

meeting hall (*bouletarion*) for the council of the polis (*boule*) that could accommodate up to 700 people (Roth, 1993).

The priority of Hellenic life was communal life, and as a result "... (they) put their best, architecturally, into temples and public buildings; in the scheme of the Greek city the houses were subordinate. The agora, the shrines, the theatre, gymnasia and so forth occupied sites determined by traditional sanctity or convenience. The houses filled in the rest" (Wycherly in Morris, 1994:54).

### B2.2.3 Public Buildings

The largest of these were open to the air and included theatres and stadia. Stadia were used for athletic contests used at certain times of the year. The theatre was almost as important a part of civic life as was the agora, encompassing plays and rituals, contributing to political education as well as entertainment; in essence a celebration of community (refer Figure B-8).

The economy of Greek city states was based on extensive slave labour, giving citizens significant leisure time to undertake intellectual discussion and collective activities. For these communal requirements, specialised building types were developed, including theatre, gymnasium and stadium, which were grouped together.

The agora, as the multi-purpose public square for democratic assembly and debate, and the leisure core (to use a modern term) of theatres and gymnasium, were revolutionary additions to those found in the Mesopotamian city.

".... the urban mass, was most probably, denied opportunity for public gathering and such leisure time, as was available, was spent resting at home. 'Revolutionary Addition' is fully justified because these two Greek innovations constitute one of the main divides between Christian and Islamic urban culture. Whereas the former evolved from Greek and Roman precedents, the historic Islamic city, in direct line of descent from Mesopotamia, likewise had no need for either democratic political assembly, or communal leisure activity in public" (Morris, 1994:54).

In conclusion, the Greek city and its public spaces, for all their regularity and formal building relationships, was less the result of academic urban planning rules- it was essentially the result of applying uncomplicated planning principles to the site in question and undertaking town planning as the art of the practical (Morris, 1994).

## B3 PUBLIC SPACE IN ROMAN CITIES

While the Greeks were recognised as 'artists' in the fullest sense, the Romans were considered as 'practical engineers' with a minimum of aesthetic ideas of their own (Morris, 1994). Mumford (1961) considers the Roman contribution to planning as being

"Chiefly a matter of sturdy engineering and flatulent exhibitionism: the taste of nouveaux riches, proud of their pillaged bric-à-brac, their numerous statues and obelisks, stolen or meticulously copied, their imitative acquisitions, their expensive newly commissioned decorations". (Mumford in Morris, 1994).

Zucker (1959) mediated the above statement by his observation that the Romans

"... in architecture as well as in sculpture the Romans created entirely new and original artistic values, although taking over the artistic vocabulary of the Greeks".

Both of the above are relevant facets of Roman public space design and layout.

The main achievement of the Romans was the creation of their extensive empire (the then 'known' world), encompassing the entire Mediterranean Region from Spain, through the whole of western and eastern Europe to the Black Sea, as far as Babylon and North Africa. This shows their genius in administration and organisation, which supported the city of Rome.

There is an even greater contrast in the organic growth of the city of Rome and its formally planned Roman provincial towns, than that between Athens and the systematically planned Greek cities of the post-Hippodamian period. This is due partly to the extensive size and population of Rome (estimated to have been 1.2 million in 200 AD) and the complex topography and associated constraints. (Morris, 1994).

### B3.1 Roman Urban Form and Street System

#### B3.1.1 The Castra

A fortified legionary camp laid out according to the strictly applied rules of castrametation (the practice of laying out Roman military camps and an important part of legionary standing orders). The street system was a gridiron layout, within predetermined rectilinear defensive perimeters, encompassing all the major urban components (refer Figure B-9).

Although the *castra* were temporary in nature, they did form the basis of permanent towns - thus *castra* formed a type of standardised plan. Timgad in North Africa is a good example of an urban settlement founded on a *castra* (refer Figure B-10).

The characteristics are:

- A square or rectangular perimeter.
- Two main cross streets forming the basis of the street structure:
  - the *decumanus*, the principal east-west street through the centre of the town; and
  - the *cardo*, the principal north-south street, crossing the *decumanus* at right angles, towards one end.
- *Insulae*, street or building blocks formed by secondary streets that complete the grid layout.
- The *Forum*, the "central square" located at the intersection of the *decumanus* and *cardo*.
- The Main Temple, theatre and public baths.
- The amphitheatre.

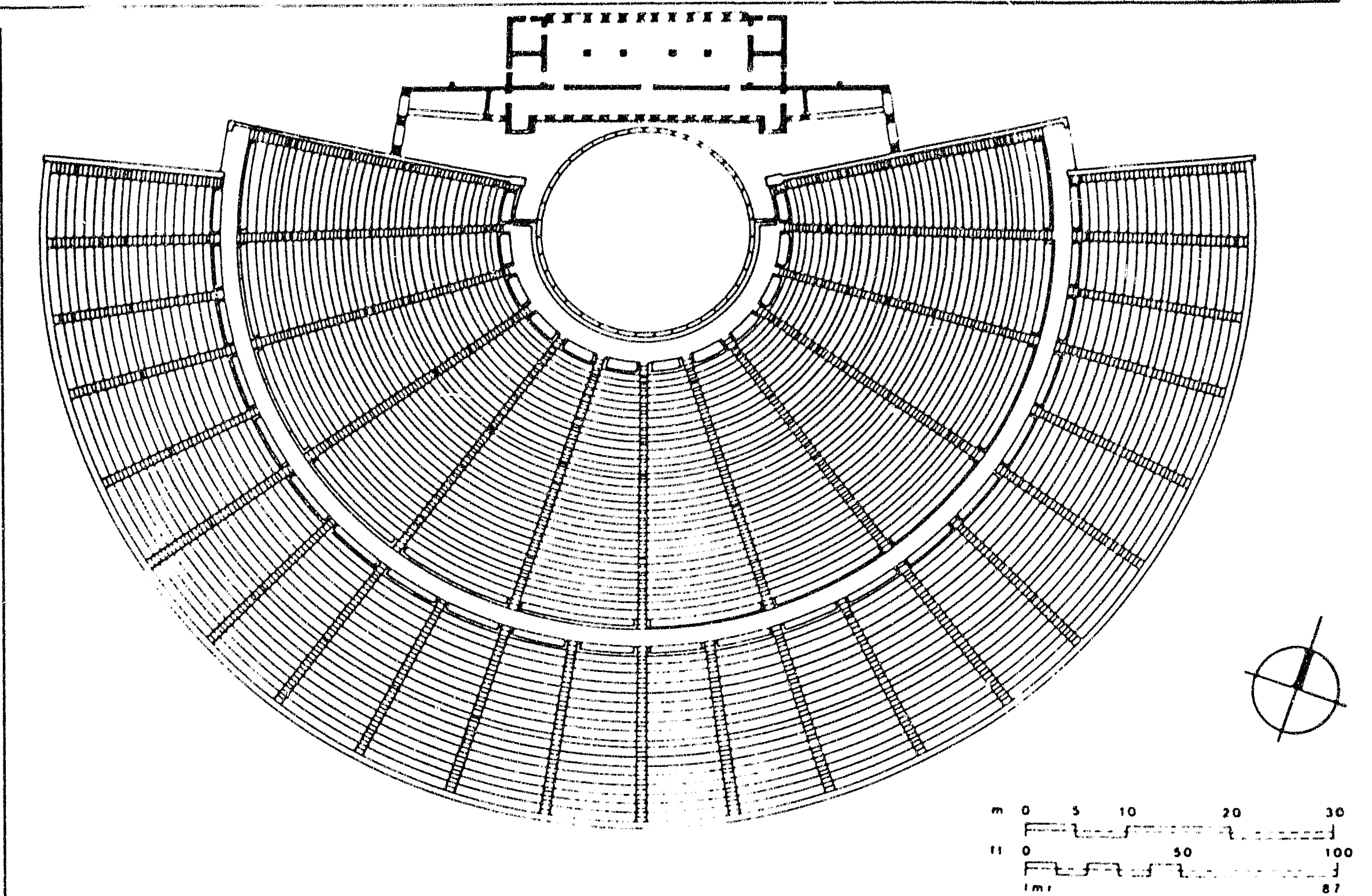


Figure B-8: Plan of Greek Theatre, Source: Roth, 1993:196

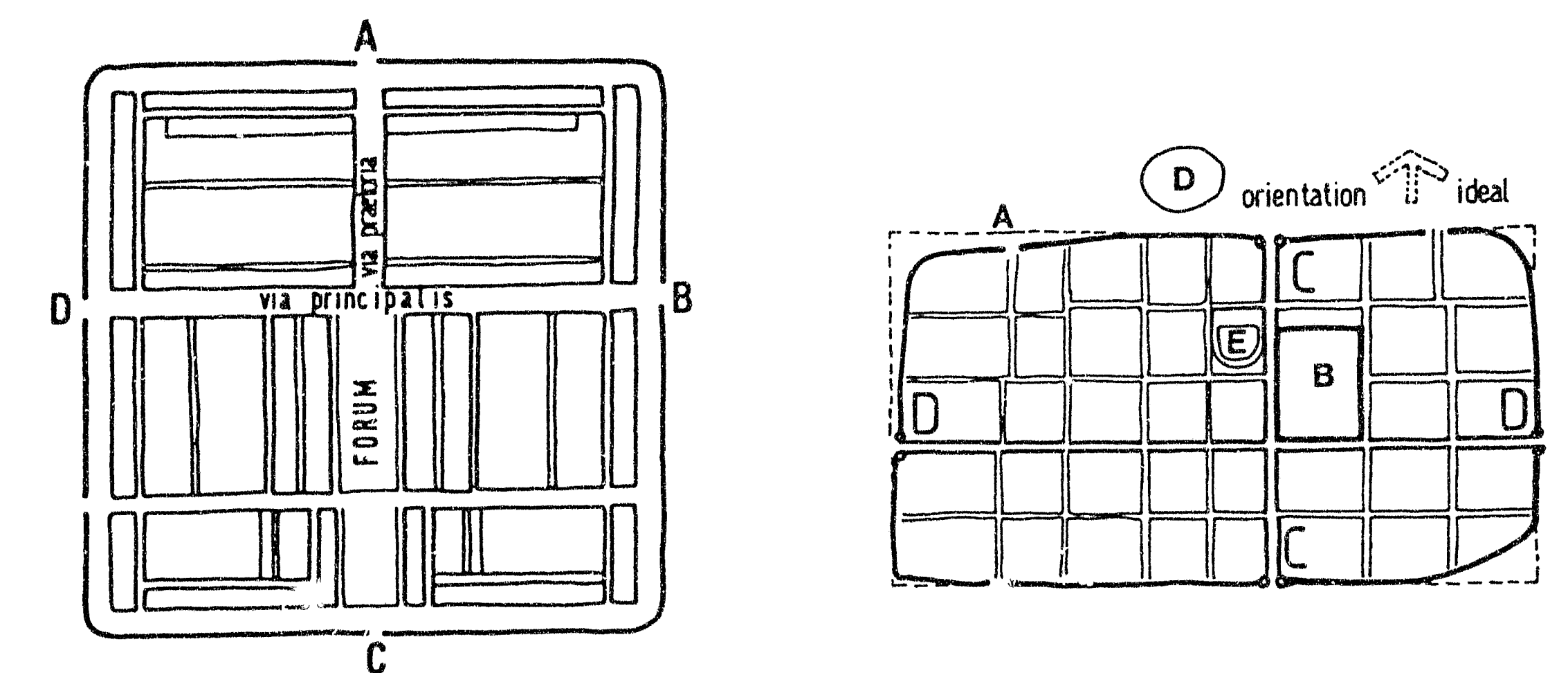


Figure B-9: Plan of typical Roman Castra layout, Source: Morris, 1994:57

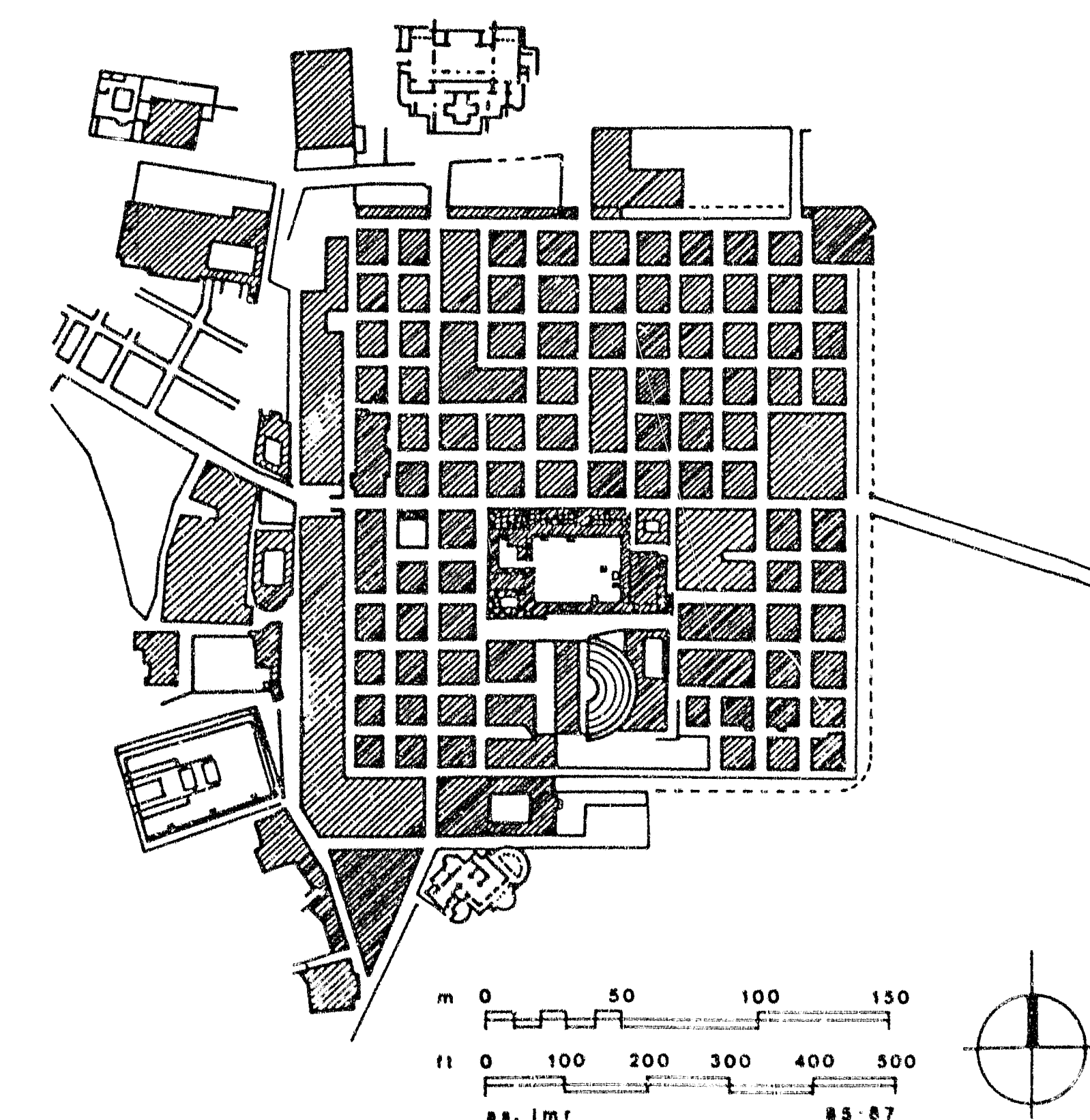


Figure B-10: Plan of Timgad A.D. 100, Source: Roth, 1993:220



B3.1.2 The Street System of Rome

The city of Rome's functional zones were linked together through a system of street routes (refer Figure B-11). There were three hierarchies of streets:

- The *itenera*, pathways for pedestrian traffic;
- The *actus*, allowing the passage of a single cart at a time; and
- The *viae*, two carts in width, a maximum width of 3 metres, and of which there were only few.

By the time of Julius Caesar the streets of Rome were grossly overloaded, compounded by their narrowness and tortuous routes, resulting in the banning of transport carts from the city during daylight hours (excepting builders' carts and some official chariots).

The great dictator had realised that in alleyways so steep, so narrow and so traffic-ridden as the *viae* of Rome, the circulation by day of vehicles serving the needs of the population of so many hundreds of thousands caused an immediate congestion and constituted a permanent danger. He therefore took a radical, decisive step in urban management:

From sunrise until nearly dusk no transport cart was allowed within the precincts of the 'urbs'. Those, which had entered during the night and had been over-taken by the dawn were required to stand still and remain unused. Four exceptions to the rule were allowed:

- on days of solemn ceremony, the chariots of the Vestals, of the Rex Sacrorum and of the Flamines;
- on days of triumph, the chariot necessary to the triumphal procession;
- on days of public games those which the official celebration required; and
- lastly one perpetual exception was made for every day of the year in favour of the carts of the contractors who were engaged in wrecking a building to reconstruct it on better and more hygienic lines.

B3.2 The Roman "Square"

B3.2.1 The Forum

The cities of the Roman Empire were centred around the forum, which combined the functions of the Greek *acropolis* and *agora*. The forum comprised a colonnaded courtyard with a temple across one end. Mumford (1961) describes it as a whole precinct, incorporating enclosed, semi-enclosed and open spaces for commerce, religious congregation, political assembly, athletics, and informal meetings. The forum was generally rectangular in shape, dominated by the temple of Jupiter, enclosed and shaped by several buildings; the *curia*, city offices, and a *basilica*, a large roofed building where legal cases were heard (i.e. the courts); as well as other public buildings, including the theatre, the public baths, and additional temples. The most important forum was that at Rome, considered the "head of the world", *caput mundi*, which grew separately as each emperor made his own additions. (refer Figure B-12).

B3.2.2 Roman Public Buildings

These encompassed the public baths, temples, libraries and the amphitheatre. The latter, because it required sloping ground for seating, was normally located outside the town.

B4 PUBLIC SPACE IN MEDIEVAL CITIES

Mumford (1961) outlines that between about the 5<sup>th</sup> and 10<sup>th</sup> centuries AD, cities ceased to play any significant roles as centres of productions. From the 10<sup>th</sup> Century AD, an overall political stability had been established to the degree that a commercial revival began to take place and steadily gained in strength. The resurgence of trade was particularly significant in Germany, and long-distance trade routes were reopened throughout Western Europe, particularly those with Venice and the North Italian trading communities.

The Church had provided the stability for civilised life, albeit limited, during the Dark Ages, providing the stable centre for many medieval towns through its moral and legal authority to maintain order and stability.

*"In addition to the protection afforded by the bishops' walled cities and strongly defended monasteries, numerous burgs were established in all parts of Europe as heavily fortified military and administrative centres also served to promote the tenth-century resurgence of trade".* (Morris, 1994:94).

Religion had enabled the re-establishment of strong commerce by the twelfth century, which transformed Europe. The economic development freed Europe's social organisation of the Dark Ages from dependence on agriculture and the country. As a result extensive urban expansion took place during the 12<sup>th</sup> and 13<sup>th</sup> centuries, and even the Black Death, which scoured Europe between 1348 and 1378, in effect only caused a temporary setback. The urban expansion also promoted rural depopulation, as people relocated to seek the commercial advantages of living in towns.

In this context Morris (1994) classifies five broad types of towns in medieval Europe of the 11<sup>th</sup> to 15<sup>th</sup> centuries, which are divided into two categories, *organic growth towns* and *planned new towns* (refer Table B-1 ).

