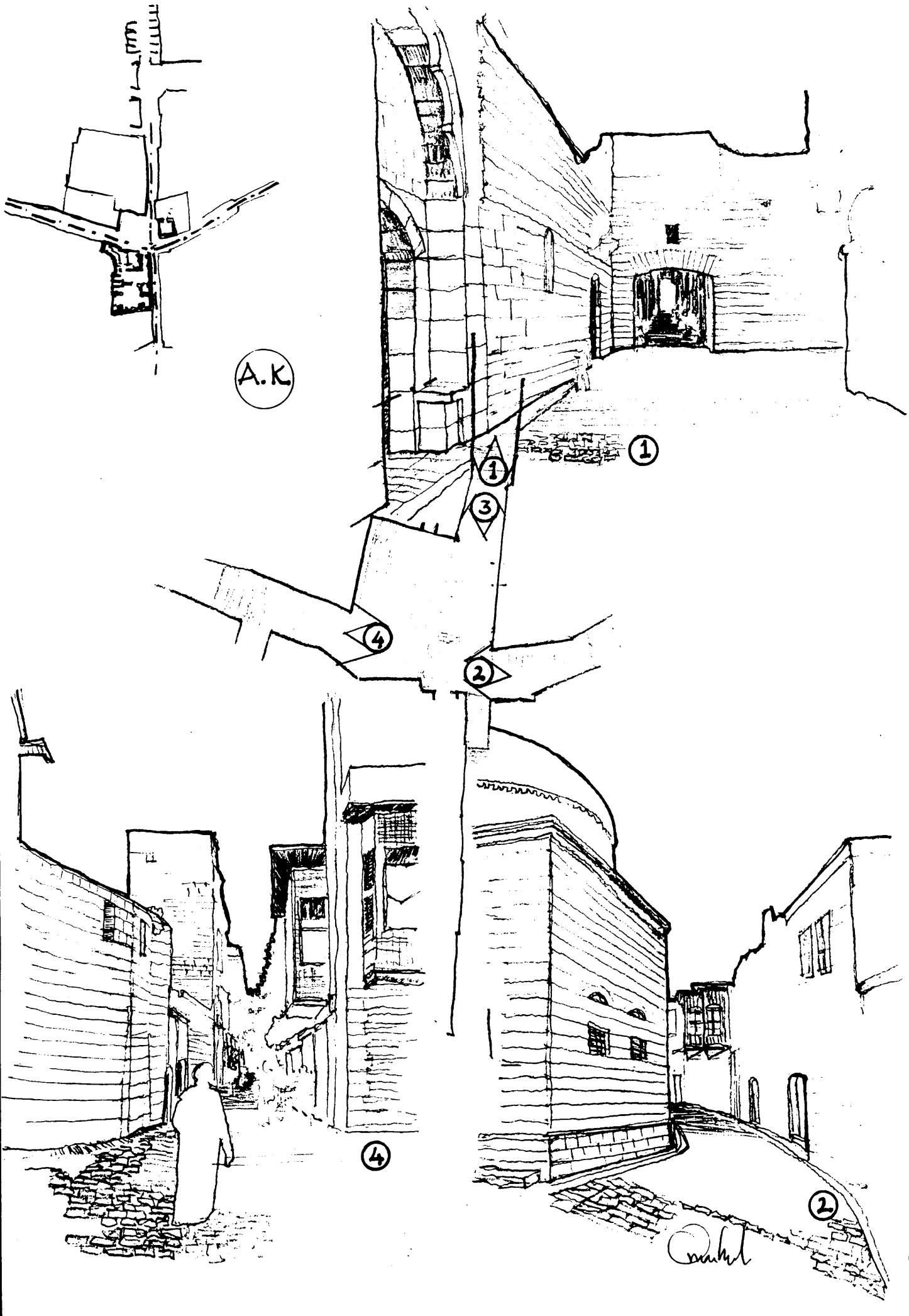
2
2
A.J
1
1


A.K
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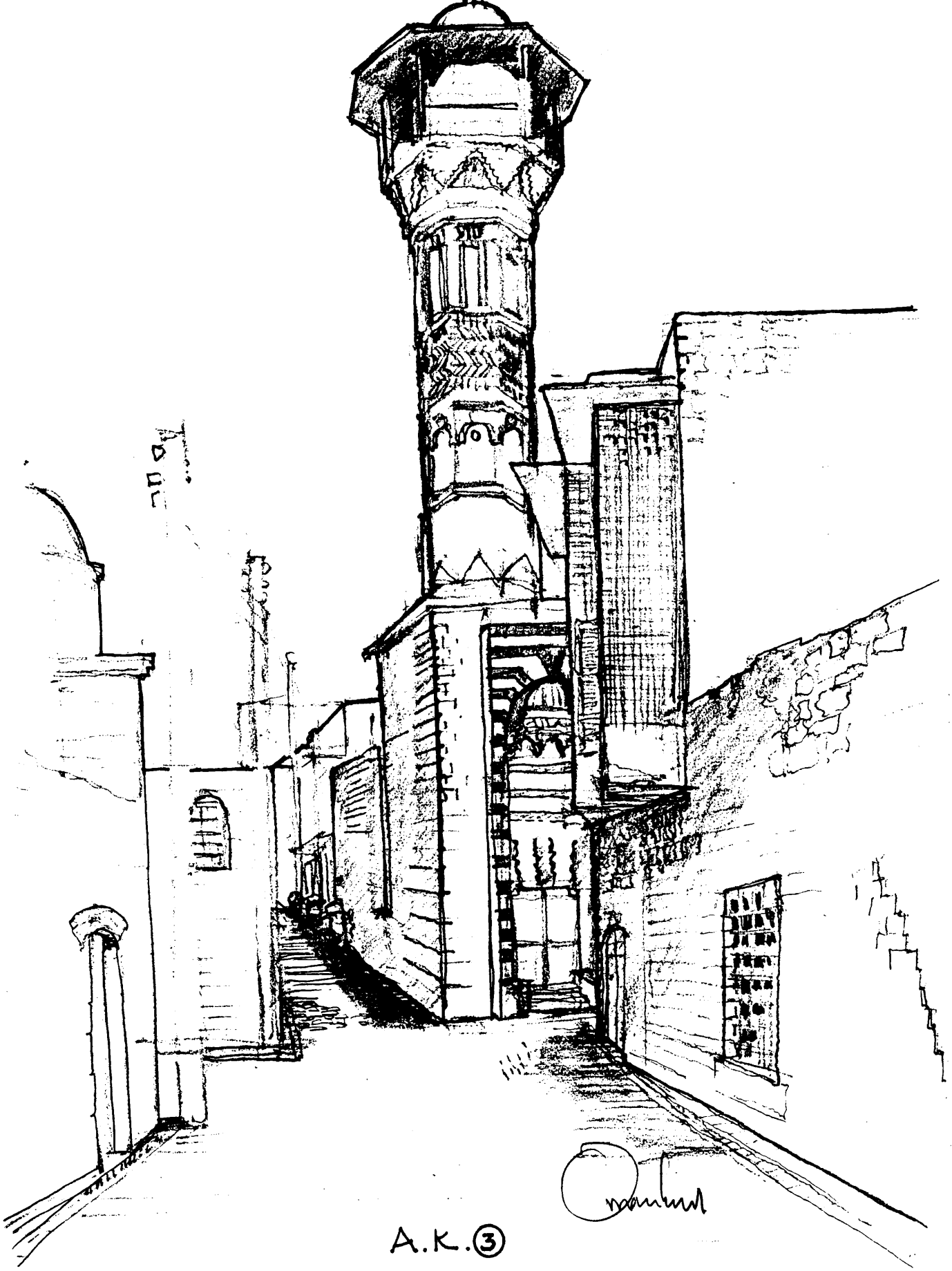
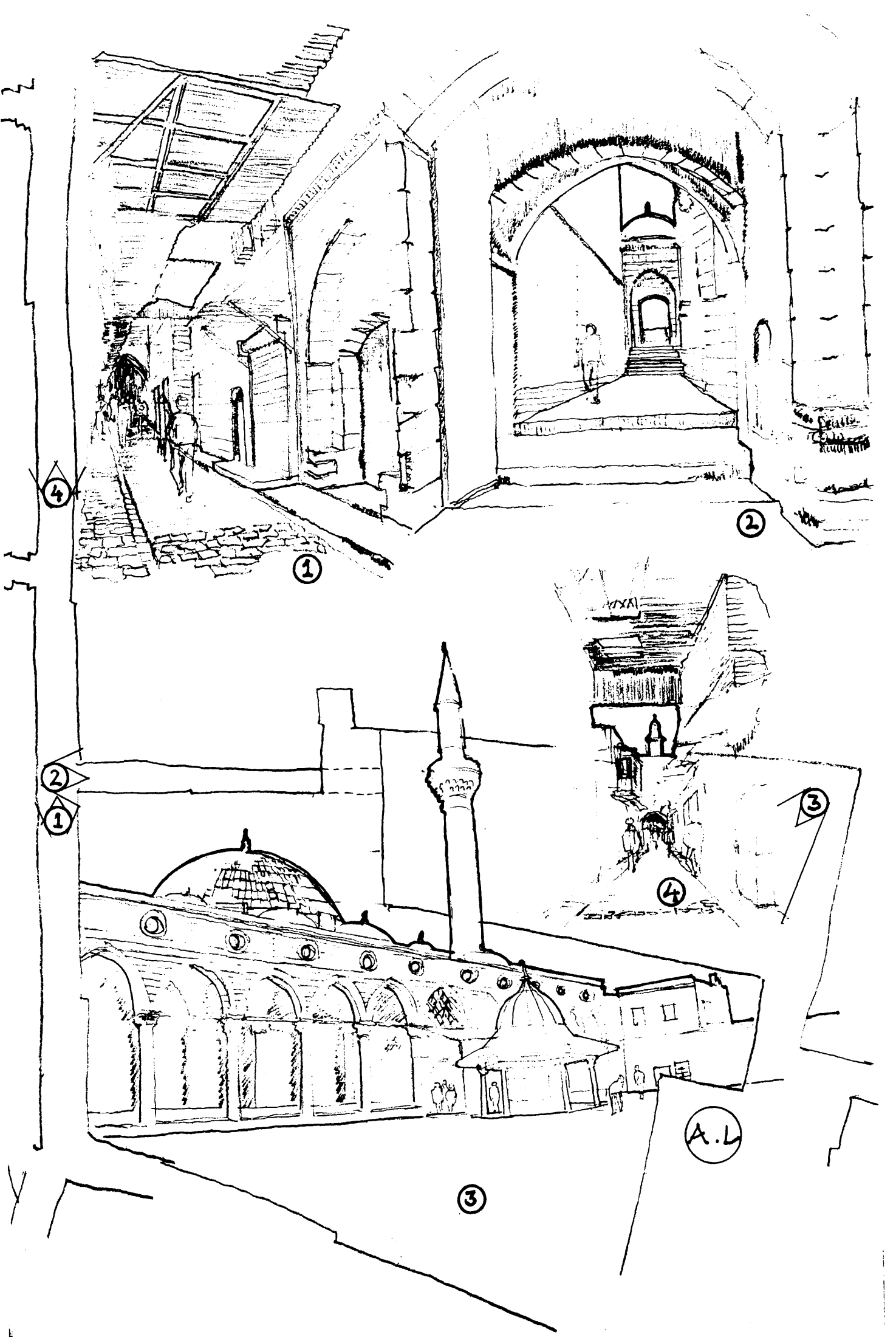
2
4
2



A.K.③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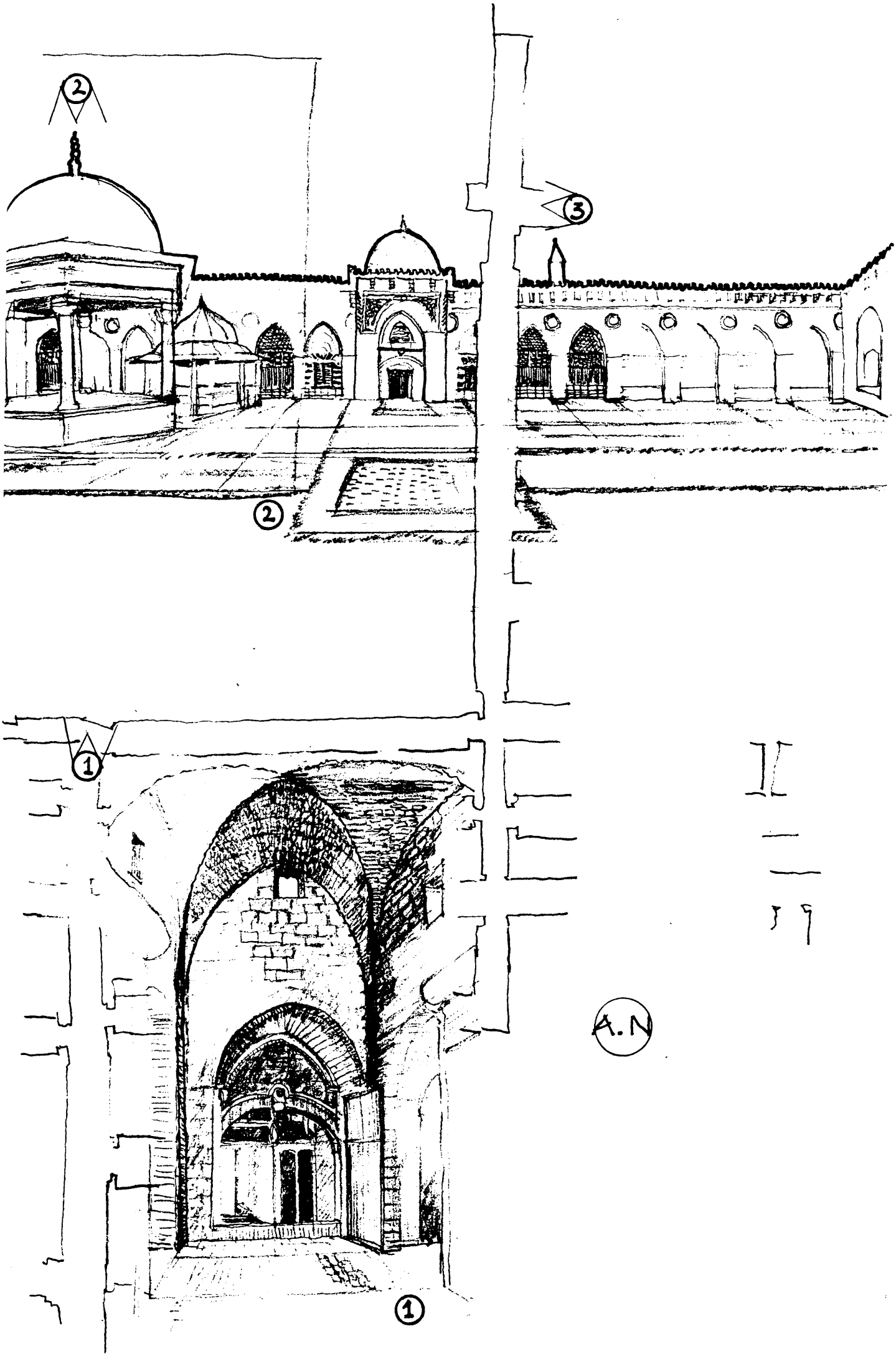
