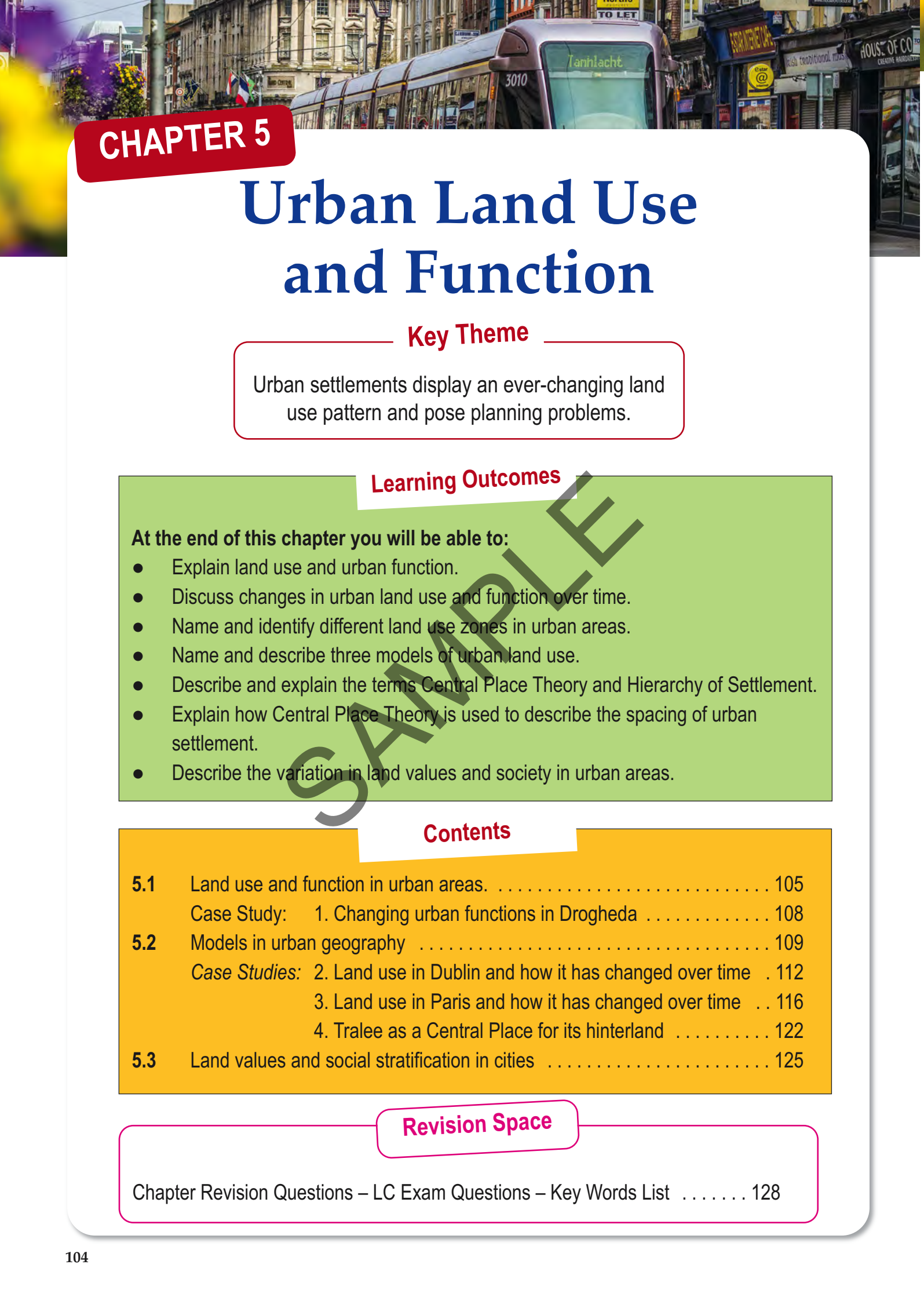




CHAPTER 5

Urban Land Use and Function

Key Theme

Urban settlements display an ever-changing land use pattern and pose planning problems.