Organic growth towns		
1.	Roman Origin	<ul style="list-style-type: none"><li>• some were re-established on their original sites, which had been deserted after the fall of the Empire; and</li><li>• others retained their urban status although very much reduced in size (e.g. Rome)</li></ul>
2.	Burgs (borough, burk, bourg, burgs)	<ul style="list-style-type: none"><li>• founded as fortified military bases and acquiring commercial functions later</li></ul>
3.	Towns	<ul style="list-style-type: none"><li>• evolved from village settlements through organic growth</li></ul>

Table B-1

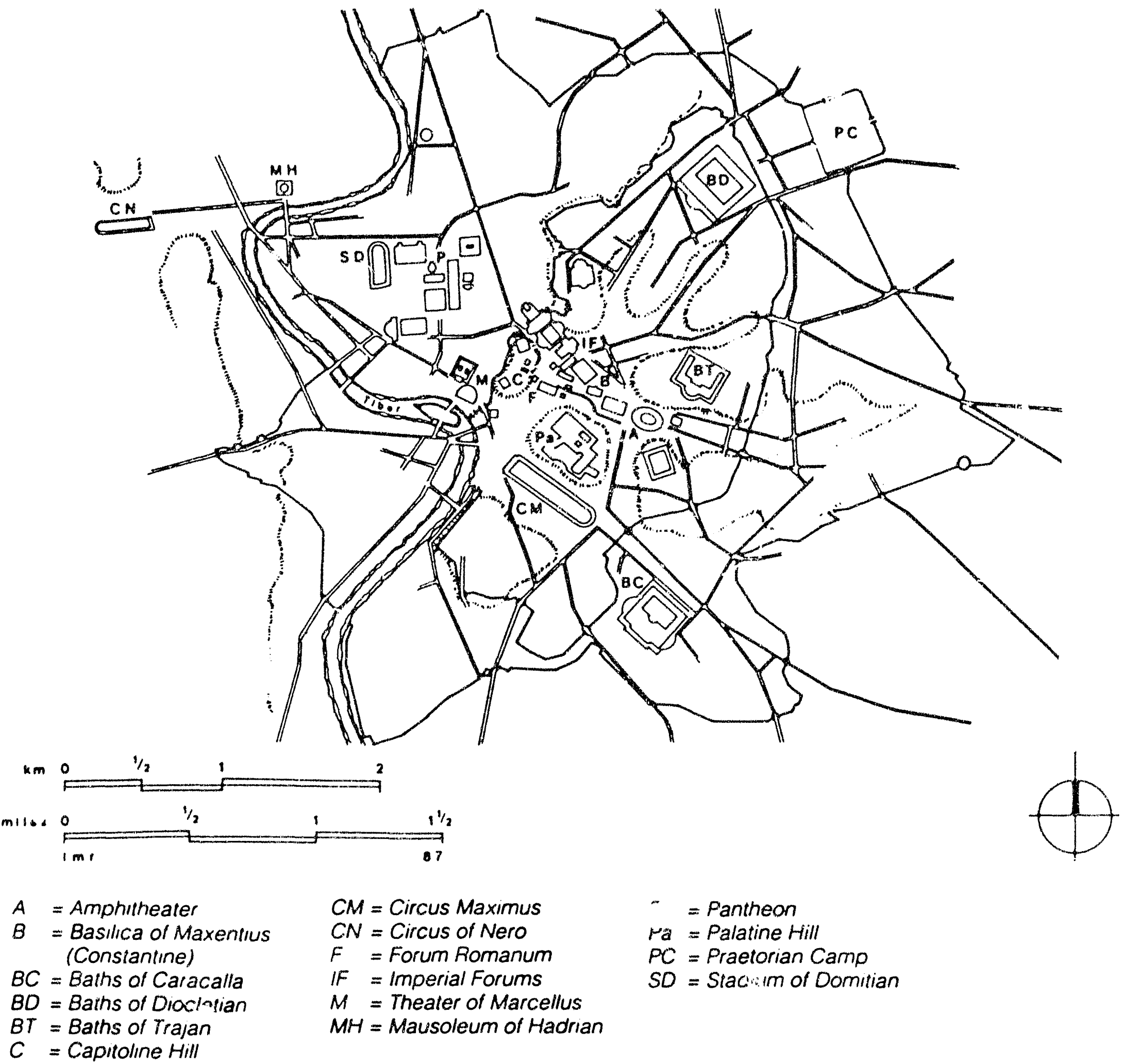


Figure B-11: Plan of Rome 3<sup>rd</sup> Century A.D., Source: Roth, 1993:220

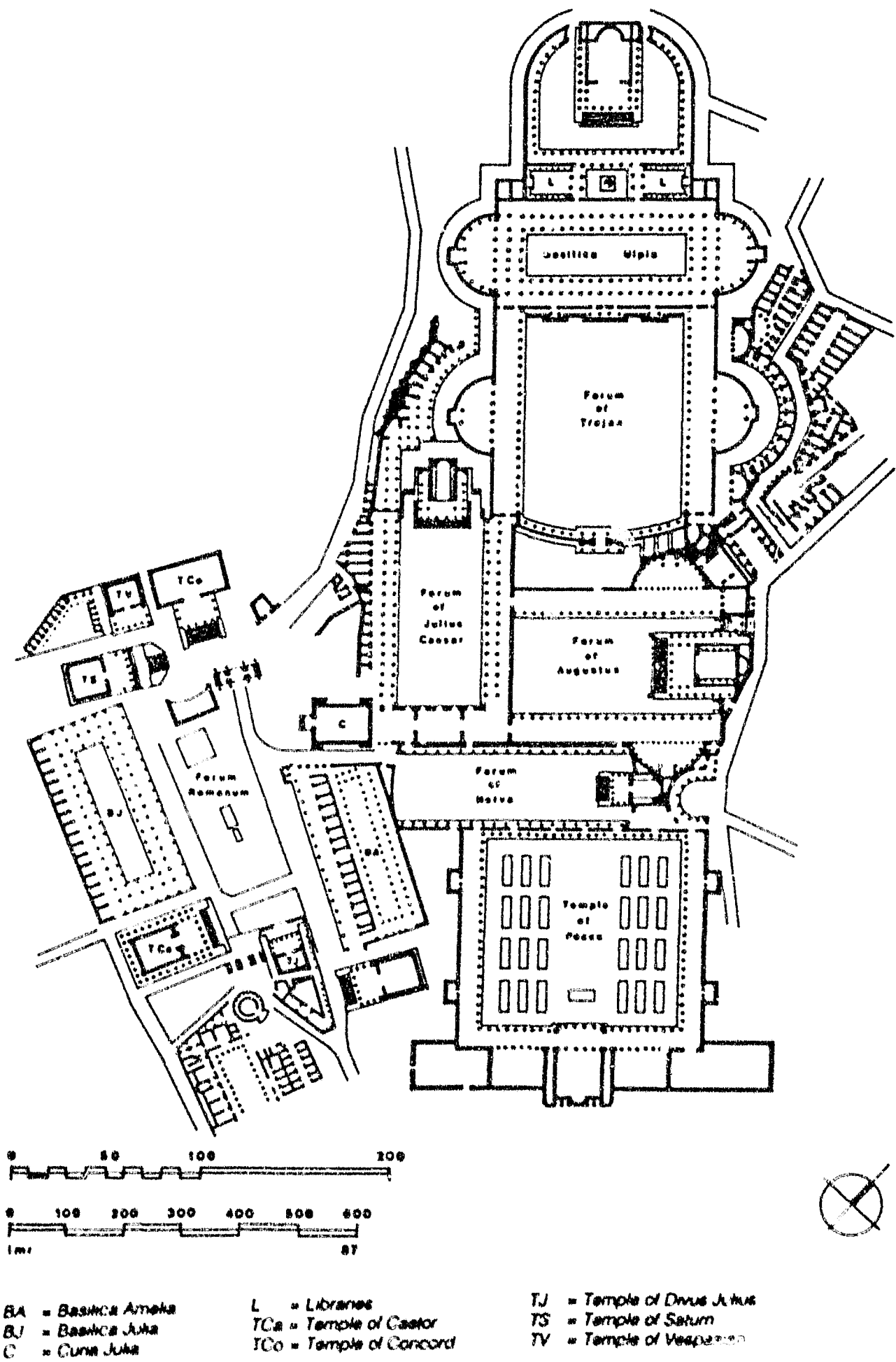


Figure B-12: Plan of Forum Romanum and Imperial Forums (Rome), Source: Roth, 1993:221



<i>"Planned New Towns"</i> (not in the modern sense of the phrase) formally established at a given moment in time, with full urban status, and with or without predetermined plan.		
1.	Bastide Towns	• founded in France, England and Wales
2.	Planted Towns	• founded throughout England generally

(Source : Morris, 1994)

Table B-1

The characteristic medieval urban form comprised the following components:

- the defensive wall, with its towers and gates;
- streets and related circulation spaces;
- the market place, probably with a market hail and other commercial buildings;
- the church, usually occupying its own space; and
- the surrounding town buildings and related private garden spaces.

(Morris , 1994)

B4.1 Medieval City Urban Form and Street System

Although all medieval towns had a formal market space, it must be noted that in effect the entire city was a market

*"Trade and production went on in all parts of the city; in open spaces and closed spaces; public spaces and private spaces"* (Saalman in Morris, 1994).

As a result, the narrow lanes of the medieval city between the gates and the market were a linear extension of the market place, as well as communication routes. This in turn made street frontage a valuable commercial asset, especially near the market place and gates, hence the continual development of street frontage. This developed further in the formation of narrow passageways orthogonal to the main streets, accessing into minor streets and court development at back gardens (Morris, 1994).

Movement in the medieval city was predominantly on foot or horse and goods were transported by pack-animal. Wheeled traffic only reached significant levels late in the period. Street paving emerged as early as 1185 AD in Paris and 1235 AD in Florence.

Throughout this period buildings continued to encroach onto and over streets and into public open spaces. In particular, the upper floors of buildings projected over the street, further with each subsequent floor, until buildings would merge. In this manner the medieval city acquired its traditional street scene -

*" ..... here was informality, 'romance', and repeated visual surprise"* (Morris, 1994).

The medieval town was incorrectly thought of as an over-crowded muddle (that came much later during the Renaissance when their growth was constricted by fortifications and thus could not accommodate the extensive population growth). Being no more the size of a village or country town in modern terms, the medieval town had significant gardens and orchards. A further misconception was the unsanitary living conditions. However, the medieval city had rudimentary refuse disposal and a water supply, albeit irregular at times.

B4.2 The Medieval "Square"

B4.2.1 The Medieval Market Place

The *raison d'être* of the medieval town was marketing and commerce. Two types are common in both planned and organic growth towns:

- (i) a square in itself, located at or near the centre of the town; and
- (ii) a square located at a widening of the main street.

Two additional types are identified by Zucker (1959) specific to organic growth towns:

- lateral expansions of the main street; and
- squares at the town gate.

In planned towns laid out with a regular gridiron structure the market square was incorporated as a void within the grid, bounded by streets on all four sides. The exceptions were some of the Welsh *bastides*, which had their markets located in front of the castle. On the European continent, the market was enveloped in buildings of the same height, unified at ground level by arcades under which the streets frequently continued alongside the square (Morris, 1994) (refer Figure B-13). Most squares contained market halls, sometimes even on two floors. The church almost never faced onto the market square, and was located elsewhere (discussed in greater detail below).

The market street was a common type in unplanned towns and never in *bastides*. It was a common feature of the Zühringer new towns of Switzerland and southern Germany, where it characteristically ran the length of the new town between the gates, as shown in Figure B-14. As trading traffic was a vital element to these towns' growth, the main thoroughfare became automatically the market place. Market places possibly developed later as lateral extensions in order to free the main thoroughfare for pedestrian or vehicle movement through the town.

In these organic growth towns the market street and market square had very differentiated layouts; each with its own distinct spatial character. In a few instances the market occupied the site of the old forum area in towns built on Roman foundations. However, the market usually occupied a central position from the original location from which the town had developed. Mumford (1961) states that

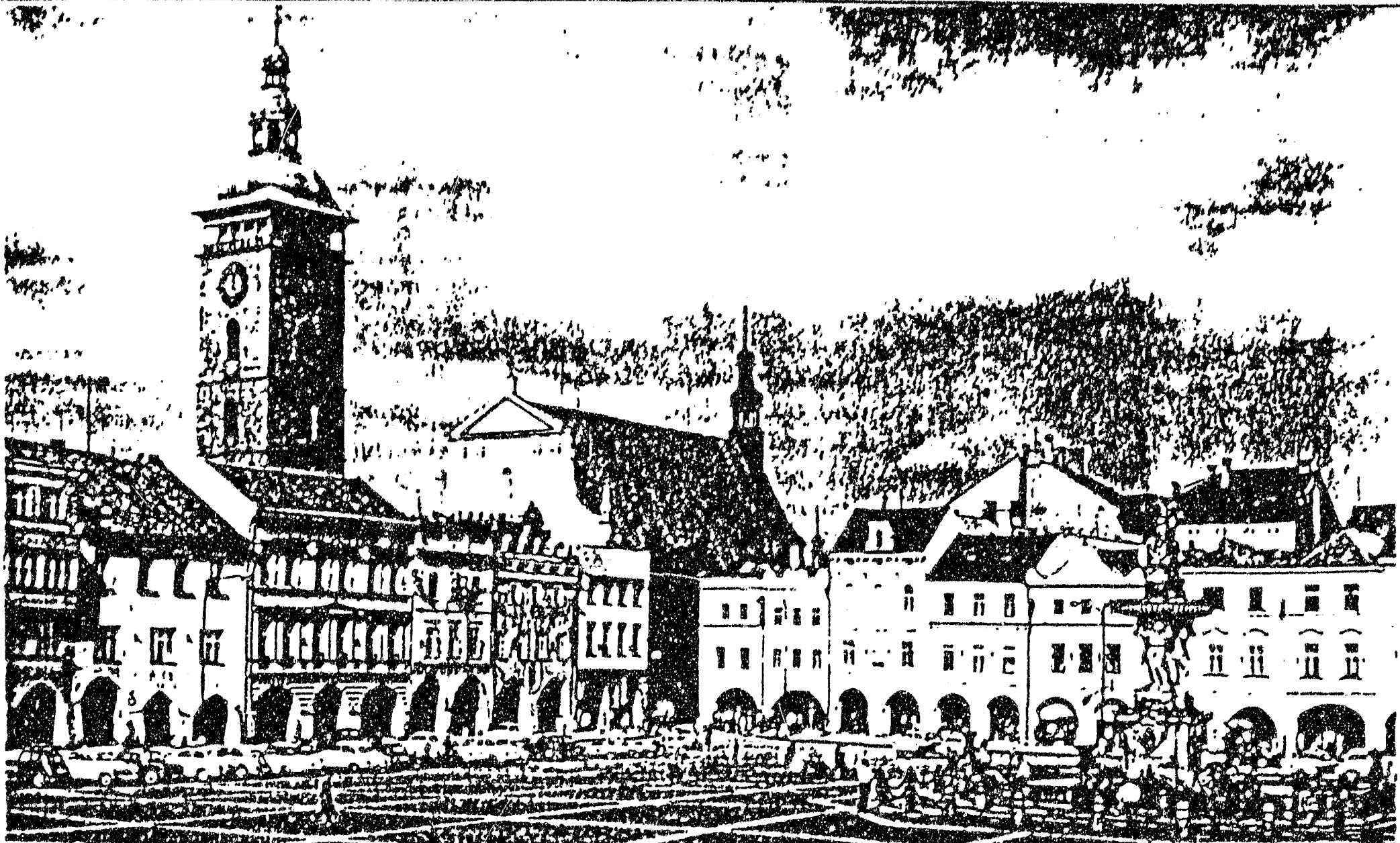
*"More often than not ..... the market place would be an irregular figure, sometimes triangular, sometimes many-sided or oval, now saw-toothed, now curved, seemingly arbitrary in shape because the needs of the surrounding buildings came first and determined the disposition of the open space"*.

This is shown in Figure B-15.

Another logical place for a market to develop was immediately inside the town gate, for reason of convenience and practicality to tradesmen and the shorter transportation distance of agricultural produce.

B4.2.2 The Medieval Church Square

The space before the church - the medieval *parvis*, was the place where the congregation gathered before and after the service. Beyond that it served as a space for outdoor sermons, ceremonial processions and mystery plays.



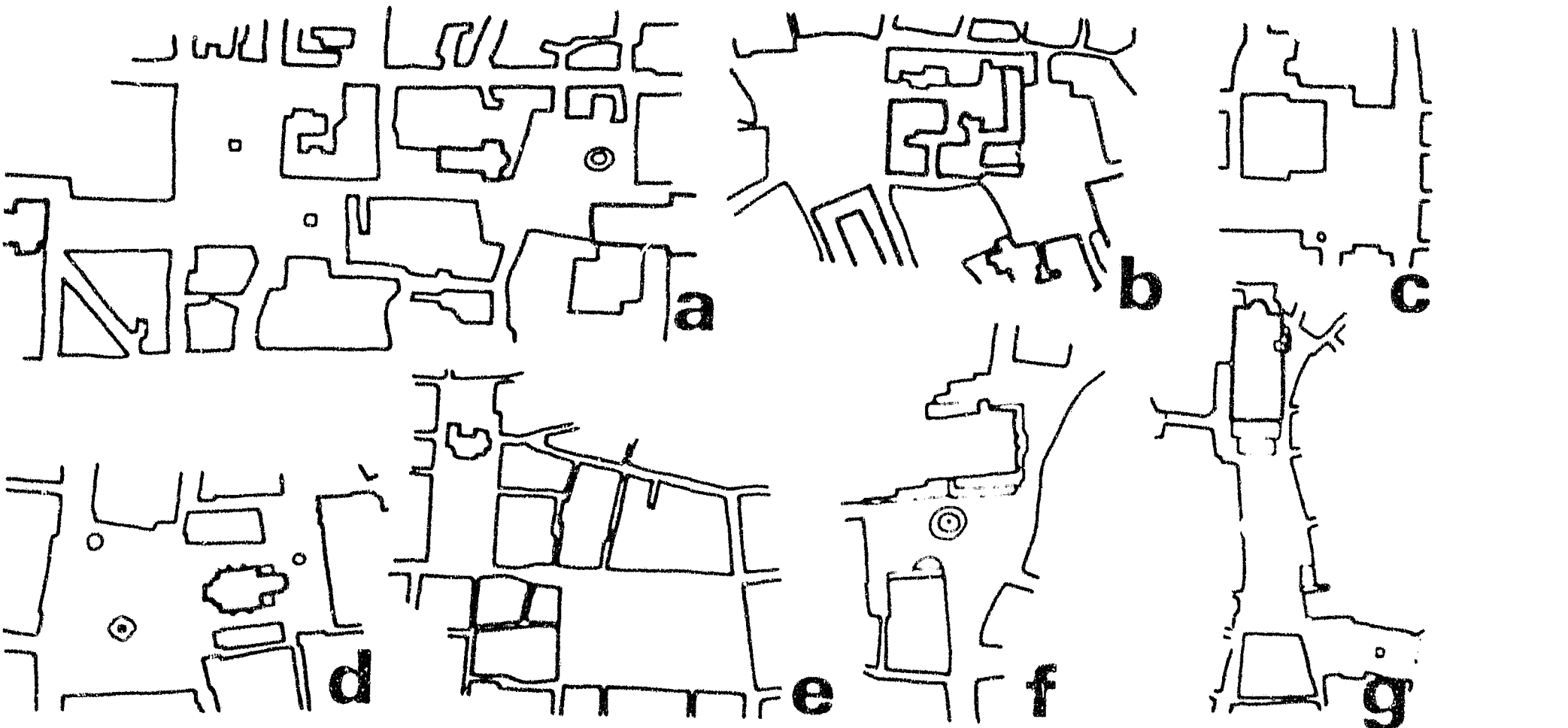
Ceske Budejovice: the north-eastern corner of the central square showing the arcaded building form. Inevitably the square is used as the town's main car park and is clear only on special occasions. The proposals for conservation and rehabilitation include provision of parking spaces outside the square. Compared with the nineteenth-century view the appearance of the square has hardly changed; moreover there is no need for it to do so in order to readily accommodate individual modern shop-fronts behind the arcade screen.

Figure B-13: Medieval Market Square, Source: Morris, 1994:149



Berne: an aerial photograph showing the distinctive gridiron form of the original Zähringer town as the nucleus of the modern city, on its exceptionally beautiful location in the bend of the river.

Figure B-14: Medieval Markets Street, Source: Morris, 1994:136



Examples of medieval civic spaces in seven cities; in several instances two or more squares form a sequence of spaces. (In addition, a number of these spaces were remodelled during the Renaissance period.) Key: a, Lucca, a complex sequence of spaces, reading from left to right; Piazza Grande (Napoleone), Piazza del Giglio, Piazza S. Giovanni, Piazza S. Martino, Piazza Antelminelli; b, Bruges, left, the Grand Place, right, Place du Bourg; c, Rothenburg, the market place in front of the Rathaus; d, Nuremberg, the Hauptmarkt in front of the Frauenkirche; e, Arras, Petite Place (top left) and the Grande Place; f, Perugia; g, Todi, the square in front of the cathedral. See P Zucker, *Town and Square*, 1959, and C Sitte, *City Planning According to Artistic Principles* (translated by G R Collins and C C Collins), for detailed consideration of medieval civic space.

Figure B-15: Medieval Civic Spaces, Source: Morris, 1994:101



It was never functionally intended to compete with the market, but did act as a secondary market place adjoining the main market square, resulting in a two-part nucleus that is a typical characteristic of medieval planned and unplanned towns (refer Figure B-16).

*"Market means little to the average citizen today, but in this period it was the centre of his week, the day he could take his goods to sell and buy himself what the market could provide. Retail trade was conducted very largely in the market, for a medieval shop was less a store than a workshop. Traders kept no stocks of made up goods, but sat in their shops and made what was ordered of them. Shops were generally very small, often not more than 6 feet wide. Osney Abbey built the Golden Cross Inn towards the end of the twelfth century. It sold the inn but kept the ground floor, consisting of 4 shops, each measuring about 6 by 15 feet."* (D M Stenton, English Society in the Early Middle Ages).

*"The church and its teachings pervaded man's entire life. One could not strike a bargain, cut a finger, or lose a farm tool without invoking celestial favour. One was seldom out of sight of a church tower, out of hearing of a consecrated bell. It is estimated that in England there was a church for every forty of fifty households. The visitor today marvels at seeing an enormous, beautiful, ancient church, usually empty, alas, in every East Anglian hamlet. According to an eleventh-century chronicler, the world was 'clothed in a white garment of churches'. Love and pride built the parish churches, and love and pride found a transfiguration, in the cathedrals. All men contributed their building, giving labour as well as money, even harnessing themselves to the supply wagons. The ecclesiastical fund-raisers were astute; they knew that by offering a little they could obtain much; thus they rewarded those who contributed generously towards the construction with indulgences or freed them from the strict observance of certain church laws. The 'Butter Tower' of Rouen Cathedral was built largely with funds received for permission to eat butter during Lent."*(M. Bishop, The Penguin Book of the Middle Ages).

B5 PUBLIC SPACE IN THE RENAISSANCE CITY

The Renaissance period in urban history began at the start of the 15<sup>th</sup> century in Italy, from where Renaissance urbanism spread to other European countries, first to France and subsequently to Britain. The term Renaissance means, literally, rebirth; a revival of interest in the classical art forms of ancient Rome and Greece, resulting in their use to inspire European painting, sculpture, architecture and urbanism (Morris, 1994). Morris (1994) used the term Renaissance for the entire period, although architectural history divides it into the following phases : Early Renaissance (1420 - 1500); Late Renaissance (1500 - 1600); Baroque (1600 - 1750); and Rococo or Neo-classical (1750 - 1900). Of these, the Baroque is the most important with relevance to urban history.

The development of printing was a key factor in the development of the Renaissance. Printing enabled the publication and distribution of the writings (discovered in 1412) of Vitruvius - an architect practising in the

Augustan Rome, which influenced architecture and urbanism. The second major influence on architecture and urbanism was the influx of Greek scholars and artists into Italy from Constantinople when it was captured by the Turks in 1453. The third influence was the evolution of Humanism.

One important trend throughout the Renaissance is the marked increase in the extent of population in European cities through urbanisation, as Table B-2 below indicates.

London	50 000 (1530 AD)	225 000 (early 1600 AD)
Berlin	Expanded fivefold between mid-15 <sup>th</sup> and early 17 <sup>th</sup> centuries	
Rome	Expanded sevenfold from 17 000 (1370 AD) to	124 000 (by 1680 AD)

Table B-2: City Population Growth, Source: Morris, 1994

Renaissance urbanism was effectively limited either to the expansion of existing urban areas or their partial redevelopment. The reasons for this were:

- the extensive size of urban settlements;
- destruction by fire and / or military action was insufficient to require comprehensive redevelopment;
- where the opportunity arose for comprehensive redevelopment, there was insufficient political will, nor the bureaucratic means for implementation;
- there was no demand for commercially orientated urban settlements, there were sufficient existing urban settlements; and
- new developments of urban settlements were primarily for a strategic military purpose or the result of autocratic rule.

