Tokyo began to grow in the late 16th century around the castle of the Edo Shogunate (near the present Imperial Palace, Figure 15.12). Later religious, cultural and financial districts developed to the north-east. Over the centuries, the mainly wooden-built city was destroyed several times, including during the 1923 Kanto earthquake (140 000 deaths) and by US aircraft in 1945. The modern city has no single CBD but, rather, has several nuclei each with its own specialist land use and functions – government offices (Figure 15.13), shopping (Figure 15.14), finance, entertainment, education and transport. Most of these nuclei are linked by one of Tokyo's many railways, the Yamanote line, which forms a circle with a diameter of 7 km.

Ikebukuro
(shopping and offices)

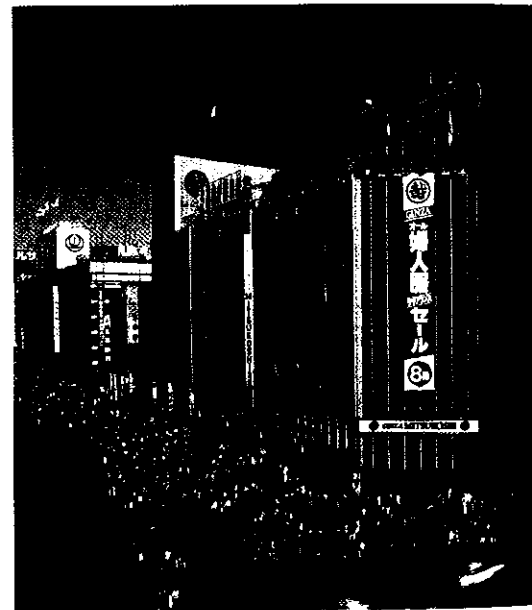- early centres
- present-day nuclei

0   2 km

Shinjuku
(government offices, shopping and entertainment)

Ueno
(originally a temple town)

Akasaka
(original site of Edo Castle, now the Imperial Palace)

Asakusa
(old commercial and entertainment centre)

7 km

Yamanote railway line

Marunouchi
(business and financial centre)

Roppongi
(Parliament, education and entertainment)

Ginza
(shopping and entertainment)

Shibuyu
(shopping, young people's entertainment)

Tokyo Bay

port/trade area

Sumida River

Figure 15.12
Multiple nuclei in Tokyo, 1994
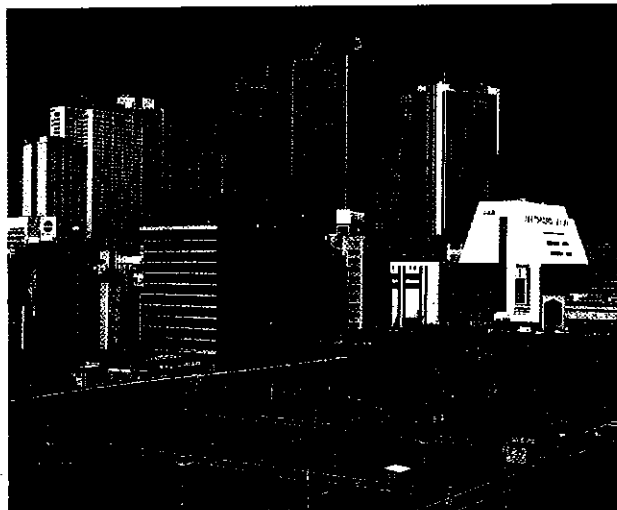
Figure 15.13
The Shinjuko business district

Figure 15.14
The Ginza shopping district

Figure 15.15
Limitations/criticisms of the four urban models

	Burgess	Hoyt	Mann	Ullman–Harris
1	zones, in reality, are never as clear-cut as shown on each model			
2	each zone usually contains more than one type of land use/housing			
3	no consideration of characteristics of cities outside USA and north-west Europe			
	based on 1 USA city	based on 142 USA cities	based on 3 English cities (in north and Midlands)	based on cities in economically more developed world
4	redevelopment schemes and modern edge-of-city developments are not included (most of the models pre-date these developments)			
5	based mainly on housing: other types of land use neglected		industry not always to north-east of British cities	
6	cities not always built upon flat plains			
7	tended to ignore transport			