Learning Outcomes

At the end of this chapter you will be able to:

- Explain land use and urban function.
- Discuss changes in urban land use and function over time.
- Name and identify different land use zones in urban areas.
- Name and describe three models of urban land use.
- Describe and explain the terms Central Place Theory and Hierarchy of Settlement.
- Explain how Central Place Theory is used to describe the spacing of urban settlement.
- Describe the variation in land values and society in urban areas.

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Revision Space

Chapter Revision Questions – LC Exam Questions – Key Words List 128

5.1 Land use and function in urban areas

Land use refers to what is built on a site, e.g. a school, houses.

Function refers to what activity is carried out at that land use, e.g. education, residential.

Land use

In most towns and cities throughout the world, the way in which land is used reflects the need for:

- (a) Housing.
- (b) Business and industry.
- (c) A range of services such as shops, schools, transport, hospitals and recreational spaces.

These types of land uses are not arranged in a random way but are grouped in certain areas of the city creating distinct areas/zones of different land use.

For example, the main shopping districts, offices, administrative buildings and places of entertainment usually occupy the most central and accessible places in a town. This area is called the **Central Business District (CBD)**.

Housing for low-income workers may be found close to factories (which themselves may be located close to railways, roads or canals) and housing for high-income workers may be found in the suburbs.

Some land uses develop in certain areas (e.g. housing and industry) and other services can co-exist alongside them (e.g. insurance offices above a chain store in the retail zone of any major high street).

Towns and cities grow over time and this can be seen in the age and change in the use of buildings. The oldest buildings are usually in the city centre. Many of these buildings may once have been houses and factories but today have a different land use as they have been converted into offices/shops.

The main land use zones that we will discuss in this chapter are:

The Central Business District (CBD)
Residential areas



Fig. 1 An example of a CBD

Industrial areas
The Zone of Transition



Fig. 2 An example of a zone of transition



Fig. 3 An example of an industrial area

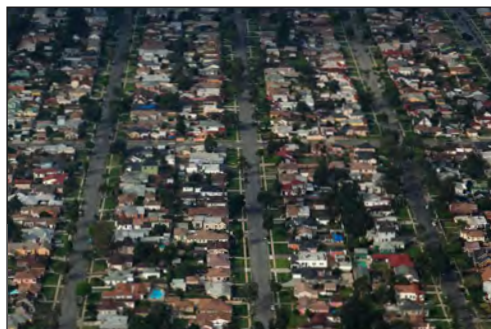


Fig. 4 An example of a residential area

The functions of urban settlements

The functions of an urban settlement are the activities that a town offers its residents and people in the surrounding area (hinterland). In some cases, a town may be well known for one function, e.g. tourism in Lahinch, County Clare or religion in Knock, County Mayo, but in reality these towns, like most settlements/towns, have many functions and are classed as **multifunctional**.

The main urban functions are easily remembered using the word **RICEPOTS**. The capital letters stand for the main urban functions you can identify from an OS map, urban plan or aerial photograph.

R = Religious, residential, recreational functions.

I = Industrial functions

C = Commercial/communications functions

E = Educational functions

P = Port functions

O = Open spaces

T = Transport/tourism functions

S = Service functions

When looking at a map or photograph, you should be able to identify the land use and the main functions of a settlement. Fig. 5 below shows evidence/indicators of functions you should look for on an OS map, urban plan and an aerial photo.

Function	Land use
Religious	Churches, cathedrals, mosques, meeting houses
Recreational	Pools, parks, cinemas, golf courses, marinas
Residential/dormitory	Housing estates, apartments, bungalows
Industrial	Industrial estate, factory, mines, tall chimney
Communications	Post office, mobile phone mast, transport network
Commercial	Shop fronts, shopping centres, market squares, car showrooms, marts
Education	Schools, universities, colleges, sports ground
Ports/ fishing ports	Cranes, containers and large ships, marinas
Open spaces	Car parks, playing fields, river/mountain walks/trails
Transport	Roads, rail, Luas, river, car parks, ferry/container ports
Tourism	Information offices, picnic sites, walking routes, hostels
Services/ administration	Hospitals, Garda stations, government offices, fire stations
Historic functions (defence)	Walls, mottes, gates, castles

Fig. 5 Urban functions, land use and examples visible on maps or photos.