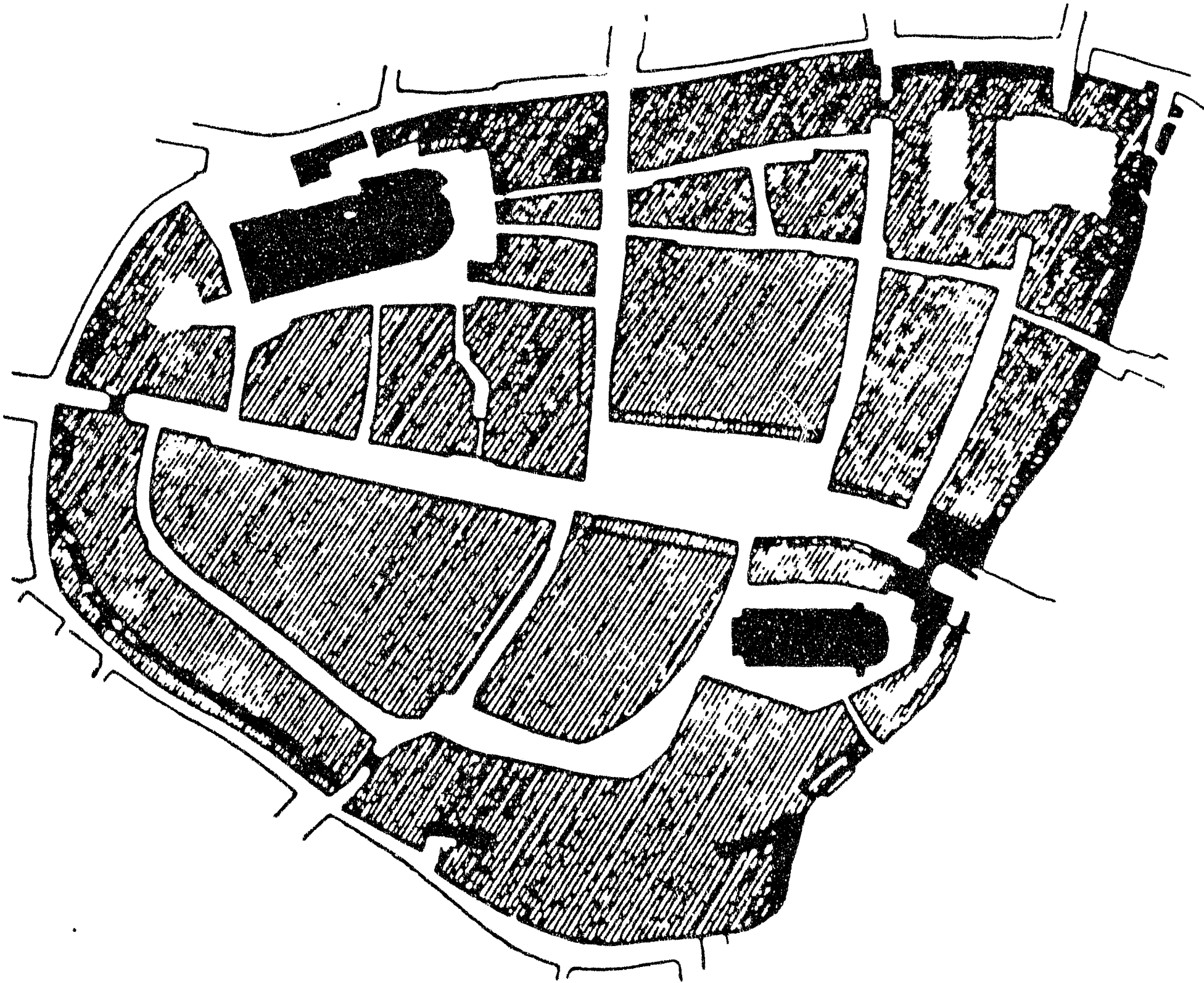
Morris (1994) identifies five broad components of urban planning characteristic of the Renaissance.

- fortification systems;
- regeneration of parts of cities through the creation of new public spaces and related sheets;
- restructuring of existing cities by the construction of new main-street systems which extended as regional routes, frequently generated further growth;
- the addition of extensive new districts, primarily for residential purposes; and
- the layout of a limited number of new towns.

Renaissance urbanism was structured and directed in terms of three main components:

- (i) the primary straight street
- (ii) grid-iron based districts
- (iii) enclosed spaces: squares, piazzas and places

*"(These components) were sometimes fused together to make a composite plan, but more often were found somewhat disjointedly used, as though the designer had now been under one influence, now under another"* (Abercrombie in Morris, 1994).



Munich: north at top; the market - Marien-platz - a lateral expansion of the street

Figure B-16: Two Part Nucleus of Medieval City, Source: Morris, 1994:101



B5.1 Early Renaissance and Baroque

The aesthetic determination of spatial design and that of enveloping architecture was the most closely integrated during the Renaissance. Bacon (1974) states that this holds true for the early Renaissance and its Baroque phases, when generally applied rules of proportion governing the plans, three-dimensional massing and detailed elevational design of buildings were extended outwards for the organisation of urban space.

*"From the 15<sup>th</sup> century on, architectural design, aesthetic theory, and the principles of city planning are directed by identical ideas, foremost among them the desire for discipline and order in contrast to the relative irregularity and dispensation of Gothic (medieval) space"* (Zucker in Morris, 1994).

Medieval (Gothic) space was informal and its architecture characterised by asymmetrical massing, and was mainly of ecclesiastical origin. In contrast, the Renaissance embraced a classical sense of balance and regularity, and was primarily used by royalty and mercantilism.

The contrast between Early Renaissance and Baroque architecture is undertaken in tabular form (refer Table B-3).

Early Renaissance	Baroque
<ul style="list-style-type: none"><li>• permanence and repose (classic)</li></ul> <p><i>"Renaissance art is the art of calm and beauty ..... its creations are perfect: they reveal nothing forced or inhibited, uneasy or agitated ....."</i> (Wölfflin in Morris, 1994)</p> <ul style="list-style-type: none"><li>• its impact was subtle, inviting to be in its presence</li><li>• spatial organisation: a quiet self-contained balance, the result being <i>limited</i> (enclosed) space at rest</li><li>• all of Renaissance and Baroque urbanism was created for minority sections of society, varying in extremes from Versailles to the less pretentious squares and streets of Georgian London</li><li>• Britain was less affected by Baroque urbanism because its monarchy had limited power over the national capital and the country's purse strings.</li></ul>	<ul style="list-style-type: none"><li>• Definite sense of direction (anti-classic and emotive)</li></ul> <p><i>"Baroque aims at a different effect. It wants to carry us away with the force of its impact, immediate and overwhelming."</i> (Wölfflin in Morris, 1994)</p> <ul style="list-style-type: none"><li>• its impact was intended to be religious and later monetary</li><li>• spatial organisation: strived for an illusion of <i>infinite</i> space, when contained within small-scale limits, or was able to achieve infinite perspectives</li><li>• achieved by immense, centralised, autocratic powers invested in certain European states, where personal aggrandisement came to replace collective interest<ul style="list-style-type: none"><li>- Absolute rulers through their political power and economic means undertook planning / architecture programmes on extensive scales (e.g. Louis XIV and XV at Versailles, Peter the Great at St Petersburg, and with different objectives, Sixtus V, Rome).</li><li>- At a correspondingly reduced scale, other lesser rulers transformed their capitals to create an urban scenery appropriate to the grandeur of their activities and availability of resources.</li></ul></li></ul>

Table B-3 Early Renaissance & Baroque Comparison, Source: Morris, 1994

The dominant aesthetic considerations of the Renaissance comprised

- A focus on symmetry.
- The closing of vistas by the appropriate placements of monumental buildings, obelisks, statues, etc. at the end of long streets.
- The integration of buildings into a single, coherent, architectural ensemble.
- Man the measure, Humanism.
- Perspective theory.

B5.2 The Renaissance Street

B5.2.1 The Primary Straight Street (Avenue / Boulevard)

The primary straight street is a Renaissance innovation, developed for the primary purpose of facilitating movement - increasingly wheeled (carriage) - between parts of the city, and simultaneously providing access to buildings and links with regional routes (Morris, 1994). Baroque Rome and Paris are the classic examples in this regard, with Rome receiving its streets (or *via*'s) during the Renaissance proper (refer Figure B-17) and Paris later during the 1850's and 1860's. These streets were planned for the purpose of economic regeneration, enabling the further growth of existing cities. They resulted in the integration of the streets into a comprehensive movement system, making all parts of the city accessible, and creating new growth in underdeveloped districts or zones. The primary streets of Rome served predominantly a religious function, however the idea of an overall design structure in the form of a movement system was achieved by Sixtus V in Rome.

The Champs Elysées (Paris) (refer Figure B-18) and the avenue, Unter den Linden (Berlin) are examples of the primary street as a generative element.

New urban plans, in which primary straight streets were the major structuring elements, or were simply incorporated included:

- Europe : Versailles, Berlin, Karlsruhe and St Petersburg.
- North America (USA) : Washington.
- England : City of London, Christopher Wren's unrealised proposals after the fire of 1666.

(just to name the important examples)

B5.2.2 The Street as an Aesthetic and Architectural Whole

During the Renaissance the street became a fully fledged architectural element and was considered as an aesthetic whole. Aspects that were considered in their conscious three dimensional design were:

- building elevation and frontage;
  - structural clarity;
  - form, space and volume;
  - perspective effects and location of terminal features, both architectural and sculptural, such as statues, fountains, obelisks and monuments;
- to name a few.

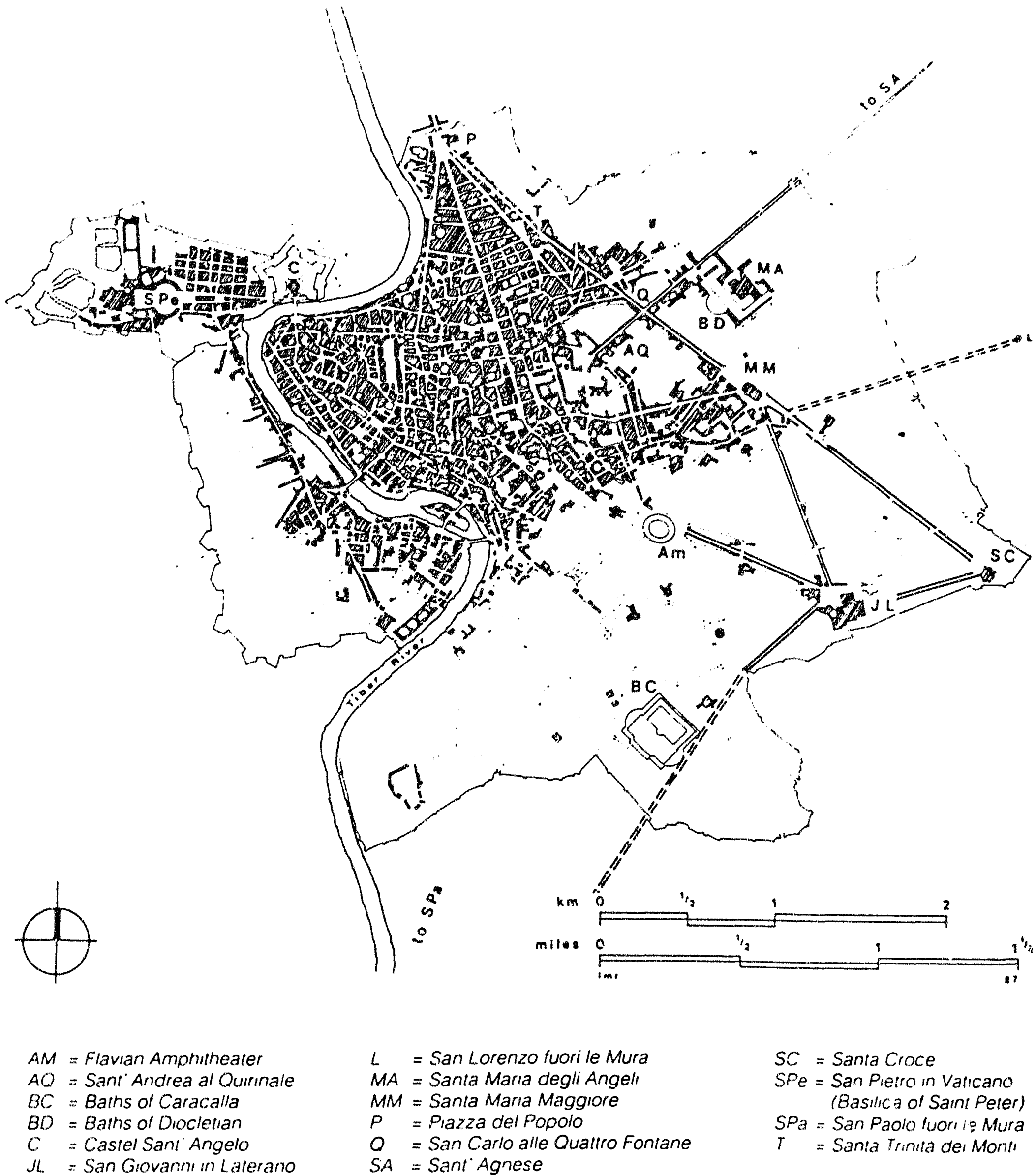


Figure B-17: The Avenue / Boulevard, Source: Roth, 1993:374

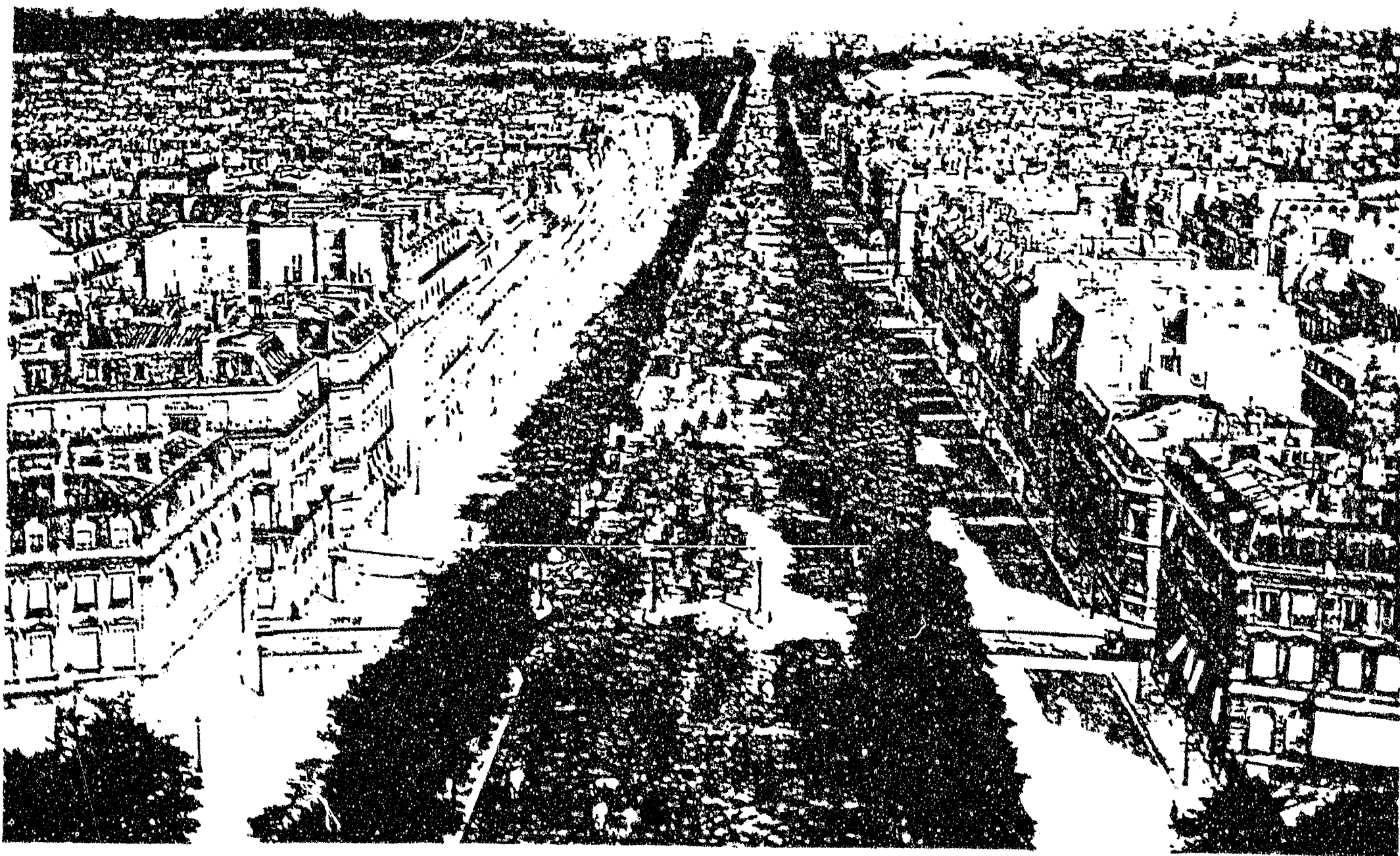


Figure B-18: The Champs Elysées, Source: Kostoff, 1992:208



### B5.2.3 The Street structured by the Grid

The Renaissance makes use of history's oldest element for structuring urban form - the grid - in the following ways:

- as the basis of new residential districts added to existing urban areas;
- as the basis of entire new town layouts; and
- in combination with a primary street system, for the layout of other new urban areas (Berlin for example).

The gridiron was used for a number of reasons:

- covered a greater area (in contrast to primary street systems which were used for in-situ redevelopment)
  - an efficient mechanism that produced an equality of land subdivision; and
  - it conformed to the Renaissance ideal of aesthetic uniformity.
- (Morris, 1994)

## B5.3 The Renaissance "Square"

### B5.3.1 The Renaissance Enclosed Space (Square, Piazza, Plaza)

Renaissance enclosed spaces had physical functions of either traffic space (forming part of the main urban route system and used by both pedestrians and horsedrawn vehicles), or residential space (intended for local access traffic only and with predominantly pedestrian recreational purposes), or pedestrian space (which excluded wheeled traffic). These spaces also served aesthetic and aggrandizement purposes - either as setting for monument or stature, or as a forecourt to an important building (Morris, 1994).

The spatial enclosure was affected by four main types of buildings: civic, religious, residential and market and related commercial buildings. Landscape elements such as colonnades, screens and terraces, as well as various forms of tree and shrub planting, were also used for enclosure, as well as the incorporation of existing buildings and natural features.

#### B5.3.1(i) Traffic Enclosed Space

The increase in the scale of urban traffic from pedestrian or horseback, to carts, required appropriately spacious junctions. These were formally designed spaces at intersections of main streets, mostly located at the urban perimeter, for example the Place Louis XV (subsequently the Place de la République and now the Place de la Concorde).

#### B5.3.1(ii) Residential Enclosed Space

The development of residential quarters around squares in the development of residential districts added to existing urban areas and was undertaken for the privileged social class. These residential squares originated in Paris with the Place des Vosges (originally Place Royale, 1605 - 12) (refer Figure B-19). It was the first residential square of integrated design. This tradition of designing residential quarters (for the wealthy) around squares was particularly strong in London between 1630 and 1827, where over two dozen such spaces were developed. The squares, which usually contained a planted central area, provided a basis for urban family life, which was held in the highest esteem. This urban form was epitomised by the quiet

squares of Bloomsbury (refer Figure B-20 and Figure B-21) and Belgravia. The proliferation of these residential squares in England is attributed to:

- their semi-public character (the idea that a square was necessarily a place for public assembly and related noise and activity); and
- the ability to restrict public access to and the use of these squares made them popular among developers.

In one place, however, baroque planning rose above its political and military premises; here it created a form of independent of the purposes of the palace. This was in the conception of the residential square. The open square had never disappeared; but by the same token had never, even in the Middle Ages, been used entirely for residential purposes, if only because the counting house and the shop were then part of the home. But in the seventeenth century, it reappeared in a new guise, or rather, it now performed a new urban purpose, that of bringing together, in full view of each other, a group of residences occupied by people of the same general calling and position. Dr Mario Labo is right in regarding the Stada Nuova in Genoa as more of a quarter than a street; but the new squares gave a fresh definition to this kind of class grouping.

In the older type of city, particularly on the Continent, the rich and the poor, the great and the humble had often mingled in the same quarter, and in Paris for instance, they long continued to occupy the same buildings, the wealthier on the ground floor, the poorest in the attic, five or six storeys above. But now, beginning it would seem, with the establishment of Gray's Inn in London in 1600, a new kind of square was formed: an open space surrounded solely by dwelling-houses, without shops or public buildings, except perhaps a church. Gray's Inn indeed was a transitional form between the medieval walled enclosure, with inner gardens, dedicated to a convent or a great lord's mansion, and the square, walled in only by its own houses conceived as part of the new street pattern.

(L Mumford, The City in History).

#### B5.3.1(iii) Enclosed Pedestrian Space

These were focused on pedestrian activity and movement, either closed completely to all wheeled traffic, or arranged such that it separated pedestrian and wheeled traffic - e.g. by restricting wheeled traffic to one side only. The majority of these spaces served as forecourts or public assembly areas in front of important civic, religious and royal buildings (Morris, 1994). The most important example are Italian:

- Rome, the Piazza of St Peter's and Michelangelo's Capitoline Piazza; and
- Venice, Piazza of San Marco (St Mark), where the enclosing buildings had civic, commercial and religious functions (refer Figure B-22 and Figure B-23).

