

### 3

## The Origins and Growth of Cities

*Preview: pre-industrial cities; theories of urban origin; hydraulic theory; economic theory; military theories; religious theories; early urban hearths; the spread of urbanism; the Dark Ages and urban revival in Western Europe; the medieval town; early modern urbanism; industrial urbanism; the form of the industrial city; residential segregation; the origins of urban USA; the westward progress of urbanism in the USA; post-industrial urbanism; the post-industrial/postmodern city.*

### INTRODUCTION

Three major transformations have altered the course of human life. The first was the revolution that led to the development of agriculture around 7000 BC and the growth of Neolithic farming settlements such as Jarmo in Iraq and Jericho in modern Israel. The second was the pre-industrial revolution that brought cities into being. The third was the **industrial revolution** of the eighteenth and nineteenth centuries that created the urban industrial forerunners of our present cities. This chapter begins by focusing on the pre-industrial revolution to examine the origins and development of the earliest urban settlements, before going on to consider the character of industrial and post-industrial cities.

### PRECONDITIONS FOR URBAN GROWTH

In Chapter 2 we saw how problematic the definition of a city can be. With reference to the **pre-industrial city**, Wheatley (1971 p. xviii)<sup>1</sup> defined urbanism as 'that particular set of functionally integrated institutions which were first devised some 5,000 years ago to mediate the transformation of relatively egalitarian, ascriptive, kin-structured groups into socially stratified politically organised, territorially based societies'. This emphasis on institutional change relates the growth of cities to a major socio-political restructuring of society, which he regards as a key element in the development of civilisation. In similar vein, Childe (1950)<sup>2</sup> provides a listing of ten characteristics of an urban civilisation. These may be separated into five primary characteristics referring to fundamental changes in the organisation of society and five secondary features indicative of the presence of the primary factors (Box 3.1). Thus, for example, a community that was

capable of building monumental public works probably had not only the craft specialists to undertake the task but also sufficient surplus to support the work. It is important to recognise that these advances in social organisation occurred in particular environmental settings. The combination of environmental and social forces underlying early urban development is encapsulated in Duncan's (1961)<sup>3</sup> ecological perspective, which emphasises how external (environmental) stimuli and internal (social) interrelationships operated together to promote the growth of cities in the pre-industrial era (Box 3.2).

With these preliminary observations in mind, we can consider a number of different theories advanced to explain the origins of urban society. In doing so we should note that, as in much social science, it is not a question of whether one hypothesis is correct and the others wrong. Rather, each contributes some insight on the rise of cities.

### **BOX 3.1**

#### Childe's ten characteristics of an urban civilisation

##### *Primary characteristics*

1. *Size and density of cities.* The great enlargement of an organised population meant a much wider level of social integration.
2. *Full-time specialisation of labour.* Specialisation of production among workers was institutionalised, as were systems of distribution and exchange.
3. *Concentration of surplus.* There were social means for the collection and management of the surplus production of farmers and artisans.
4. *Class-structured society.* A privileged ruling class of religious, political and military functionaries organised and directed the society.
5. *State organisation.* There was a well-structured political organisation with membership based on residence. This replaced political identification based on kinship.

##### *Secondary characteristics*

6. *Monumental public works.* There were collective enterprises in the form of temples, palaces, storehouses and irrigation systems.
7. *Long-distance trade.* Specialisation and exchange were expanded beyond the city in the development of trade.
8. *Standardised, monumental artwork.* Highly developed art forms gave expression to symbolic identification and aesthetic enjoyment.
9. *Writing.* The art of writing facilitated the processes of social organisation and management.
10. *Arithmetic geometry and astronomy.* Exact, predictive science and engineering were initiated.

**BOX 3.2**

## Pre-conditions for pre-industrial urban growth

*Population*

The presence of a population of certain size residing permanently in one place is a fundamental requirement. The environment, level of technology and social organisation all set limits on how large such a population would grow. Particularly important was the extent to which the agricultural base created a food surplus to sustain an urban population. The earliest cities were relatively small in modern terms, with few exceeding 25,000 inhabitants.

*Environment*

The key influence of the environment, including topography, climate, social conditions and natural resources on early urban growth is illustrated by the location of the earliest Middle Eastern cities on the Rivers Tigris and Euphrates, which provided a water supply, fish and fertile soils that could be cultivated with simple technology.

*Technology*

In addition to the development of agricultural skills, a major challenge for the early urban societies of the Middle East was to develop a technology for river management to exploit the benefits of water and minimise the risk of flooding.

*Social organisation*

The growth of population and trade demanded a more complex organisational structure including a political, economic and social infrastructure, a bureaucracy and leadership, accompanied by social stratification.

**Source: Adapted from O.Duncan (1961) From social system to ecosystem  
Sociological Inquiry 31, 140–9**

**THEORIES OF URBAN ORIGINS****HYDRAULIC THEORY**

The importance of irrigation for urban development, especially in the semi-arid climates of the Middle East where the **agricultural revolution** took place, was identified by Wittfogel (1957),<sup>4</sup> who argued that the need for large-scale water management required centralised co-ordination and direction, which in turn required concentrated settlement. The principal characteristics of a 'hydraulic society' are that it:

1. permits an intensification of agriculture;
2. involves a particular **division of labour**;
3. necessitates co-operation on a large scale.

As Box 3.2 indicates, these are reflected in Duncan's (1961) preconditions for urban growth. Agricultural intensification allows a concentration of population, while co-operation leads to a need for managers and bureaucrats. Those who control the water resources (whether a temple elite or secular state) exert power over others (e.g. farmers). The division of labour, centralisation of power and administrative structure all promote concentrated settlement, and hence the emergence of a town. As well as in the Middle East, evidence of a relationship between the adoption of irrigation and rapid population growth, nucleation, monument construction, intense social stratification and expansionist warfare has also been found at Teotihuacán in Mexico, which was the site of a pre-industrial city of 70,000–125,000 inhabitants.

There is now little doubt that irrigation was a key factor in the growth of pre-industrial cities in the ancient world. The problem lies in disentangling cause and effect. This is particularly difficult if one is seeking to support the belief that urbanisation *followed upon* the development of irrigation. A more likely scenario is that the institutions of centralised urban government and large-scale irrigation grew side by side. At first, small-scale irrigation schemes would have required a certain amount of administration, which would have expanded the irrigation system. This in turn would have required greater administration and so on, eventually leading to large-scale irrigation works and an urban political organisation with a monopoly of power.

### ECONOMIC THEORY

Several theorists have suggested that the development of complex large-scale trading networks stimulated the growth of urban society<sup>5</sup> Certainly, the fact that southern Mesopotamia did not have many raw materials such as metallic ores, timber, building stone or stone for tools made trade essential. This required an administrative organisation to control the procurement, production and distribution of goods. Such an organisation would have been a powerful agent in the community, and its power may well have extended beyond trade into other aspects of society. The need to increase production for trade purposes as well as to feed an expanding population would have led to continued specialisation and intensification, and the growing sedentary population would itself constitute a market for local produce and trade goods. Once again, however, it is unclear whether trade was a cause of city growth or the product of an already existing urban administrative elite.

### MILITARY THEORIES

Some theorists suggest that the origin of cities lay in the need for people to gather together for protection against an external threat, the initial agglomeration leading to subsequent urban expansion. The excavation of a massive defensive wall built on bedrock would appear to indicate the defensive origins of Jericho, but not all early towns have such defences. Wheatley (1971)<sup>6</sup> believed that warfare may have contributed to the *intensification* of urban development in some places by inducing a concentration of population for defensive purposes and by stimulating craft specialisation.

## RELIGIOUS THEORIES

Religious theories focus on the importance of a well-developed power structure for the formation and perpetuation of urban places and, in particular, how power was appropriated into the hands of a religious elite who controlled the disposal of surplus produce provided as offerings.<sup>7</sup> There is clear evidence of shrines and temples in ancient urban sites and there can be little doubt that religion played a significant part in the process of social transformation that created cities. However, it is unlikely to have been the sole factor.

## THEORETICAL CONSENSUS?

It is doubtful if a single autonomous, causative factor will ever be identified in the nexus of social, economic and political transformations that resulted in the emergence of urban forms of living. A more realistic interpretation is generated if the concept of an 'urban revolution' is replaced by the idea of an *urban transformation* involving a host of factors operating over a long period of time. As Redman (1978 p. 229)<sup>8</sup> explained:

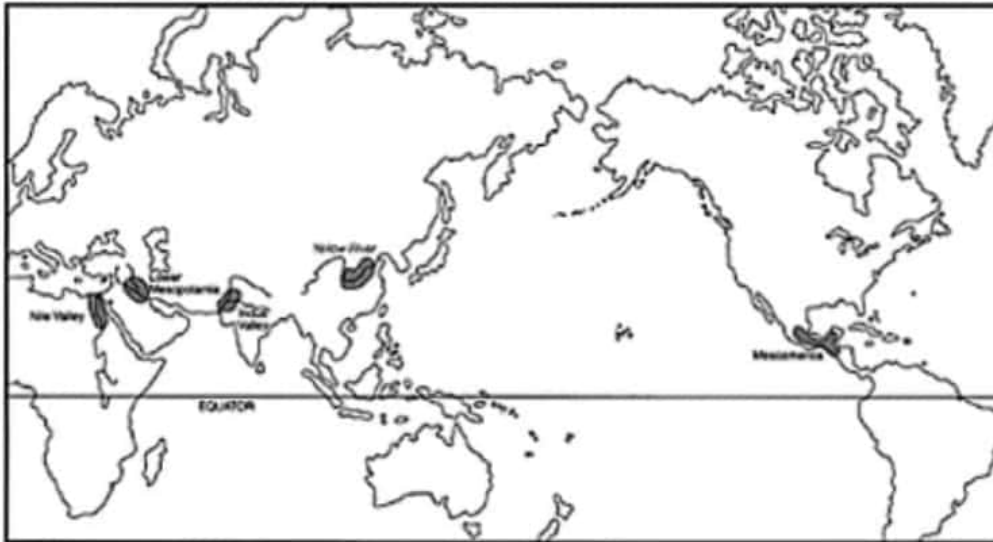
urbanisation was not a linear arrangement in which one factor caused a change in a second factor, which then caused a change in a third, and so on. Rather, the rise of civilisation should be conceptualised as a series of interacting incremental processes that were triggered by favourable ecological and cultural conditions and that continued to develop through mutually reinforcing interactions.

This approach represents a significant departure from monocausal views on the origin of cities. Its value lies in exposing the key roles of social stratification and individual and group decision-making underlying the complex reality of the transformation from nomadic life to settled urban life in the ancient world. For urban geographers, this poses the particular question of *where* such developments occurred.

## EARLY URBAN HEARTHS

As Figure 3.1 illustrates, there is evidence of early city growth in four areas of the Old World and one area of the New World:

1. *Mesopotamia*. The first cities are thought to have begun around 3500BC in lower Mesopotamia (Sumer) around the Tigris and Euphrates



**Figure 3.1 Early urban hearths**

rivers (Figure 3.2). One of the earliest cities was Ur, which from 2300 BC to 2180BC was the capital city of the Sumerian Empire, which extended north along the Fertile Crescent, possibly as far as the Mediterranean. In 1885BC Ur and the other southern cities were conquered by the Babylonians<sup>9</sup> (Box 3.3).