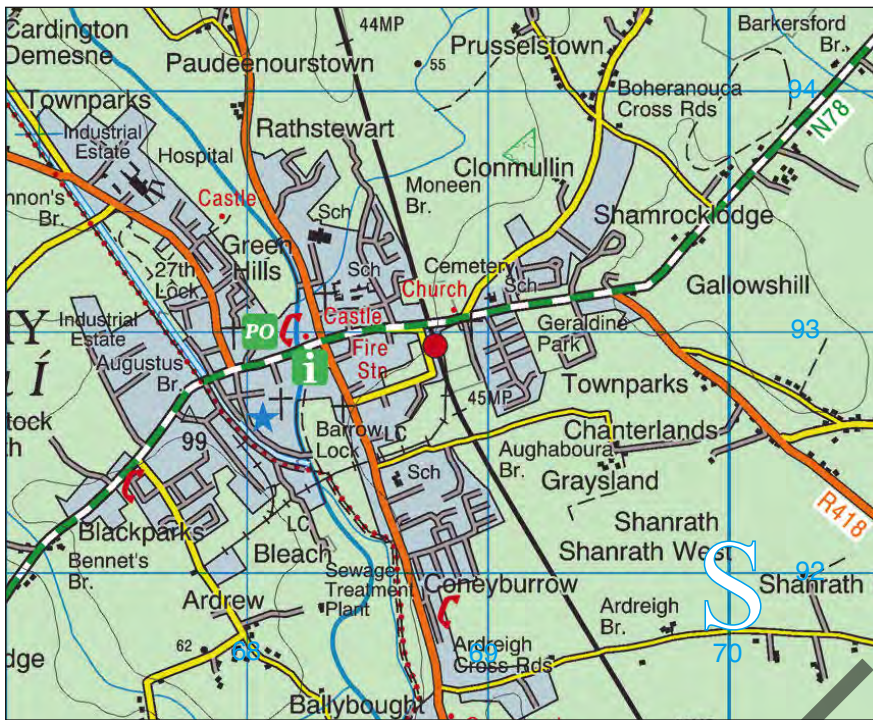


Fig. 6 OS map of Athy

Activity

1. Look at the OS map of Athy. Name, locate and briefly describe three functions of Athy. Describing a function means you should briefly explain how the function is carried out.
2. Look at the aerial photograph of Athy. Name, locate and describe four functions visible in the photograph.
3. Draw a sketch map of the photo to show the location of three different functions.



Fig. 7 Aerial photo of Athy

The functions of urban settlements change over time

Urban functions may change over time. In some cases, one function may disappear and another may replace it. Many Irish towns began as religious settlements, e.g. Kells, County Meath, or as defensive Norman positions, e.g. Limerick City. Today, these functions are extinct and more modern functions are in place, e.g. shopping, education and industry.

Activity

Think of the town or city nearest to you. Copy the table into your geography copybook and fill it in.

Town	Original function(s)	Present function(s)	Future function(s)

CHAPTER 5

Case Study 1

Changing urban functions in Drogheda

Drogheda is a multifunctional town on the River Boyne. It has transport, residential, industrial, retail, port, religious and educational functions. In the past, it also had a very important defence function.

It has a long history based on its port function which formed the basis of its many and varied manufacturers. Industries developed along the quays using raw materials imported through the port or by rail. This industrial function included ironworks, shipbuilding, boot and shoe manufacturing, oil and cake mills (producing raw materials for margarine manufacturers). Its world famous textile industry was based on yarn and linen mills which were major manufacturers in the area. Raw cotton was imported through Dublin, Glasgow and Liverpool where it was spun and bleached in Drogheda's four linen mills. These mills closed in the late 1800s and early 1900s but the world famous Greenhills sheets and towels mills continued to manufacture using imported cottons.

The 1970s and 1980s saw a decline in the diversity of Drogheda's industries. Many of the industries described above could no longer compete on the world market and therefore had to close down. EU membership also increased competition for business so many factories closed and Drogheda became an unemployment blackspot. Many of the factories became derelict and rundown. Some were demolished and their sites became car parks. EU grants and national and local investment policies of the 1990s encouraged several modern industries (e.g. Becton Dickinson) to locate in local industrial estates and provided employment in the town.

Many of the former derelict industrial sites were redeveloped into apartments, hotels and a conference centre and two new major shopping centres were opened up – Scotch Hall on the site of the oil and cake mills and the Laurence Centre on the site of the old Drogheda Grammar School.

