

Internal structure of cities and patterns of Land use

(Theories of Urban Morphology)

Lecture compiled by Dr. Sahar Zia

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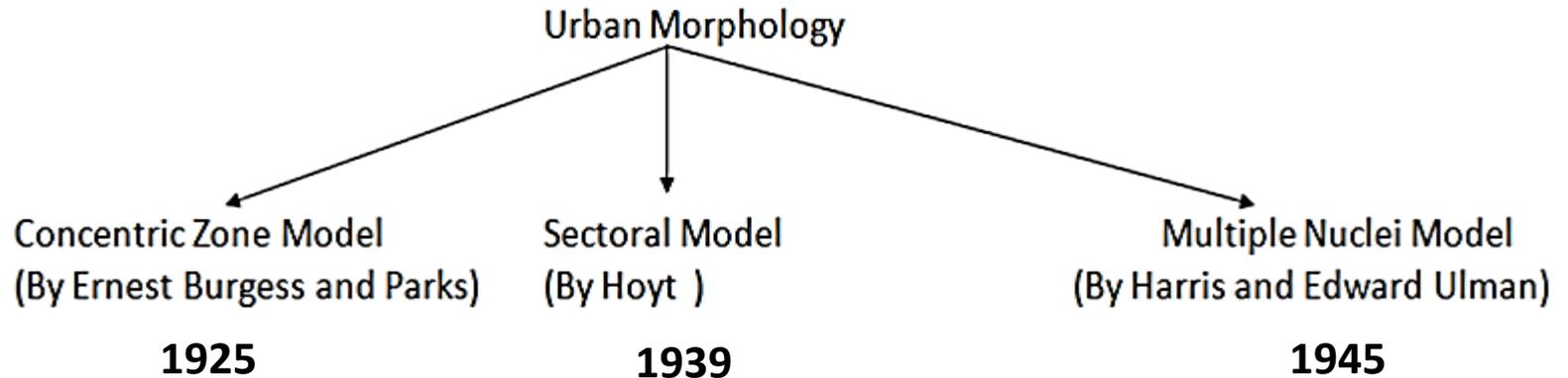
Learning Outcomes

In the end of the lecture students will be able to

- Understand fundamentals of urban land use patterns and structure
- Identify and analyze land use structures of different cities in Pakistan

Overview

- Several studies have been carried out for spatial transformations of landscapes **20th and 21st centuries**
- Part of philosophy of urban geography and landmarked attempts of urban morphology





Ernest Burgess

Canadian-American urban sociologist



Homer Hyot

American economist



Chauncy D. Harris

Geographer at University of Chicago



Edward Ullmans

Urban Geographer at University of Chicago

Concentric Zone Model

- Propounded in **1925**
- **Study area:** Chicago
- to explain the **structure and growth of the city**
- Published and contributed in **Chicago school of thoughts**
- Data was based on **land use patterns empirical observations.**



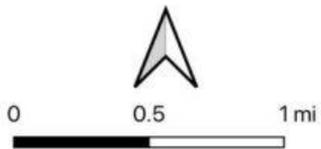
Burgees model: Assumptions

- Area under consideration as isotropic surface (a surface without topographic variability)
- He considered every man as an economic and rational person.
- All transportation routes converge at the city center.
- Each part of the city has equal accessibility.
- Geometrical shape of the city is circular.