2. *Egypt*. There is a long-standing debate in archaeology over theories of urban diffusion or independent invention but it is most probable that agricultural and other technologies, possibly including city-building, spread along the Fertile Crescent, then south-west into the Nile valley. By 3500BC a number of the Neolithic farm hamlets along the lower Nile had risen to 'overgrown village' status and were clustered into several politically independent units, each containing large co-operative irrigation projects. The transition from settled agricultural communities to cities occurred around 3300 BC when the lower Nile was unified under the first pharaoh, Menes.

The early Egyptian cities were not as large or as densely settled as those of Mesopotamia because:

- The early dynastic practice of changing the site of the capital, normally the largest settlement, with the ascendancy of a new pharaoh limited the growth opportunity of any single city.
- The security provided by extensive desert on both sides of the Nile meant that once the valley was unified politically, Egyptian cities, unlike those of Mesopotamia, did not require elaborate fortifications and garrisoned troops for protection.

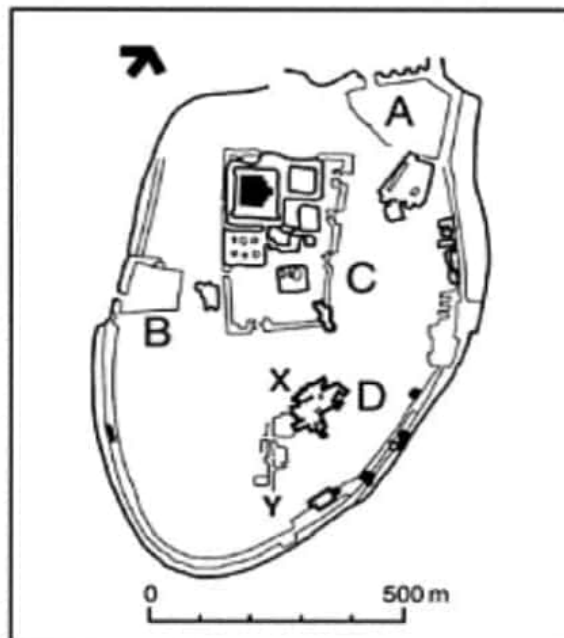


**Figure 3.2 The Fertile Crescent and ancient cities of the Middle East**

**BOX 3.3**

**Ur of the Chaldees**

The city of 2000BC was surrounded by a wall 26ft (8m) in height which enclosed an area of 89 acres (36 ha) and a maximum population of 35,000. The walled city was an irregular oval shape, about three-quarters of a mile (1.2km) long by half a mile (0.8km) wide. It stood on a mound formed by the ruins of previous buildings, with the River Euphrates flowing along the western side and a navigable canal to the north and east.



The harbours to the north and west provided protected anchorages (A and B in the plan). The *temenos* or religious precinct occupied much of the north western quarter of

the city (C in the plan). The remainder of the city within the walls was densely built up as residential quarters (D in the plan), with two-storey houses of burnt brick below and mud brick above, with plaster and whitewash concealing the change in material. House size and ground plan varied according to the space available and the owner's means, but generally rooms were arranged around a central paved courtyard that gave light and air to the house. A processional avenue (X-Y in the plan) possibly ran straight through to the *temenos*. Including those resident outside the walls, a figure of 250,000 has been estimated for the total population of the city-state.

**Source: A. Morris (1994) *History of Urban Form* Harlow: Longman**



**Plate 3.1 The pyramid at Chichen Itza in Mexico functioned as a solar calendar for the Mayan civilisation that flourished in Meso-America and the Yucatan between 300 BC and AD 1300**

3. *The Indus valley.* The Harappa civilisation appeared around 2500 BC in the Indus valley in what is now Pakistan. It was distinguished by twin capital cities, a northern one of Harappa in the Punjab and Mohenjo-daro, 350 miles down-river. The planned layout of each city was in marked contrast to the organic growth of Mesopotamian cities such as Ur. Both cities were laid out on a gridiron pattern with wide, straight streets forming 1,200 ft×800 ft (370 m×240 m) rectangular blocks. Socio-spatial segregation was common, with blocks or precincts occupied by a specific group such as potters, weavers, metalworkers and the elite. Each city covered approximately one square mile in area (640 acres/250 ha) and accommodated 20,000 people.



The Harappa kingdom was ruled from the twin capitals by a single 'priest-king' who wielded absolute power. There is some evidence of trade with the Sumerian city-states by 2000 BC but the unchanging material culture and still undeciphered written language suggests that, in contrast to the cities of the Nile valley, the Harappa culture and cities emerged independently. Following a thousand years of stability, the Harappa civilisation was destroyed by invaders around 1500BC.

4. *The Yellow River.* The valley of the Huangho (Yellow River) was the birthplace of the Shang civilisation that arose around 1800BC. The most significant feature is that individual cities, such as An-Yang, were linked into a network of agricultural villages; a town wall did not separate an urban **subculture** from a rural one.<sup>10</sup> This form of 'urban region' is without precedent in the early civilisations of Mesopotamia, the Nile and the Indus.
5. *Mesoamerica.* The earliest cities in the New World appeared around 200 BC—in southern Mexico (Yucatan), Guatemala, Belize and Honduras. Thus Mesoamerican peoples were entering a stage of development equivalent to the Neolithic of the Old World at a time when Mesopotamian cities had been in existence for 2,000 years. Of the several civilisations that evolved in Mesoamerica, the Mayan, which flourished between AD 300 and AD 1000, was the most culturally advanced. Cities such as Tikal, Vaxactum and Mayapán were centres of small states ruled by a leader drawn from a priest-hood and organised into a loose confederation. Society was highly stratified, with the elite occupying central city land around the palaces and temples, and the lower classes the urban periphery.

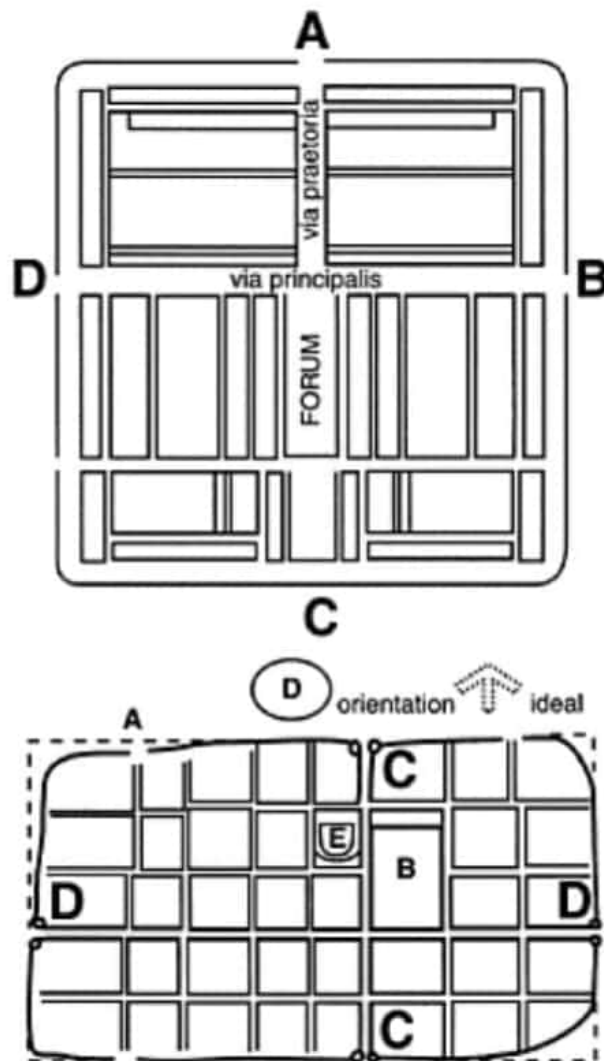
Although the debate over urban diffusion or independent origin remains unresolved, identification of a number of common features among early urban societies encouraged Sjöberg (1960) to propose a model of the socio-spatial structure of the pre-industrial city<sup>11</sup> (Box 3.4).

## THE SPREAD OF URBANISM

By 800 BC cities such as Athens, Sparta and Megara had arisen on the Greek mainland. Greek cities subsequently spread to other parts of the Mediterranean and along the Black Sea coast. The Greek urban diaspora was a direct response to population pressure and the poor agricultural base available to the mainland cities. Individual cities equipped expeditions to establish new cities. A first wave beginning around 750 BC led to settlements on the coast of the Ionian Sea, in Sicily and in southern Italy (e.g. Ephesus, Syracuse and Naples), with a second wave spreading east to reach the Black Sea by 650BC. A significant feature of Greek urban colonisation was that in contrast to the organic layout of mainland cities like Athens, the new independent cities frequently adopted a gridiron plan, irrespective of the topography of a site.

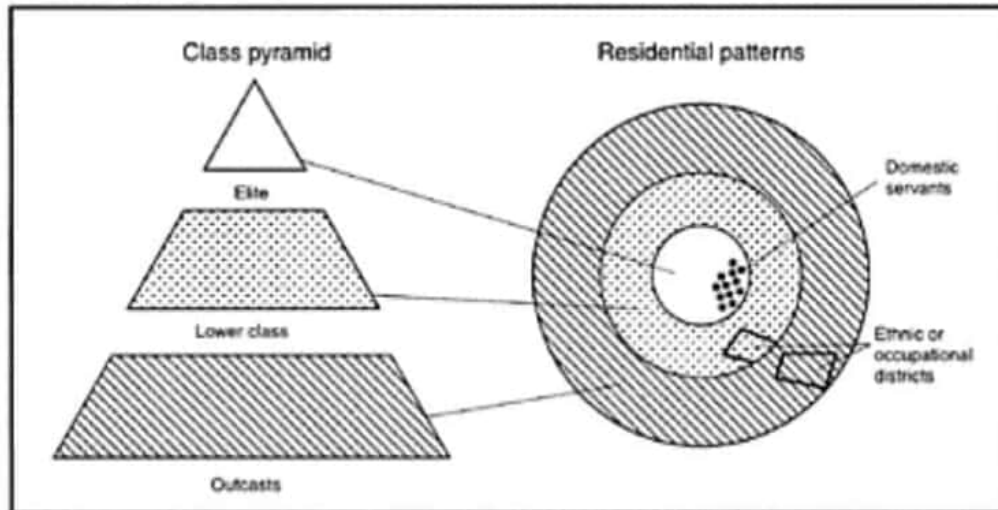
The expansion of the Roman Empire, following the defeat of Carthage in the Punic Wars (264–146 BC), carried the practice of city-building, and in particular the gridiron plan, into Western Europe. In Britain, prior to the Roman conquest in 55 BC, systematic town-planning was unknown. Figure 3.3 shows the typical form of a Roman imperial urban settlement. The town perimeter was usually square or rectangular. Within it there were two main cross-streets, the east-west *decumanus* through the centre of the town, and

the north-south *cardo*, usually bisecting the *decumanus* towards one end. Secondary streets completed the grid layout to form the *insulae* or building blocks. The *forum* (equivalent to the Greek *agora*) was typically located in one of the angles formed by the intersection of the two



**Figure 3.3 Typical form of a Roman imperial settlement and a generalised example from Roman Britain**

Source: A.Morris (1994) *History of Urban Form* Harlow: Longman

**BOX 3.4****A model of the pre-industrial city**

Sjoberg's model attempts to identify some common cross-cultural features of the pre-industrial city. Like all models claiming a wide range of application, this model of a generic pre-industrial city has been criticised for oversimplification and overextension. Sjoberg's model is most appropriate in cities where domination by an elite occurred. He identifies three social groups with social boundaries rigidly defined and often formally codified. The class pyramid was translated into a distinct spatial pattern. The elite occupied the central district around the ceremonial and symbolic institutions, including the religious, educational and political structures. Interspersed within the inner core were the servants of the elite, but the major concentration of lower-class residences was in a zone outside the core. The outcasts were relegated to the periphery, completing the spatial gradation of social status. Within each of the zones further differentiation occurred by occupation or ethnicity; however, there was limited segregation of distinct land-use functions. This generalisation has been questioned by Vance,<sup>12</sup> who gives greater emphasis to the pattern of occupational subdistricts and downplays the extent of a zone of lower-class labourers, placing them instead as lodgers scattered within the various subdistricts. Notwithstanding differences of detail, both Sjoberg and Vance depict a walking-scale city with a general social degradation from core to periphery.