2
2
1
3
4
3
A.L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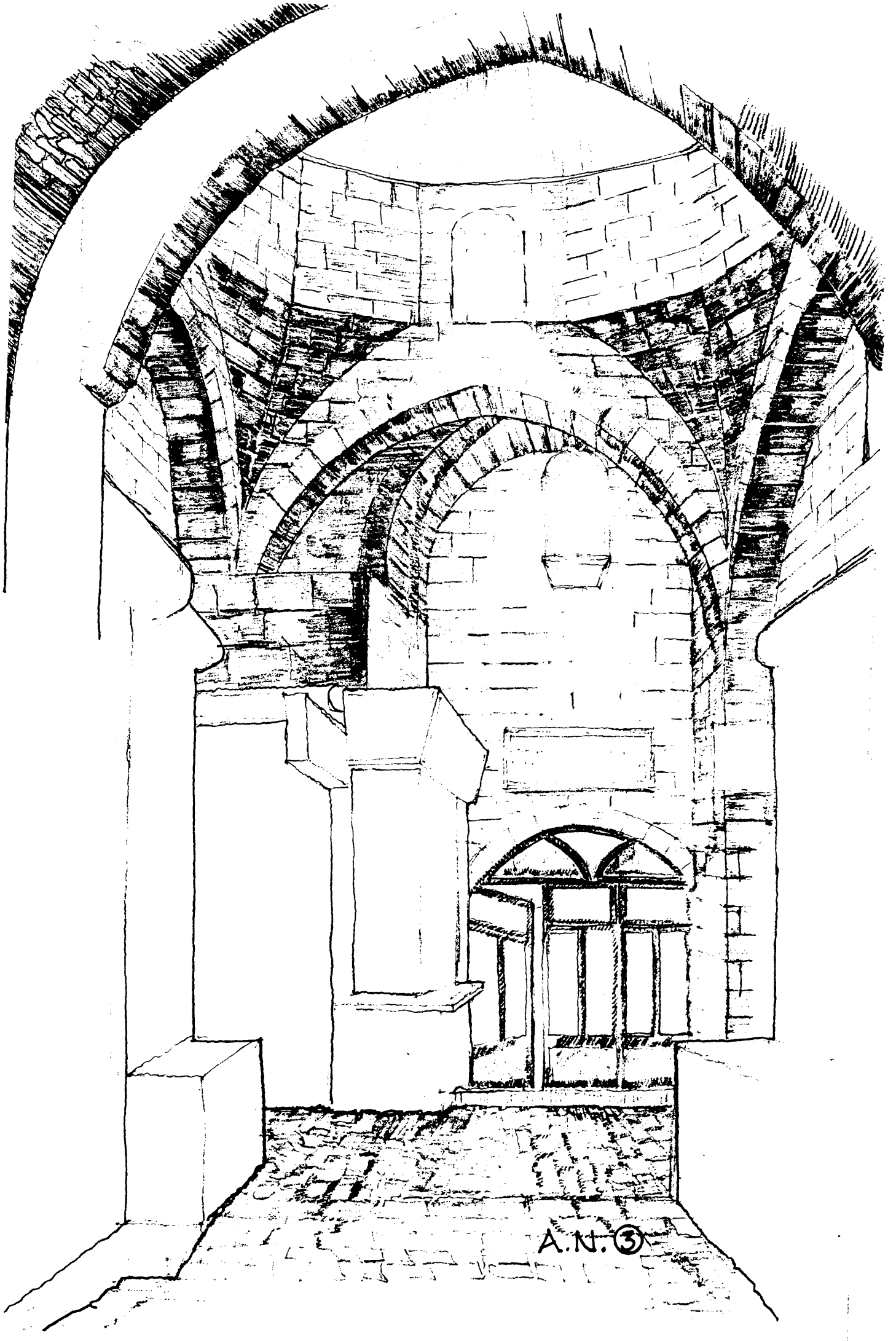
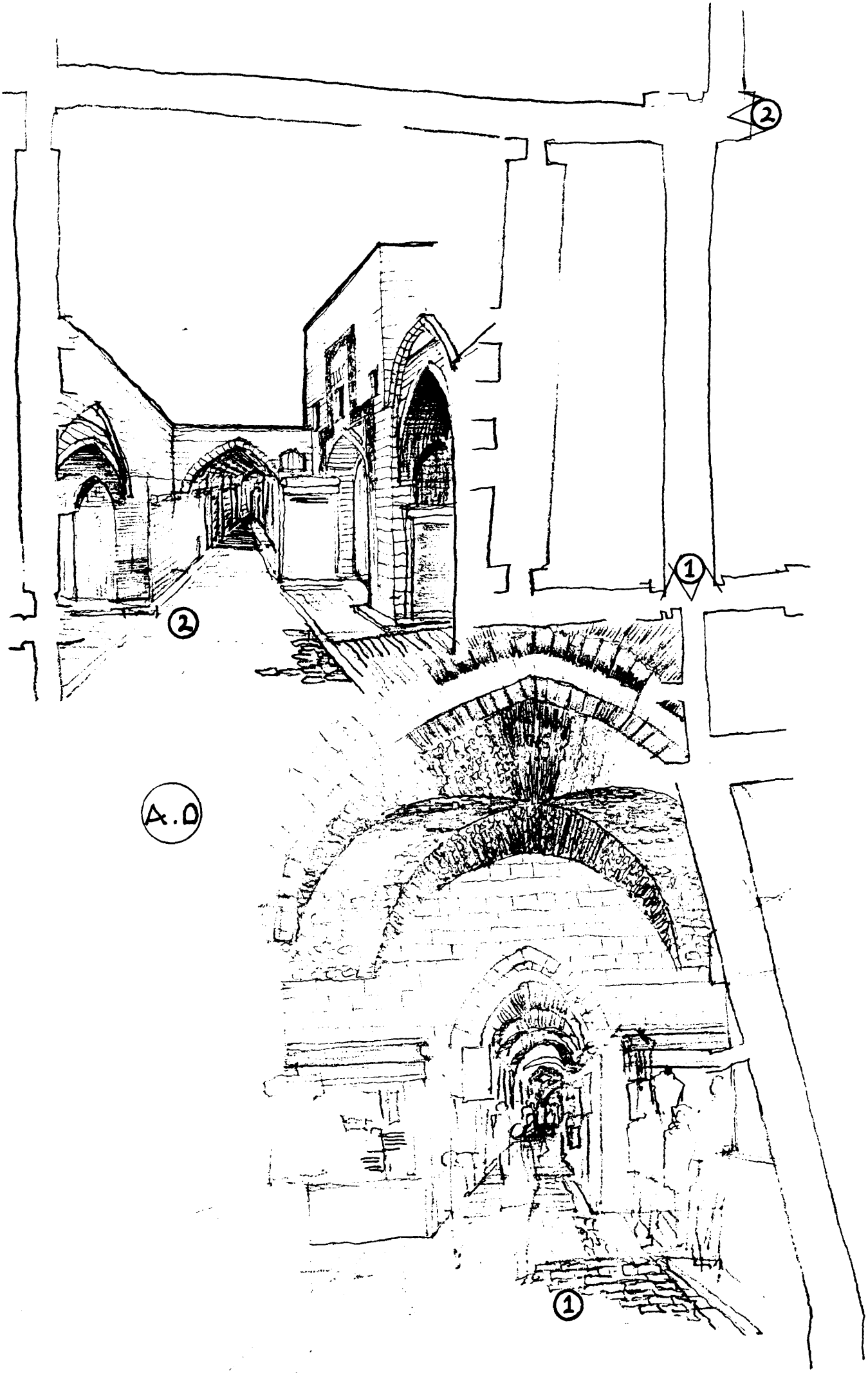
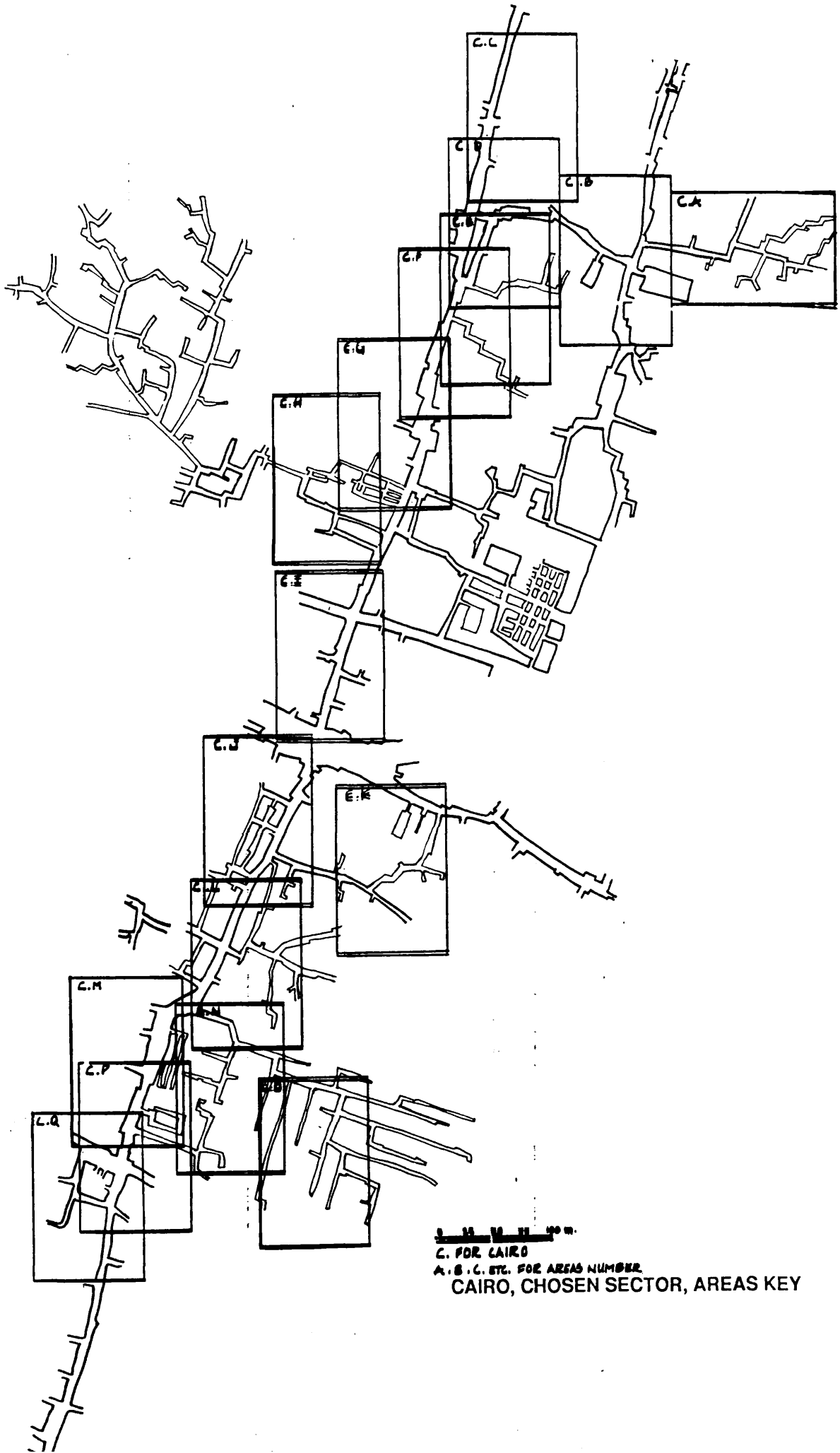
3
2
1
1
A.N


A.N.③


2
2
1
A.0
1