Chicago, IL

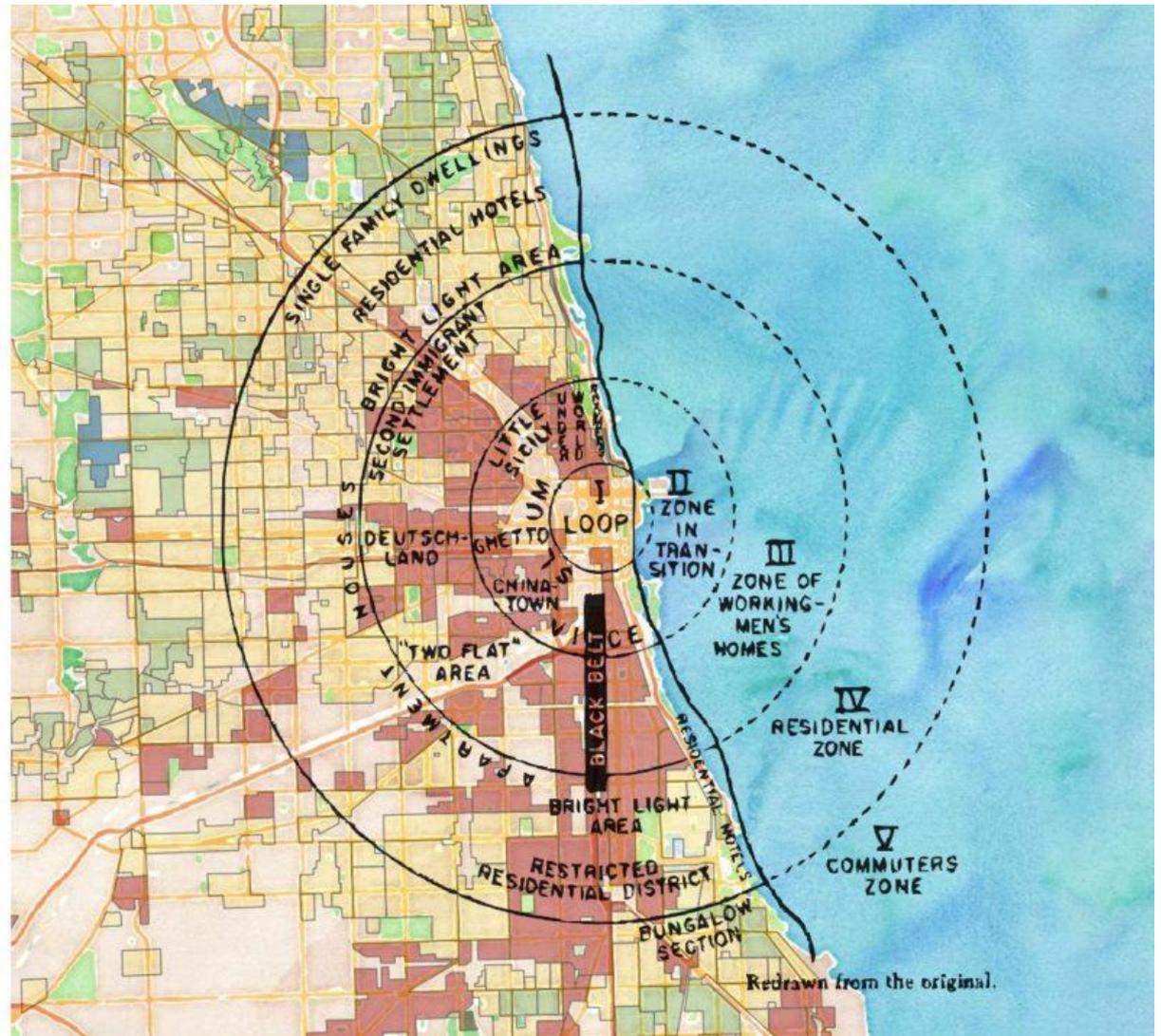
Redlining map from FHA, 1940

- A
- B
- C
- D



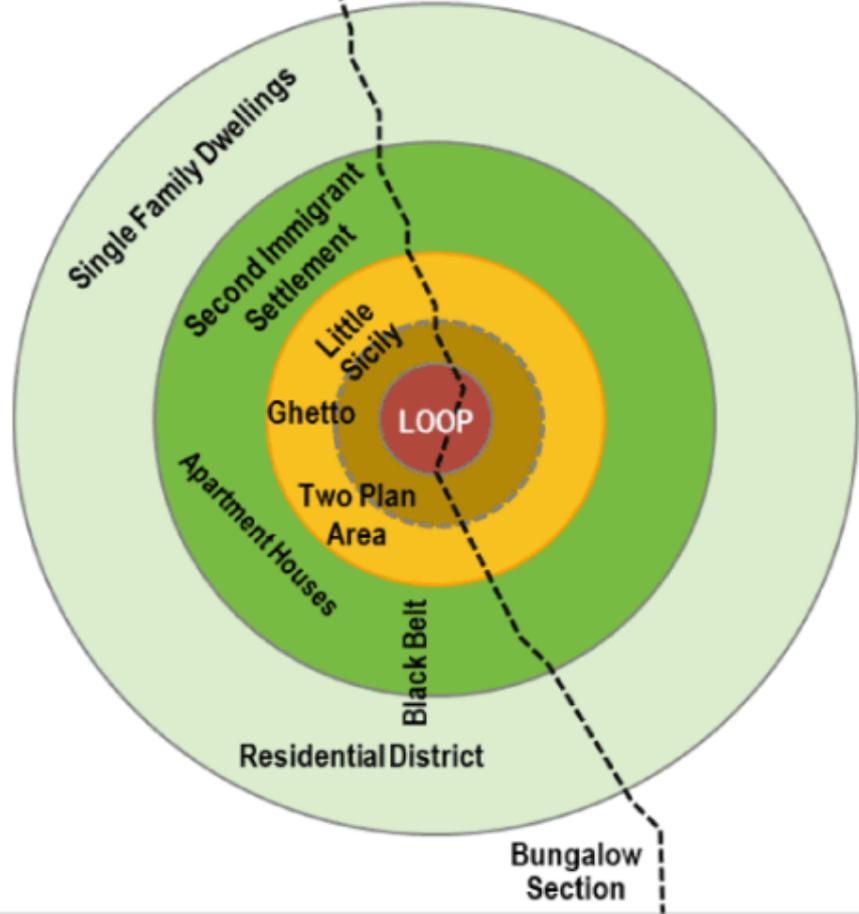
Urban Areas map from "The City", Ernest Burgess, 1925

Redlining data from Mapping Inequality



Chicago, 1920s

Model

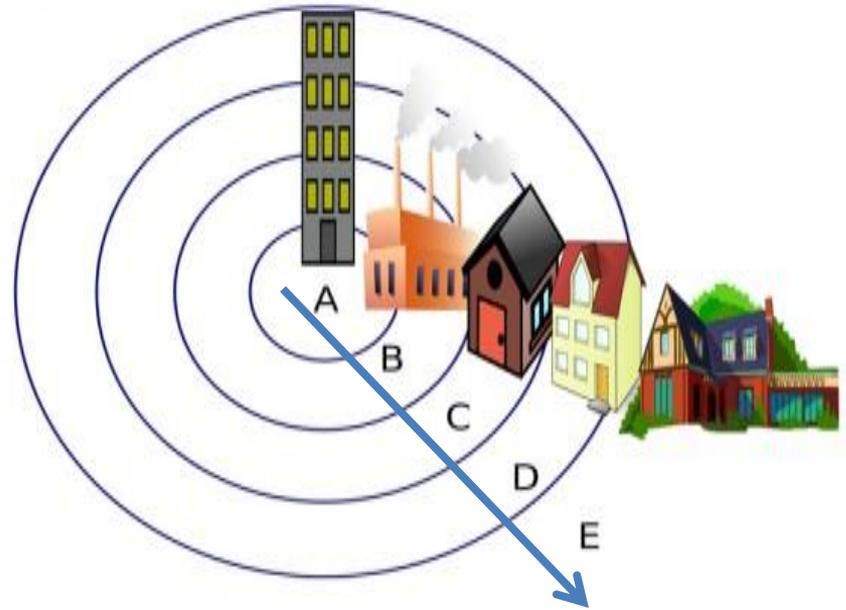


-  I - Loop (downtown)
-  II - Factory zone
-  III - Zone of transition
-  IV - Working class zone
-  V - Residential zone
-  VI - Commuter zone