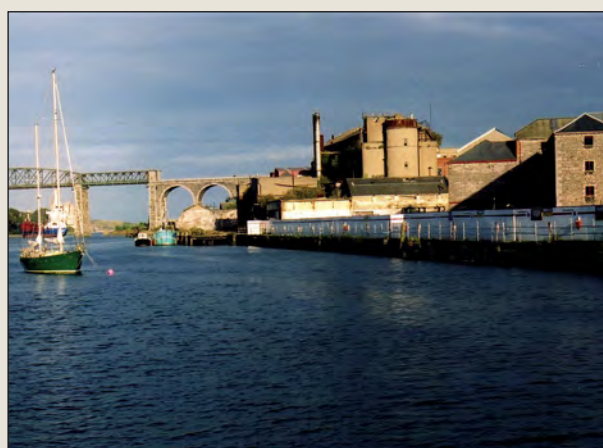


Fig. 8 The industrial quayside in Drogheda before redevelopment

5.2 Models in urban geography

Geographers have developed models or theories to explain patterns in the urban landscape. These models act to simplify reality. Urban geography models include the Concentric Zone Model, the Hoyt Sector Model, the Multiple Nuclei Model and Central Place Theory.

1. The Burgess Concentric Zone Model (Developed in 1925)

After studies of land use in Chicago, a sociologist called Ernest W. Burgess observed that land use was organised in a series of concentric circles around the CBD.

His theory, known as the **Concentric Zone Model**, is based on the idea that land values are highest in the centre of a town or city. Burgess stated that the outer edge of the CBD is constantly growing. As it grows outwards, land is redeveloped for use in the CBD. He called this area on the edge of the CBD the **zone of transition**.

At the time of his research (1920s), society was very class conscious and housing areas were strictly divided according to income level. He observed two patterns in residential land use:

- (a) Socio-economic status increased with distance from the city centre (richer people lived in the outer suburbs).
- (b) Population and density of housing decreases with distance from the CBD.

His model identifies five concentric circles of different land use zones.

- Zone 1.** This contains the **CBD** common to all urban areas.
- Zone 2.** The **industrial zone** and **zone of transition**, containing factories and poor quality housing.
- Zone 3.** This contains **lower-income housing** which is in better condition and wealthier than the housing in Zone 2.
- Zone 4.** **Middle-income** housing occupies this zone. Larger houses with gardens are common.
- Zone 5.** The **commuter zone**. This area includes towns and villages which are about an hour's commute from the CBD.

Although the model is simplistic, it does give a very generalised interpretation of land use which is helpful in trying to study the urban landscape.

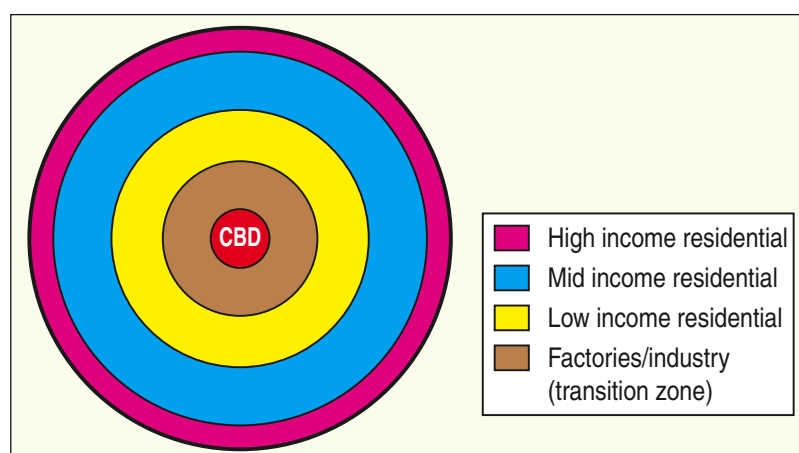


Fig. 9 The Burgess Concentric Zone Model of urban land use

Problems with the Burgess Concentric Zone Model

- The Burgess model is old and was developed before high levels of car ownership and the general increase in wealth in all sections of society occurred.
- Burgess did not take into account the effect that landscape could have on urban development. In his model, he assumed the land is flat and featureless. However, in real life, rivers, hills and valleys change the pattern of land use.
- New ways of living and working have occurred since the Burgess model was developed. Many people now choose to live and work outside the city on the urban fringe.
- Burgess did not consider the major impact that industry and transport could have on land use.