Figure 15.16
Bid–rent curves

A–A rent that commerce is willing to pay
B–B rent that industry is willing to pay
C–C rent that residential users are willing to pay

rent

CBD
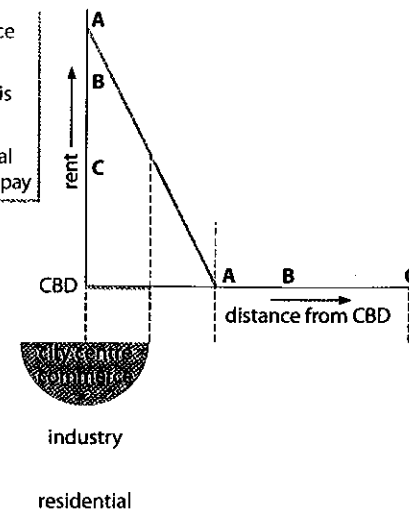
distance from CBD

industry

residential

The land value model or bid–rent theory

This model is the urban equivalent of von Thünen's rural land use model (page 471) in that both are based upon locational rent. The main assumption is that in a free market the highest bidder will obtain the use of the land. The highest bidder is likely to be the one who can obtain the maximum profit from that site and so can pay the highest rent. Competition for land is keenest in the city centre. Figure 15.16 shows the locational rent that three different land users are prepared to pay for land at various distances from the city centre.

The most expensive or 'prime' sites in most cities are in the CBD, mainly because of its accessibility and the shortage of space there. Shops, especially department stores, conduct their business using a relatively small amount of ground-space, and due to their high rate of sales and turnover they can bid a high price for the land (for which they try to compensate by building
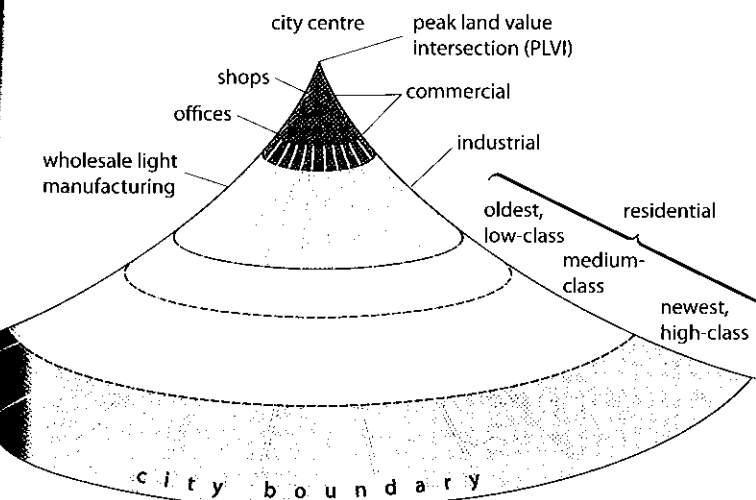
upwards and by using the land intensively). The most valuable site within the CBD is called the **peak land value intersection** or **PLVI** – a site often occupied by a Marks and Spencer store! Competing with retailers are offices which also rely upon good transport systems and, traditionally, proximity to other commercial buildings (this concept does not have the same relevance in centrally planned economies).
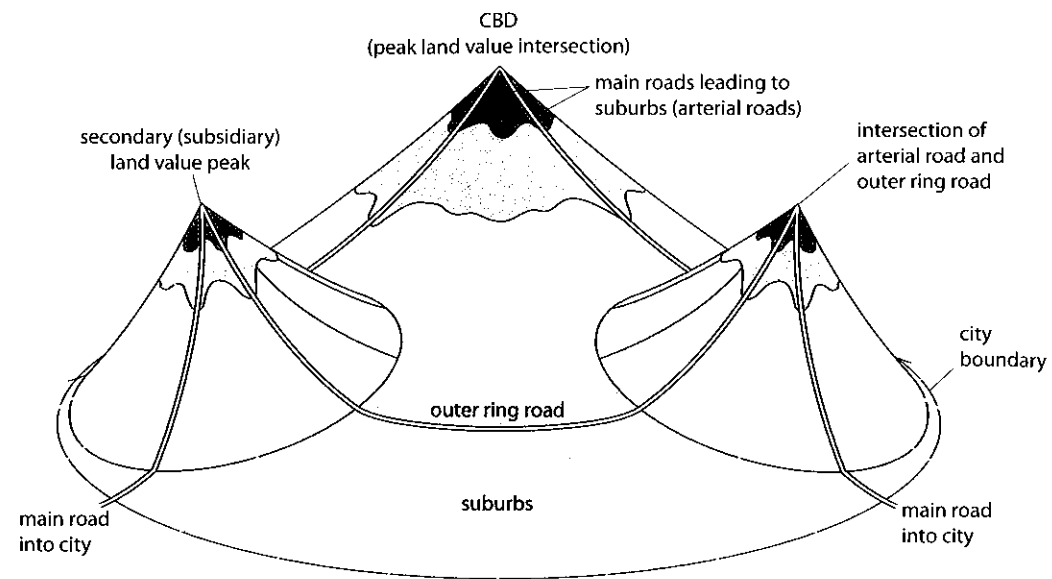
Away from the CBD, land rapidly becomes less attractive for commercial activities – as indicated by the steep angle of the bid–rent curve (A–A) in Figure 15.16. Industry, partly because it takes up more space and uses it less intensively, bids for land that is less valuable than that prized by shops and offices. Residential land, which has the flattest of the three bid–rent curves (C–C), is found further out from the city centre where the land values have decreased due to less competition. Individual householders cannot afford to pay the same rents as shopkeepers and industrialists.