Idealistic model

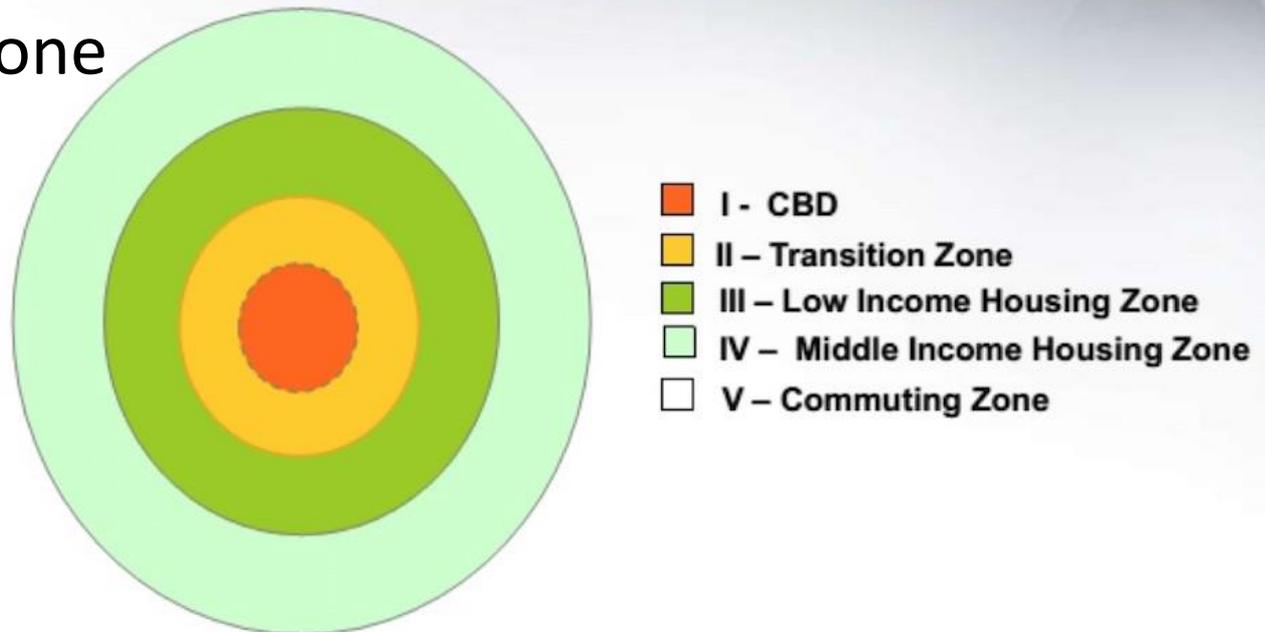
It is an based on spatial concentration of urban land use pattern w.r.to increasing distance from the market center.

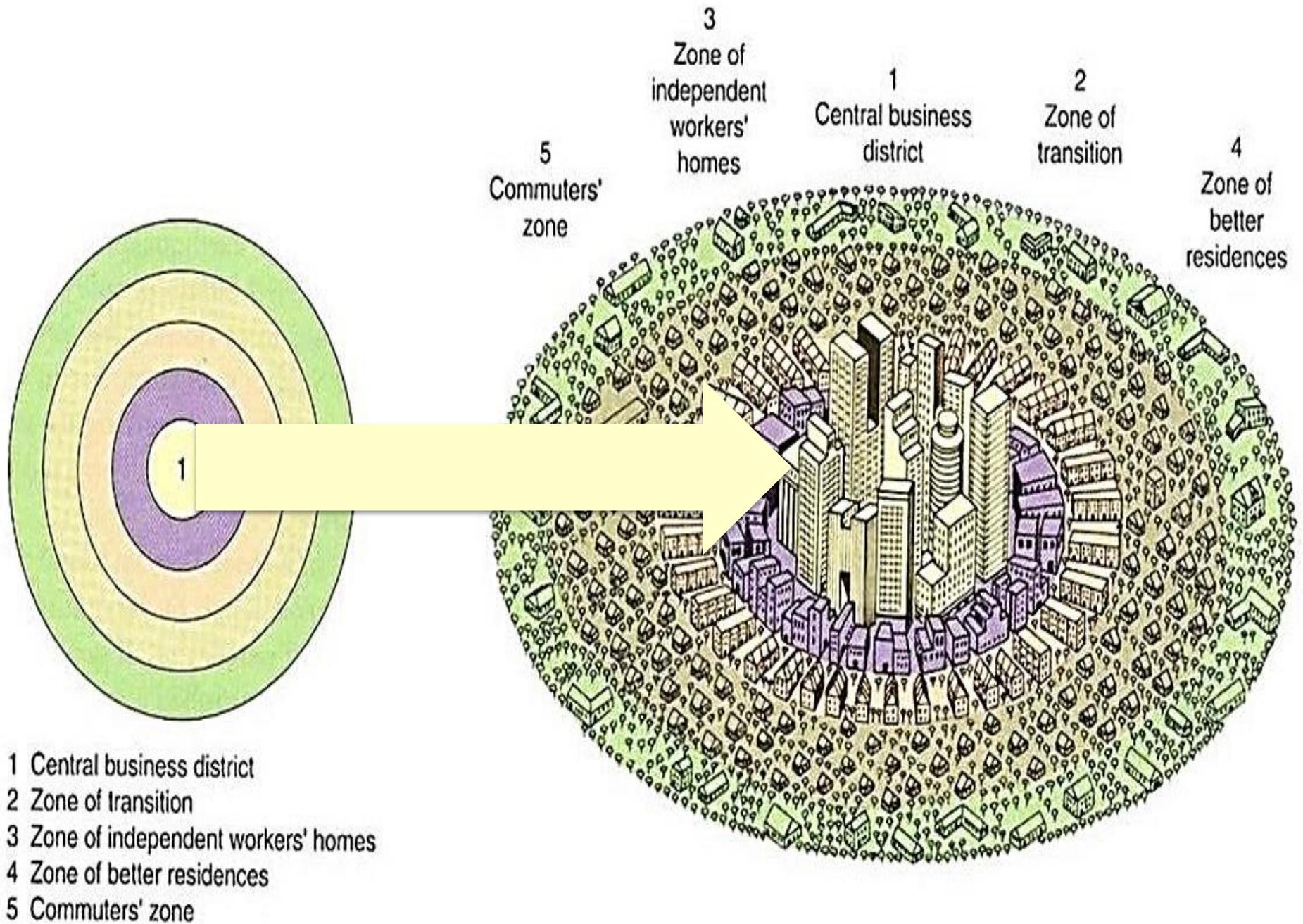
- According to this model, a city develops around a prominent commercial center called **CBD (Central Business District)** around which there are concentric zones of land users.