2. The Hoyt Sector Model of urban land use (Developed in 1939)

Homer Hoyt developed his model after studying rents paid for housing by people in many cities. He believed that by mapping rent values, a pattern of different types of land uses could be seen within the urban area.

The **Hoyt Sector Model** is based on the concentric zones of the Burgess model, but unlike Burgess, Hoyt considers the impact of transport routes and manufacturing on land use. Hoyt's model shows that towns have grown in **sectors** or wedges radiating out from the CBD along transport links (rivers, railway and roads). Each sector reflects different zones of land use and/or income.

As in Burgess's time, income and status divided society so people of different incomes did not live close to or mix socially with each other. This is called **social stratification**. Housing areas reflected this social separation.

Hoyt identified different land use zones in each sector.

Zone 1. CBD similar to Burgess.

Zone 2. Contains **wholesale** and **light manufacturing** land use. The location of railways and canals may result in the construction of warehouses and industrial areas along the transport route. Housing here developed as low-income residential areas and may be confined to one side of the town, close to the industrial area.

Zone 3. Contains mainly **low-income housing** occupied by slightly wealthier people who could afford to live away from the industrial zone.

Zone 4. Contains **middle-income housing**. This housing would be found on a side of town away from poorer areas.

Zone 5. Contains **high-income housing**. When a high-income residential area develops, it expands outwards, as the most desirable sites are on the outskirts of the town and home owners can afford to commute.

In 1964, Hoyt altered his model to account for greater car ownership, stating that commuter villages beyond the built-up area of a city would have higher rents. Again this is quite a generalised model and is just a modification of the Burgess theory. As the five sectors extend outwards, they may eventually develop into concentric circles. However, as this model is based on statistical data, it is less open to the criticism which Burgess's model received.