Despite its simple structure, at a general level the Sjoberg model continues to serve as a useful standard against which individual cities may be assessed. For example, while Langton<sup>13</sup> found limited correspondence between the model and the social geography of seventeenth-century Newcastle upon Tyne, Radford<sup>14</sup> revealed a close relationship between the model's description of pre-industrial urban society and the situation in the ante-bellum city of Charleston SC.

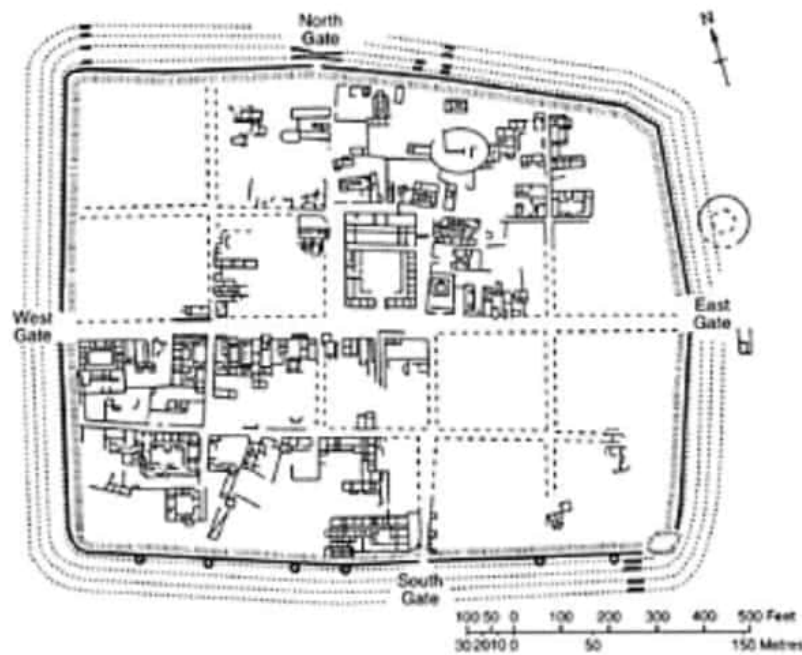
**Source: After G.Sjoberg (1960) *The Pre-industrial City* New York: Free Press**

principal streets and normally comprised a colonnaded courtyard with a meeting hall built across one end. The main temple, the theatre and the public baths were also located near the forum. Venta Silurum, a Romano-British town on the western military frontier in Wales, is a good example of Roman town planning<sup>15</sup> (Box 3.5). Many of the great modern cities of Europe can trace their urban beginnings to Roman influence, including London, Brussels, Seville, Cologne, Paris, Vienna and Belgrade.

With the fall of the Roman Empire in the fourth century AD, Muslim control of the Mediterranean trade routes during the seventh and eighth

### BOX 3.5

#### Plan of Venta Silurum (Caerwent)



The town dates from AD75 and was founded to replace a tribal hill fort situated on high ground a mile to the north-west. The settlement covered an area of 44 acres (18 ha) and typically was divided in two by the main east-west street that was lined with shops and ran between the two main gates. Two other streets running east-west and four running north-south divided the town into twenty blocks. In a north-south direction there is not one dominant street line but two, each leading to a gate in the defences in a manner typical of a military settlement.

centuries and increasing Viking raids from the north in the ninth century, much of Europe entered a Dark Age of economic and cultural stagnation. Under such unsettled conditions long-distance trade of any significance was impossible, towns became isolated and inward-looking, and urban life in Western Europe declined to its nadir by the end of the ninth century.

## URBAN REVIVAL IN WESTERN EUROPE

During the tenth century, the reopening of long-distance trade routes and the presence of urban nuclei represented by fortified settlements and ecclesiastical centres stimulated the beginnings of a commercial revival. But the rebirth of urbanism was hindered by the social and economic constraints inherent in the dominant social system of feudalism. Feudalism was a form of social organisation (or mode of production) characterised by the interrelationship of two social groups. Direct producers (peasants working the land) were subject to politico-legal domination by social superiors (feudal lords) who formed a status hierarchy headed by the monarch. Social relations under feudalism are not defined primarily through market interactions (as under capitalism) but are legally defined, and the whole society was organised in terms of a formal and rigid hierarchy of power and dominance. A key feature of the manorial (estate-based) system of economic organisation prevalent in medieval feudalism was the focus on self-sufficiency and local markets. This restricted innovation and commercial expansion. In addition, since the amount of **surplus value** extracted by feudal lords in rents and taxes was dependent less on market forces than on their expenditure requirements (which increased as they competed for political status through conspicuous consumption), there was insufficient reinvestment in the productive capacity of agriculture and industry.<sup>16</sup> The regrowth of towns in Europe coincided with the decline of the feudal system and was related to the increasing economic and political power of an emerging middle class of mer-

### BOX 3.6

#### The merchant class and urban growth in medieval Europe

During the centuries of the Dark Ages an economy based on exchange was replaced by an economy of consumption. But a new merchant class was appearing on the edge of feudal society. Probably originating among landless men, escaped serfs, casual harvest labourers, beggars and outlaws, the bold and resourceful among them—the fast talkers, quick with languages, ready to fight or cheat—became chapmen or pedlars, carrying their wares to remote hamlets. They were paid in pennies and farthings and in portable local products, such as beeswax, rabbit fur, goose quills and the sheepskins for making parchment. If they prospered, they could settle in a centre and hire others to tramp the forest paths.

The merchants made the towns. They needed walls and wall builders, warehouses and guards, artisans to manufacture their trade goods, cask makers, cart builders, smiths, shipwrights and sailors, soldiers and muleteers. They needed farmers and herdsmen outside the walls to feed them; and bakers, brewers and butchers within. They bought the privilege of self-government, substituting a money economy for one based on land, and thus were likely to oppose the local lord and become supporters of his distant superior, the king. Towns recruited manpower by offering freedom to any serf who would live within their walls for a year and a day.

**Source: M. Bishop (1971) *The Penguin Book of the Middle Ages* Harmondsworth: Penguin**

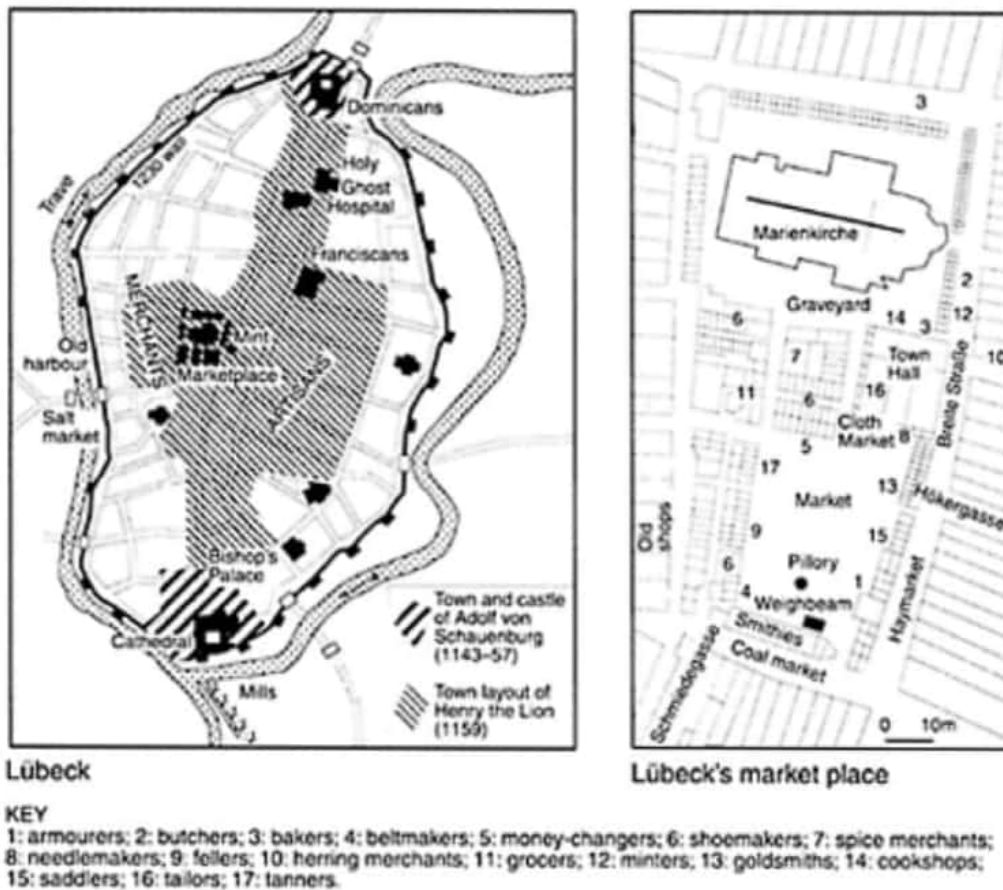
chants opposed to the economic regulation of their activities by feudal lords (Box 3.6). The urban bourgeoisie of merchants, manufacturers and financiers, often organised into guilds, obtained certain freedoms, notably the right to supervise their own markets. Successful towns obtained charters from the king and, in England, were known as boroughs. In the more urbanised parts of Europe many towns such as Milan, Florence, Cologne and Bruges were able to become self-governing municipalities (communes) capable of independent political action. In northern Italy a fiercely competitive society of rival city-states had emerged by the thirteenth century (providing a foundation for the Italian Renaissance). The economic and political freedoms obtained by the emerging class of burghesses (free merchants and craftsmen) was of central importance in the rise of European urban society and the corresponding decline of medieval feudalism. As the power of the urban bourgeoisie increased, the goal of the economy became expansion and economic profit the function of city growth.