Five zones of Burgess Model

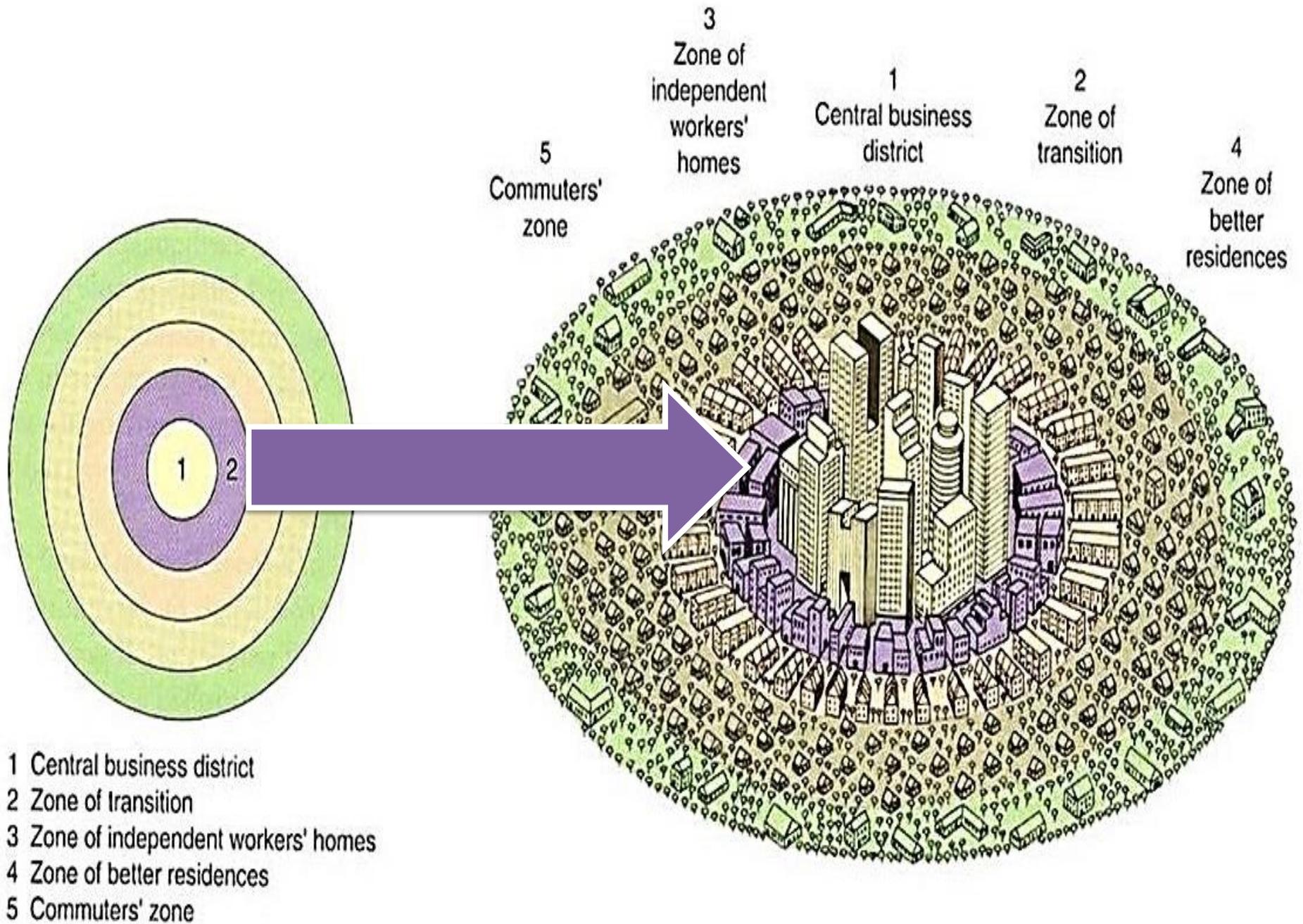
- Central Business District (CBD)
- Zone in Transition (Transitional zone)
- Working Men's Homes (Workmen Housing)
- Residential Zone
- Commuter's Zone