CAIRO



CAIRO, CHOSEN SECTOR, AREAS KEY

5
5
4
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C.A


4
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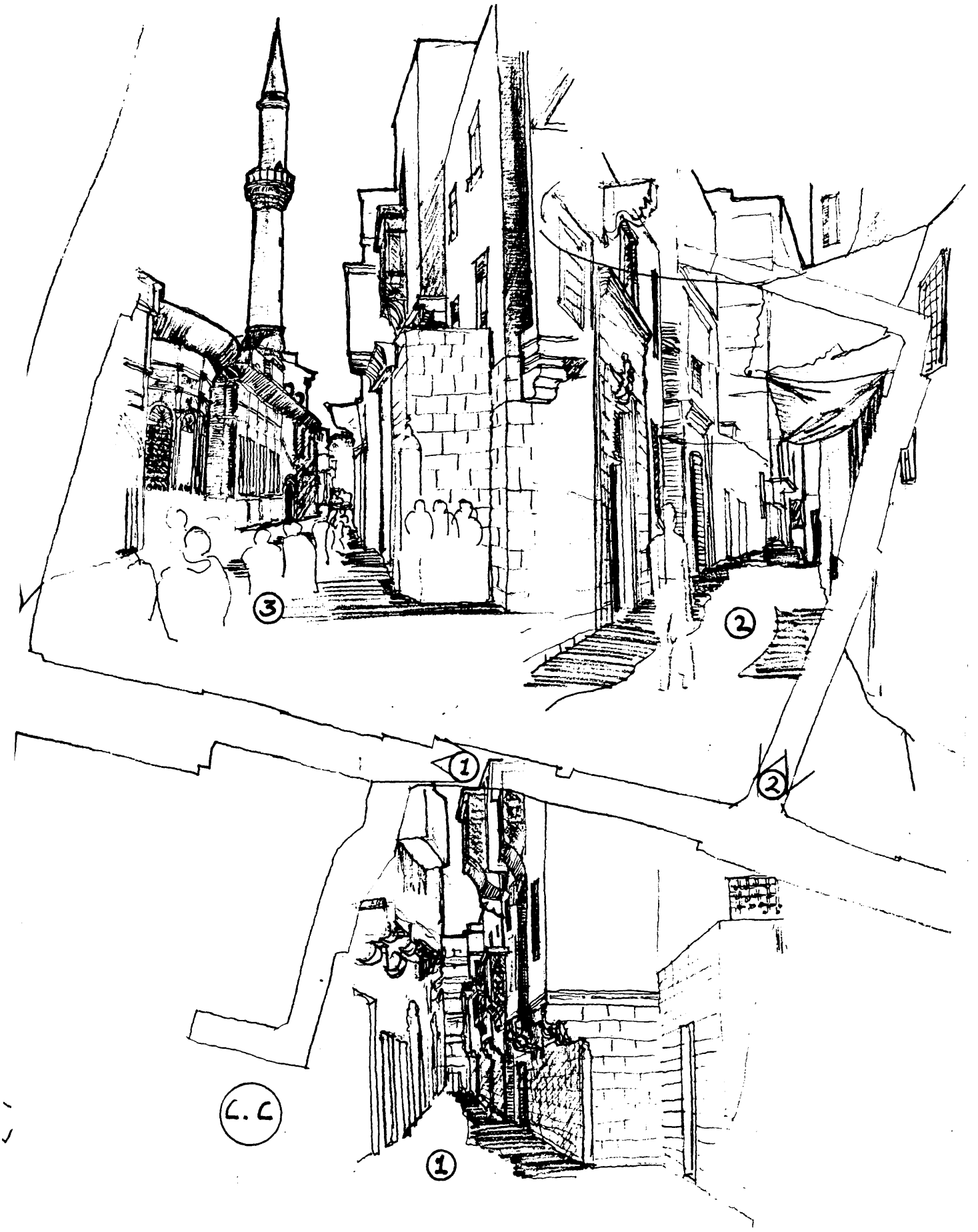
3
L.B
1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C. C