### **THE MEDIEVAL TOWN**

The power of commerce and trade in medieval urbanism is exemplified in the German city of Lübeck, founded in 1159 by the Duke of Saxony in order to attract merchants from neighbouring lands. Situated at the western edge of the Baltic Sea, Lübeck developed into the nucleus of a German Baltic trading system organised by a confederation of towns known as the Hanseatic League that included Hamburg, Lüneberg, Cologne, Danzig and Riga. Development of regular trade with the Russian city of Novgorod brought furs and forest products, which, along with local salt for preserving fish and meat, were distributed throughout northern Europe in exchange for cloth and other manufactures. The wealth and power acquired by the merchant elite enabled them to govern Lübeck and the other Hanse cities.

Within Lübeck the central importance of trade and commerce was reflected in the urban structure (Figure 3.4). The town had a medieval cathedral and monasteries, but it was dominated by the central marketplace. This consisted of the shops of a range of specialist merchants and craftsmen concentrated together in their own areas (e.g. a street of bakers, spice merchants or tailors), with living quarters located above the shop. A mint, the new urban engine of the medieval money economy, was located close to the marketplace.

Despite the central importance of commerce, the medieval town did not sever links with the surrounding area but enjoyed a symbiotic relationship with the countryside. In particular, medieval towns, with their poor hygiene and higher mortality, grew only because of the influx of rural immigrants seeking employment and economic opportunity. Many cities, such as Venice and Nuremberg, annexed large areas of their surrounding lands to guarantee food supplies (a rural-urban symbiosis that remains common in modern China).



**Figure 3.4 The urban structure of medieval Lübeck**

In addition to the commercial function, the main characteristic of the European medieval city that distinguished it as a separate entity was its legal status, which afforded citizens privileges denied to rural dwellers. The dictum that 'town air makes free' was a powerful attraction for the rural peasantry and a major force for urban growth. The same privileges did not extend to medieval towns elsewhere. The city of Novgorod, despite its prosperity, was not politically autonomous. Neither were urban freedoms possessed by other important non-European medieval towns such as Baghdad, Delhi or Beijing. Only in the medieval West did cities acquire this special legal status.<sup>17</sup>

More generally, the new force of *capitalism* pushed aside the vestiges of feudalism, ushered in the industrial revolution, and paved the way for the emergence of the industrial city.

### **THE PRECONDITIONS FOR INDUSTRIAL URBANISM**

The complex series of innovations commonly referred to as the industrial revolution emerged in Britain from the mid-eighteenth century onwards, spreading from there to the European mainland and ultimately to other parts of the world during the nineteenth and twentieth centuries.<sup>18</sup> The industrial revolution is typically thought of in terms of technology the invention of complex machines and use of inanimate energy sources that

greatly increased worker productivity—but important cultural, social and population changes were also involved. It is important to understand these and their effects on the form of the city.

For Weber (1958),<sup>19</sup> a fundamental change in Western cultural values was a prerequisite for the industrial revolution. Central to this was the concept of profit. In medieval Europe, profit was an alien concept among artisans: the price of a product was fixed by adding to the cost of materials the fair value of one's labour. In the absence of profit (defined as the excess of the selling price of goods over their cost) there could be no large capital accumulation to invest in the development of industrial society. This change in social outlook was stimulated by the Protestant Reformation, which fostered a new set of values that stressed rationality in interpersonal relations, including trade, hard work and the right to the material rewards of one's labour. This 'work ethic', which originated in northern Europe in the sixteenth century, spread throughout Western society and in Weber's view represented a prime precondition for the industrial revolution, the development of capitalist society and the emergence of the **industrial city**, the



**Plate 3.2 The oval-shaped Renaissance-period Piazza San Pietro in Rome, constructed by Bernini in 1656 to symbolise the all-embracing power of the Church, is a potent expression of the link between architecture and ideology**

foundations of which were laid in the early modern period.



## EARLY MODERN URBANISM

In the early modern (post-medieval, pre-industrial) period, from 1500 to 1800, the economic and political powers of the European medieval city were usurped by the expansion of nation-states. Despite this relative decline in urban autonomy, however, the period witnessed increasing levels of urbanisation and the gradual emergence of an urban system in Europe.<sup>20</sup> During the early modern period urban development in Europe was characterised by cycles of growth and decline. Three main phases may be identified:

1. The 'long sixteenth century', from 1500 to 1650, was a period of general prosperity during which urban growth was widely distributed.
2. From 1650 to 1750 population growth slowed in response to war, plague and famines combined with cyclical downturn in the economy as a result of rising labour costs, falling rent incomes from property and technological stagnation. Urban growth occurred differentially. Cities that were centres of state government (such as Madrid) and port cities engaged in Atlantic trade (such as Amsterdam) experienced growth. By contrast the majority of inland trading centres, ecclesiastical seats and industrial towns suffered at least a relative loss of standing. A net result was a more hierarchical size distribution of urban places.
3. The period of 'new urbanisation' between 1750 and 1800 witnessed the growth of smaller cities and the addition of new cities to the urban system. This process was related to the political economy of **proto-industrial** production that formed as urban and rural-based precursors of factory-based manufacturing industry.<sup>21</sup> Widespread urban growth was stimulated by increases in agricultural production and incomes that promoted the growth of regional marketing, administrative and commercial centres. Many small cities with resource-based industries such as metallurgy grew as a consequence of technological innovation, and many rural places that had developed with proto-industrial textile production emerged to become industrial towns as technological change encouraged factory organisation. By the end of the early modern period the twin processes of proto-industrialisation and urbanisation had paved the way for the emergence of industrial urbanism.

## THE FORM OF THE INDUSTRIAL CITY

The nineteenth century witnessed the flowering of *industrial capitalism* in Western Europe and the rapid growth of the European industrial city. A major driving force was the factory system with its **economies of scale**, increased productivity and higher levels of output. The need for a large pool of labour as well as ancillary services and markets for their products encouraged factories to cluster together in towns. Successful towns attracted further economic activity that drew in more migrants in search of work in a cumulative process of growth (Box 3.7). Town populations grew apace. By 1800 London was the largest city in the world, with a population of over 900,000. The population of Birmingham increased by 273 per cent between 1801 and 1851 from 71,000 to 265,000, Manchester grew from 75,000 in 1801 to 338,000 in 1851 (a growth of 351 per cent) and Glasgow from 84,000 to 350,000 over the same period (an increase of 317 per cent). Lawton (1972)<sup>22</sup> estimated that almost all the 27 million increase in the British

population between 1801 and 1911 was absorbed by urban areas. In many of the great nineteenth-century industrial cities, wealth found civic expression in monumental public buildings and cultural institutions.

Industrial capitalism also brought a major realignment of social structures with the creation of two main classes:

1. *capitalists*, who invested in labour with the goal of realising a profit;
2. *labour*, that sold its skills to the owner of capital in return for a wage.

The unequal division of power between the two main classes had a direct effect on the form of the industrial city, which was developed primarily to fulfil the needs of capital. This was particularly evident in the socio-spatial segregation of the classes

### BOX 3.7

The circular and cumulative model of urban growth



The urban economy may be viewed as being made up of two interrelated sectors:

1. the basic sector, comprising activities that produce goods and services sold outside the city to obtain the means needed to purchase imports (e.g. manufactures);
2. the non-basic sector, comprising activities that provide goods and services for the city itself (e.g. retailing).

The two sectors are functionally interdependent. Thus, if the basic sector expands, workers in that sector will spend more on services available in the city, creating growth in the non-basic sector. The extent of growth will depend on the respective sizes of the two sectors. In a city with a basic: non-basic ratio of 1:4 an increase of 1000 in basic employment will lead to an increase of 5,000 (1,000+ 4,000) in total employment. This is referred to as the urban economic multiplier and is a key concept in the economic explanation of urban growth. In practice, given the variety of economic activity in any

2,800 in Glasgow. The wealthy, with their power to exercise choice, sought to maintain a healthy separation from the masses.

### **RESIDENTIAL SEGREGATION**

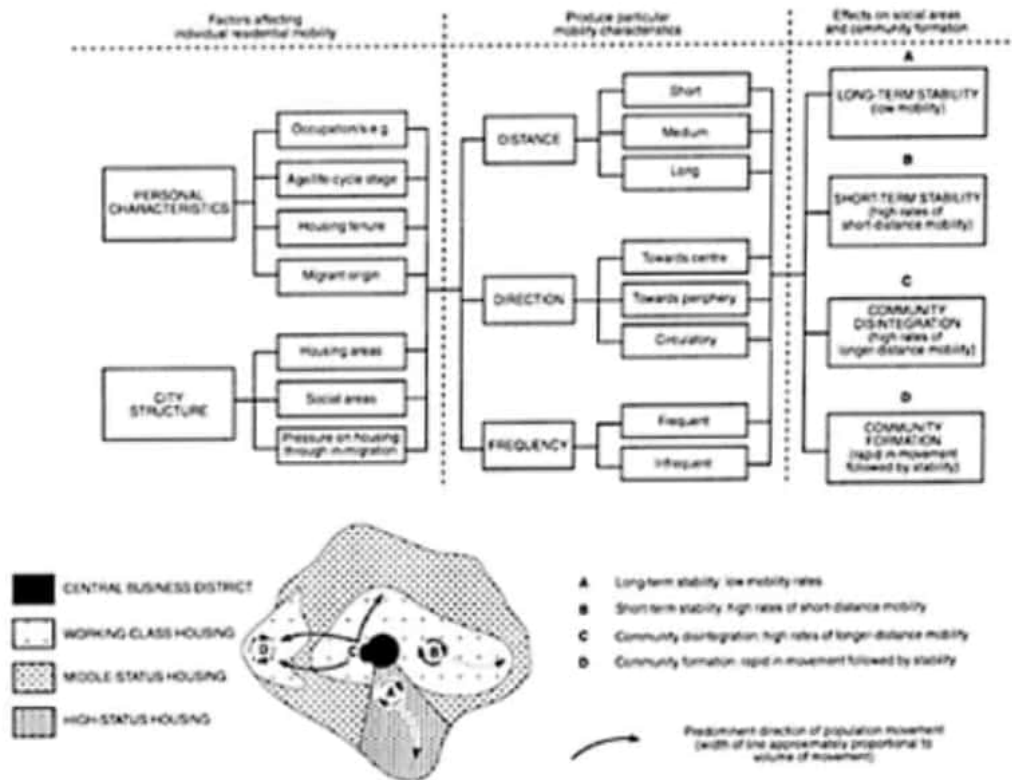
Several processes underlay the pattern of residential segregation in the Victorian city. First, in terms of the physical growth of the city and the evolution of housing areas, much of the house building was undertaken by speculative builders, who were rarely interested in building for the lower end of the market. As a result, the demand for cheap housing remained high, especially following the influx of migrants from the Irish famine in the mid-nineteenth century. This demand was met by multiple occupancy, leading to overcrowded conditions in the central slum areas of most cities. The development of new middle- and high-status housing on the urban periphery by speculative builders allowed vacated inner-city properties to filter down to poorer families.