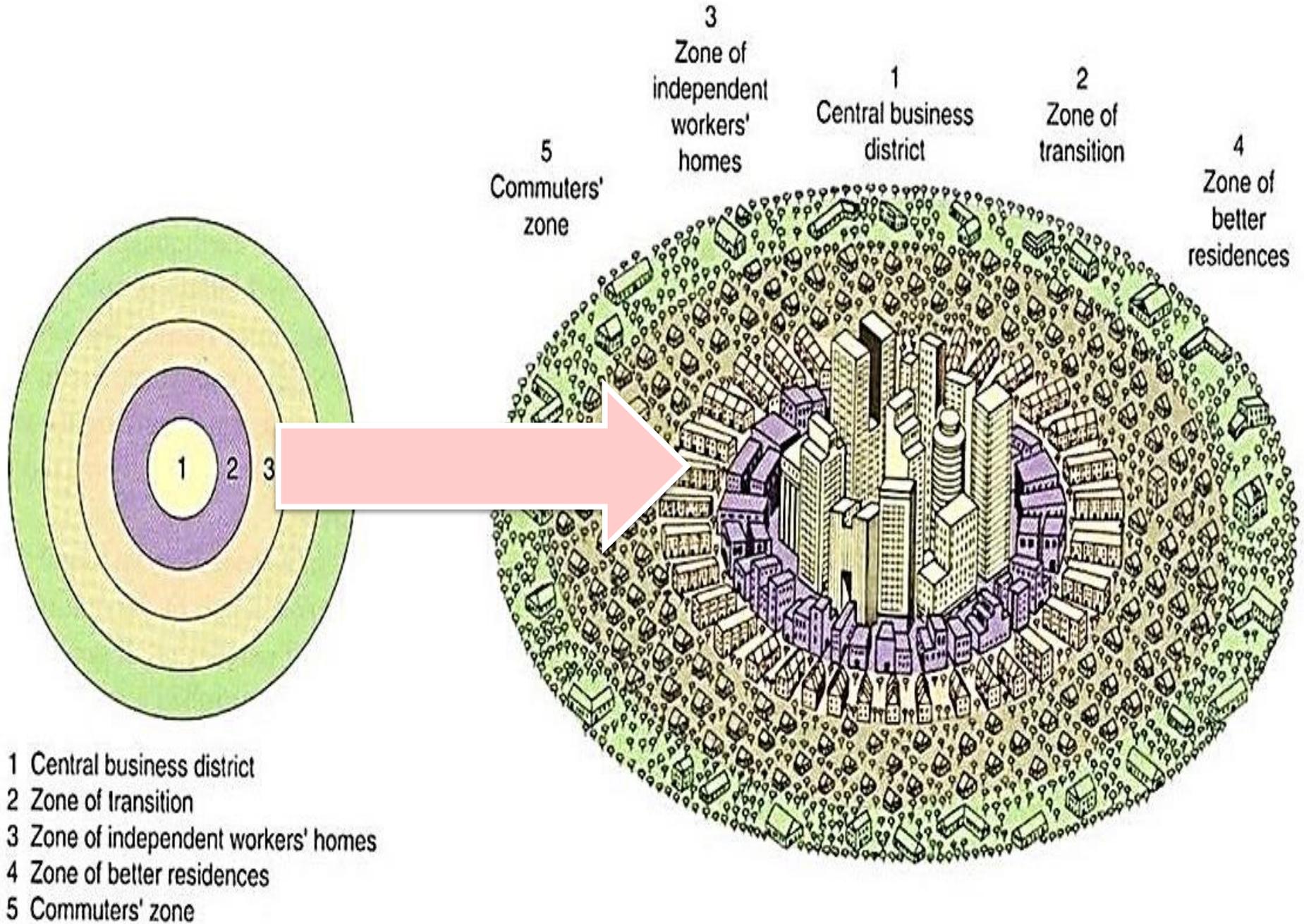
Zone I: **Central Business District (CBD)**

- **Term** was coined by Murphy
- Exclusive commercial area (hub of wholesale and retail markets)
- Government offices, corporate office and headquarters of various organizations, agencies.
- Dense land use/congestion and Land prices are high
- Major transportation routes converge at Central Business District
- There is very rapid vertical growth with high rise and sky scrappers
- After office hours, when commercial centers cease to function, the Central Business District becomes dead zone.
- Central Business District usually has old and traditional shops having costliest items, antiques and finest handicrafts.



Zone II – Transitional zone:

- Light Industries and slums mainly occupy this zone. This zone is characterized by mixed land use pattern.
- Industrial workers tend to settle here and it can develop slums and ghettos.
- It is one of the most polluted zones of the city.
- The settlement in this zone has shabby look and high room density.
- After Central Business District, it represents the oldest part of city.



- 1 Central business district
- 2 Zone of transition
- 3 Zone of independent workers' homes
- 4 Zone of better residences
- 5 Commuters' zone

Zone III – Workmen Housing:

- It represents skilled middle class residential area, who work in manufacturing industries and have higher income than industrial wage earner.
- They live in better condition than industrial wage earners.

Zone IV – Residential Zone:

- Housing of upper class people
- Rich people tend to live away from city crowding to avoid urban miseries like pollution, congestion, etc
- This zone has better civil amenities, health centers, farm houses, and extensive residential quarters.
- Rich can afford to commute to and fro from Central Business District because of development of transportation.

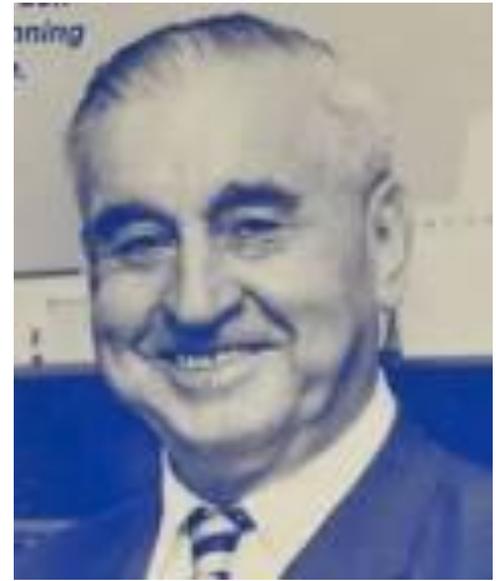
Zone V – Commuter's Zone:

- It has scattered upper-class house colonies and hypermarkets, suburbs.
- Here wholesale purchase of grains and vegetables is done. The dwellings of daily workers also exist in this zone.