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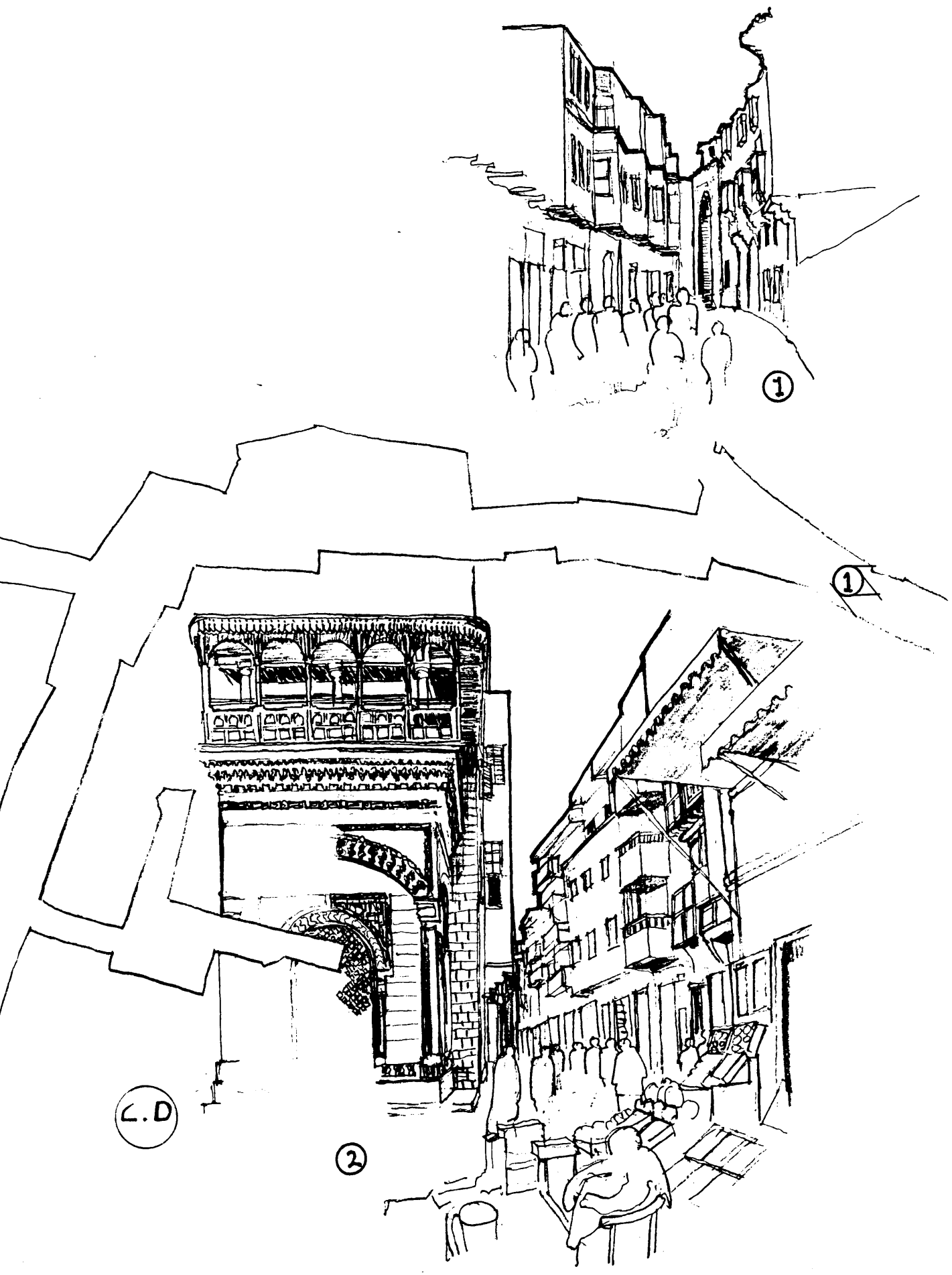
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C.D
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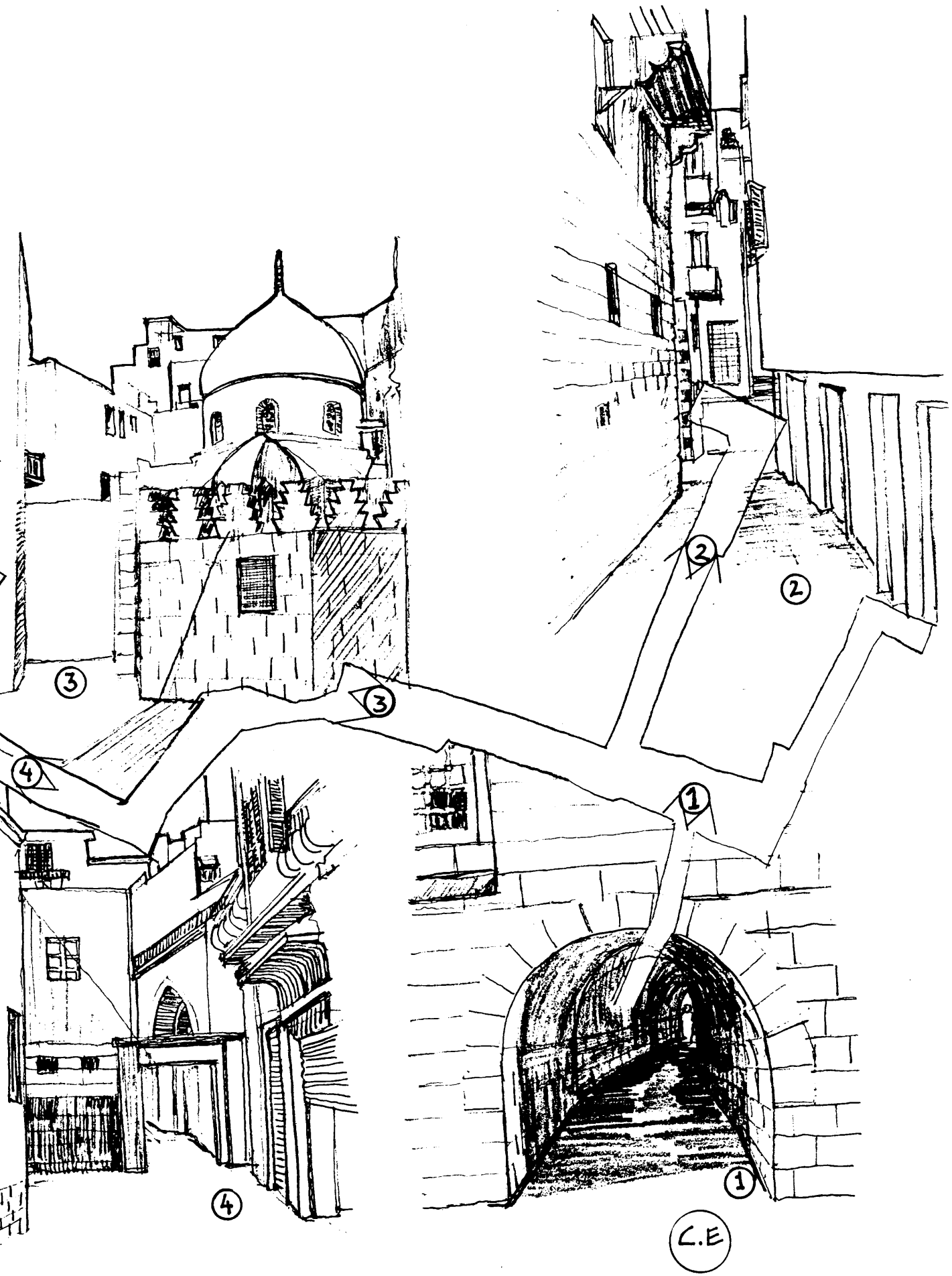
2