Second, the development of residential segregation was a result of individual locational decisions within the context of a rapidly expanding urban population. Few urban dwellers remained in the same house for long in the nineteenth century, and both migrants and established residents would have been continually re-evaluating the suitability of their residential location. The main economic constraints on residential relocation were those of disposable income, the availability of employment in different areas, and access to accommodation in different sectors of the housing market. Social, demographic and cultural characteristics, as well as knowledge of the city, also influenced residential location.

Third, the process of residential differentiation was also influenced by the development of commercial and industrial areas within the city that imposed constraints on the nature of residential development. These constraints were exerted through pressure on land in certain districts, such as the invasion of inner-city housing areas by commercial development; through the provision of employment in particular areas with associated working-class housing close by; and through industrial pollution that prompted those who could do so to move away. Fourth, although land-use planning did not exist in the Victorian city and institutional forces were weaker than they are today, national and local governments affected residential development in several ways. Local by-laws, together with national health and housing legislation, imposed some control over new housing development, while town improvement schemes aimed at better water supply, sewage disposal, the closure of cellar dwellings and the demolition of slum properties affected existing housing. The rate at which new houses were built, and their tenure and form, were also constrained by private-sector factors such as the problem of land-ownership and the prevailing rate of return on investment. Finally, though based on objective standards, residential differentiation was perpetuated through popular images of different areas. Certain parts of the city could gain a reputation as being, say, of high status, unhealthy or predominantly Irish.<sup>23</sup>

The operation and outcomes of the processes of residential segregation in the Victorian city are apparent in Liverpool where, as in many nineteenth-century industrial cities, immigration was a major factor underlying urban change (Box 3.8). More generally, Pooley (1979)<sup>24</sup> provides a model that summarises the processes of residential

sorting by social class in the nineteenth-century British city (Figure 3.6). Intra-urban residential mobility is characterised by three main features—distance, direction and frequency—which, in



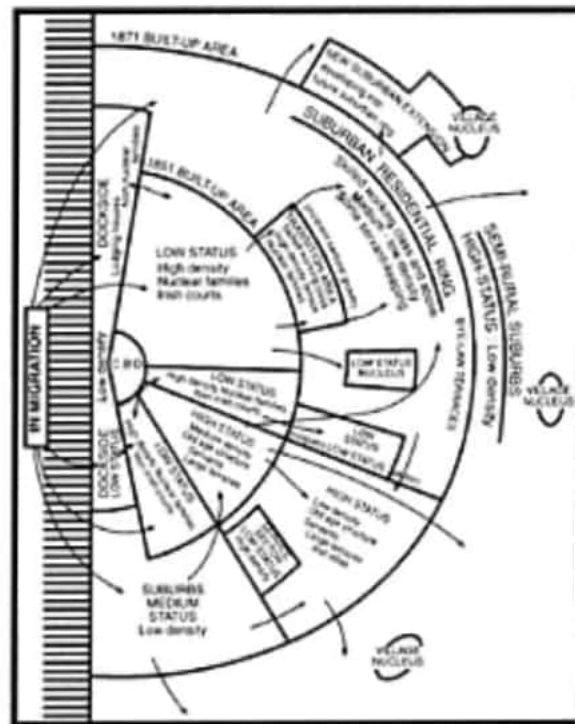
**Figure 3.6 The processes of residential sorting by class in the nineteenth-century British city, s.e.g. is socio-economic group**

Source: C.Pooley (1979) Residential mobility in the British city *Transactions of the Institute of British Geographers* 4, 258–77

**BOX 3.8**

**Socio-spatial segregation in nineteenth-century Liverpool**

By 1871 socio-spatial segregation was a feature of the urban landscape of Liverpool. It was based on three principal factors: (1) socio-economic class; (2) ethnicity (primarily Irish/non-Irish); and (3) stage in lifestyle. Though the result is a complex mix of sectors, zones and nuclei, a series of distinct elements can be identified:



1. The older central residential districts, approximately within the 1851 built-up area, had developed by 1871 into a number of distinct sectors largely constrained by the location of the docks, principal routes radiating from the centre, and surviving islands of high-status property.
2. Outside the 1851 built-up area, broadly zonal characteristics are present: population from the central area had moved out into the newer suburbs, within which there were several areas of a transitional nature. Complementary to the mainly outward direction of 'internal' population movement, the central zones were largely fed by in-migrants, some of whom were to stay permanently in low-status areas, others of whom soon moved out to the newer suburbs. There was also considerable movement between sectors of low-status housing, often caused by displacement due to urban redevelopment, though non-Irish families generally avoided the Irish areas.
3. The high-status population moved sectorally into the third peripheral zone, while within the suburban ring, lateral movement took socially upward-moving families into the high-status sector to the north.

**Source:** Adapted from R.Lawton and C.Pooley (1976) *The Social Geography of Merseyside in the Nineteenth Century: Final Report to the Social Science Research Council London: SSRC*

combination, produce different patterns of movement within the city. These three main features are, in turn, influenced by the personal characteristics of the household (e.g. socio-economic group, or stage in the life cycle) and by general features of city structure (such as the extent to which distinct social and housing areas have developed). The outcome of these factors is seen in the production of social areas characterised by

different levels of residential mobility and community stability. The model identifies four types of area, together with their typical locations in the Victorian city:

1. *Type A.* An area that maintains long-term stability owing to low rates of mobility and the replacement of population loss by in-migrants of a similar character. This type occurred most frequently within high-status areas of the city.
2. *Type B.* An area that attains short-term stability through frequent short-distant mobility of a circulatory nature, but which over a longer period succumbs to a general centrifugal flow of population. This was the dominant form of mobility in the Victorian city.
3. *Type C.* An area where there are high rates of longer-distance mobility, as from central and industrial areas under pressure for further commercial use. Rapid community disintegration may take place, and such areas are essentially unstable in character, with a largely transient population often in the process of moving towards the urban periphery. Community disintegration may also occur in high-status areas that are under pressure from a lower-status population. As the high-status migrants leave, the area may become unstable, or alternatively develop as a new, lower-status community.
4. *Type D.* An area of rapid in-migration on the urban periphery receiving large numbers of in-migrants from outside the city as well as from intra-urban population flows. Such areas are characterised by strong community formation and long-term stability.

Although the precise form of mobility patterns is dependent on local urban context, the model provides a useful summary of the major causal forces, processes and outcomes of residential mobility in the Victorian city. It is clear that in general the nineteenth-century city formed a dynamic system in which frequent individual residential moves were an integral part of a 'socio-spatial sorting mechanism' that influenced the nature of the urban residential mosaic by reinforcing some communities and destroying others.<sup>25</sup>

## HOUSING THE POOR

It is important to recognise differences between England, Scotland, North America and continental Europe with regard to housing systems and consequent social patterns in industrial cities. In England, most working-class families rented accommodation from private landlords on weekly terms. Their houses were most likely to be all or part of two- or three-storey terraced houses, whether 'through houses' (with a back door and garden), 'back-to-back' or built around courtyards, perhaps sharing water supply and toilet facilities. In Scotland and continental Europe the working classes were more likely to live in tenements, managed by a 'factor' on behalf of an absentee landlord and let on yearly terms. In North America, although most poor families rented from private landlords, rates of home-ownership were higher, and there was little involvement of philanthropic bodies and less state intervention in housing provision.<sup>26</sup>

In the industrial towns of nineteenth-century Britain, neither town councils nor employers saw it as their responsibility to build housing for the immigrants. This task was generally left to speculative builders whose *modus operandi* was to maximise the use of land and

minimise expenditure on materials and services. This architectural parsimony reached an apogee in the terraces of back-to-back



**Plate 3.3 Serried rows of nineteenth-century red-brick working-class terraced housing run down the hillside to the now disused shipyards on the River Tyne in the Elswick district of Newcastle upon Tyne**

**BOX 3.9**

The slum district of Little Ireland in Manchester, 1849

The district of Little Ireland was a typical living environment for 4,000 residents at the bottom of the social order. Engels described how the 'coal-black, stagnant, stinking river' Medlock loops through the area. The rows of back-to-back housing held an average of twenty persons per house, with its two rooms, attic and wet cellar. There was a single privy for six houses. Engels (1958 p. 71) presents a graphic description of the area: 'the cottages are very small, old and dirty, while the streets are uneven, partly unpaved, not properly drained and full of ruts. Heaps of refuse, offal and sickening filth are everywhere interspersed with pools of stagnant liquid. The atmosphere is polluted by the stench and is darkened by the thick smoke of a dozen factory chimneys. A horde of ragged women and children swarm about the streets and they are just as dirty as the pigs which wallow happily on the heaps of garbage and in the pools of filth.'<sup>27</sup>

**Source: Adapted from T.Freeman (1957) *Pre-Famine Ireland Manchester*: Manchester University Press**



**Figure 3.7 Layout of back-to-back housing in Manchester**

*Source: E. Morris (1997) British Town Planning and Urban Design Harlow: Longman*

housing constructed from the 1830s onwards. These dwellings were built in double rows under a single roof, one side facing the street and the other a parallel back street or alley or a courtyard accessible from the street at intervals through narrow passages or 'entries' (Figure 3.7). At the ends of the street or in the corner of a courtyard a standpipe for water supply and a communal earth closet were provided for the use of about twenty houses, or upwards of 150 people. The density of such developments averaged sixty houses or 200 rooms per acre (150 houses or 500 rooms per hectare), and the overcrowding, poor sanitary arrangements, lack of sunlight and absence of through-ventilation in the houses made back-to-backs the despair of medical officers (Box 3.9). As late as 1913 an inquiry into housing conditions in part of Birmingham found that:

some 200,000 people were housed in 43,366 dwellings of the back-to-back type already long condemned as injurious to health because of lack of ventilation. For the most part they contained only three rooms, and so were overcrowded. In the six worst wards, from 51 per cent to 76 per cent were back-to-backs. Even more serious was the fact that 43,020 houses had no separate water supply, no sinks, no drains, and 58,028 no separate w.c., the closets being communal and exposed in courts. This meant that over a quarter of a million people lived in cavernous conditions. The real objection to back-to-back houses lies not so much in their method of construction as in the degrading and disgusting conditions of their



outbuildings, which frequently made decency impossible and inevitably tended to undermine the health and morals of the tenants.

(Bournville Village Trust 1941 p. 16)<sup>28</sup>

Even higher residential densities were created by the tenement form of building in working-class areas of nineteenth-century Glasgow (Box 3.10).

### THE OTHER SIDE OF THE COIN

In marked contrast to the slum areas of the nineteenth-century industrial city were the status areas occupied by the elite. Many of Britain's industrial cities were characterised by marked sociospatial differentiation between the upper-class west end and lower-class east end.

The genesis of this pattern is illustrated by the westward migration of the upper middle classes in Glasgow which began in the mid-eighteenth century with the movement of the 'tobacco lords' away from the old city centre, and culminated in the classbased residential segregation of the Victorian city. The process was driven by two sets of factors. Major push factors were:

1. commercial encroachment into formerly highstatus residential areas adjacent to the central business district;
2. the deteriorating social and physical fabric of the old city centre.

The dangers of crime and vice from slum areas were compounded by the threat of cholera, which, though originating in the slums, was no respecter of class.