#### B5.3.1(iv) Fortifications of the Renaissance and Public Space

The need for defense was of paramount importance, during the Renaissance, for protection against attack, and was a major reason for high-density urban life based on relative high-rise apartments. Due to the extensive system of defences, horizontal expansion was limited, and population growth had to be accommodated through upward

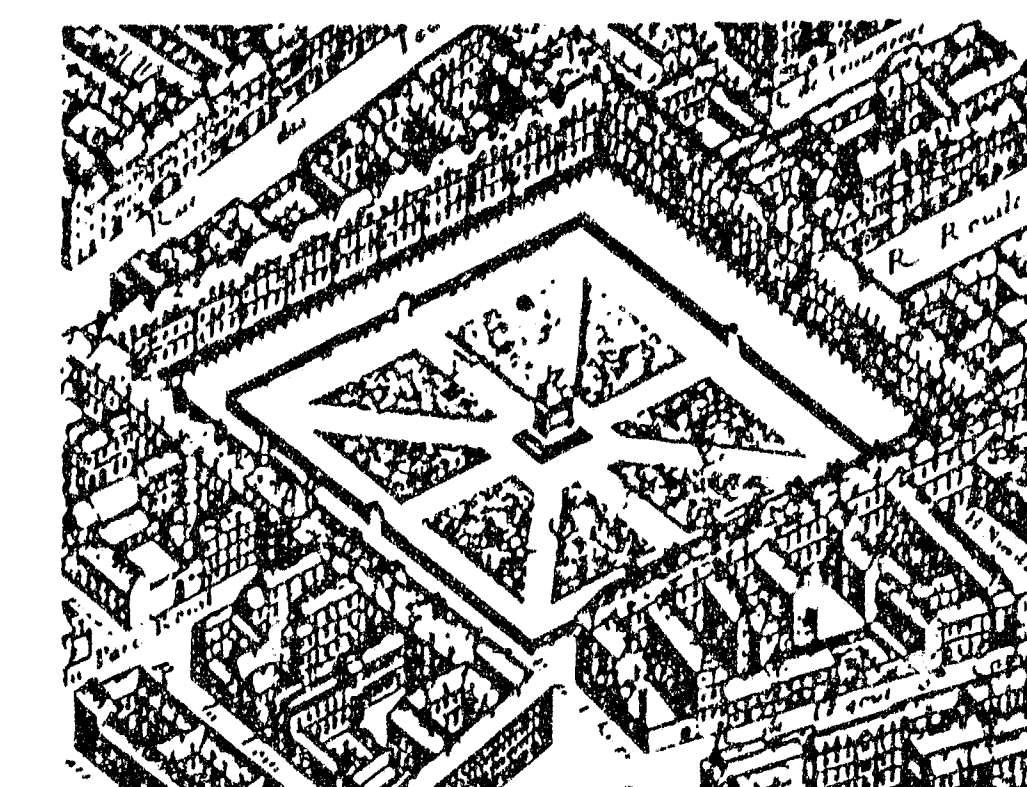


Figure B-19  
Residential Enclosed Space,  
Source: Morris, 1994:197

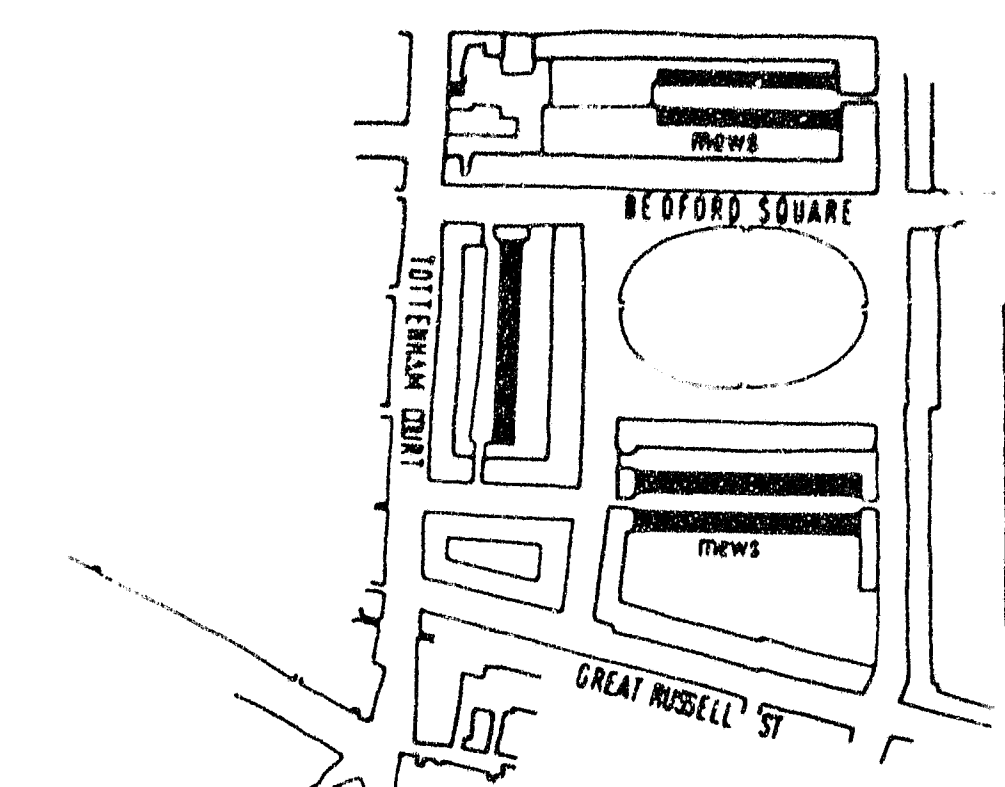


Figure B-20  
Plan of Bloomsbury Residential Square  
Source: Morris, 1994:263

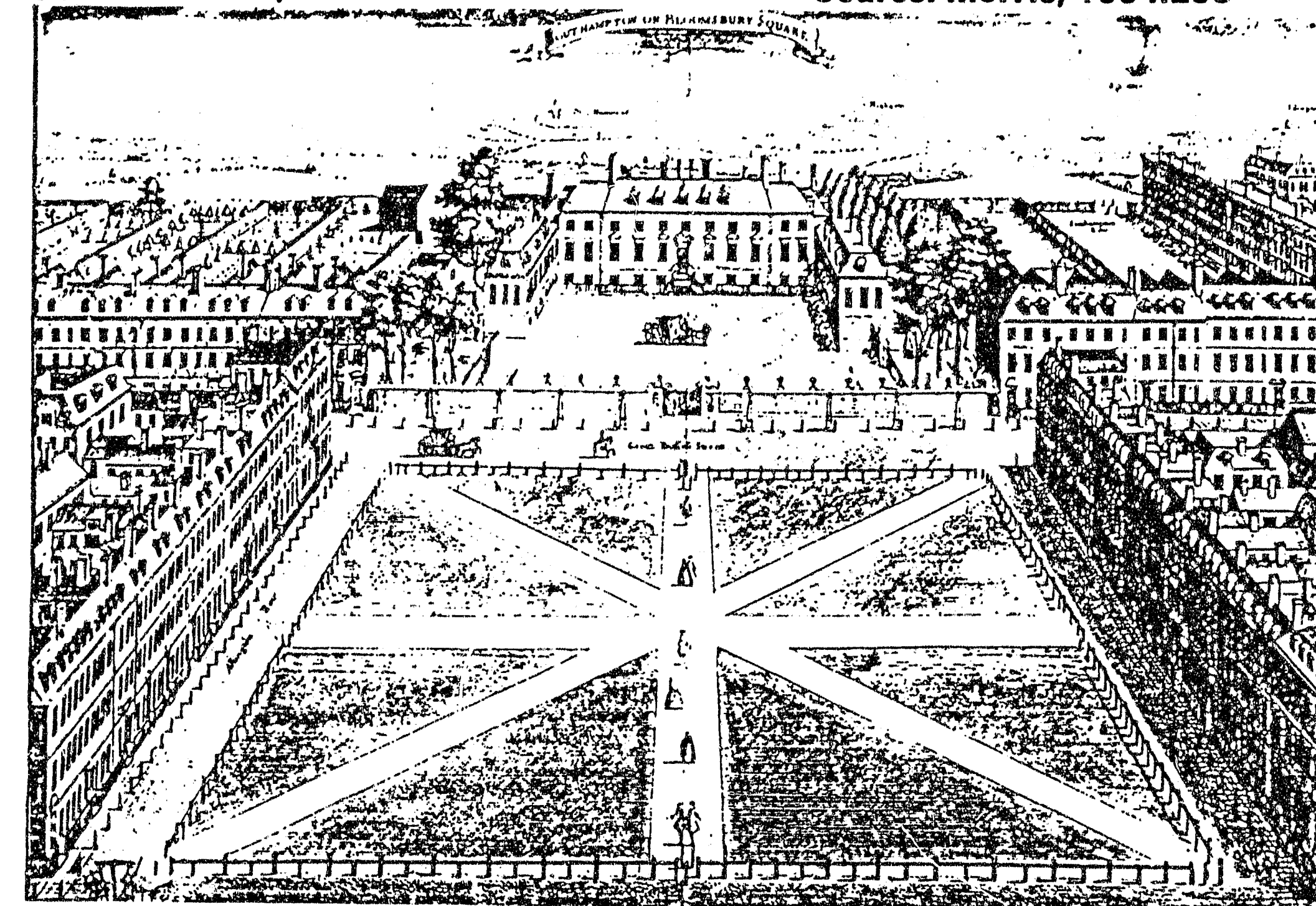


Figure B-21: Perspective of Bloomsbury Residential Square, Source: Morris, 1994:264

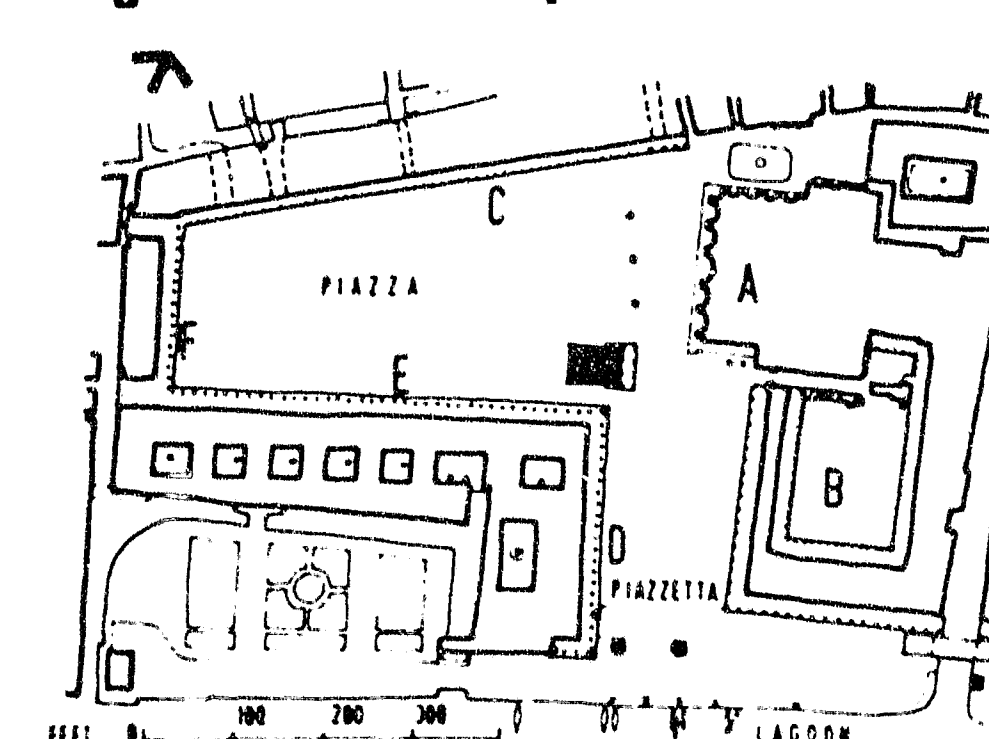


Figure B-22: Plan of Piazza San Marco, Source: Morris, 1994:189

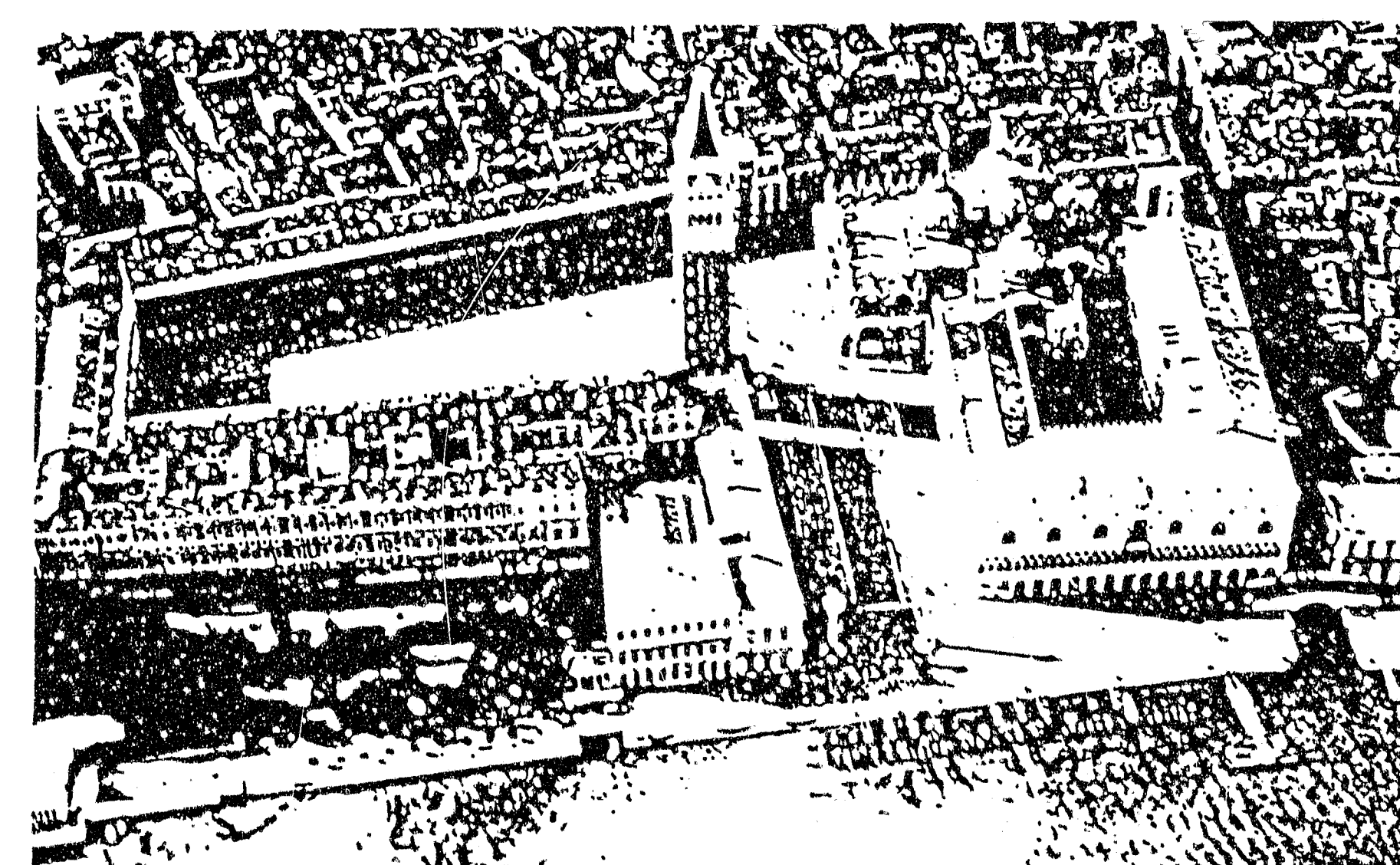


Figure B-23: Aerial Photograph of Piazza San Marco, Source, 1994:189



expansion. An example this is Turin (refer Figure B-24).

The important aspect in terms of public space is that once these fortifications become obsolete, the land or space made available becomes an opportunity for either street / boulevard development and / or public open space.

### B5.3.2 The Renaissance Square / Plaza in the New World: Americas

Many of the prominent early settlements in the New World were established by the Spanish. The towns were modelled after typical settlements in Spain, centred around a main square (plaza) used as a marketplace and other purposes, including celebrations, turnabouts and even bullfights (Carr et al., 1992). The square typically was enclosed by an arcaded street containing the town's major buildings - the main church, town halls, and shops (refer **Figure B-25**).

The above was enforced by the town planning regulations that had been in force from 1573, when Philip II had issued a royal ordinance governing the founding and physical planning of new towns throughout the Empire. (In turn, the 1573 ordinance had embodied existing imperial 'standing orders').

North American cities were also generally established around a central green or common that were quite large, such as. The common served a variety of purposes, from cattle grazing the militia drills. The church or meeting house and civic buildings faced onto the common or site directly adjacent to it.

The 1682 plan for Philadelphia by Penn and Holme was apparently influenced by the squares of London. The Philadelphia plan (refer **Figure B-26**) featured a central square and four public residential squares equidistant from it.

*"The Philadelphia model of a planned street grid containing one or more squares was adopted by many cities. Whereas some cities, like Savannah, were organised around a series of squares, Reps (1965) states that the single open square in the centre of town became the typical expression of the Philadelphia plan as it was transplanted west" (Carr et al., 1992:174).*

In conclusion, the functional and aesthetic aims of the town planners were also becoming clear. In so far as they were not military, they were closely connected with each other. The city was meant to impress, firstly by its layout, in which its different parts and subordinate centres were to be connected by straight avenues, very much like the formal Italian gardens which were just beginning to be imitated beyond the Alps. Secondly, the city was meant to impress by the magnificent façades of its churches and palaces, and by elaborate fountains. Thirdly, and perhaps most important, it was meant to impress by monumental perspectives. The architects and town planners had learned this from the Renaissance and mannerist painters whose idealised architectural compositions they now began to translate from canvas into stone. To heighten the dramatic effect of perspective Sixtus V set up obelisks in front of St Peter's and in the Piazza del Popolo. Where the Renaissance statue had been related to a building - Verocchio's Colleone in Venice, for example, or even much later Cellini's Perseus in Florence - the mannerist and the baroque statue

was moved into the centre of a square, related no longer to a building but a view. The possibilities of this new fashion for the glorification of the subject as such monuments, was not lost on kings and princes. The baroque towns, as they began to be planned in the sixteenth century in Italy and developed over much of Europe in the seventeenth and eighteenth, became part of the deliberately dramatic and theatrical appeal of absolutist monarchy. Just as the new baroque style of church decoration developed a deliberate popular appeal by making the interior of the church, and especially the high altar, into a kind of stage, where mass was celebrated as a theatrical performance for an audience-like congregation; so the baroque city became a huge theatrical setting for the display of the court, the princes of the church, the nobility and other rich and powerful persons. It was the visual aspect of the political and social change from the city state, with its free citizens, to the capital of the absolute monarch, with its court and its subject inhabitants.

(H. Koenigsberger and G L Mosse, *Europe in the Sixteenth Century*).

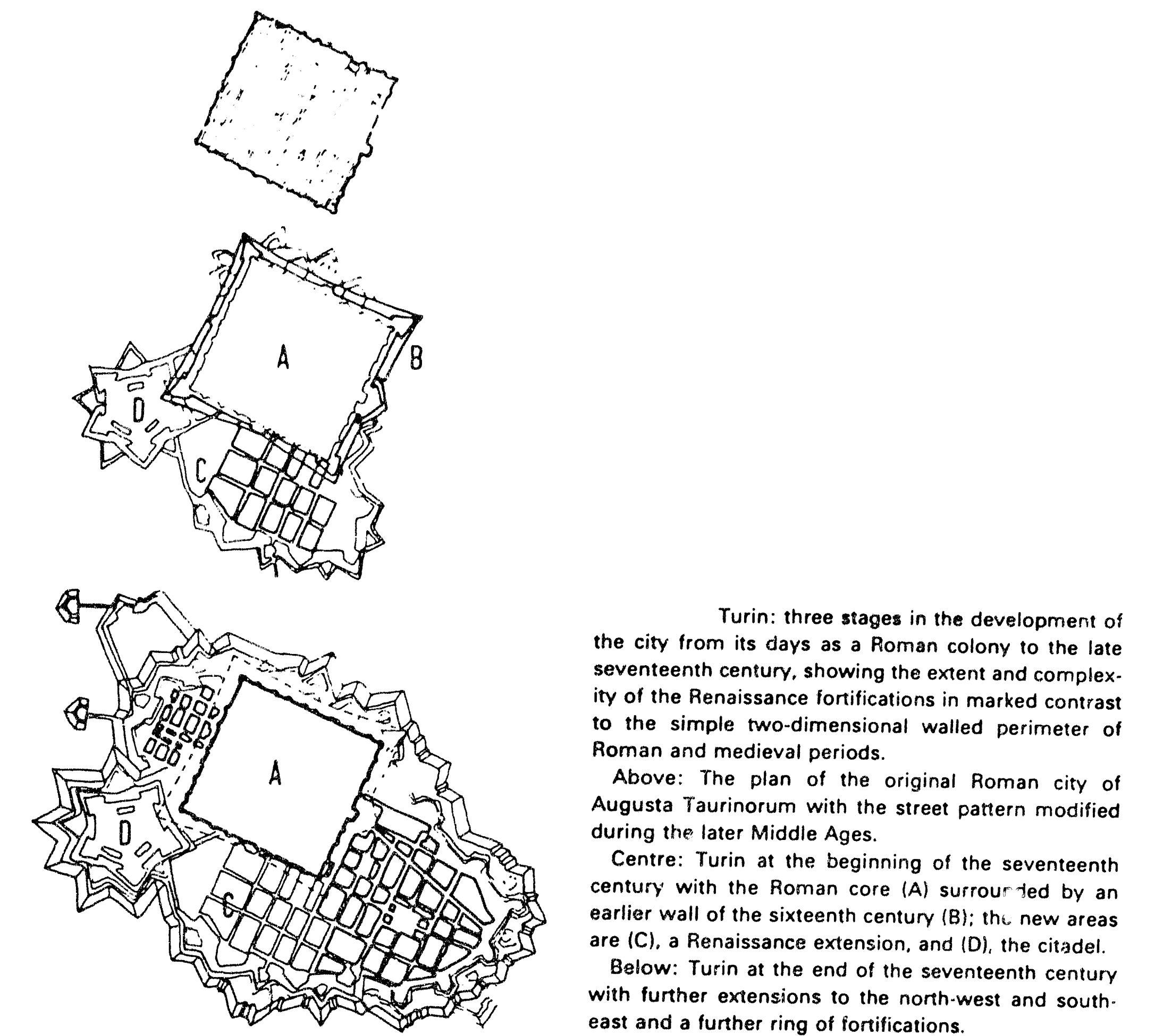
Summarized, the aesthetic determinant of Renaissance city planning embodied and extended the principle of Renaissance architecture. Balance - usually involving symmetry about one or more axes, regularity in elevational design - in particular the heights of individual buildings as viewed in perspective; an emphasis on focal points to terminate distant vistas; and conformity of construction materials for walls, usually stone or stucco substitutes, and roofs, the last of diminished significance behind building cornices.

Outstanding examples include the eighteenth century developments in Bath, the London Squares and parts of Rome and Paris.