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1
C.E


1
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3
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C.F
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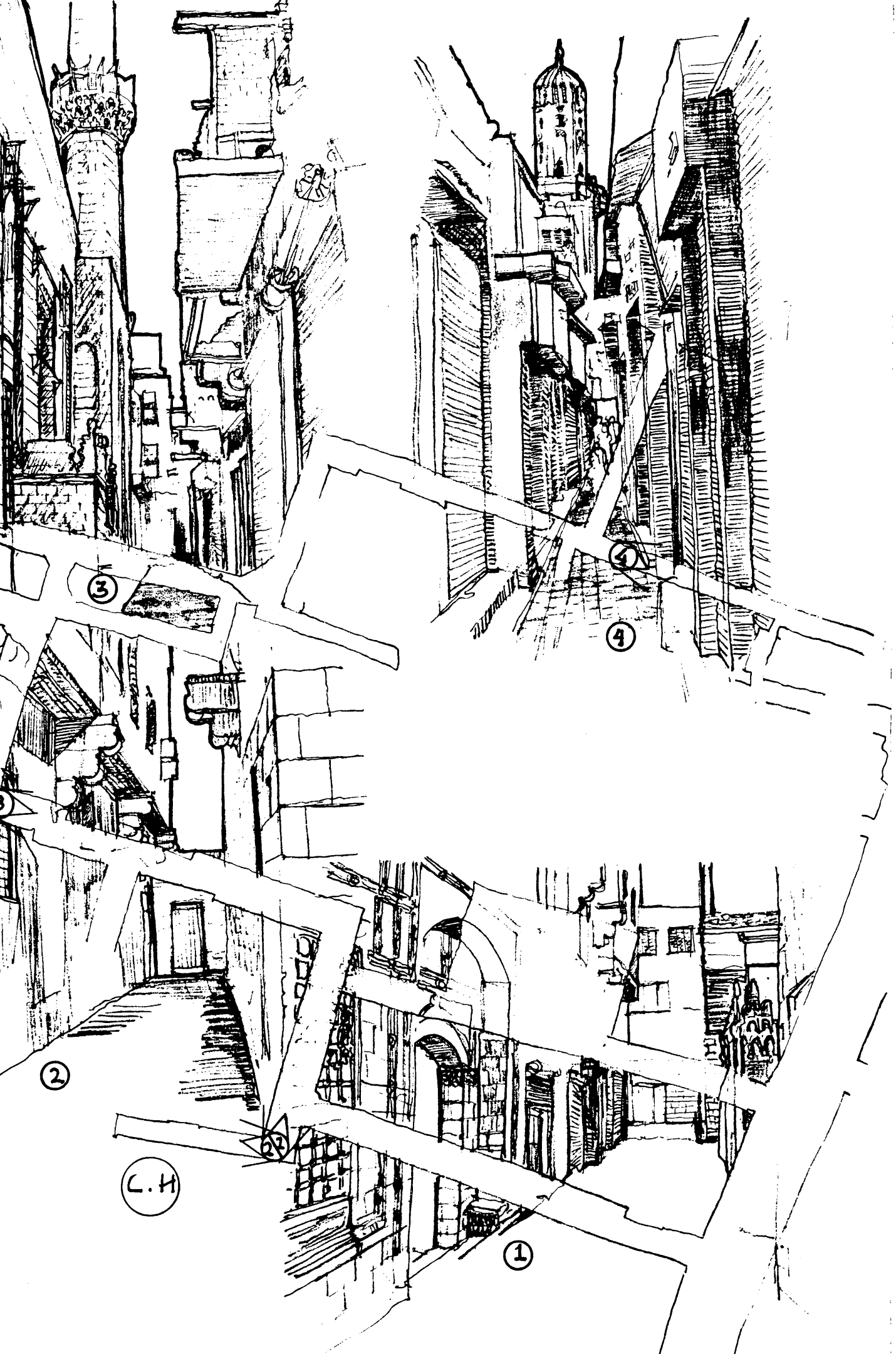
1
2
3