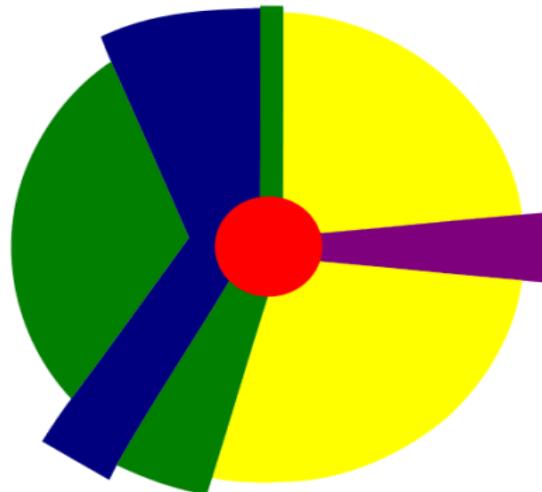
Critical evaluation of Concentric Zone Model

- This model is normative model, thus, it presents an idealistic, hypothetical deductive picture of a city. But, the urban land use is much complex.
- This model is more applicable to small cities with more than one lack population.
- Another drawback is that it does not consider transportation lines along which the city has tendency to expand.
- Therefore, another model “Sectoral Model” was proposed by Hoyt and Davis.

An American economist known for his pioneering work in land use planning, zoning, and real estate economics



The **Sector model/Hoyt model**, is a **model of urban land use** proposed in **1939** by **land economist Homer Hoyt**

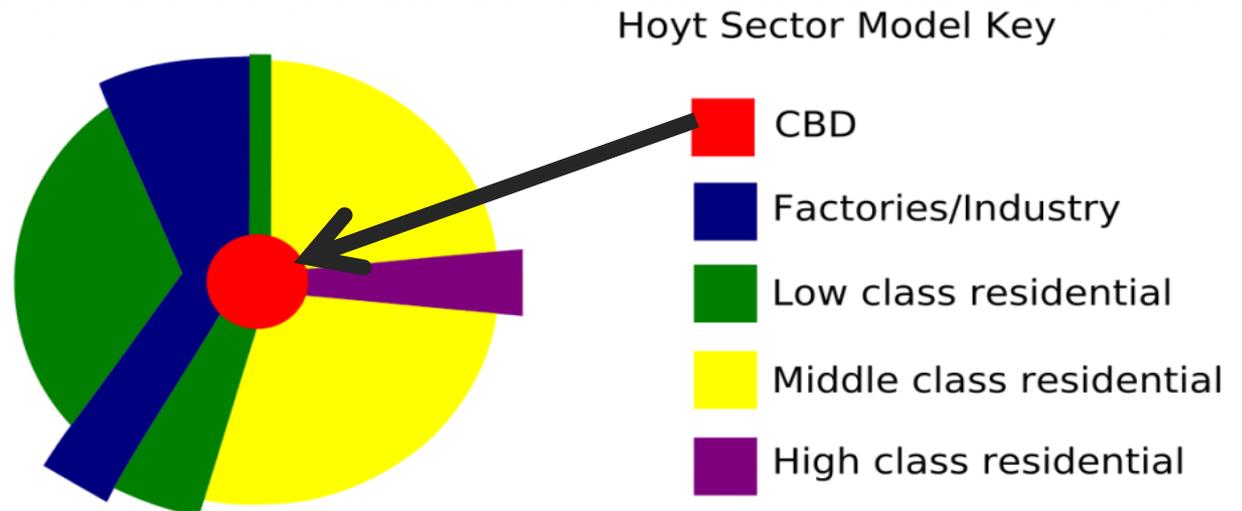


Hoyt Sector Model Key

-  CBD
-  Factories/Industry
-  Low class residential
-  Middle class residential
-  High class residential

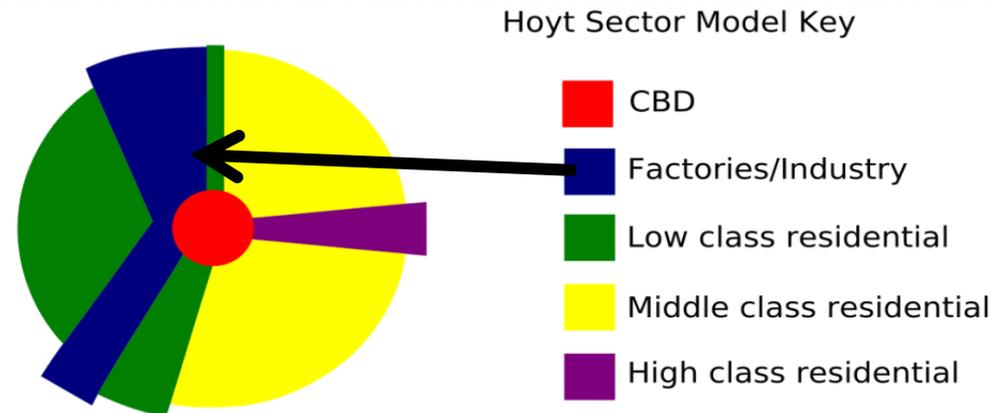
Central Business District (CBD)- Zone I

- Central core of city (with circular geometric shape).
- Commercial Hub
- Blighted part of city (because during the night darkness prevails in the building and it becomes no man's land).
- Costliest part of the city.