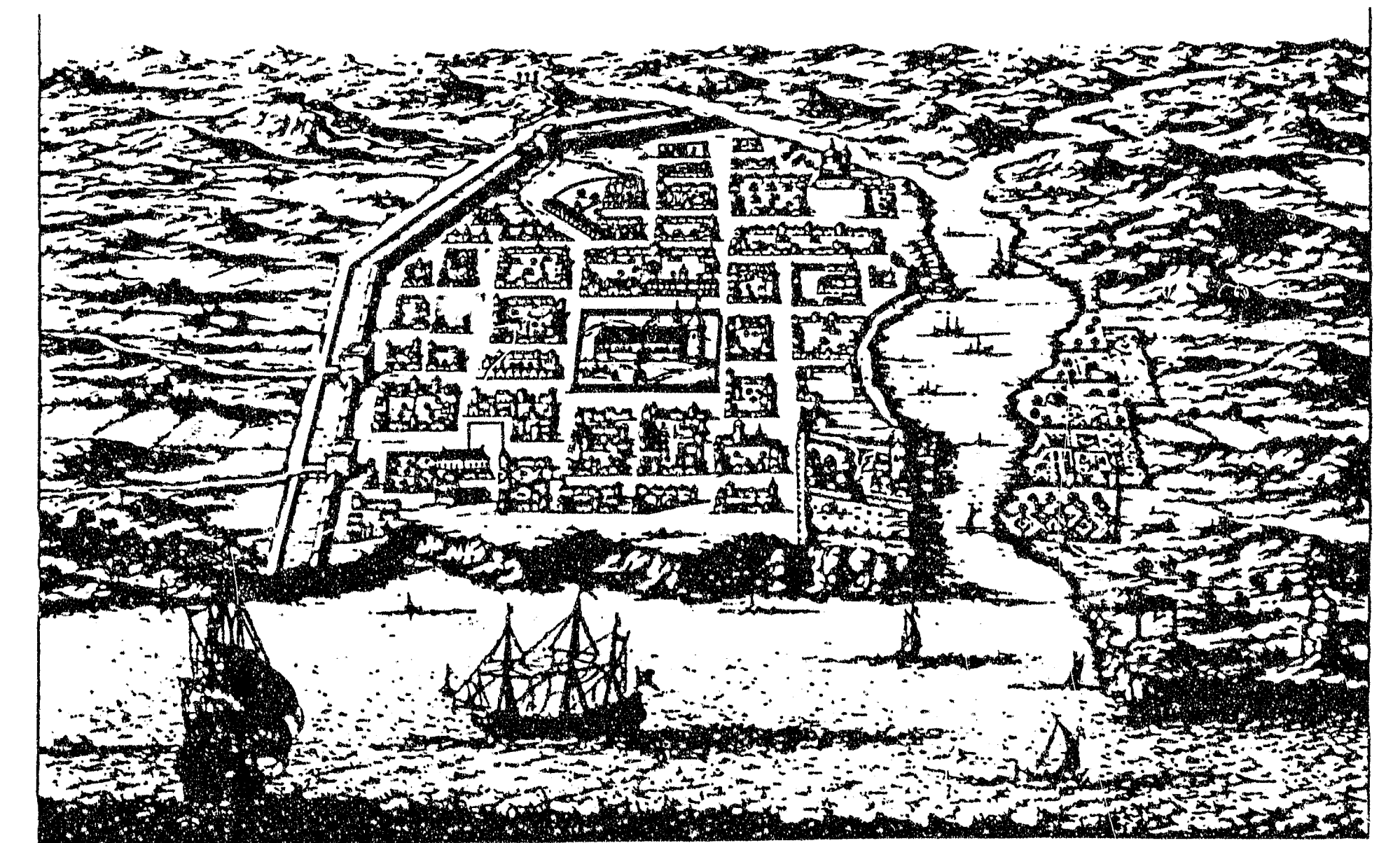
The avenue is the most important symbol and the main fact about the baroque city. Not always was it possible to design a whole new city in the baroque mode; but in the layout of half a dozen new avenues, or in a new quarter, its character could be re-defined. In the linear evolution of the city plan, the movement of wheeled vehicles played a critical part; and the general geometrizing of space, so characteristic of the period, would have been altogether functionless had it not facilitated the movement of traffic and transport, at the same time that it served as an expression of the dominant sense of life. It was during the sixteenth century that carts and wagons came into more general use within cities. This was partly the result of technical improvements that replaced the old-fashioned solid wheel with one build of separate parts, hub, rim, spoke and added a fifth wheel to facilitate turning.

The introduction of wheeled vehicles was resisted, precisely as that of the railroad was resisted three centuries later. Plainly the streets of the medieval city were not adapted either in size or in articulation to such traffic. In England, Thomas tells us, vigorous protests were made, and it was asserted that if brewers' carts were permitted in the streets the pavement could not be maintained; while in France, parliament begged the king in 1563 to prohibit vehicles from the streets of Paris - and the same impulse even showed itself once more in the eighteenth century. Nevertheless, the new spirit in society was on the side of rapid transportation. The hastening of movement and the conquest of space, the feverish desire to 'get somewhere', were manifestations of the pervasive will-to-power. (L Mumford, *The City in History*).

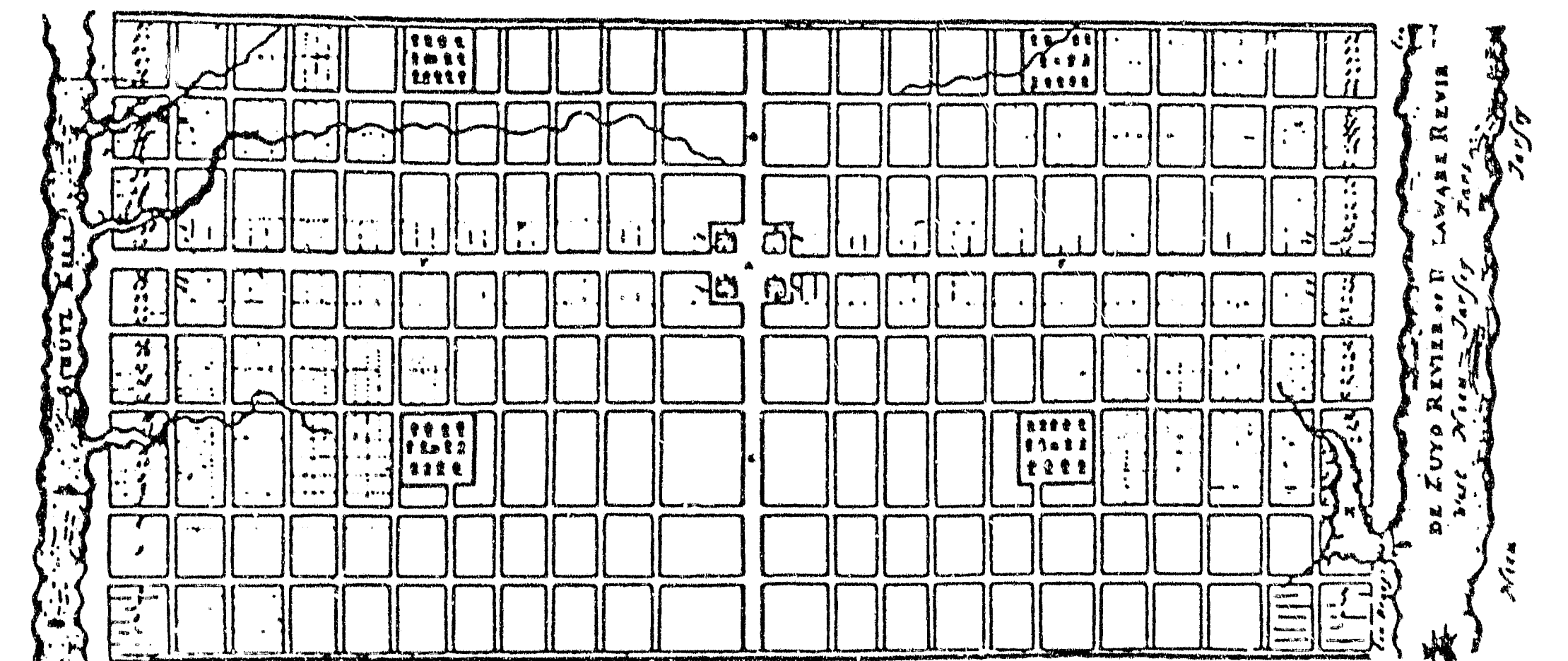
(L Mumford, *The City in History*).



**Figure B-24: Implications of Fortifications on Public Space,**  
Source: Morris, 1994:165



**Figure B-25: The New World Renaissance Square, Source: Morris, 1994:303**



**Figure B-26: Philadelphia Plan, Source: Morris, 1994:339**



## B6 THE DEVELOPMENT OF THE PARK

The public park is predominantly a green (soft) open space (sometimes hard) belonging to the public as of right and provided with a variety of facilities for the enjoyment of leisure. Its development is mostly linked to the industrial era, although Ceasar in Rome and Medieval London are precedents. The park's historical evolution is considered in greater detail by Kostoff (1992).

Open land within the city limits was not an exception in antiquity and the Middle Ages. Open space comprised:

- Fruit and vegetable gardens at the backs of houses.
- Commons, where the town cattle could graze and were used as recreational grounds. In this regards the *Laws of the Indies* specify, *"A commons shall be delimited, large enough that although the population may experience a rapid expansion, there will always be sufficient space where the people may go for recreation and take their cattle to pasture without them making any damage"*. (Ordinance 129, in Kostoff, 1992:166).
- Rome had extensive areas of trees, and when it became a city, the groves remained, tended and protected by religious sanctions. As did the Greek cities prior to them.
- The Chinese had, and still have, a practice of making the gardens of public buildings and the private gardens of the very wealthy open to all, under certain conditions and during certain times.
- Ancient Rome had a number of special gardens open to everyone, in which public buildings were situated.
- The idea of the large private park (*horti*) was first introduced in Rome in the 2<sup>nd</sup> century BC, from Hellenistic inspiration. Alexandria was renowned for its lush parklands which covered a quarter of its entire area.
- In terms of the urban structure, much of the open space for general use lay beyond the city limits. *"Public claims to air and recreation clashed with special interests (pasture lands, agricultural fields, drill grounds and cemeteries) and with invasions of private ownership. The areas closest to the edge of town, because of their accessibility to commoners without carriages, were the most bitterly contested"* (Kostoff, 1992:166).

Through regular recourse to the Law, the public's use of open fields was established by the 17<sup>th</sup> Century. By then the gardens of Whitehall Palace, London, were a public meeting place. Hyde Park was also opened to the public during this period; and later Hampstead Heath and other open spaces were retained.

- An established custom by 1700 was the opening of the gardens of the noble and royal parks to the public. These were later incorporated into the public realm on a pertinent basis.
- Once fortifications became obsolete they were turned into promenades.
- The cemetery was also a public park to a degree - *"Especially with the disfavour of churchyard burial grounds during the Enlightenment for reasons of health and decorum, and the establishment of planned extramural cemeteries, some of the churchyards became public gardens"* (Kostoff, 1992:169).

In America cemeteries were designed as semi-public picturesque gardens.

The public park, as it is known in modern terms, emerged during the industrial era. This is discussed in greater detail in the following section.

## B7 PUBLIC SPACE IN THE INDUSTRIAL CITY

The Industrial Revolution, or better termed, the machine age, dawned in the course of 1776 onwards. Until this time all goods had been predominantly hand-made. Shops (or the workplace) were of modest size, physically part of the home of the owner / entrepreneur, and had generally a small workforce (employees).

Inventions during the Renaissance comprised the expanded use of gunpowder, the printing press, improvements in the processing of materials, and simple hand machinery which became more efficient.

In 1769 James Watt invented the steam engine, thus freeing mechanical power from direct operation by hand. Steam power revolutionised the mode of production (conveyor belt) and the workplace. It resulted in the increased production of goods, expanding trade and commerce. From it came the development of the new workplace - the factory, and the concomitant separation of home and workplace.

Machines driven by independent power resulted in mass production and the advent of mass-consumerism. Laissez-faire capitalism was introduced, and forms the economic framework of most cities and nations throughout the world to this day.

### B7.1 The Industrial City

The industrial revolution caused extensive societal transformations, which had profound effects on the city. The growth of industrial capitalism affected the nature of economic activity, social organisation and the forms of urban settlement to a massive extent. The changes occurred at an unprecedented pace and were paralleled by major advances in transportation, communications technology, service infrastructure and medical science. The industrial revolution also exacerbated the population explosion and extensive urbanisation, which had already been initiated by the agricultural revolution.

The economic change was characterised by the workshop at home to the factory system, the latter underpinning the nature of the industrial city. The factory system resulted in:

- the specialisation of labour;
- the conveyor belt; and
- greater volumes of production.

This resulted in greater production, associated economies of scale, higher productivity per worker and overall level of output, resulting in profitability and economic growth. Factory systems were dependent on a pool of labour in close proximity. Factories also agglomerated in order to optimise labour pools, markets, transport and infrastructure services, ancillary suppliers and services.

The agglomeration of factories, their attraction of labour and the concomitant acceleration of urbanisation, resulted in the typical characteristics of the industrial city:

- the industrial built form was grafted onto the existing urban settlement form;
- the economic growth and wealth resulted in the development of the new "monuments" of the industrial city : civic buildings, cultural institutions and new infrastructures comprising road, rail and utility services;
- the development of class distinction between the "bourgeoisie" (industrialists, businessmen and professionals) and the working class; and
- mass urbanisation resulted in extensive overcrowding and congestion, exacerbated by the emergent speculative building industry providing low quality housing for rent, and the subdivision of existing properties.

Pre-industrial city structures and organisations were totally overwhelmed by the industrial revolution. The exploitation of the workforce resulted in poverty. Public sanitation and water supply services broke down, resulting in abject condition of squalor and low quality housing.

*"Engels wrote in 1892 of conditions in London where houses were occupied at high levels of overcrowding and had fallen into severe states of disrepair with narrow courts and alleys filled with filth and rubbish - such conditions led inevitably to contagious disease and ill-health and to a breakdown in social order with high rates of crime and vice"* (Herbert et al, 1990).

Out of the industrial city emerged a restructured urban form: the city centre became the commercial heart of the industrial city, the wealthy moved to the open spaces on its edges, enabled through transport technology, resulting in the birth of the suburb. The poor, unable to afford the mobility of the wealthy, and dependent on close proximity to the factory, were left at the heart of the city in their crowded tenements and high density terraces.

The industrial city, to a great extent, became almost uninhabitable. Its urban environment was described as oppressive, filthy and unhealthy. It was environmentally degraded, enveloping extensive residential areas in a pall of smoke, the atmosphere was filled with a continuous haze, and a film of grime and soot covered everything. (Eisner et al, 1993).

Charles Dickens, whose sense of public moral responsibility was especially keen, sketched a revealing caricature of the mid-nineteenth-century no-nonsense industrial city, Coketown, in his novel *Hard Times* (1845). Coketown, he wrote, was a creation of economic determinism.

*"It was a town of machinery and tall chimneys, out of which interminable serpents of smoke trailed themselves forever and ever, and never got uncoiled. It had a black canal in it, and a river that ran purple with ill-smelling dye, and vast piles of building full of windows where there was a rattling and a trembling all day long, and where the piston of the steam-engine worked monotonously up and down, like the head of an elephant in a state of melancholy madness..... You saw nothing in Coketown but what was severely workful ..... everything was fact between the lying-in hospital and the cemetery, and what you couldn't state in figures, or show to be purchasable in the cheapest market and saleable in the dearest, was not, and never should be, world without end, Amen."*



## B7.2 The Street of the Industrial City

The function of the street disintegrated together with the functionality of the pre-industrial city, as outlined in the previous section. The streets were characterised by congestion between people and traffic, hindering movement and mobility. The reactions to the situation caused by industrial development are characterised by three examples:

### B7.2.1 The Boulevards of Paris (Urban Restructuring)

In restructuring medieval Paris to accommodate its extensive growth, Baron Haussmann (under the authority of Napoleon III) embarked on a rebuilding programme based on:

- The development of a system of tree-lined boulevards, providing access, linkage and urban mobility throughout the existing urban fabric and had entire sections of the medieval core demolished.
- The laying of new water and sewer systems.
- The development of several small parks throughout the city.
- The creation of two enormous park reserves created from the royal hunting grounds on the west and east edges of the city.

(refer Figure B-27).

### B7.2.2 The Ringstrasse of Vienna

Once the fortifications of Vienna became obsolete, they were removed. In its place a boulevard, lined with public buildings and parks, was built (refer Figure B-28). The purpose was to unite the medieval core of the city with the suburbs that had developed beyond the fortifications.

### B7.2.3 The Street within the First Planned Industrial New Towns

In an attempt to counter the diabolical social and environmental effects of the industrial revolution, a number of companies planned the development of new towns. One of the first was Saltaire, outside Bradford, England, begun in 1852. In 1879 the Cadbury family began construction of Bournville, outside Birmingham, as the site of the Cadbury chocolate factory, with rows of housing and communal facilities set on winding landscaped roads (Roth, 1993).

These new towns were based on utopian, moral and pre-industrial countryside ideals. The classic example was Port Sunlight built by the Lever family in 1888 (refer Figure B-29)

*"... in which the houses were specially designed and arranged on winding landscaped streets so as to suggest the quaint atmosphere of a pre-industrial English village"* (Roth, 1993).

The plan comprised a distorted grid, with public open space in the form of playing fields and green landscaped open areas. Public facilities included a church, gymnasium, swimming pool and schools; everything to sustain a community. The industrialists considered this the best way to counter poverty, urban overcrowding, pollution and social decay.

## B7.3 The Public 'Square' of the Industrial City

The industrial revolution resulted in a new approach to the treatment of public space in relation to new architecture and new technologies. The shift was to one of ignoring public places, as industrial production and consumption tended to amplify the individual.

## B7.4 The Emergence of the Contemporary Park

The provision of sizeable public green spaces prior to the industrial revolution was restricted to the centrally located squares, as discussed previously. The latter section also outlined the forerunners of the contemporary park.

The Nineteenth-Century Parks Movement emerged from the reaction against the overcrowding, poverty, crime, disease and unsanitary conditions of the industrial city. The philosophy is summarised by Olmsted, speaking of Central Park, who wrote (in Carr et al, 1992):

*"The main object and justification (of the park) is simply to produce a certain influence in the minds of people and through this to make life in the city healthier and happier - the character of this influence is a poetic one and it is to be produced by means of scenes, through observation of which the mind may become more or less lifted out of moods and habits into which it is, under the ordinary conditions of life in the city, likely to fall"*.

The above underlines the thinking of Loudon (1820), who is most commonly credited with proposing the idea of a public park as it is thought of today. According to him it was a means to:

*"... raise the intellectual character of the lowest classes of society"* (In Kostoff, 1992:169).

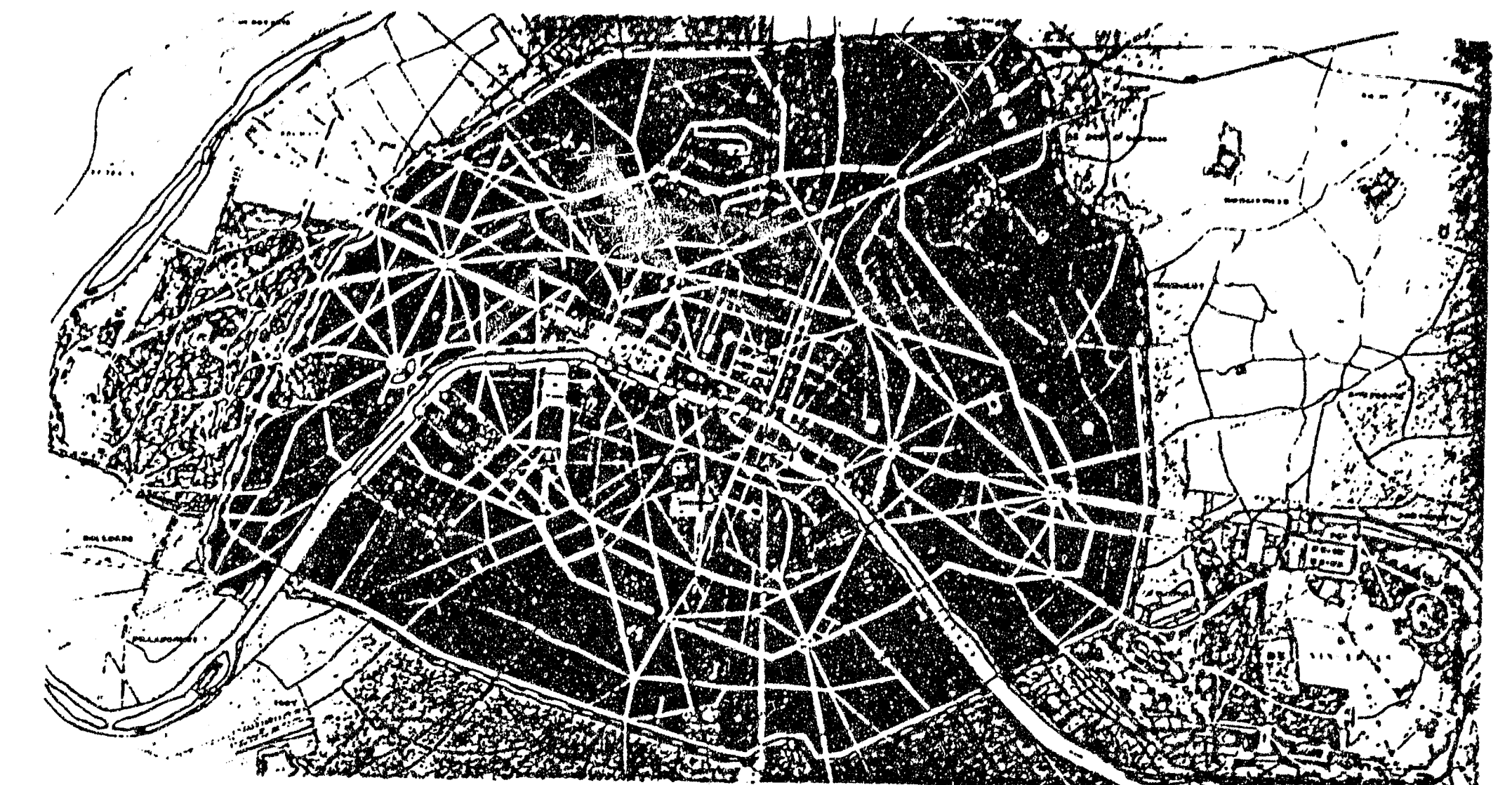
The development of parks was welcomed, and were well used by both the lower classes and gentry. It was also viewed as a public space by means of which the poor were exposed and encouraged to aspire to the values of the gentry. However, in many parks, controversy developed over the rules of use.

*"The rough and tumble manners of street life spilled over into these new public spaces, leading to attempts to restrict the use of lawns, restrain crowds, fence off plantings, and the like"* (Carr et al, 1992).

One of the earliest designed contemporary parks (after Regents Park) was the *Englischer Garten* in Munich (begun in 1804). The park was considered to be a medium for public education about the natural environment and present the opportunity for the mingling of social classes (Kostoff, 1993). Buildings within the park included pictures of national history, statues of heroes, and monuments to important events. The development of other parks followed in Germany, specifically in Magdeburg (1824, *Friedrich-Wilhelmsgarten*), and in cities such as Berlin, Frankfurt and Munich beginning in 1840.