4
4
3
C.G


L.G 5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C.H
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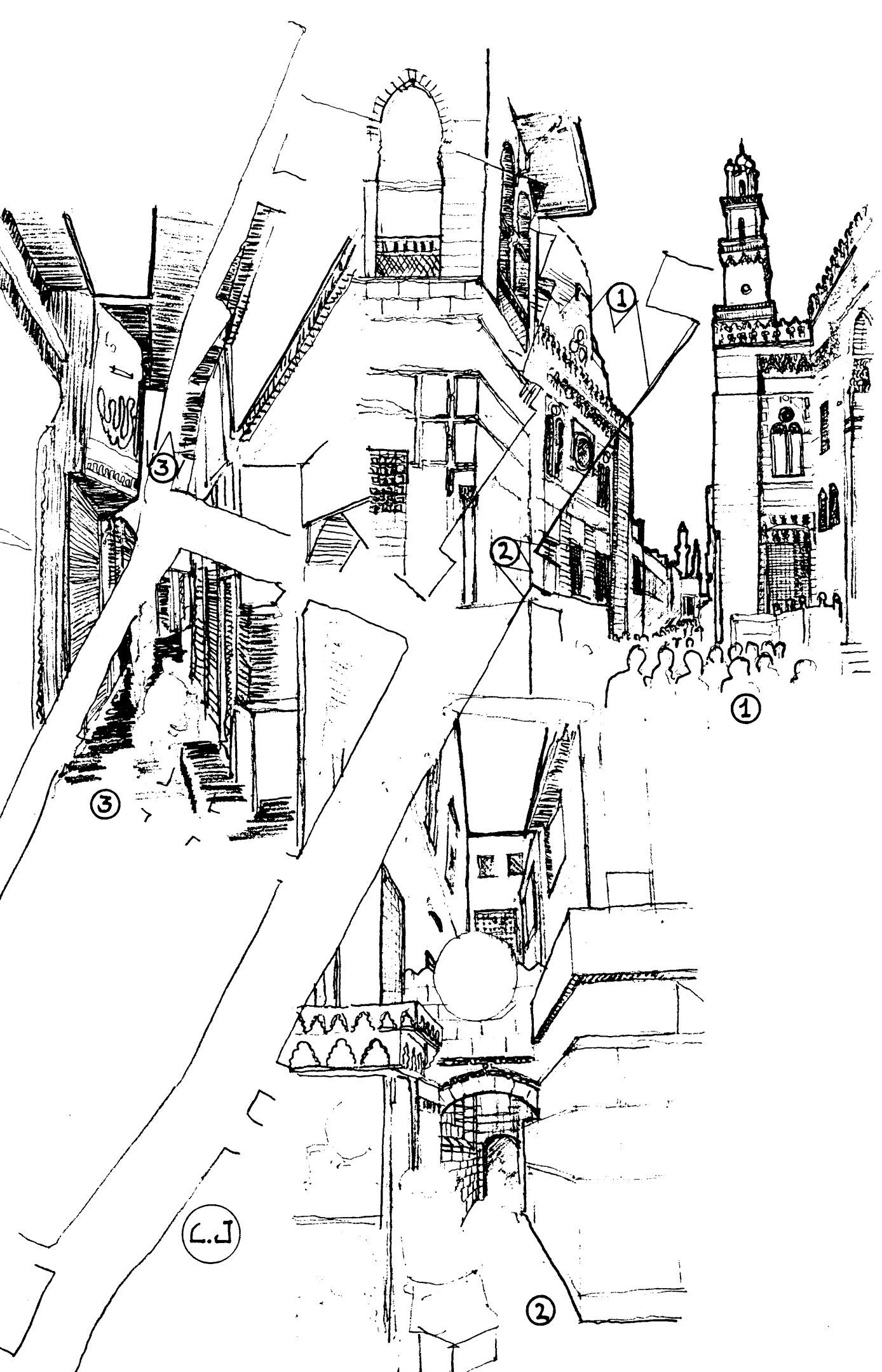
C.I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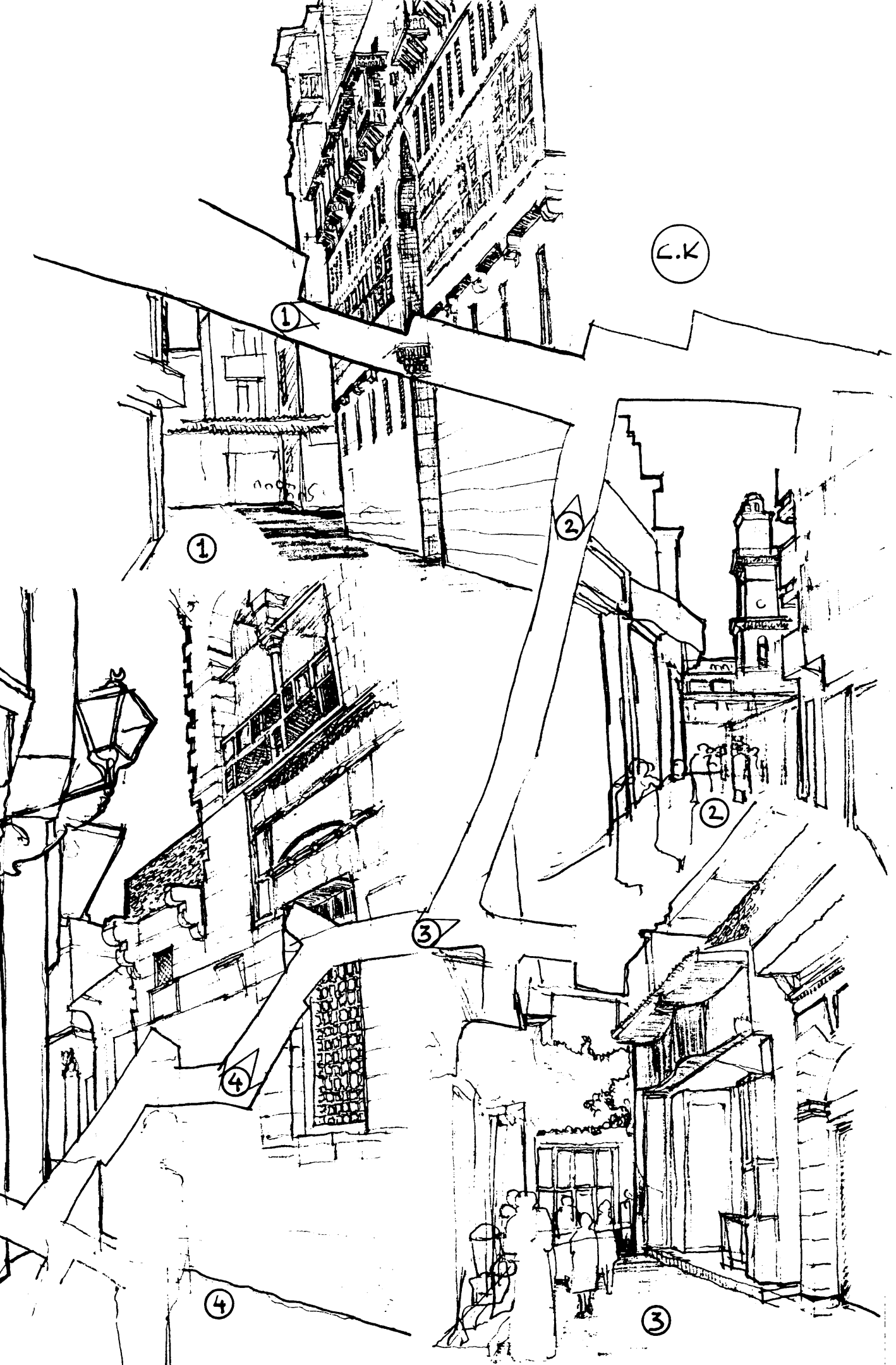