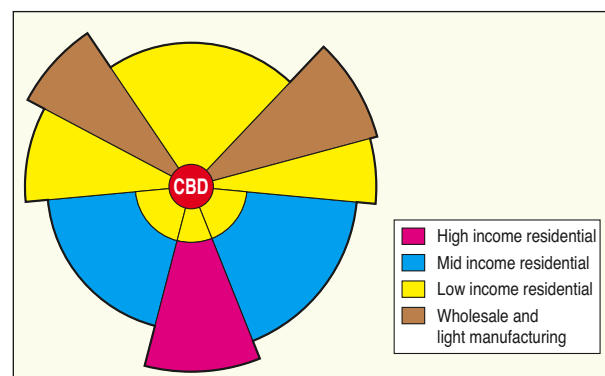


Fig. 10 The Hoyt Sector Model of urban land use

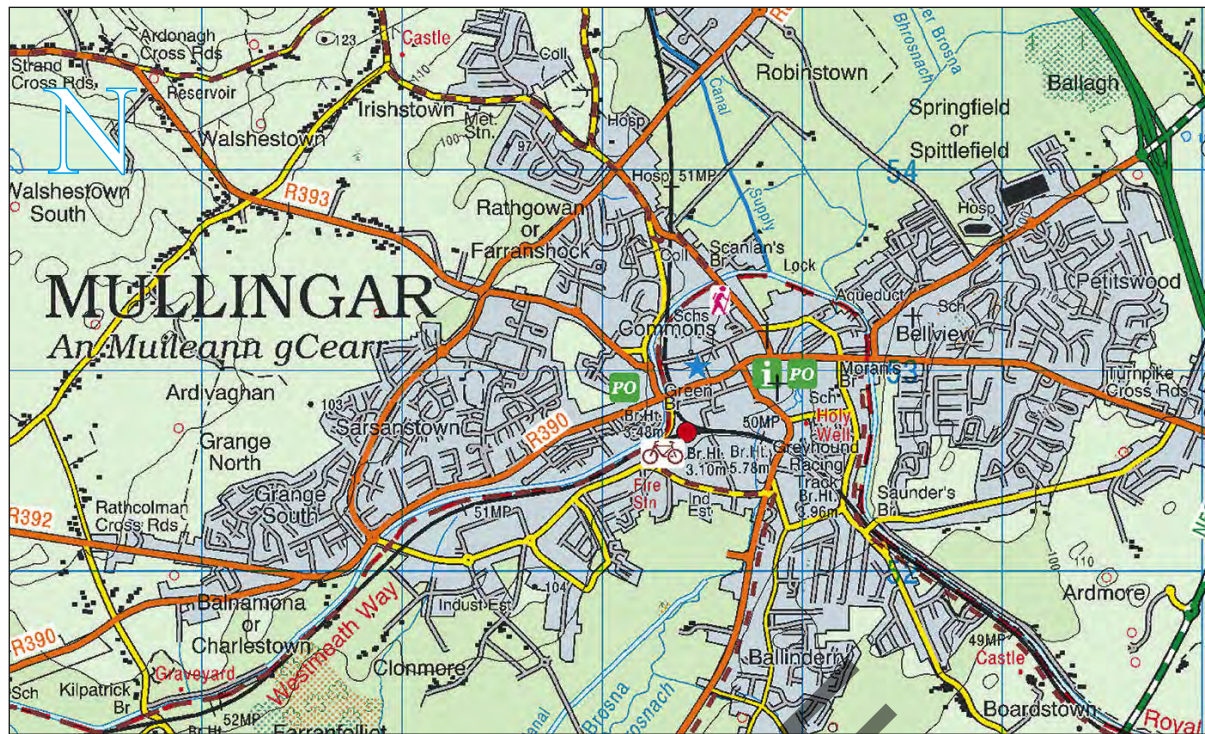


Fig. 11 Mullingar demonstrates Hoyt's Sector Model.

3. The Harris and Ullman Multiple-Nuclei Theory (Developed in 1945)

Chauncy Harris and Edward Ullman identified similar land use zones to the two previous models but proposed that as an urban area develops over time, it tends to grow around a number of different business centres (**multiple nuclei**) rather than around a single CBD.

The **Multiple-Nuclei Model** is a mixture of the Burgess Concentric Zone and Hoyt's Sector Models and clearly shows where some activities attract each other (many factories in an industrial estate) and others repel each other (housing is usually located well away from industrial zones).

The location of each type of land use reflects its economic needs. For example, heavy industry locates close to a port, high-income housing develops on or close to a scenic site, retailing develops on a busy route focus.

These different centres (nuclei) attract growth and may become the focus for further development – they are mini CBDs. For example, Tallaght has its own housing, industry, transport, health and education services and therefore is an independent growth centre (nuclei) of Dublin.

The Harris and Ullman Multiple-Nuclei Model does not fit all towns and cities exactly. However, many large urban areas and conurbations fit into this model, e.g. Dublin city and its current development plan (see page 170, Chapter 7).

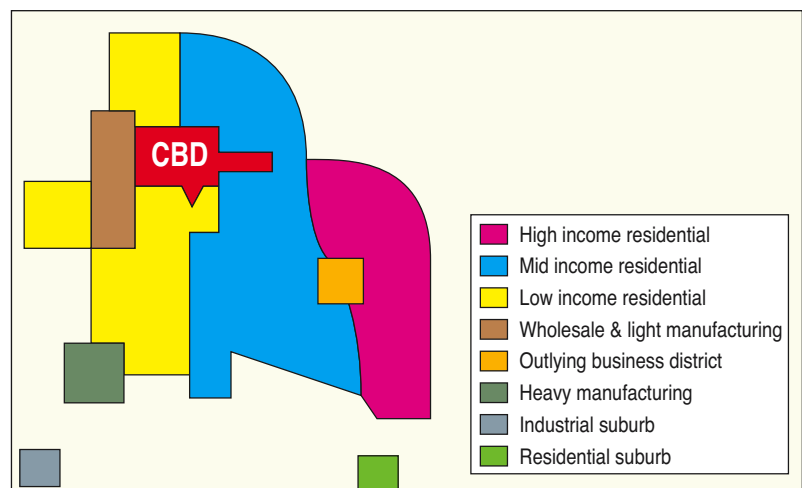


Fig. 12 The Harris and Ullman Multiple-Nuclei Model of urban land use