In addition to the push factors, the social elite of nineteenth-century Glasgow had a clearly defined set of criteria against which to judge a potential suburb. Most important was the social composition of the neighbourhood, which had to be exclusively upper class. In Glasgow's emerging west end this was ensured by:

#### BOX 3.10

Living conditions in the tenement slums of mid-nineteenth-century Glasgow

The westward migration of the wealthy from the old town not only introduced sociospatial polarisation into what had been in the eighteenth century a heterogeneous urban structure, but freed land and housing for other uses. Those parts of the old city abandoned by the elite were colonised by a working-class population that was burgeoning in response to the new industries' demand for labour. Residences previously occupied by a single wealthy family were 'made down' to accommodate large numbers of the poor in grossly crowded conditions, characterised most graphically by the wynds and vennels around Glasgow Cross. The end result of decades of making down in such places was addresses such as 'Bridgegate, No. 29, back land, stair first left, three up, right lobby, door facing'.

In 1861 two-thirds of Glasgow's population of 394,864 lived in houses with only one or two rooms and of these 60 per cent shared a room with at least four others

Overcrowding was intensified by property speculators building on any available open space to produce 'backjams' and 'backlands' tenements, which were either added to existing buildings or erected in the erstwhile gardens of the formerly wealthy burgher residences.

By the mid-nineteenth century the old city was a congeries of poor-quality housing. One street in a dark ravine of a close housed a husband, wife and two children in a 'sort of hole in the wall' measuring six shoe-lengths in breadth, between eight and nine in length from the bed to the fireplace, and of a height that made it difficult to stand upright. Densities of 1,000 persons per acre were commonplace. A notorious example was the rookery in the Drygate, where in a single close 500 people claimed a dwelling.

**Source: M. Pacione (1995) *Glasgow: The Socio-Spatial Development of the City* Chichester: Wiley**

1. an informal land-use zoning consensus among owners to reserve the area for high-quality housing despite the presence of exploitable deposits of coal, iron, brick clay, building sand and freestone;
2. restricted clauses in feu charters, leaseholds and freeholds of houses which laid down what activities were permitted, as well as details of the design of houses, provision of footpaths, type of gas lamps and sewers, and even the nature of the shrubbery. Later feu contracts also often specified a minimum market price for a given house—the whole providing an early example of 'exclusionary zoning'.

The middle classes were also attracted by the picturesque 'healthful and well aired' environment of the west end with its rolling drumlin topography, prevailing westerly winds, and location above and to the west of the industrial areas and insalubrious old town. A further attraction was the proximity of the west end to the central business district, where the majority of Glasgow's leading citizens were engaged.<sup>29</sup>

As well as spatial or territorial social segregation, in cities such as Glasgow, where 'high-rise' tenement building was the norm, vertical segregation was also prevalent. Within the tenement the principal apartments were always on the first floor, away from the noise, smell and dirt of the street but not too far to climb (Box 3.11).

The industrial city first developed in Britain, the cradle of the industrial revolution, but soon spread to Europe and North America.

## THE ORIGINS OF URBAN USA

Despite the existence of a Neolithic urban hearth in Mesoamerica, there were no pre-Columbian settlements in the territory of the future USA that could be considered of urban status. The urban origins of the USA are related unequivocally to the process of colonisation by Spanish, French and especially English settlers.

The earliest urban settlements were established during Spanish occupation of the South West in what are now the states of Texas, Arizona, New Mexico and California. This process also extended north from the Caribbean into Florida. Reps (1965)<sup>30</sup> has identified St Augustine in Florida, founded in 1565, as the first American city. As in other early Spanish settlements, this combined the functions of (1) military post

(*presidio*), (2) base for trade and farming (*pueblo*), and (3) religious centre (mission). On the west coast, in California, the Spanish mission settlements formed the pre-urban nuclei for many of the great modern cities from San Diego to San Francisco de Solano.<sup>31</sup> Nevertheless, despite the early beginnings, by the mid-nineteenth century there were no urban settlements in the South-West of comparable size to those of the East and rapidly emerging Midwest.

English colonisation of North America began in 1585 with several unsuccessful attempts by Crown-appointed adventurers to establish a settlement on Roanoke Island in North Carolina. During the seventeenth century the colonial effort passed to corporate enterprises in the shape of royal chartered joint-stock companies. In 1607 the Virginia Company of London founded Jamestown, which became a centre for the tobacco plantations and which by 1619 had attained a population of around 1,000. Reps (1965)<sup>32</sup> has divided these early British settlements into four groups:

1. the earliest tidewater colonies of Virginia and Maryland, including Jamestown and Baltimore;
2. the new towns of New England, the largest of which was Boston;
3. the towns of the middle colonies, dominated by New York and Philadelphia (Box 3.12);
4. the colonial towns of Carolina and Georgia such as Charlestown and Savannah.

Also in the seventeenth century the Dutch established Fort Orange (Albany) in 1624 and New Amsterdam (New York) two years later as their main trading posts. Farther north the French were active, founding Quebec in 1608 and Montreal in 1620, giving them effective control of the St Lawrence river valley. By the end of the seventeenth century, however, English colonisation was dominant, although settlement was still largely confined to a 50-mile (80 km) fringe of country inland from navigable waterways. In 1800, of a US population of 4 million, only some 170,000 were settled west of the Allegheny Mountains. The nineteenth century saw a shift in the population centre of gravity as the urban frontier moved westward (Box 3.13).

## THE WESTWARD PROGRESS OF URBANISM

A major obstacle to westward settlement was the difficult transportation links back to the main markets of the eastern seaboard. The importance of developments in transport technology for the expansion of urbanism is illustrated by the impact

### BOX 3.11

#### Tenement life in Glasgow

The tenements of Glasgow have provided accommodation for millions of citizens over the past 150 years. The quality of this form of housing varied across the city, and was signalled by the character of the front entrance. In working-class tenements the entrance to the close (the passage leading to the stairs) was a simple opening in the wall. In better-class tenements the close entrance might be decorated to match the windows on the floor

above, or might be adorned by a porch reached by a flight of steps from street level. The close was the communal part of the tenement, and in working-class communities was a place of social interaction where neighbours met as they entered or departed from the building or took their turn to sweep the close or wash the stairs.

At the rear of the tenement was the back court. This enclosed space, or drying area, was the common property of everyone living in the tenement. It sometimes contained a communal wash-house with a cast iron boiler heated by a coal fire, which was available to residents on a rota basis. Strict adherence to the rota was required for a peaceful existence! One could not change one's wash day to suit circumstances, and the whereabouts of the indispensable item, the washroom key, was a frequent source of friction.

The back court also accommodated the ash pits, which replaced the dung heap of earlier generations. Space in the back court was also taken up by the brick w.c. stack, affixed to the back wall of the tenement, and housing a single toilet for communal use on each half-landing. These toilet stacks replaced the dry closet or privy in the back court which served the whole tenement until the Police Act of 1892 made internal sanitation compulsory.

As far as the internal structure of the building is concerned, the prime characteristic of the tenement as a building form was its flexibility. An ingenious architect could provide a reasonable variety of different house sizes and plans within the same solid rectangular framework. The four-storey Victorian tenement could contain five large houses of six or more rooms or, on a building plot of the same size, to meet totally different requirements, twenty-five single-apartment houses. The diagram illustrates the layout of a west-end tenement at the higher end of the market (with two flats of four or five main rooms on the upper floor). At the other



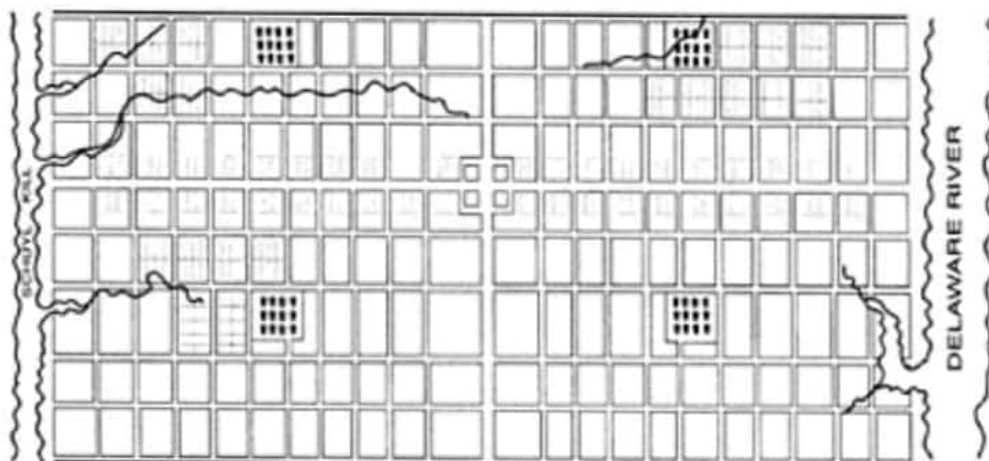
end of the social scale were one-room and two-room apartments, commonly known as 'a single end' and a 'room and kitchen' respectively. In the diagram a 'single end' is grouped between two two-room flats, and this 2:1:2 formation was probably the most common tenement type in Glasgow. In the 'room and kitchen' arrangement the room or

parlour faced the street, as in the better-class tenements. A bed closet was provided on the wall opposite the window, the built-in bed hidden from view behind a door until the practice was forbidden by the Glasgow Buildings Regulation Act of 1900. The parlour would be furnished to the extent of the occupants' means, and, perhaps surprisingly in view of the cramped size of the flat, was often kept for best and used only 'for visitors' or for special occasions such as a wedding or funeral. The family lived and slept in the kitchen at the rear. In the kitchen the open bed recess contained a built-in bed about 2 ft 6 in. (75 cm) above the floor, below which could be stored a smaller bed that could be wheeled out at night for the children. Toilet facilities were provided by a communal w.c. on the half-landing of the stair. It is salutary to note that at the outbreak of the First World War the great majority of Glasgow families lived in one- or two-room flats, and that as late as 1951 this form of accommodation made up half the city's housing stock.

**Source:** M. Pacione (1995) *Glasgow: The Socio-Spatial Development of the City*  
**Chichester: Wiley**

### BOX 3.12

Philadelphia: a seventeenth-century planned town



In 1681 William Penn (1644–1718) was granted a charter from Charles II establishing him as governor and proprietor of Pennsylvania (in return for cancellation of a £16,000 royal debt owed to Penn's father). Penn appointed three commissioners to lead the first group of settlers and provided them with a detailed brief for the location and planning of a new town.

The gridiron plan served the immediate purpose of quickly dividing up the urban land into equal-size plots to be allocated to settlers by lottery. The layout also reflected Penn's experience of the Great Plague and the Great Fire of London, and his determination to create a healthy and safe urban environment. Two main avenues 100ft (30m) in width crossed in a central square of 10 acres (4 ha), with minor squares of 8 acres (3 ha) in each quarter of the city. The central square would accommodate a number of public buildings. Penn also instructed that space should be allocated to allow every house to be located in the centre of the plot if the owner desired, thereby providing recreation space and

reducing the fire hazard.