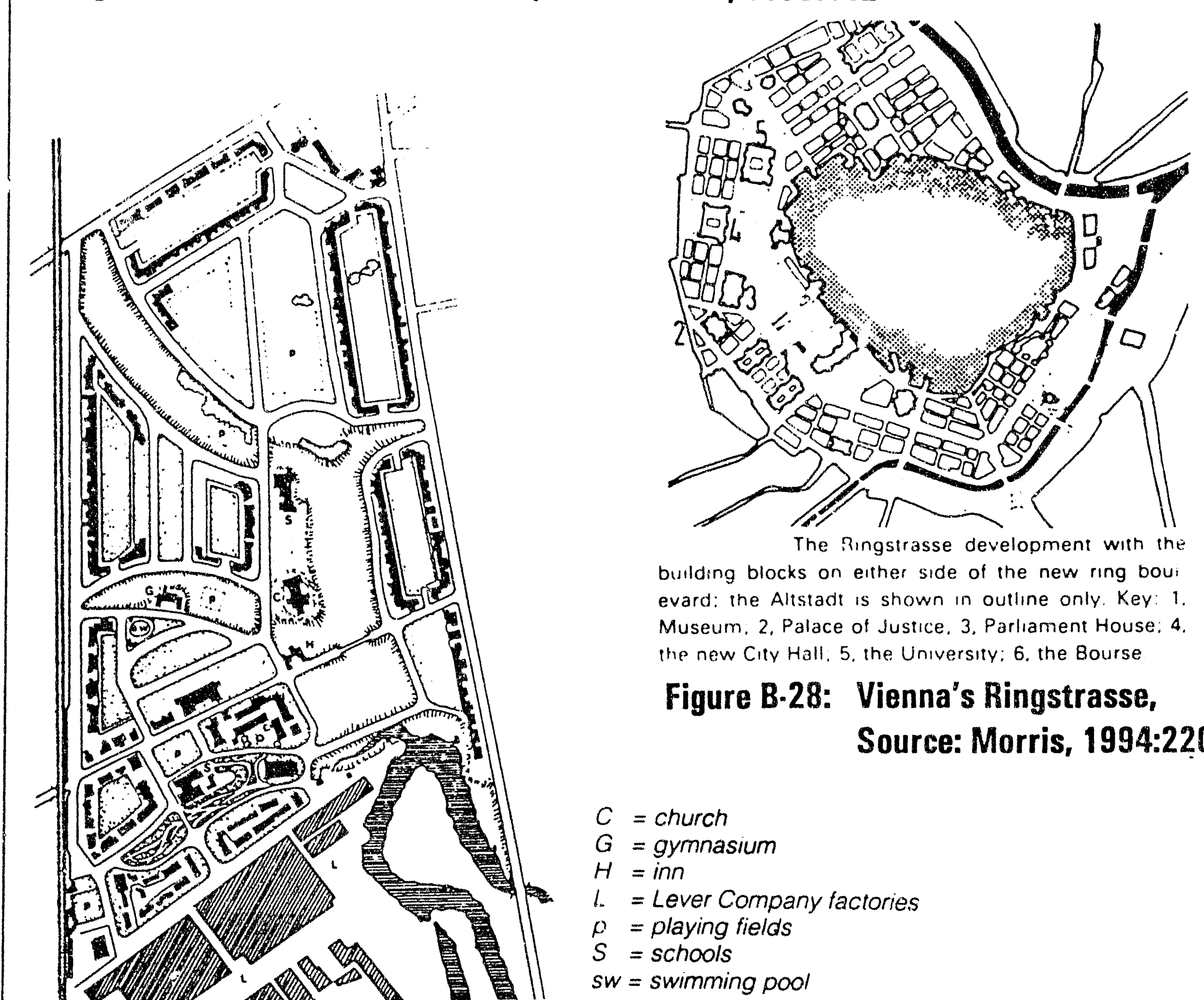
The first English park specifically developed for public use, was Birkenhead Park, designed by J. Paxton in 1843. Its distinguishing characteristic being the separation of different types of traffic. The Birkenhead Park scheme (refer Figure B-30) comprised a central park surrounded by rowhouses laid out in the form of terraces and crescents. The park interior included a number of lakes, with winding carriage roads throughout and crossing it, and more intimate paths for pedestrians. Birkenhead Park greatly influenced Olmsted - the pivotal figure in America's public parks movement - who wrote of Birkenhead Park

*"... in democratic America, there was nothing to be thought of as comparable with this people's Garden ..... And all this magnificent pleasure-ground is entirely, unreservedly and for ever the*



Baron Georges-Eugène Haussmann. Plan for Paris, 1852. With the support of Emperor Louis-Napoléon, Haussmann undertook the rebuilding of the city, cutting major new streets, laying new water and sewer systems, and adding new parks

Figure B-27: Boulevards of Paris, Source: Roth, 1993:442



The Ringstrasse development with the building blocks on either side of the new ring boulevard; the Altstadt is shown in outline only. Key: 1. Museum, 2. Palace of Justice, 3. Parliament House, 4. the new City Hall, 5. the University, 6. the Bourse

Figure B-28: Vienna's Ringstrasse, Source: Morris, 1994:220

C = church  
G = gymnasium  
H = inn  
L = Lever Company factories  
p = playing fields  
S = schools  
sw = swimming pool

Figure B-29: Port Sunlight Layout, Source: Roth, 1993:443



Figure B-30: The Plan of Birkenhead Park, Source: Kostoff, 1992:171



people's own. The poorest British peasant is as free to enjoy it in all its parts as the British Queen" (In Kostoff, 1992:170).

By the 1860's most areas of London and the northern industrial towns had parks. The park had by then also been incorporated into the restructuring of Paris by Haussmann - as indicated earlier - with the redesign of the existing royal hunting grounds, created various larger parks as well as 24 smaller public gardens or *squares*. Olmstead brought the public park to American cities, beginning with Central Park in New York and Prospect Park (Brooklyn).

The issue of sports within the public park was a contentious issue because of the perception that it was incompatible with the peaceful enjoyment of nature. Birkenhead did enclose a simple open space devoted to sports. Calls as early as 1844 were made to accommodate sports in public parks. However, only after the emergence of organised sports in the 1870's were public parks opened up and designed to accommodate a variety of sporting, physical and cultural activities.

This early generation of public parks has gone through a number of phases of decline and neglect, followed by redevelopment. And, contrary to the purposes of the public park espoused by its designers, "... these leafy urban enclaves often seem to be the setting of the conflict between classes more than their reconciliation" (Kostoff, 1992:170).

## B8 PUBLIC SPACE IN THE ISLAMIC CITY

In Islamic cities there is a well-defined sense of public space, underpinned by Islam, which is a 'total way of life', encompassing religion and civilisation. Besides outlining religious rituals, Islam also prescribes strict pattern of order for society which include family life, civil and criminal law, business, etiquette, food, dress and even personal hygiene.

The urban form of the Islamic city was directed by:

- local conditions regarding topography, climate and construction materials;
- Islam's religious patterns of order and associated legislative guidelines;
- the pre-urban cadastre and the need for urban mobility; and
- internal city security.

What is absent in the Islamic urban morphology in comparison to the Western world are:

- the gridiron pattern of streets, a Graeco-roman concept;
- legislation in the form of codified civil law; and
- aggrandisement and considerations of civic aesthetics (excepting the pre-eminence accorded to the mosque).

An Islamic city is considered to have urban status when it has a:

- Friday mosque (*Mejid al-Jami*), where the Friday sermon is given and which should serve the residents of the city and its dependants living outside it.
- Governor and / or judge (*Kadi*); and a
- Market (*Sug*) serving the economic needs (Morris, 1994)

- Public Baths (*Hamman*), are mentioned by other authors as an important attribute.

In addition to the above, the urban components of the Islamic city comprise

- The *Medina*, the older historic nucleus, and the *Rabad*, the later additions or 'suburbs'.
- The *Rabad*, adjoining districts or quarters.
- The *Mahella*, the quarters of families of a common ethnic or religious background, which could be locked up for security purposes.
- The *Kasbah*, the citadel (primarily in North Africa).
- The *Musalla*, an open assembly space for prayer large enough to accommodate the entire adult male population on special occasions. (Morris, 1994) (refer Figure B-31).

The mosque is the centre of Islamic city life, it is the religious focus, a meeting place and forum, centre of religious education, and a place of refuge and shelter for the destitute. It is architecturally the most unique building type.

The form of the residential quarters was determined by the urban guideline requirements of domestic-domain privacy, and a minimum width of the cul-de-sac lanes and through streets. The road structure comprised the cul-de-sac lanes and the city's main public right-of-way thoroughfares.

The road structure results from the patterning of the buildings. The roads do not play a determining function of the urban form. They essentially have a distribution function enabling the mass movement of people from the major buildings into the path network, and associated large monumental structures (refer Figure B-32).

The mature Islamic city contains a number of *sugs*, the markets, mostly linear in form and orientated toward major 'nodes' such as the Mosque, the city gates, and special buildings for storage and hostel accommodation (refer Figure B-33).

Islamic society is focused on public life and social responsibility entrenched through its religion. The streets and mosques can never be privately owned; and every male member of society has equal claim to public places, whether Muslim or Non-Muslim, on a "first come, use for the whole day" basis (excepting women who have very limited rights). Furthermore the gift of water is of particular importance. Water requires to be shared, and everybody must have free access to it.

## B9 CONCLUSION

This concludes the historic overview of the role and function of public space. The conclusions reached from the above are elaborated in chapter four.

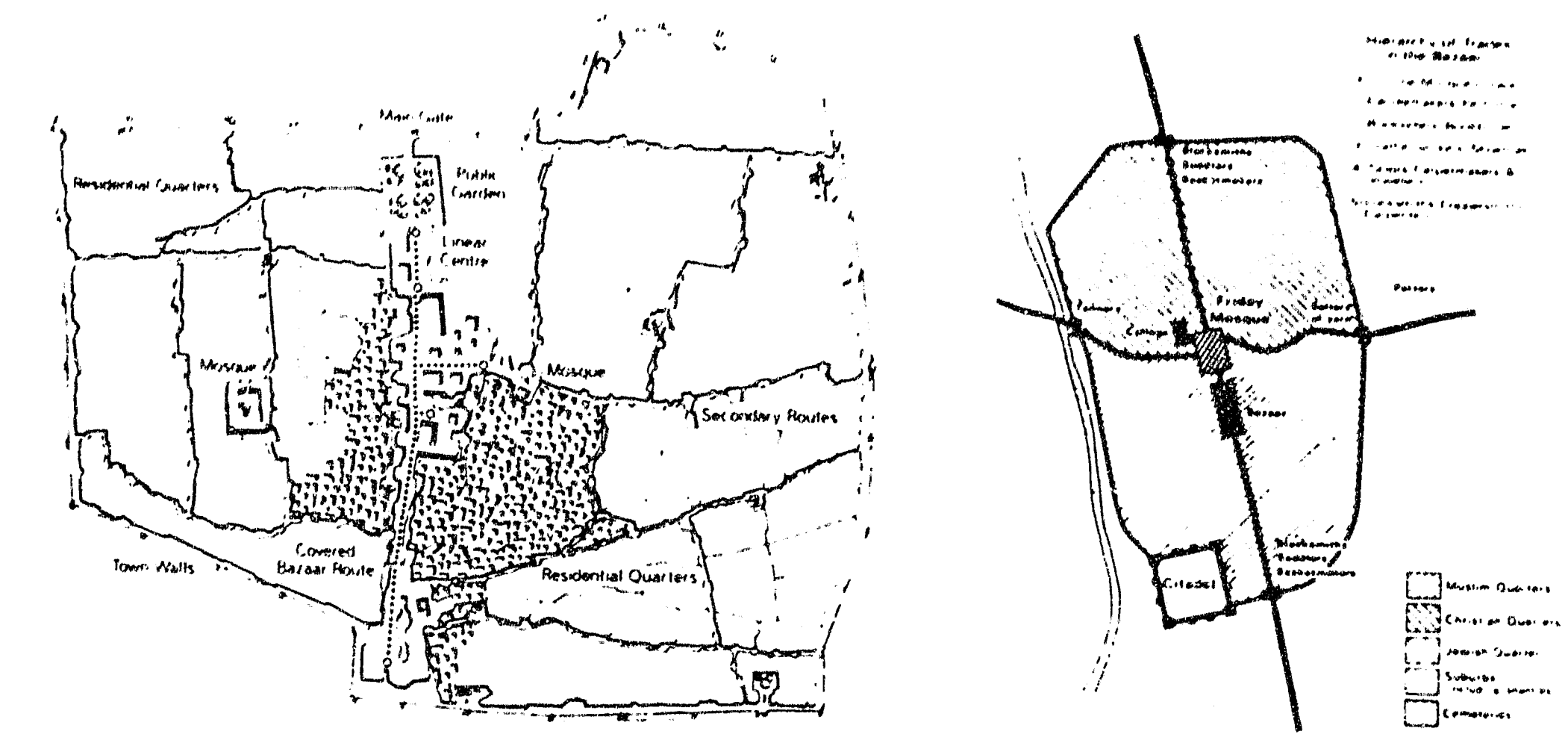


Figure B-31: A Typical Islamic City, Source: Morris, 1994:384

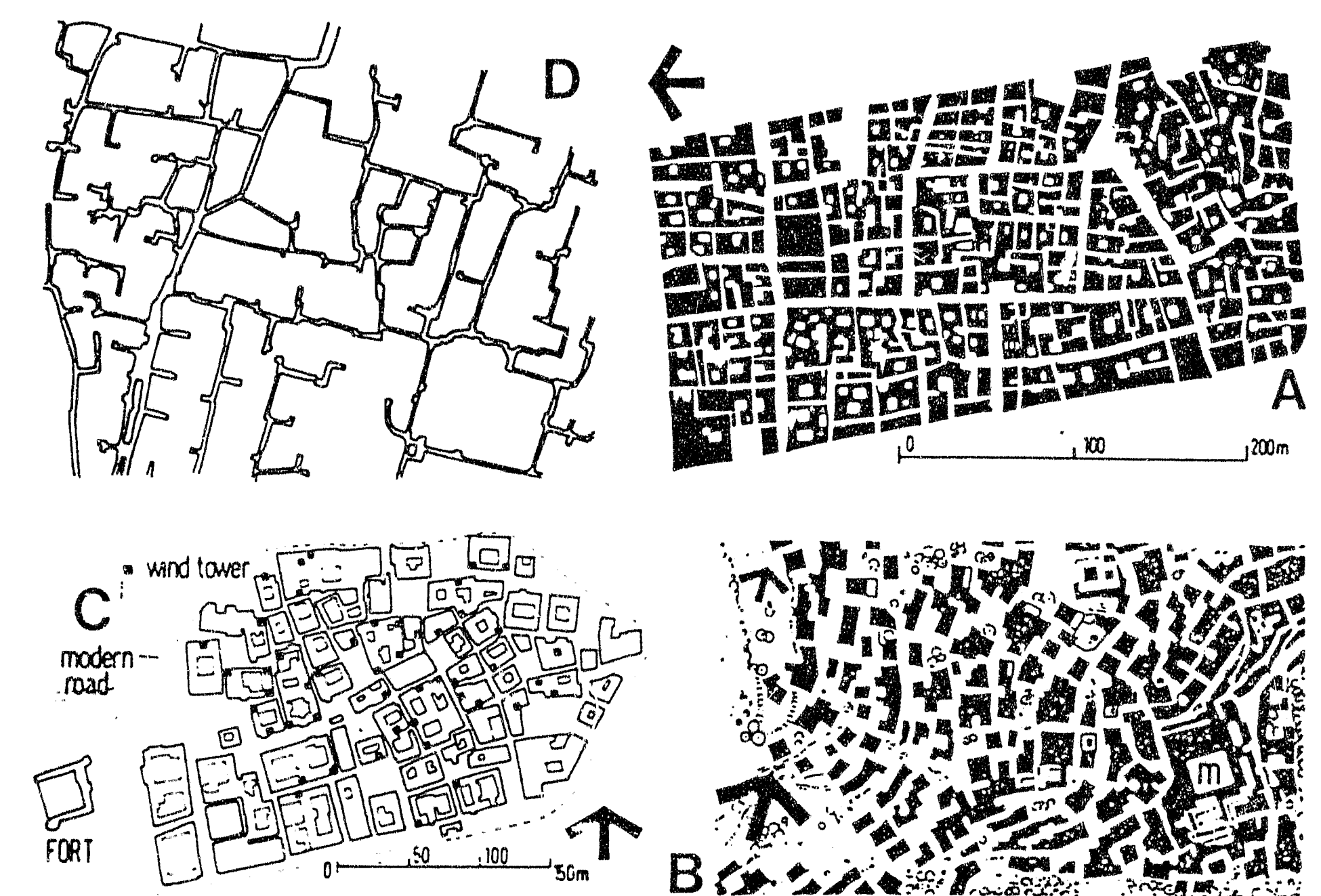


Figure B-32: Islamic City Built Form Pattern, Source: Morris, 1994:389

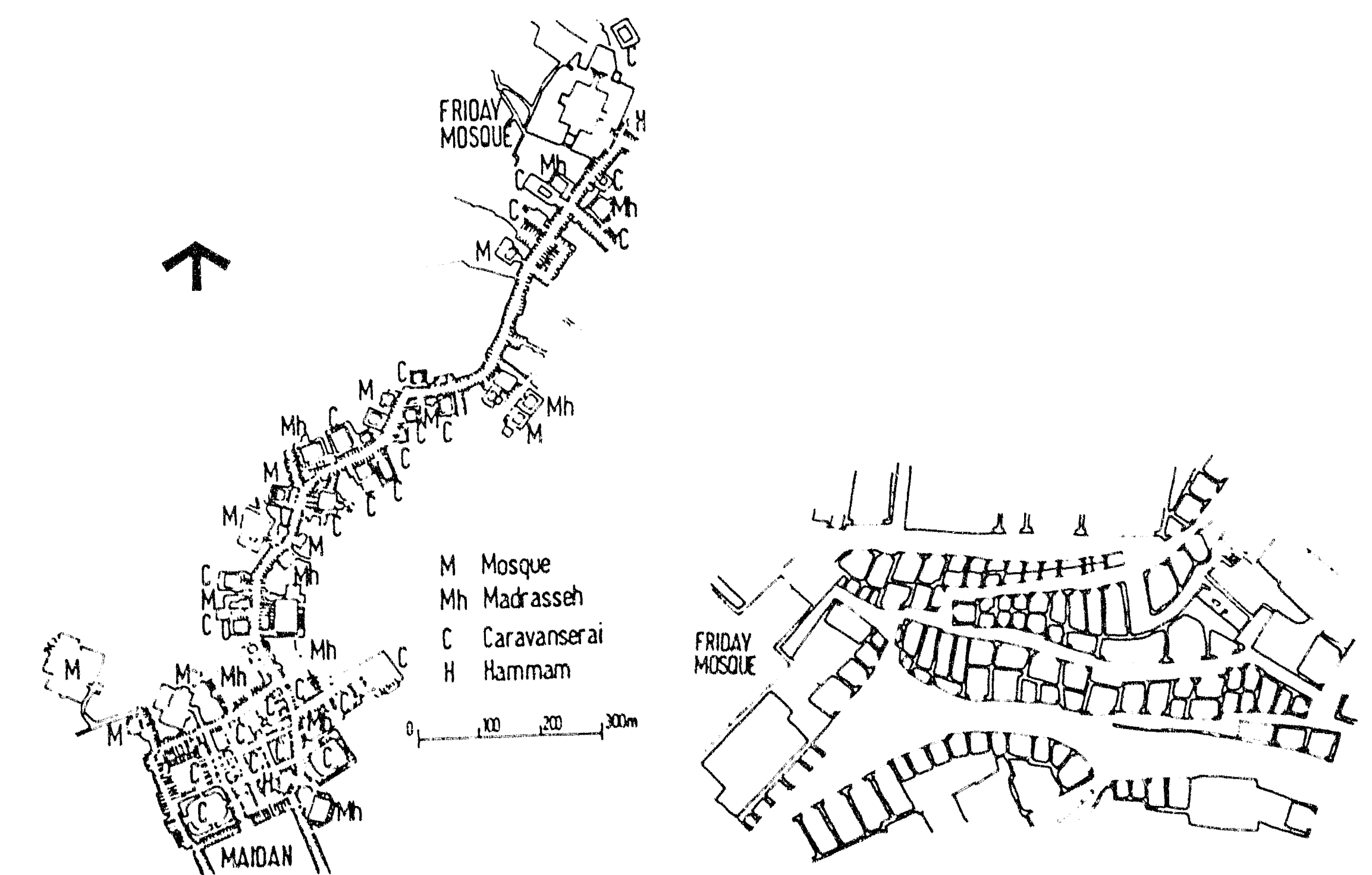
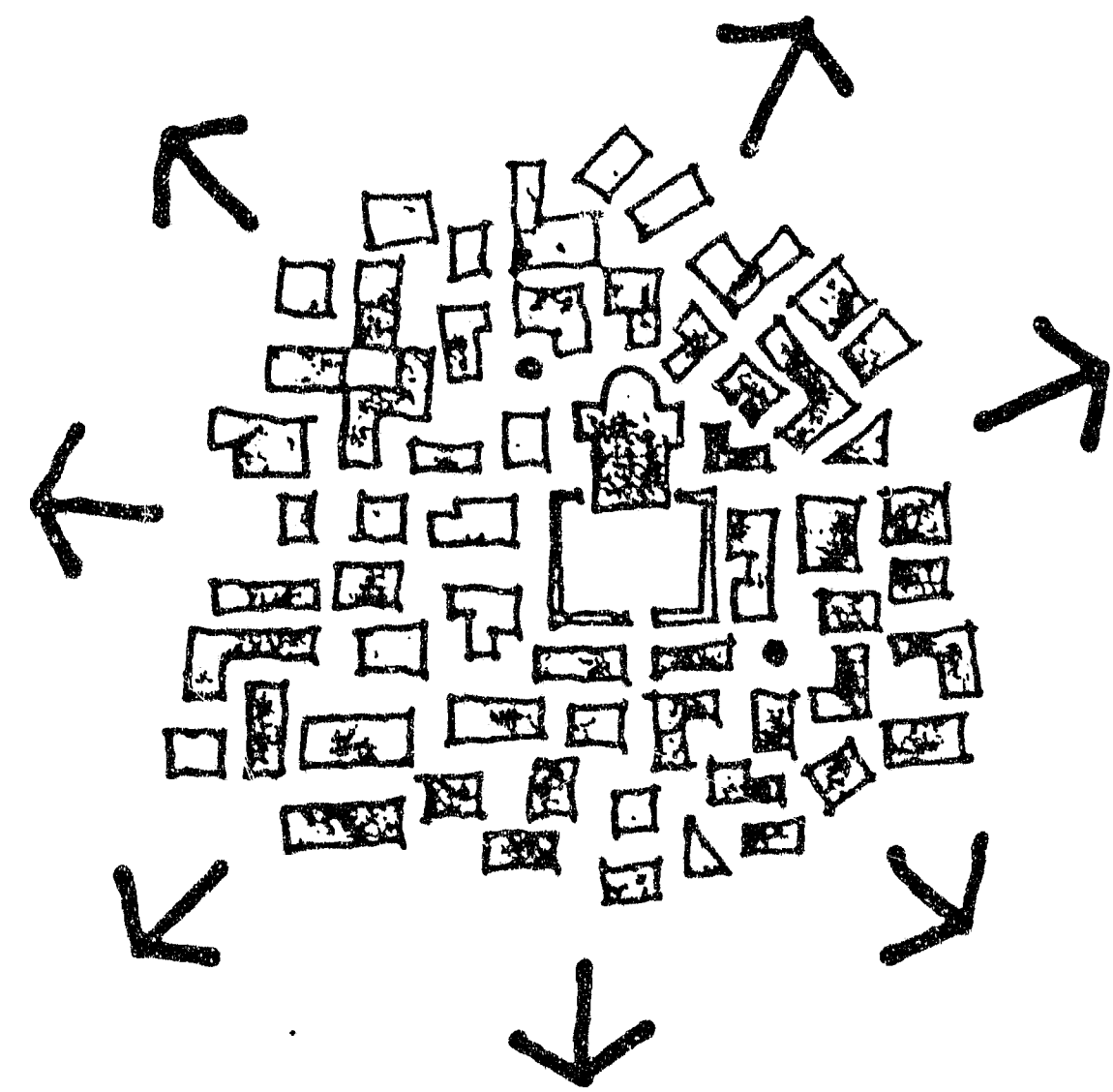