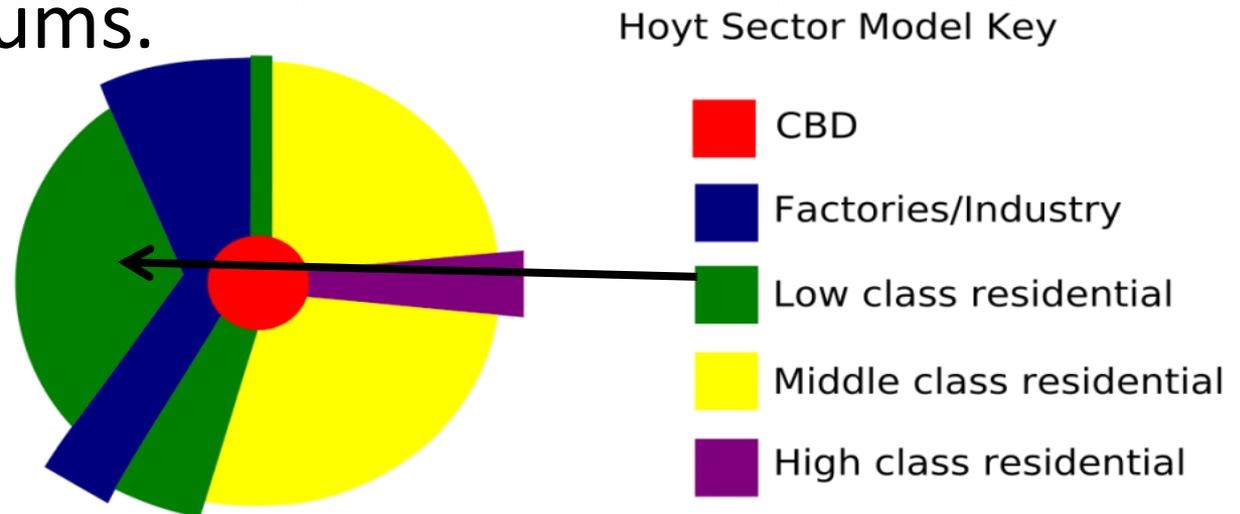
Light manufacturing industries- Zone II

- Light and small scale manufacturing industries
- has the mixed pattern of land use with commercial and residential purposes.
- Hub of retail and wholesale marketing
- This zone develops along the major communication/transportation lines.
- One the most polluted areas of the city with high traffic congestion, noisy traffic and slum development.



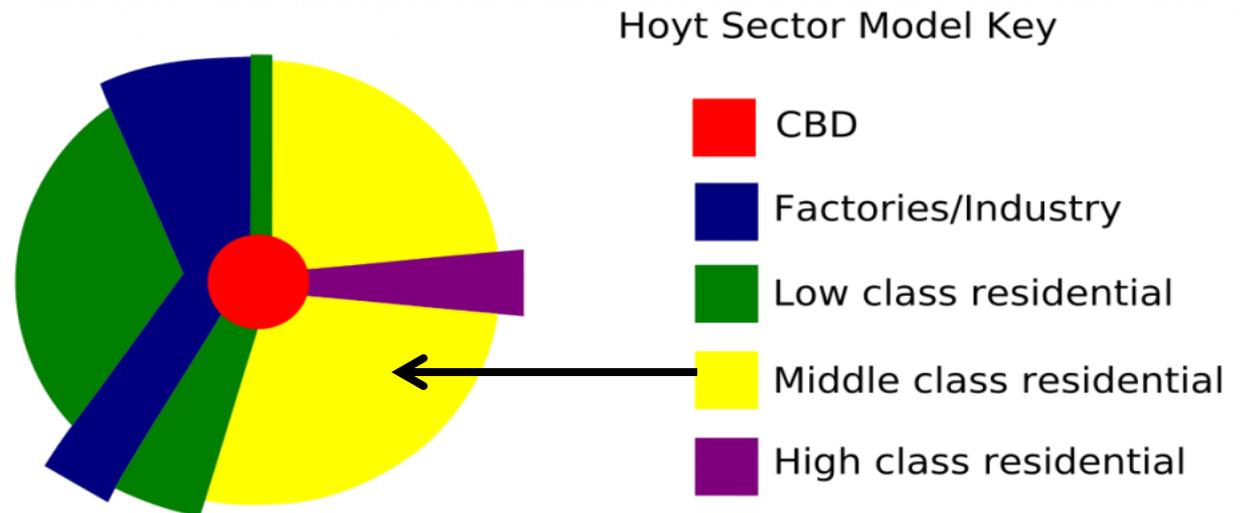
Lower class residential area (Poor housing)- Zone III

- This zone is the residential area of the factory workers who work in Zone 2.
- This zone consists of people with low income and has the highest room density with shanty towns and slums.