C.K
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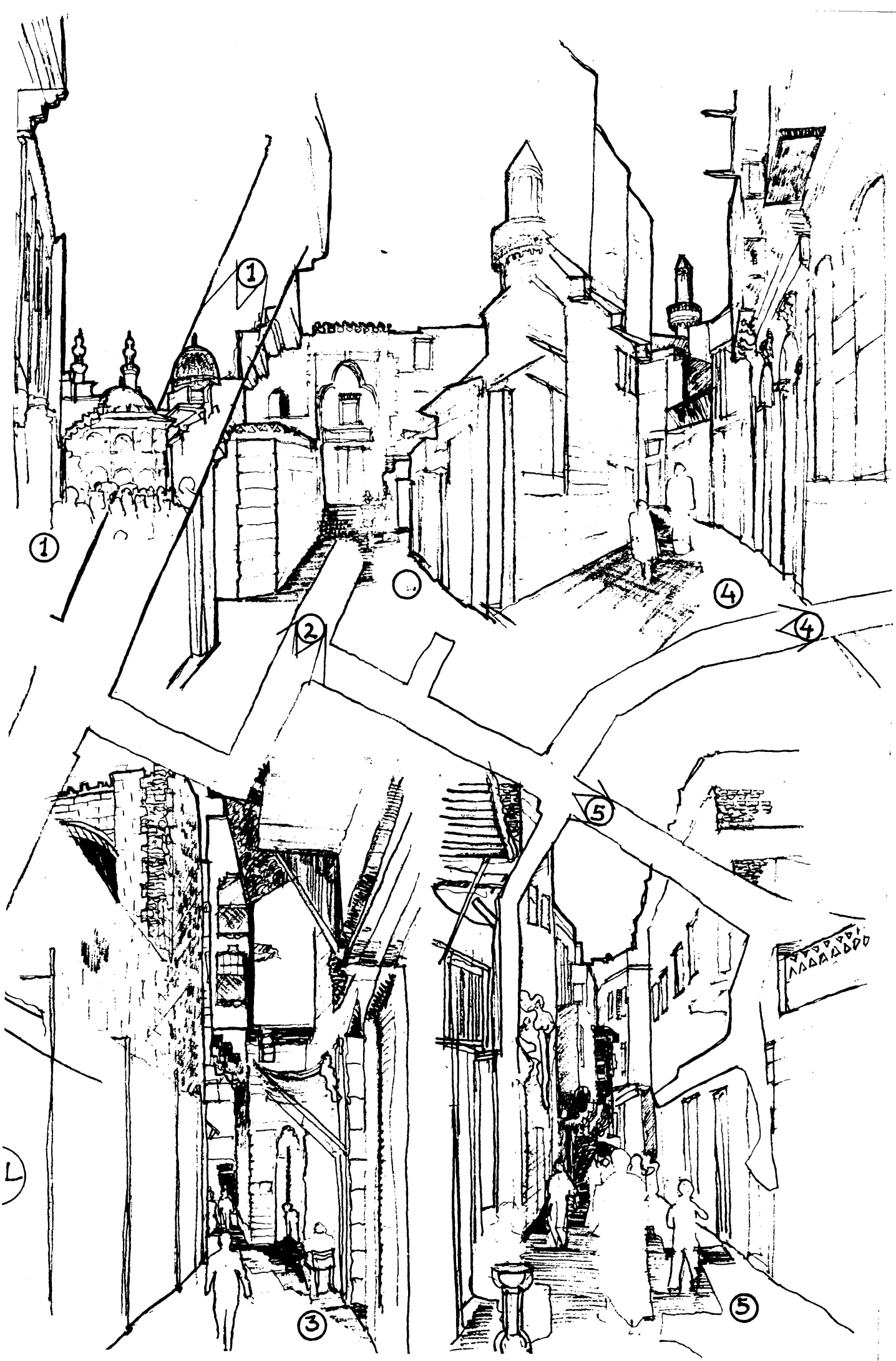
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E.M
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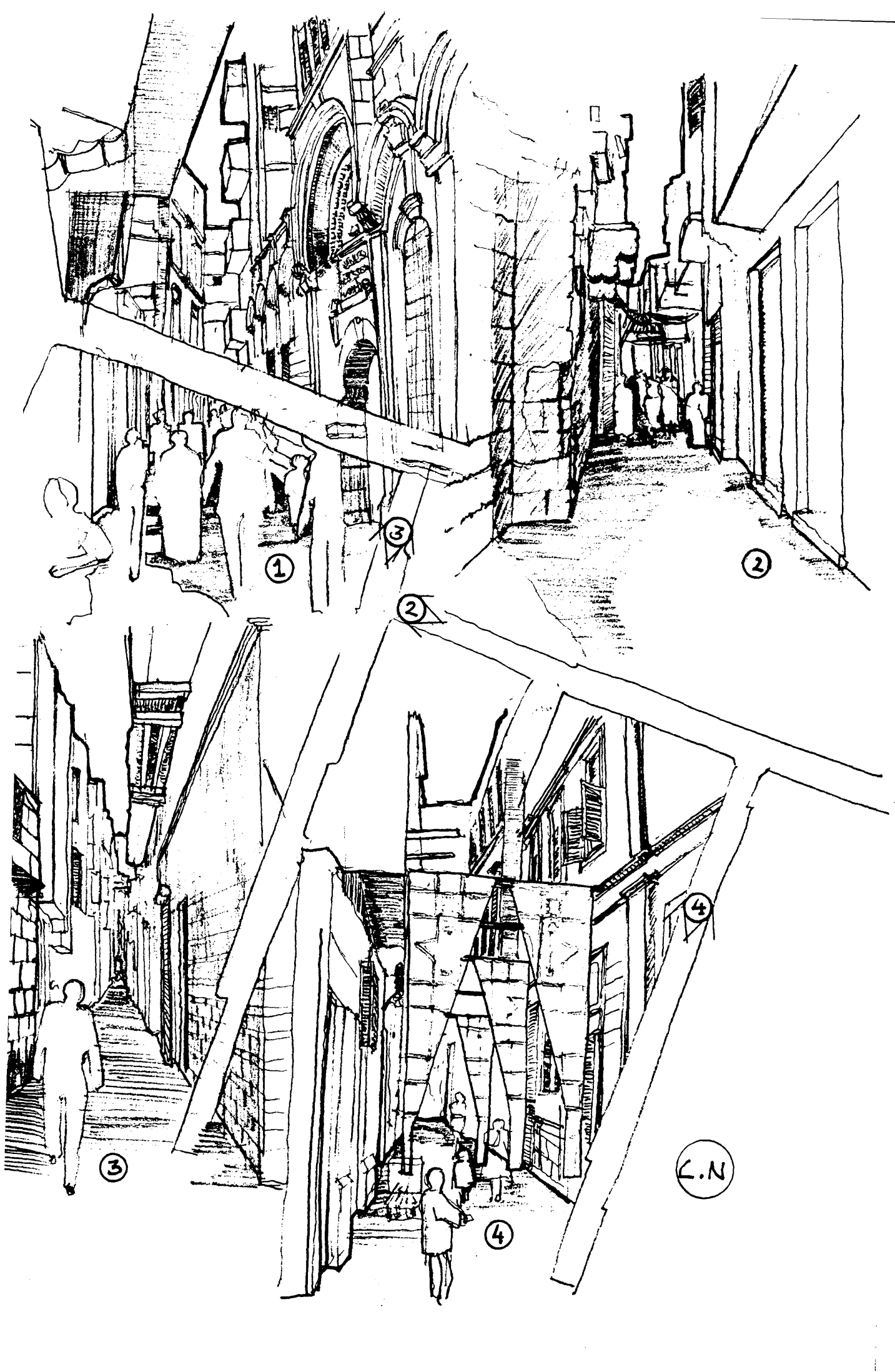