Figure B-33: Markets in the Islamic City, Source: Morris, 1994:390

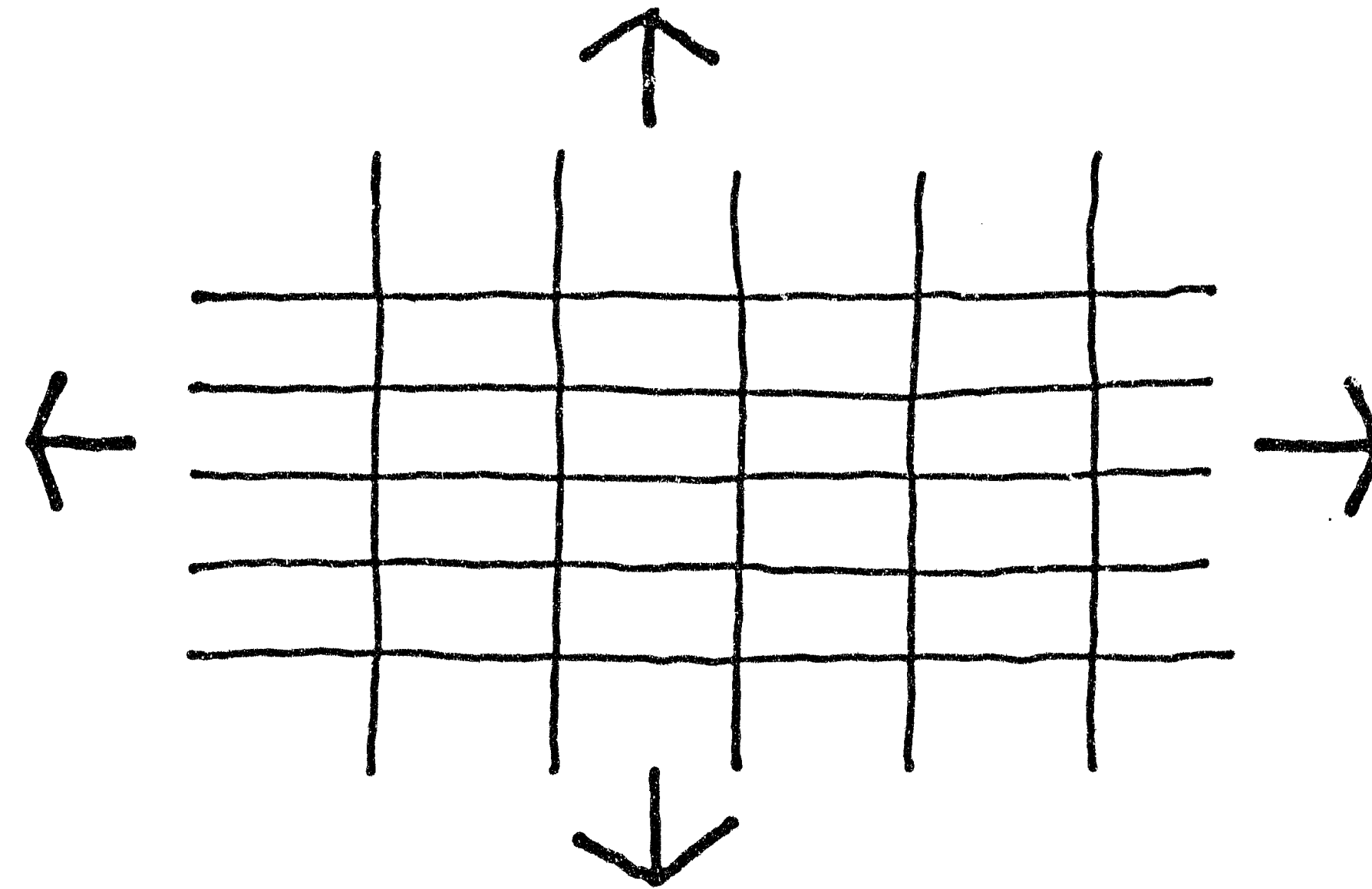


## APPENDIX C

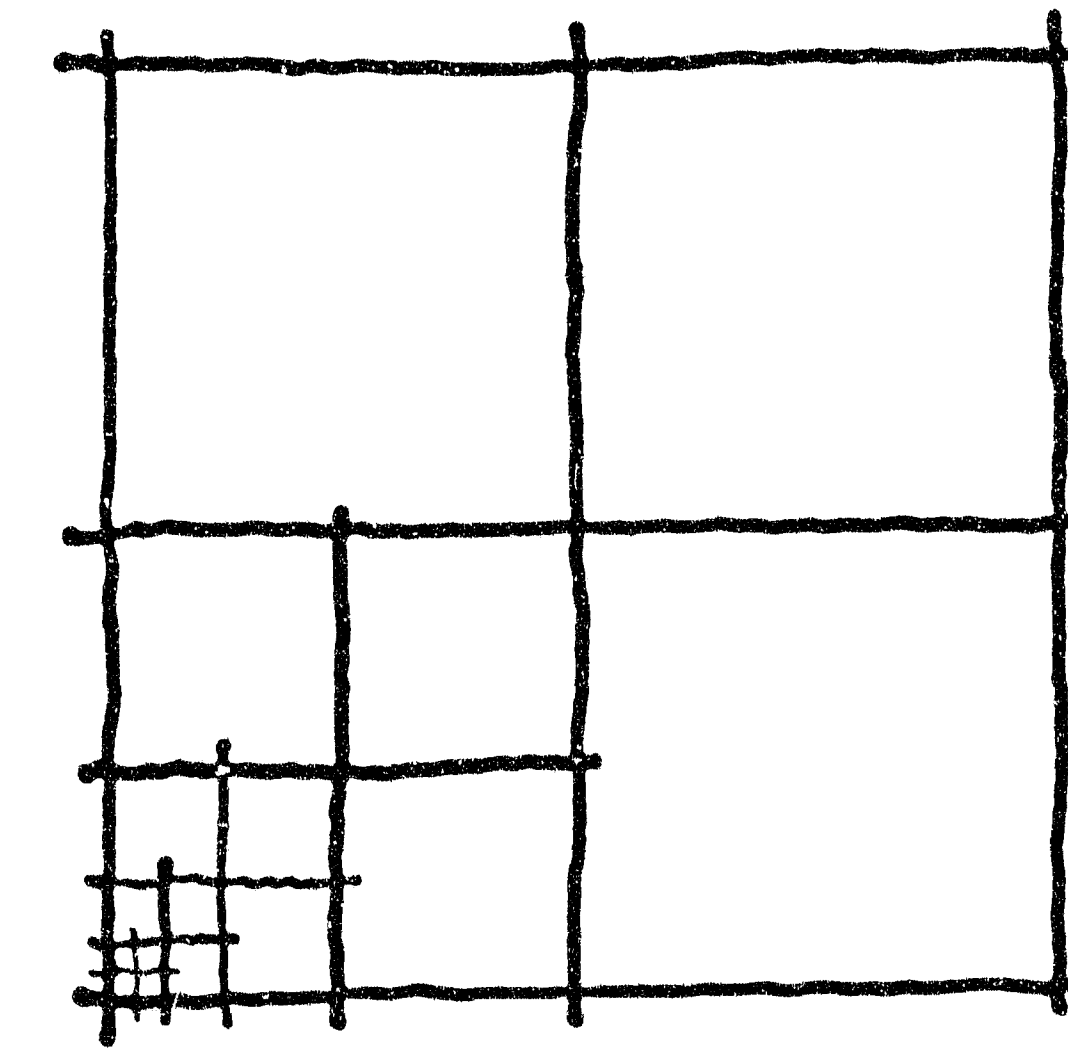
## SOME CHARACTERISTICS OF THE GRID STRUCTURE



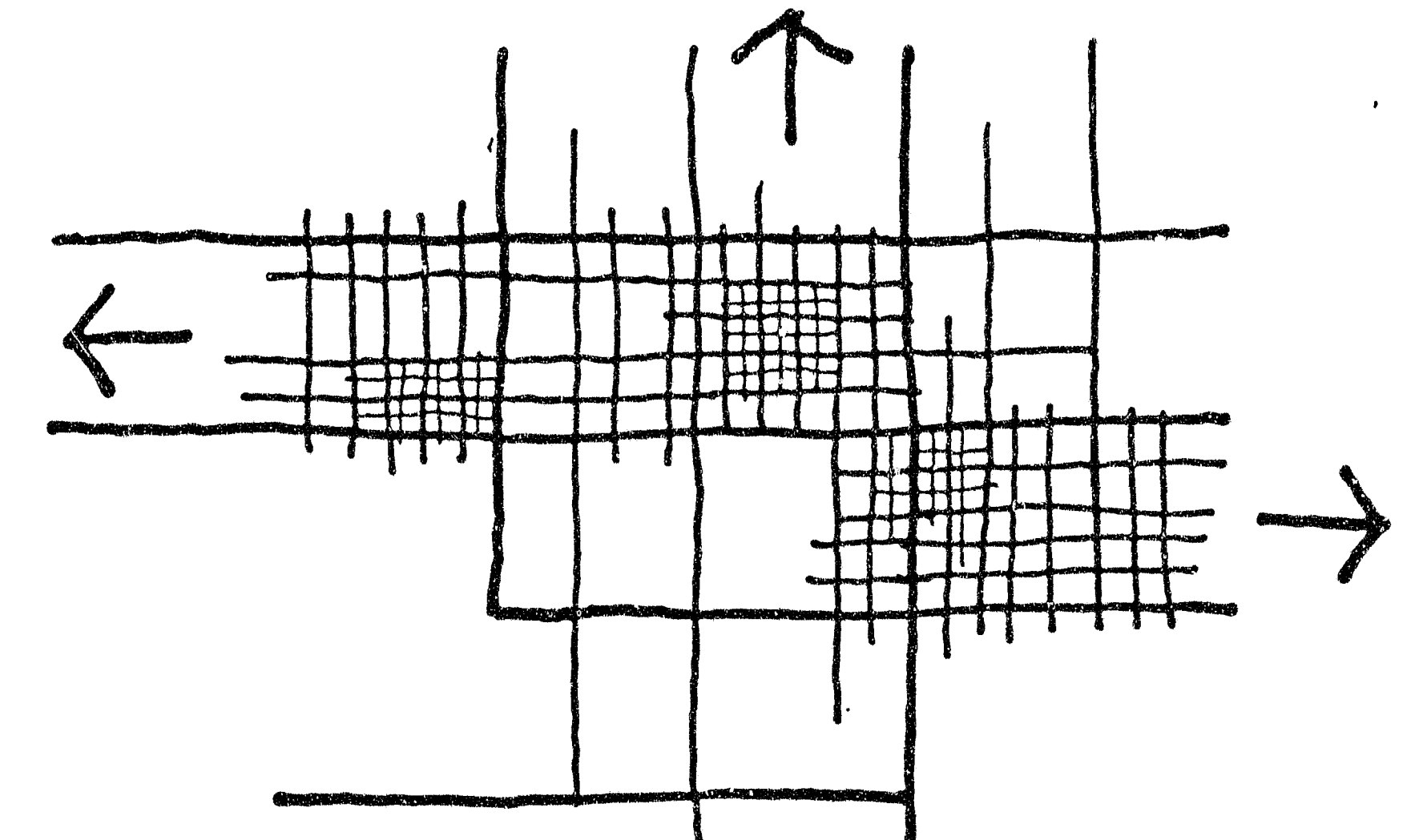
IN MEDIEVAL CITIES, WHERE CIRCULATION FOLLOWED BUILT FORM, BUILDINGS WERE LOCKED INTO RELATIONSHIPS WITH ONE ANOTHER. EXPANSION WAS RADIAL AND MADE ACCESS TO THE TOWN CENTRE DIFFICULT.



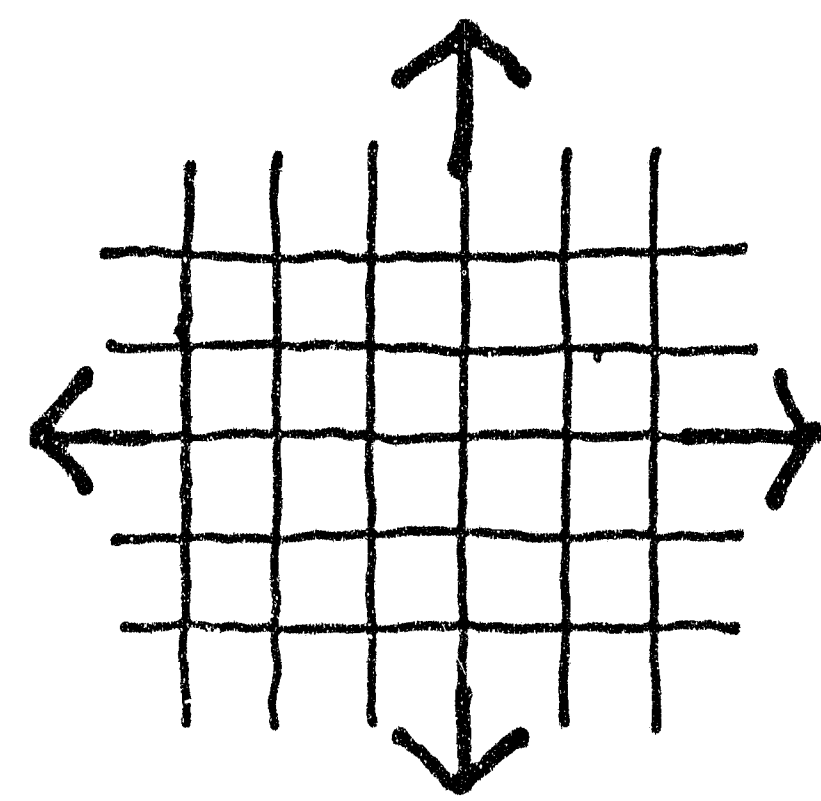
CONTEMPORARY GRID CITIES, WHERE CIRCULATION PRECEDED DEVELOPMENT, ARE CAPABLE OF RAPID EXPANSION. THE FLEXIBILITY OF GRID CITIES IS BASED ON NO ONE PART OF THE GRID BEING MORE IMPORTANT THAN ANY OTHER AND GROWTH BEING POSSIBLE IN ANY DIRECTION.



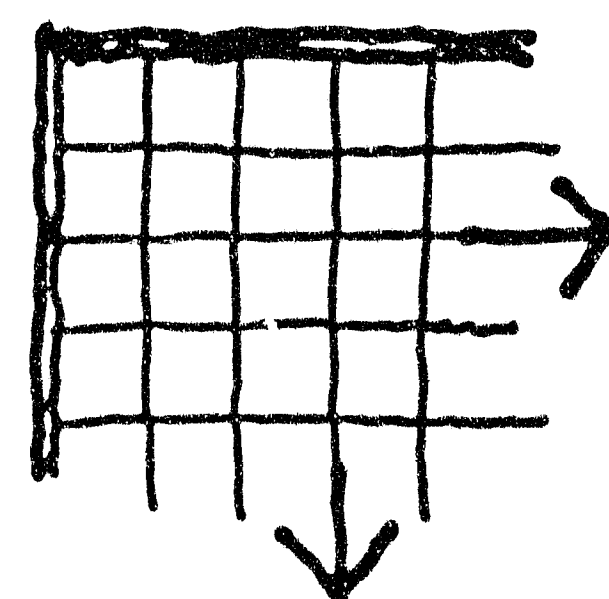
GRIDS MAY BE AGGREGATED OR DISAGGREGATED INTO COARSER OR FINER LEVELS OF RESOLUTION...



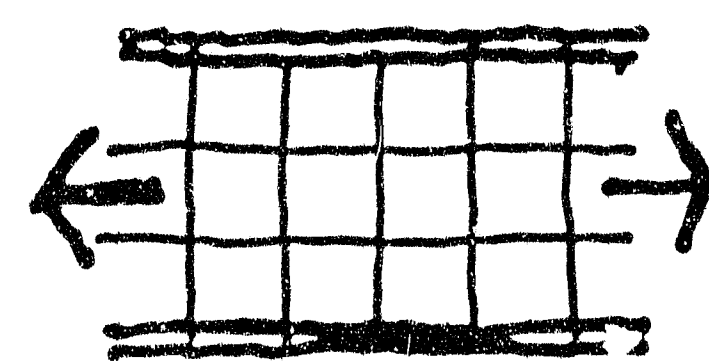
...TO VARY AND ADAPT URBAN FORM AND STRUCTURE IN ORDER TO RESPOND TO GROWTH REQUIREMENTS, INTENSITY OF ACTIVITY AND TOPOGRAPHY.



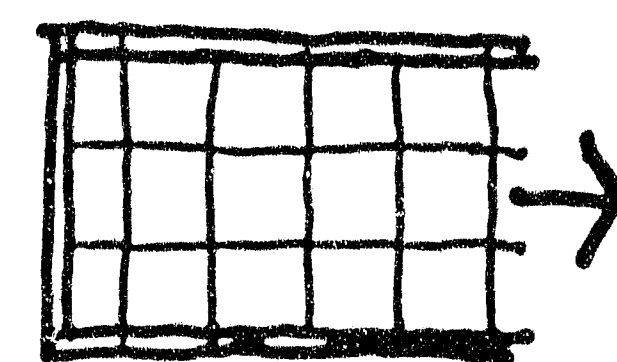
GRIDS MAY BE MANIPULATED TO ALLOW AMORPHOUS GROWTH...



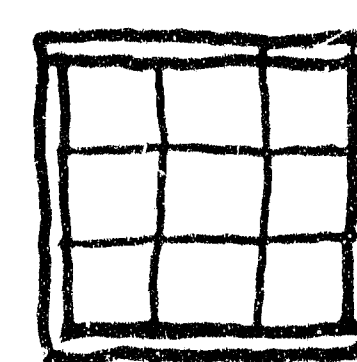
GROWTH IN SELECTED DIRECTIONS...



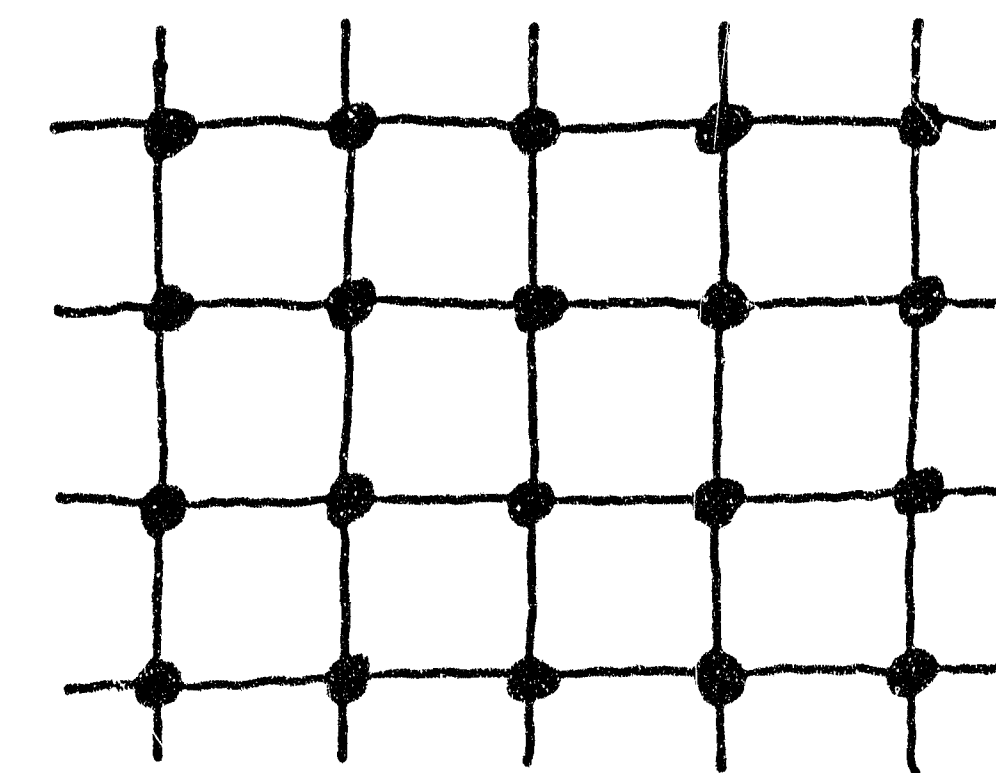
LINEAR...