After three years Philadelphia had 600 houses, which increased to 2,000 by 1700. Although Penn had envisaged a dispersed pattern of growth between the two rivers, the dominance of the Delaware as a trade route meant that the city expanded outwards from the port area. Not until well into the nineteenth century did the city reach the area of the central square designated in the master plan, a new city hall being completed there in 1890. Subsequently, in the twentieth century, the migration of the central business district (downtown) away from the waterfront led to the gradual decay of the old port area and earliest residential districts, providing opportunities for redevelopment.

of the construction of the Erie Canal between the Hudson River and Lake Erie. When the canal reached the obscure village of Buffalo in 1824 the decimation of freight costs over the 363 miles to the Hudson River led to the construction of 3,400 houses in the following year, with the town reaching a population of 18,000 by 1840. Other settlements on the new waterway such as Rochester, Utica, Syracuse and, principally, New York all grew rapidly into prosperous cities (Box 3.14).

Borchert (1967)<sup>33</sup> has proposed a model of US urban development related to changes in technology.

#### STAGE 1: THE SAILING VESSEL AND HORSE-DRAWN WAGON ERA TO 1830

Throughout the eighteenth and early nineteenth centuries the North American economy was based almost entirely on agriculture and the export of staple products. The main function of the few cities that existed was mercantile, involving the import of manufactured goods from Europe and export of primary produce. The largest cities were on the Atlantic seaboard, with New York, Philadelphia, Boston and Baltimore dominating the trade of the original colonies. The next largest cities were located on the riverine routes into the interior at New Orleans, Quebec and Montreal. Most of the cities beyond the Appalachians were small service centres for surrounding agricultural settlements, the largest in 1830 being Cincinnati with 24,800 inhabitants.

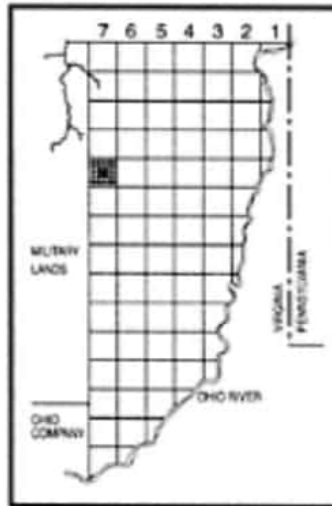
#### STAGE 2: THE AGE OF STEAM AND THE IRON RAIL, 1830–70

The proportion of the US population living in urban areas rose from 8 per cent to 23 per cent over the period 1830–70. In addition to the continued growth of the cities of the eastern seaboard, which had developed as manufacturing bases and key centres for the commercial exploitation of the developing continent, the most dramatic trend was the spread of urbanism in the Midwest associated with the construction of canals and railways. The rail network expanded from 9,000 miles of track in 1850 to 53,000 miles by 1870 and, as well as linking all the east-coast cities, had reached Oakland on the west coast. Inland cities in accessible locations boomed. Chicago on Lake Michigan, with waterway links to the east and the Great Lakes and Erie Canal, grew into a city of 300,000 people by 1870. The only large cities beyond the east coast and the Midwest were New Orleans (population 191,000), with a rich agricultural **hinterland**, and San

Francisco (population 150,000), which developed rapidly following the gold rush of 1849.

### BOX 3.13

The township and range system of land division



The westward expansion of settlement in the USA was based on a national land policy enshrined in the Land Ordinance of 1785. The law required that the territory to be sold should be laid out in regular sections or townships 6 miles square. Each township was divided into thirty-six square sections of one square mile or 640 acres (260ha). Half the land was to be sold as townships, the other half as sections. Section 16 in each township was reserved for the support of schools.

The first seven ranges of townships were surveyed by 1786 immediately west of the Ohio river (numbered 1–7 from east to west). An example township in the seventh range is shown divided into its thirty-six sections. Each section could also be divided into quarter-sections. Section boundaries often provided lines for roads, and villages and towns grew up at junctions or were laid out and promoted by property speculators.

### STAGE 3: THE AGE OF STEAM AND STEEL, 1870–1920

Over the period 1870–1920, the urban population of the USA experienced a fivefold increase to 41 million, and urban development was evident across the continent. On the east coast the New York metropolitan area had quadrupled in population to 5.3 million by 1920, while Philadelphia tripled to reach 1.8 million. In the Midwest, Chicago moved from being the fifth-largest city in North America to being the second largest and experienced a ninefold increase in population to 2.7 million. On the west coast a growing number of cities had populations in excess of 100,000, including Los Angeles. By contrast, in the South, urban development was still at an incipient stage.

The continental urbanisation wave was driven by several forces, including:

1. the increasing integration of the North Ameri-

**BOX 3.14**

**New York: the urban explosion**  
 In contrast to Philadelphia, New York began



without a master plan, and only after 150 years of organic growth was the first gridiron laid out. When the British captured the city in 1664 the population was around 1,500. Following the opening of the Erie Canal, the city's population mushroomed from 150,000 in 1820 to 300,000 in 1840, 515,000 in 1851 and 942,000 by 1870. To accommodate expansion, city commissioners were authorised to lay out a gridiron on the undeveloped part of Manhattan Island. As the map shows, the plan of 1811 imposed a uniform grid based on twelve 100ft (30m) wide north-south avenues and 155 east-west streets, 60ft (18m) in width. The southern start line of the commissioners' plan is clearly seen against the earlier, randomly aligned grids.

By 1850 the infilling of the grid had reached Forty-Second Street without any provision for major public open space. In 1858 the culmination of a fourteen-year campaign led to the appointment of Olmsted and Vaux to design Central Park. By 1898 the current five-borough city of New York was constituted with the addition of Brooklyn, Bronx, Queens and Staten Island to Manhattan.

The expansion of New York was facilitated also by advances in structural engineering that allowed the Hudson and East Rivers to be bridged and tunnelled under, and that underlay the construction of skyscrapers and high-speed elevators. New York is today a 'world city' and one of the command centres of the global economy.



- can transport system due to the standardisation of rail gauges and increase in transcontinental lines;
2. the influx of large numbers of poor immigrants, which provided a continuous supply of low-cost labour;
  3. the introduction of the assembly-line factory system, exemplified by the 'Fordist' production system of the Detroit automobile industry, which spread rapidly to all types of manufacturing;
  4. the large surpluses being produced by a mechanised agricultural system;
  5. the entrepreneurial activity of family-owned corporations. Pittsburgh, for example, became the base of the Carnegie Iron and Steel Corporation, which in 1901 merged with other producers to become US Steel.

Consequently, by the early decades of the twentieth century the basic alignment of the North American urban system had been established.

#### STAGE 4: THE AGE OF THE AUTOMOBILE AND AIR TRAVEL, 1920–70

Over the period 1920–70 the proportion of the US population living in urban places of 5,000 or more people increased from 47 per cent to 70 per cent. In geographical terms the major changes in the distribution of the urban population were:

**TABLE 3.1 THE FASTEST-GROWING US  
CITIES AND BIGGEST POPULATION  
LOSERS, 1980–90**

<i>The fastest-growing</i>				<i>The big population losers</i>			
<i>City</i>	<i>1980</i>	<i>1990</i>	<i>% change</i>	<i>City</i>	<i>1980</i>	<i>1990</i>	<i>% change</i>
1. Moreno Valley CA	28,309	118,779	319.6	1. Gary IN	151,968	116,646	-23.2
2. Rancho Cucamonga CA	55,250	101,409	83.5	2. Newark NJ	329,248	275,221	-16.4
3. Plano TX	72,331	128,713	77.9	3. Detroit MI	1,203,369	1,027,974	-14.6
4. Irvine CA	62,134	110,330	77.6	4. Pittsburgh PA	423,960	369,879	-12.8
5. Mesa AZ	163,594	288,091	76.1	5. St Louis MD	452,804	396,879	-12.4
6. Oceanside CA	76,698	128,398	67.4	6. Cleveland OH	573,822	505,616	-11.9

*Source: adapted from E. Phillips (1996) City Lights New York: Oxford University Press*

1. the emergence of super-metropolitan and megalopolitan urban areas;

2. the spread of metropolitan urban development across most of the continent;
3. the growth of urban areas beyond the old central cities.

These spatial trends were facilitated by transport developments, including the widespread use of the automobile and construction of the interstate highway system.

The highest rates of urban growth occurred in the sunbelt, with slower growth and in some cases negative growth in the older cities of the North-East (Table 3.1). Between 1940 and 1980 Phoenix grew by 1,107 per cent and Albuquerque by 836 per cent. The phenomenal growth rates of the sunbelt cities were related to the exploitation of petrochemicals and the growth of the microelectronics, computer and aerospace industries. The new industries' need for a smaller but highly trained and educated workforce freed them from the need to locate close to a large pool of factory labour and laid greater emphasis on other factors, including markets, prevailing wage and tax rates, and a benign climate. Other key factors in the expansion of sunbelt cities included:

1. the growth of federal military expenditure;
2. the migration of large numbers of retirees, often on government pensions, drawn by a warm climate and low cost of living;
3. an improved standard of living and changing lifestyle resulting in more leisure time;
4. the entrepreneurialism and civic boosterism of the political and economic leadership of sunbelt cities, which attracted inward investment.<sup>34</sup>

In terms of morphology, the cities of the sunbelt exhibit a distinctive character: shaped by the automobile, they have no need for a dominant downtown area but sprawl over the landscape in a low-density form of development encapsulated in the phenomenon of the **edge city**.

#### STAGE 5: THE AGE OF DECONCENTRATION, 1970 TO THE PRESENT

The continuation and extension of these trends to other regions during the latter part of the century allows us to add a fifth stage to Borchers (1967) model. This is characterised by a decrease in the size of the larger metropolitan areas, a decline in the density of the urban population, and increasing segregation of people in communities according to socio-economic factors such as class, race, age or language. The counterurbanisation trend is driven by industrial decentralisation, the insecurity and discomfort of metropolitan life as perceived by those able to exercise a choice, a search for amenities and retirement loci, and improved transportation and communications networks which enable people to enjoy an urban lifestyle without being permanently resident in a large metropolitan area. These characteristics are exhibited most clearly in the concept of the **post-industrial city**.

#### POST-INDUSTRIAL URBANISM

Post-industrialism is a social process that has had a major impact on the city. Its principal characteristics are:

1. changes in the economy leading to a focus on the service sector rather than on manufacturing;
2. changes in the social structure that afford greater power and status to professional and technological workers;
3. changes in the knowledge base, with greater emphasis on R&D;
4. greater concern for the impact of technological change;
5. the advent of advanced information systems and intellectual technology.

According to Bell (1973) the industrial post-industrial watershed was reached in 1956 in the USA when, for the first time in the history of industrial civilisation, the number of white-collar workers exceeded the number of blue-collar workers.<sup>35</sup> For Bell (1973) the advent of post-industrial societies meant fundamental changes in the nature of economic organisation and social relations. The resultant post-industrial city is characterised by:

1. an employment profile that reflects the twin processes of deindustrialisation and tertiarisation (see Chapter 14) as part of a restructuring of the economic base from a Fordist mode of industrial production to more flexible (post-Fordist) production systems (e.g. high-tech knowledge-based industries);
2. greater integration into the global economic system;
3. restructuring of urban form;
4. emerging problems of increasing income inequality, social and spatial segregation, privatisation of urban space and growth of defensible spaces.