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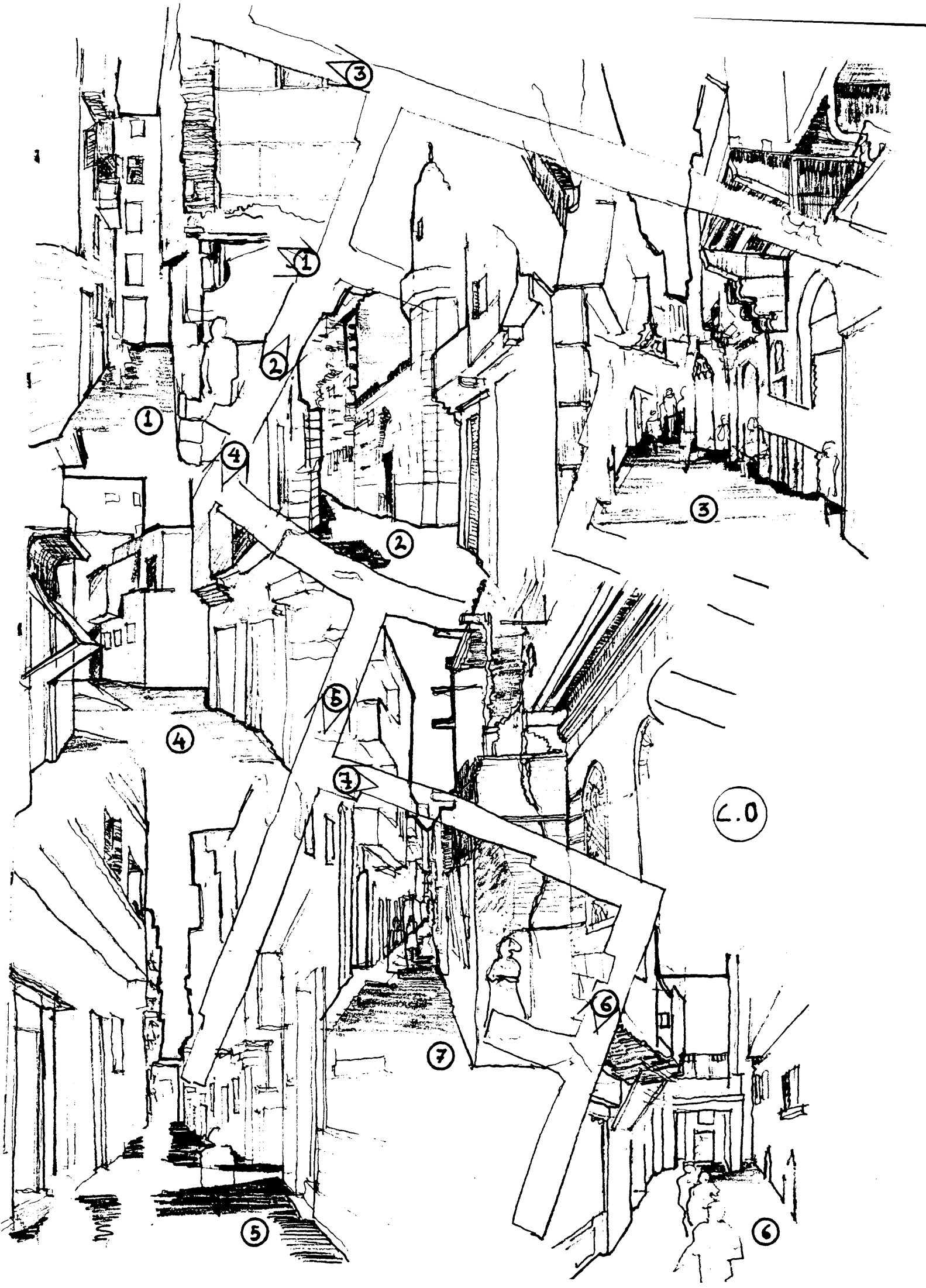
L.N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2
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4
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L.0
6
7
6
5

C.Q