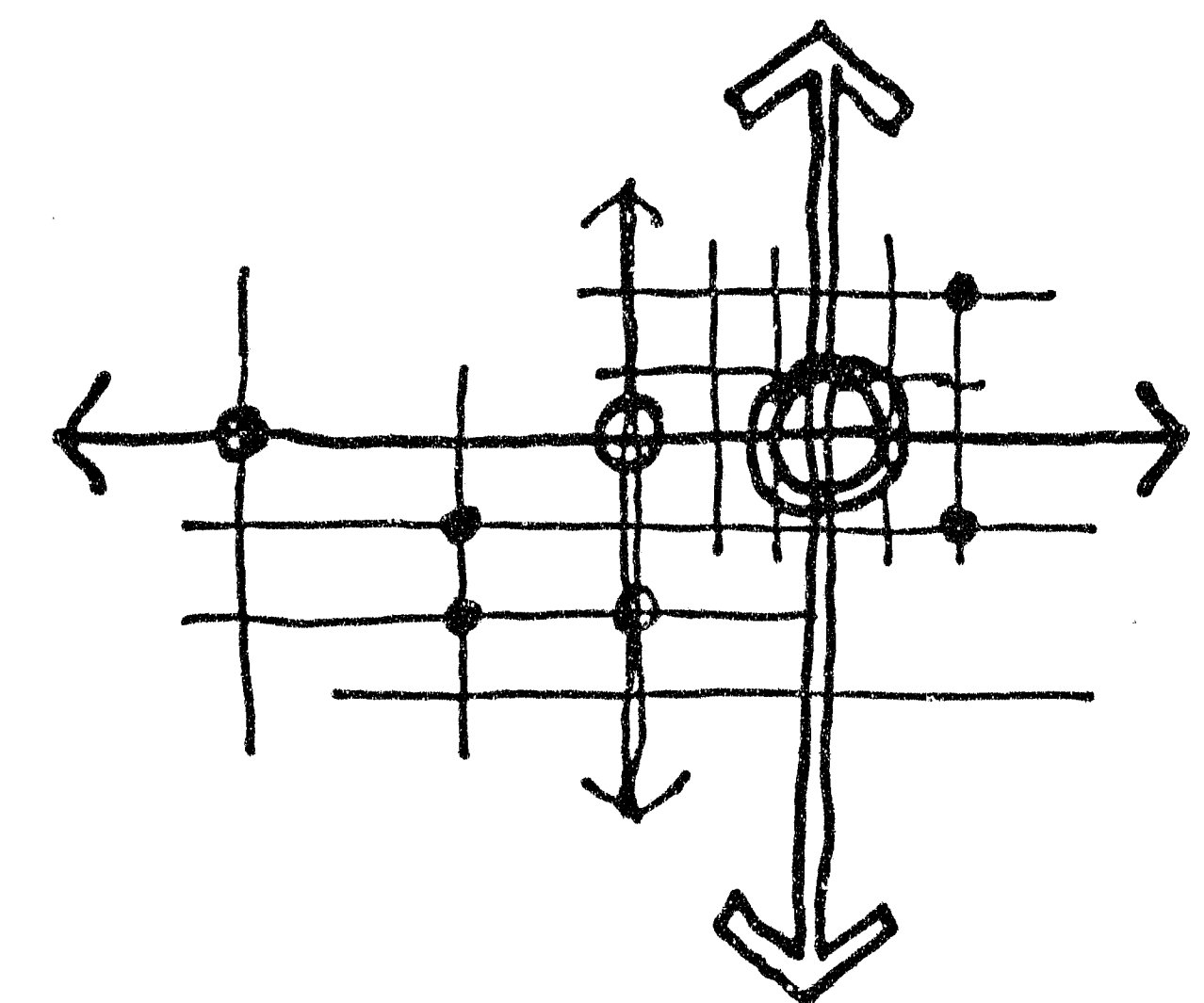
UNI-DIRECTIONAL...



OR CONTAINED.



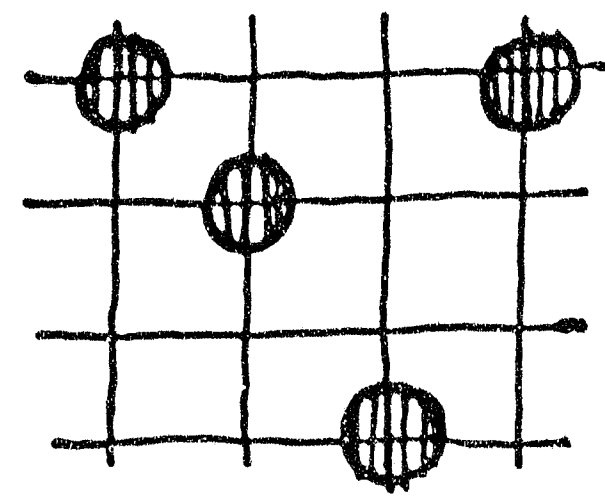
NODES OCCUR AT INTERSECTIONS IN THE GRID. AN UNDIFFERENTIATED GRID RESULTS IN A SERIES OF NODES OF EQUAL SIZE BY VIRTUE OF THE EQUAL ACCESS AFFORDED.



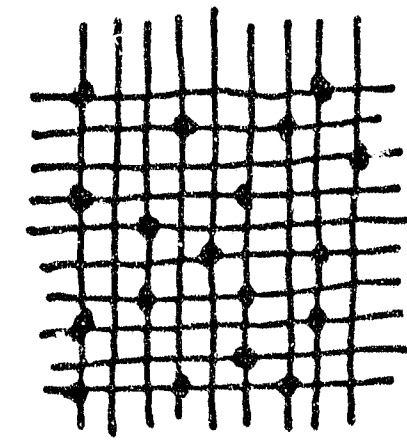
WIDTHS AND CONTINUITY ON SELECTED ROUTES INCREASE THE STRUCTURING QUALITIES OF THE GRID AND FACILITATES A HIERARCHY OF MOVEMENT AND ACTIVITY NODES TO EMERGE.



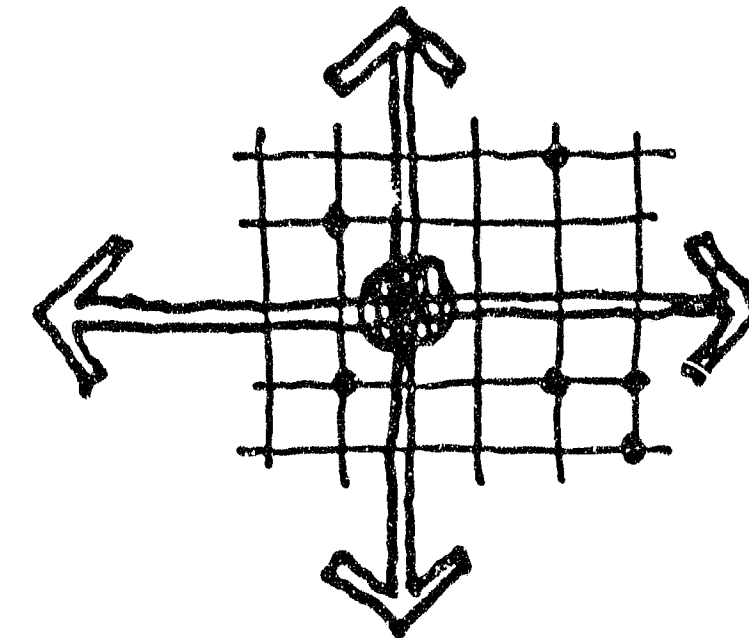
## FACILITY DISTRIBUTION WITHIN A GRID



IN A COARSE GRID — HIGH-ORDER FACILITIES OCCUR IN CENTRALIZED NODES

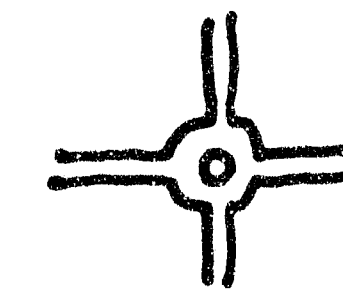


IN A FINE GRID — DISPERSED LOW-ORDER FACILITIES OCCUR IN SMALL LOCAL NODES

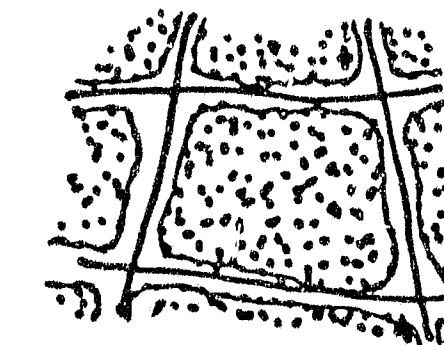


DEPENDING ON MOVEMENT — HIGH-ORDER FACILITY NODES CAN OCCUR WITHIN A PATTERN OF DISPERSED LOW-ORDER FACILITIES.

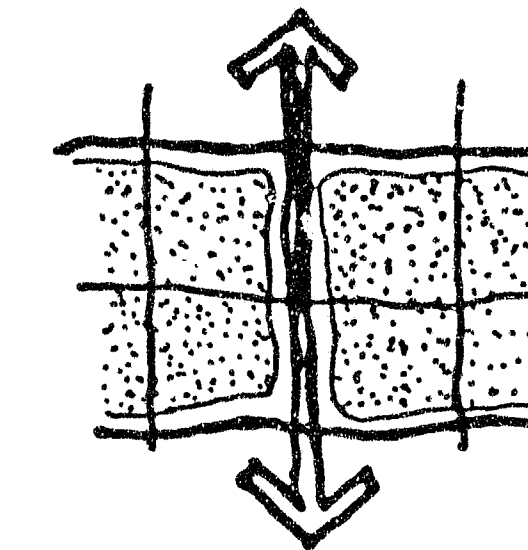
## IDENTITY AND SYMBOLISM WITHIN THE GRID



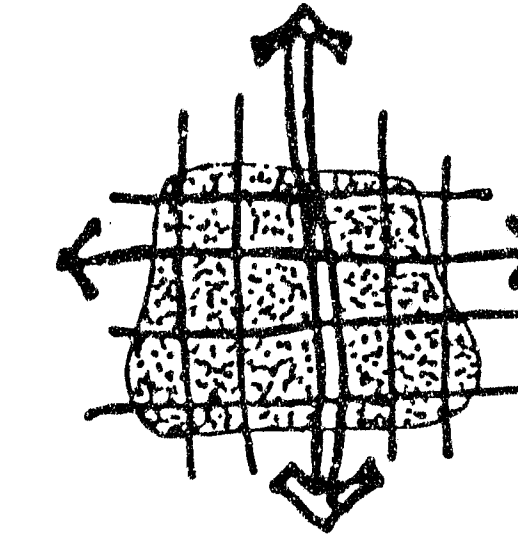
LANDMARKS AT INTER-SECTIONS



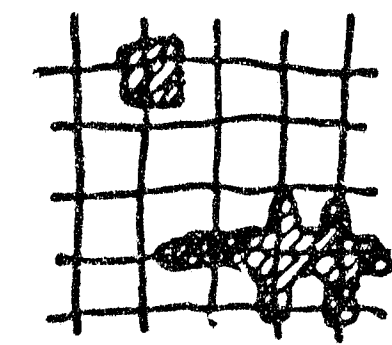
EDGES TO DISTRICTS



BARRIERS BETWEEN DISTRICTS

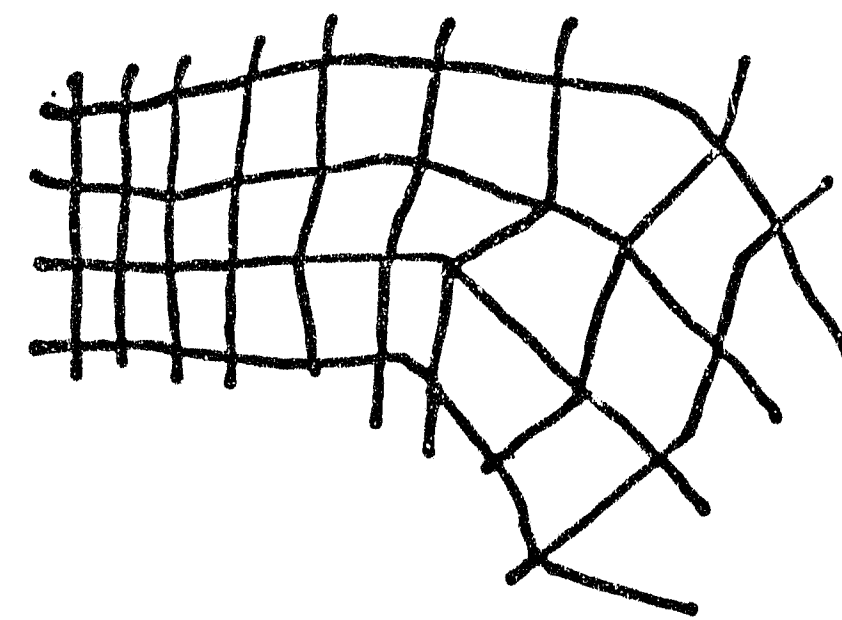


PATHS THROUGH AN URBAN FIELD

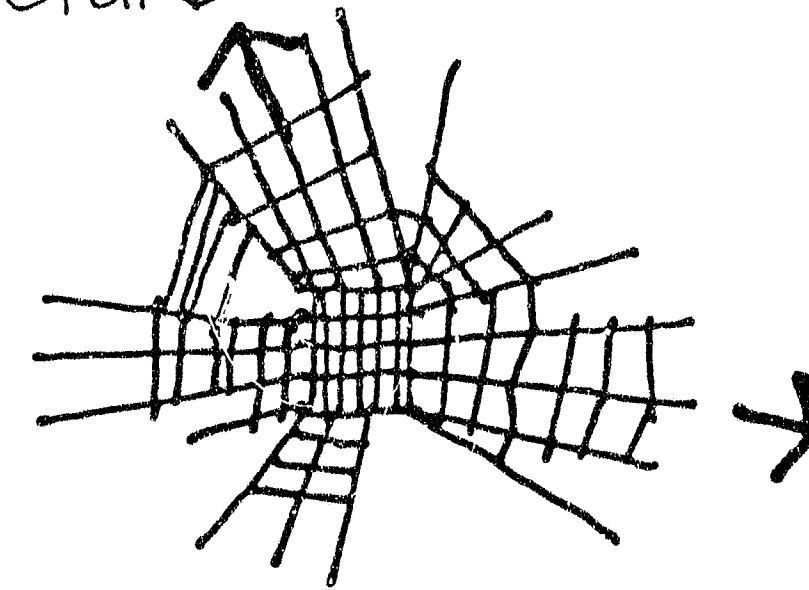


NODES BASED ON SIGNIFICANT INTERSECTIONS

## ADAPTATION WITHIN THE GRID STRUCTURE

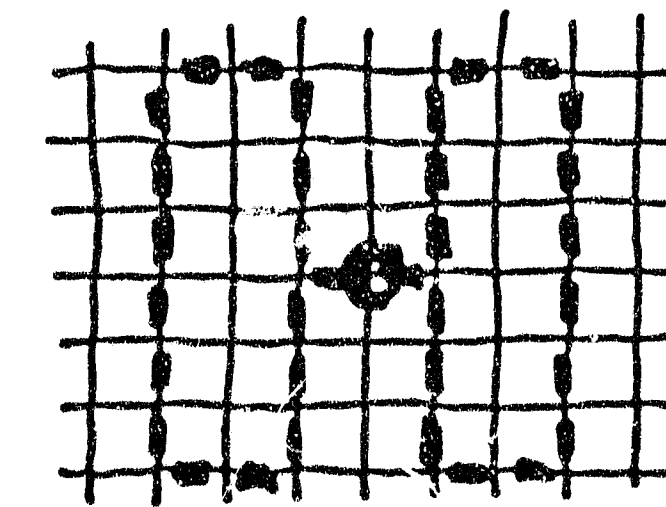


THE GRID CAN BE DISTORTED RADICALLY WITHOUT COMPROMISING ITS INHERENT QUALITIES OF ACCESSIBILITY AND STRENGTH OF STRUCTURE

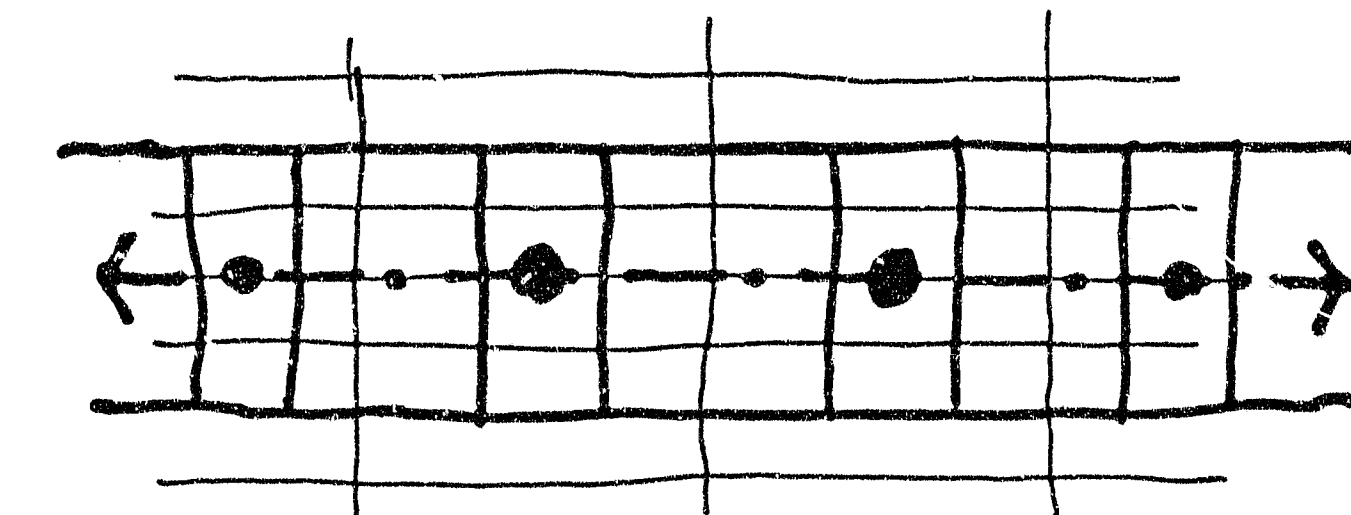


AT THE URBAN SCALE THE GRID RETAINS A VARIETY OF OPTIONS FOR FUTURE GROWTH AND CAN BE USED TO STRONGLY DEFINE THE STRUCTURE OF SUCH GROWTH.

## THE GRID INTEGRATED WITH OTHER MOVEMENT SYSTEMS

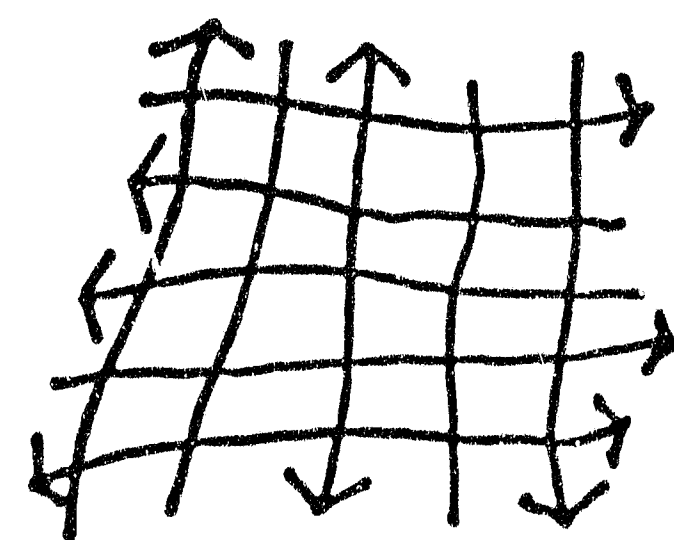


A BUS SYSTEM INTEGRATED WITH A GRID SERVING MOVEMENT IN PRIVATE VEHICLES.

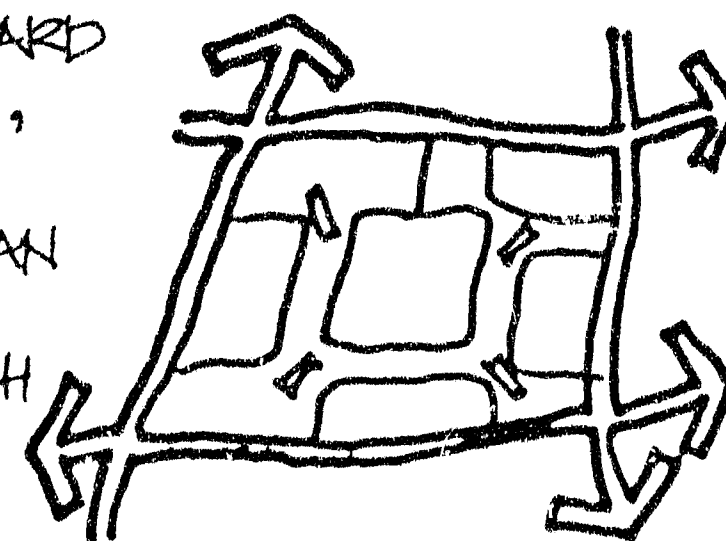


A LINEAR GRID STRUCTURED ON A MASS MOVEMENT SYSTEM SUCH AS A LIGHT RAIL.

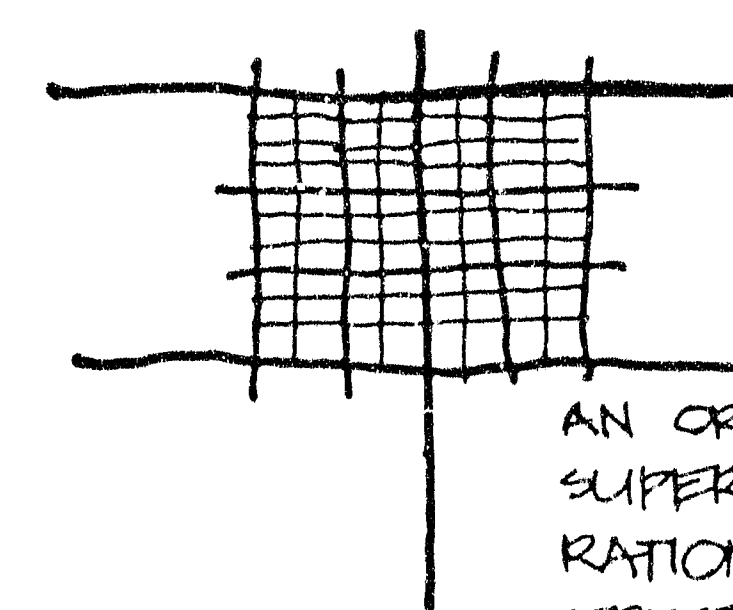
## DEFINING ENVIRONMENTAL AREAS WITHIN A GRID



WHERE AN ENVIRONMENTAL STANDARD HAS BEEN SET FOR AN AREA, A LIMIT IS PLACED ON THE AMOUNT OF TRAFFIC THAT CAN BE ACCOMMODATED IN THAT AREA. UNNECESSARY THROUGH TRAFFIC IS KEPT PERIPHERAL TO THE ENVIRONMENTAL AREA ON HIGHER-ORDER MOVEMENT CHANNELS.



## RECONCILING THE ORGANIC AND THE FORMAL



AN ORGANIC MOVEMENT SYSTEM SUPERIMPOSED ON A FORMAL RATIONAL GRID PROVIDES A BASIC STRUCTURE OF REMARKABLE QUALITY



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