The model helps to explain housing (and population) density. People who cannot afford to commute have to live near to the CBD where, due to higher land values, they can only obtain small plots which results in high housing densities. People who can afford to commute are able to live nearer the city boundary where, due to lower land values, they can buy much larger plots of land, which creates areas of low housing density. Figure 15.17 shows the predicted land use pattern when land values decrease rapidly and at a constant rate from the city centre. The resultant pattern is similar to that suggested by Burgess (Figure 15.4).

One basis of this model is 'the more accessible the site, the higher its land value'. Rents will therefore be greater along main routes leading out of the city and along outer ring roads. Where two of these routes cross, there may be a secondary or subsidiary land value peak (Figure 15.18). Here the land use is likely to be a small suburban shopping parade or a small industrial estate. The 'retail revolution' of the 1980s (page 432), which led to the development of large edge-of-city shopping complexes (MetroCentre in Gateshead, Places 55, page 433, Bluewater in Kent and Brent Cross in north London), has altered this pattern. Similarly, large industrial estates and science parks (Places 86, page 566) have been located near to motorway interchanges.

Figure 15.17
Urban land use patterns based on land values

city centre
peak land value intersection (PLVI)
shops
commercial
offices
wholesale light manufacturing
industrial
oldest, low-class
residential
medium-class
newest, high-class
city boundary

Figure 15.18
Secondary land value peaks

Figure 15.18 Secondary land value peaks

[Diagram labels: CBD (peak land value intersection); main roads leading to suburbs (arterial roads); secondary (subsidiary) land value peak; intersection of arterial road and outer ring road; city boundary; outer ring road; suburbs; main road into city; main road into city]

Functional zones within a city

Different parts of a city usually have their own specific functions (Figure 15.12). These functions may depend upon:
- the age of the area: buildings usually get older towards the city centre except that most CBDs and many old inner-city areas have been redeveloped and modernised
- land values: these increase rapidly from the city boundary in towards the CBD (Figure 15.16)
- accessibility: some functions are more dependent on transport than others.

While each urban area will have its own unique pattern of functional zones and land use, most British cities exhibit similar characteristics. These characteristics have been summarised and simplified in Figure 15.19 where:

Zone A = the CBD (shops and offices)
Zone B = old inner city (including, before redevelopment, 19th-century/ low-cost/low-class housing, industry and warehousing and, after redevelopment/regeneration, modern low-cost housing and small industrial units
Zone C = inter-war (medium-class housing)
Zone D = suburbs (modern/high-cost/high-class housing, open space, new industrial estates/science and business parks, shopping complexes and office blocks).