Post-industrial urbanism is characterised by fragmentation of urban form and its associated economic and social geographies.<sup>36</sup> For some commentators this socio-spatial fragmentation heralds the advent of the postmodern city,<sup>37</sup> and is evident in the 'quartering' of urban space.

### **THE QUARTERING OF URBAN SPACE**

It is possible to identify a number of increasingly separate 'residential cities'. Each has its source in a parallel, (although not always congruent), 'city of business and work'. The five principal formations of parallel residential and business cities are: (1) the luxury city and the controlling city, (2) the gentrified city and the city of advanced services, (3) the suburban city and the city of direct production, (4) the tenement city and the city of unskilled work, (5) the abandoned city and the residual city.

1. *The luxury areas of the city*, while located in clearly defined residential districts, are not tied to any quarter. For the wealthy the city is less important as a residential location than as a location of power and profit. If they reside in the city, it is in a world largely insulated from contact with non-members of their class. The controlling city tends to be located in the high-rise centres of advanced services. The controlling city parallels the luxury areas of the residential city in many ways but not necessarily in physical proximity. The luxury city and the controlling city come together in space in the citadel where those at the top of the economic hierarchy live, work, consume and recreate in protected spaces.

2. *The gentrified city* serves professionals, managers and 'yuppies' who may be doing well for themselves, yet work for others. Their residential areas are chosen for environmental or social amenities or access to white-collar jobs. Gentrified working-class neighbourhoods, older middle-class areas and new developments with modern and well-furnished apartments all serve their needs. The parallel city of advanced services consists of professional offices with many ancillary services internalised in high-rise office towers and is enmeshed in a technologically advanced communications network. The skyscraper centre is the stereotypical form, as at La Défense in Paris or Canary Wharf in London's Docklands.
3. *The suburban city* of the 'traditional' family is sought out by better-paid blue- and white-collar workers, the lower middle class. It provides stability, security and a comfortable world of consumption. The home as a symbol of self, exclusion of those of lower status, physical security against intrusion, political conservatism, comfort and escape from the workaday world (thus often incorporating substantial spatial separation from work) are characteristic. The city of direct production parallels, but is not congruent with, the residential suburban city in either time or space. It includes



**Plate 3.4 The social polarisation of the postmodern city is displayed by the scavenger collecting discarded drinks cans from rubbish bins in the up-market Sixteenth Street mall in Denver CO**

not only manufacturing but also the production aspects of advanced services, government offices and the back offices of major firms located in clusters in various locations within the metropolitan area that facilitate easy contact with

clients. An example in New York City is the industrial valley for the printing industry between midtown Manhattan and the financial district.

4. *The tenement city* serves as home for lower-paid workers who often have irregular employment, few benefits, limited job security and little chance of advancement. In earlier days, the residents of these 'slum neighbourhoods' were often the victims of clearance and urban renewal programmes. Today they may experience abandonment, displacement, service cuts, deterioration of public facilities and political neglect. Struggles against displacement by urban renewal or gentrification have led to militant social movements in many cities. The city of unskilled work includes the informal economy, small-scale manufacturing, warehousing, sweatshops and unskilled consumer services. These are closely intertwined with the cities of direct production and advanced services and thus are located near them, but separately in scattered clusters. The economic city of unskilled work parallels the tenement city.
5. *The abandoned city* is the place of the very poor, the excluded, the never-employed and permanently unemployed, and the homeless. In older industrialised countries it will have a crumbling infrastructure and deteriorating housing, typical of slums and ghetto areas of the inner city. In less developed countries the excluded often live in peripheral squatter settlements. The abandoned city is paralleled in economic terms by the residual city the city of the less legal portions of the informal economy. In the developing countries the two cities overlap. In industrialised countries the residual city is the place where otherwise undesirable land uses are located. Many of the most polluting and environmentally detrimental components of the urban infrastructure, necessary for its economic survival but not tied directly to any economic activity, are located here. These include sewage treatment plants, incinerators, AIDS residences, homeless shelters, juvenile detention centres and jails.

### THE POST-INDUSTRIAL/ POSTMODERN CITY

Just as industrialism left its imprint on the nineteenth-century city,<sup>38</sup> so post-industrialism/post-modernism promoted changes in the form of the late twentieth-century city. Soja (1995)<sup>39</sup> has characterised these trends in terms of six geographies of restructuring:

1. *The restructuring of the economic base of urbanisation.* This involves a fundamental change in the organisation and technology of industrial production, and the attendant social and spatial division of labour. This is marked by a shift from Fordist to post-Fordist urbanisation, from the tight organisation of mass production and mass consumption around large industrial complexes to more flexible production systems vertically disintegrated but geographically clustered in 'new industrial spaces'.
2. *The formation of a global system of world cities.* This has the effect of expanding both the 'outreach' of particular world cities, bringing most of the globe within their effective hinterland, and their 'inreach', bringing into the global city capital and labour from all major cultural realms. In brief, the local is becoming globalised and the global localised in a process of 'glocalisation'.<sup>40</sup>
3. *The radical restructuring of urban form.* This restructuring has generated a large number of neologisms, including **megacity**, outer city, edge city, metroplex,

**technoburb, post-suburbia**, technopolis, heteropolis and exopolis to indicate a process whereby the city is 'simultaneously being turned inside out and outside in'.<sup>41</sup> The spatial organisation of the post-industrial/postmodern city is significantly different from that of the early modern city, exemplified in the neat concentric and sectoral models of the Chicago school (see Chapter 7), or even the more disjointed late modern city with its dominant central business district, **inner city** of poor and **blue-collar** workers, and sprawl of middle-class dormitory suburbs.

Among the most obvious features of the post-industrial/postmodern city is the urbanisation of suburbia, but change has also affected the older central cities including significant reductions in density and the gentrification of former working-class neighbourhoods. As we shall see in Chapter 4, some of the large metropolitan regions have also experienced renewed growth after several decades of population decline. On a larger scale is the emergence of megacities, such as Mexico City.

4. *The changing social structure of urbanism.* Postmodern urbanism is associated with the development of new patterns of social fragmentation, segregation and **polarisation**, most evident in highly visible lifestyle differences and a growing gap between rich and poor. The socio-economic structure of the postmodern city is increasingly fluid and fragmented in ways that reduce the interpretative value of simple class-based divisions.
5. *The rise of the carceral city.* The complex geographies of postmodern cities have made them increasingly difficult to govern via traditional local-government structures. This has promoted the appearance of 'carceral' areas of walled-in residential estates protected by armed guards, shopping malls made safe by electronic surveillance, 'smart' office buildings impenetrable to 'outsiders', and neighbourhood-watch schemes organised by concerned homeowners.<sup>42</sup> More positively, these developments have refocused attention on 'the politics of place', bringing enhanced local political consciousness over who controls and benefits from the restructuring of urban space.
6. *A radical change in urban imagery.* This refers to our images of the city and how these affect our behaviour and lifestyle in the postmodern city. Hollywood and Disneyland, and their equivalents elsewhere, produced a modernist hyper-reality as entertainment, but in the postmodern city hyper-reality has diffused from such specialised factories into everyday life.<sup>43</sup> The popular media and expanding communications network have helped to promote the effects of hyper-reality on how people eat,

### BOX 3.15

Los Angeles: the archetypal postmodern metropolis

Los Angeles has been described as the quintessential postmodern metropolis—not because it is a model for all other cities, but because the processes of postmodernism are displayed with particular clarity in the city. These may be illustrated with reference to six geographies or restructuring processes:

1. *The restructuring of the economic base of urbanisation, seen in:*

- the growth of new technopolis outside the old industrial zone in what were once

dormitory suburbs or agricultural land, exemplified by the clusters of high-technology aerospace and electronics firms and industrial parks in Orange County and the San Fernando Valley;

- the growth of the film and entertainment industry;
- the presence of low-skill, labour-intensive, fashion-sensitive growth industries such as the apparel, furniture and jewellery industries, mostly around downtown Los Angeles but increasingly dispersed throughout the metropolitan area;
- the growing finance, insurance and real estate (FIRE) sector providing business services to both domestic and foreign capital.

2. *The formation of a global system of world cities*, seen in:

- the city's growing importance as a world financial and trade centre;
- the creation of urban multiculturalism, with more than one-third of the 9 million residents of Los Angeles County foreign-born.

3. *The radical restructuring of urban form*, seen in the complex geography of population and employment growth in the metropolitan area. The city of Moreno Valley, for example, grew rapidly during the 1980s as families moved there in anticipation of jobs. The non-appearance of the promised jobs led to overcrowded schools, poor social services, gridlocked freeways and four-hour daily commuting journeys.

4. *The changing social structure of urbanism*. Inequality is a deeply embedded facet of Los Angeles life, and the disparity between rich and poor continues to widen, with an increasing percentage of low-wage workers and a steady rise in the poverty rate (from 11 per cent in 1969 to 15 per cent in 1989) and in levels of homelessness. Economic inequalities often coincide with racial and ethnic divisions, with African-Americans, Latinos and Asians represented disproportionately at the bottom of the economic ladder, and located in inner-city areas such as Watts. The fluidity of postmodern urban restructuring is evident in the rapid racial transition in areas such as Huntington Park and Maywood, which have moved from being 80 per cent Anglo in 1965 to 90 per cent Latino.

5. *The rise of the career city*. The carceral (imprisoning) landscape of Los Angeles has been characterised as 'the built environment of security-obsessed urbanism', seen in the gated communities and voracious consumption of private security services, Nimby protest movements, increasing suburban separation, exclusionary zoning regulations and the hardening of the city against the undesirable poor, with absent public lavatories, razor wire-protected trash bins, and overhead sprinkler systems that operate randomly through the night to deter pavement (sidewalk) sleepers.

6. *A radical change in the urban imagery*. Los Angeles is the world's leading centre for the production and marketing of hyper-reality. Not only have these image products reached around the globe (who is not familiar with the voyages of the Starship *Enterprise?*), but they also affect the local urban landscape. In the 'theme-parked' environment of Los Angeles one can choose to live in a place that caters for a particular lifestyle—for example, for the elderly, swinging singles or gay/lesbian communities—or occupy a 'dreamscape' replica of a Greek island, Little Tokyo or old New England.

work, dress, sleep, vote, enjoy leisure that is, all the activities that underlie the social construction of urban space.

Los Angeles in the late twentieth century assumed a position with regard to urban theory comparable to that of Chicago in the early twentieth century (Box 3.15). A number of academic and popular accounts have constructed Los Angeles as an archetype of contemporary and future urbanisation.<sup>44</sup> These should not be accepted uncritically, however. In particular, it is important to reflect on how widespread the phenomenon of the post-modern city is. To suggest that the postmodern metropolis of Los Angeles offers a general model for the interpretation of contemporary urbanisation would be incorrect. As with the urban models of the Chicago school, so the greatest contribution of the California school of urban geography lies not in the modelling of urban form but in the exposition of the forces influencing contemporary urban landscapes which have been identified first and most visibly in Los Angeles.