The central business district (CBD)

The CBD is regarded as the centre for retailing, office location and service activities (banking and finance). It contains the principal commercial streets and main public buildings and forms the **core** of a city's business and commercial activities. Some large cities, such as London and Tokyo (Figure 15.12) may have more than one CBD. Other types of city-centre land use, such as government and public buildings, churches and educational establishments, are classed as non-CBD functional elements.

The delimitation of the CBD

Most of you are likely to have relatively easy access to a town or city centre. If so, your geography group may be able to make one or more visits to that CBD with the aim of trying to delimit its extent. Bearing in mind possible dangers, such as from moving traffic, your group could attempt one or more of several methods, based on the pioneer work of Murphy and Vance in North America, and described in Places 54, page 430. Ideally you should:
1. formulate one (or more) hypothesis before you begin your fieldwork (Framework 10, page 299)
2. collect, as a group, the relevant data
3. determine how you will record that data (i.e. using which geographical techniques)
4. discuss – again as a group – your findings.

Framework 13

One of several dangers that may result from putting forward geographical models and from making generalisations is that of creating stereotypes. For example:

a Urban models have the tendency to suggest that some areas are 'better' than others, e.g. that all housing in inner city areas is low-class/low-income and that only the elderly and single-parent families live here in a zone lacking open space, whereas wealthy families only reside in the 'tree-lined' suburbs.

b Different groups of people tend to develop their own customs and ways of life. By putting such characteristics together, we make mental pictures and develop preconceptions of different groups of people, i.e. we create stereotypes.

The following unsupported, emotive statements may not only be grossly inaccurate, they may also be considered, by many, to be offensive.

- The Germans, on holiday, are always first to the swimming pool and dining room.
- All Italians drive cars dangerously.
- All Chinese and Japanese are small.
- Favelas are shanty settlements whose residents have no chance of improving their living conditions and who can only survive by a life of crime (see below).
- The Amazon Amerindian way of life remains undeveloped as the people are lazy and unintelligent (see below).

The following accounts are based on the author's experiences in Brazil.

Example One

'According to books which I had read in Britain and advice given to me by guides in São Paulo, favelas were to be avoided at all costs (Places 57, page 443). Any stranger entering one was sure to lose his watch, jewellery and money and was likely to be a victim of physical violence.

With this in mind, I set off in a taxi to take photographs of several favelas. On reaching the first favela, to my horror the driver turned into the settlement and we bumped along an unmade track. He kept stopping and indicating that I should take photographs. Expecting at each stop that the car would be attacked and my camera stolen, I hastily took pictures – which turned out to be over-exposed because, not daring to open windows, I took them through the windscreen and looking into the sun!

Suddenly the taxi spluttered and stopped. In one movement, I had hidden my camera and was outside trying to push the car. I raised my eyes to find three well-built males helping me to push the car. Which one would hit me first? I smiled and they smiled. I pointed to each one in turn and called him after one of Brazil's football players and then referred to myself as Lineker. Huge smiles, big pats on the back and comments like Ingleesh amigo were only halted by the car re-starting. As we drove away, I began to question my original stereotyped view of a favela inhabitant.'

Example Two

'I was surprised to find, on landing at Manaus airport in the middle of the Amazon rainforest, that our courier was an Amerindian. He dashed around quickly getting our party organised and our luggage collected. (He certainly did not seem to be slow or lazy.) He later admitted, and proved, that he could speak in seven languages (hardly the sign of someone unintelligent – how many can you speak?). I asked him why so few Amerindians appeared to have good jobs and why he kept talking about returning to the jungle. His reply was simple: "to avoid hassle". He considered that the Indian lifestyle was preferable to the Western one with its quest for material possessions. Had he returned to the jungle, he would have rejoined his family and become a shifting cultivator living in harmony with the environment (Places 66, page 480). Is that traditional way of life really less demanding of intelligence than that imposed by invading timber and beefburger transnationals engaged in the destruction of large tracts of rainforest?'

From these examples, we can see how easy it is to accept stereotypes without realising we are doing so, and also how seeing a situation for ourselves may lead us to question our original picture. Should geographers take a role in overcoming the problems of stereotyped images (on the basis of which planning decisions, for example, may be made) by helping to provide relatively unbiased information to improve knowledge and understanding?