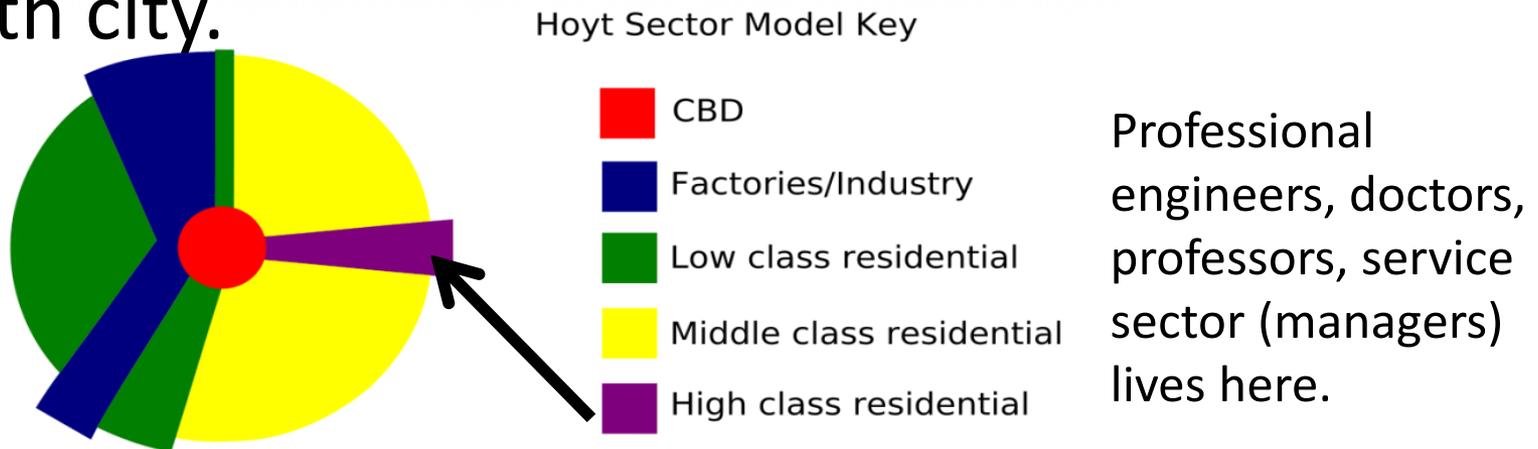
Middle-class dwelling (Medium housing)- Zone IV

- This zone has better civic amenities than previous two zones.
- It is less polluted and has workers with high income level.



Upper-class residential areas- Zone V

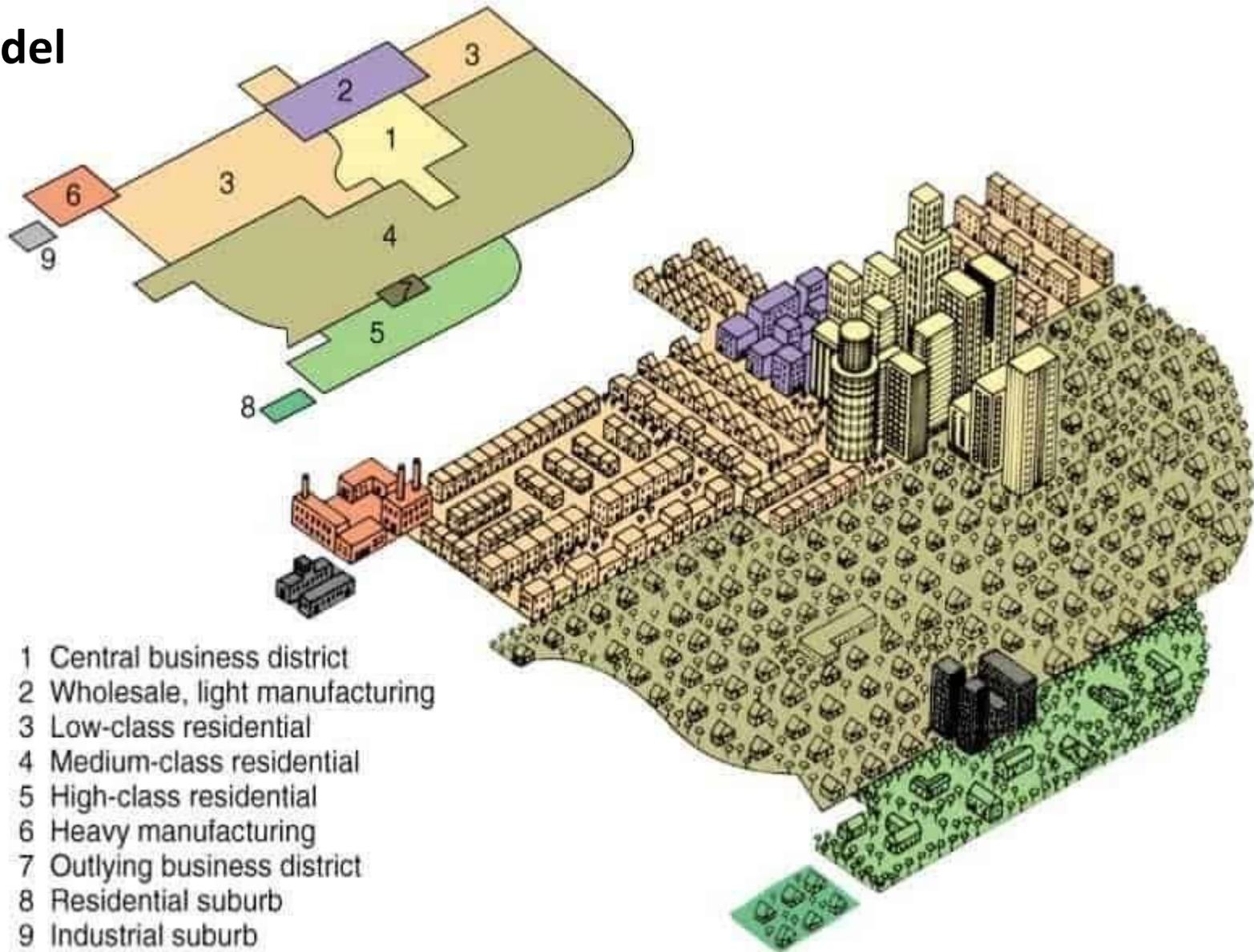
- This zone is developed along major transportation lines.
- People working in CBD with higher income lives here.
- This zone has easy and direct connectivity with city.



Critical Evaluation

- With the model, metropolis and megacities can't be projected as its only suitable for the District level town.
- The million-plus cities have more than one CBD because the economic functions are highly diversified
- All populations can't be accommodated with all economic functions at a single center.
- Post-industrial revolution cities of Europe which are semi-planned more correspond to this model.
- In order to address the problems in Sectoral Model Harris and Edward Ullman came with the "Multiple Nuclei Model".

Multiple Nuclei Model

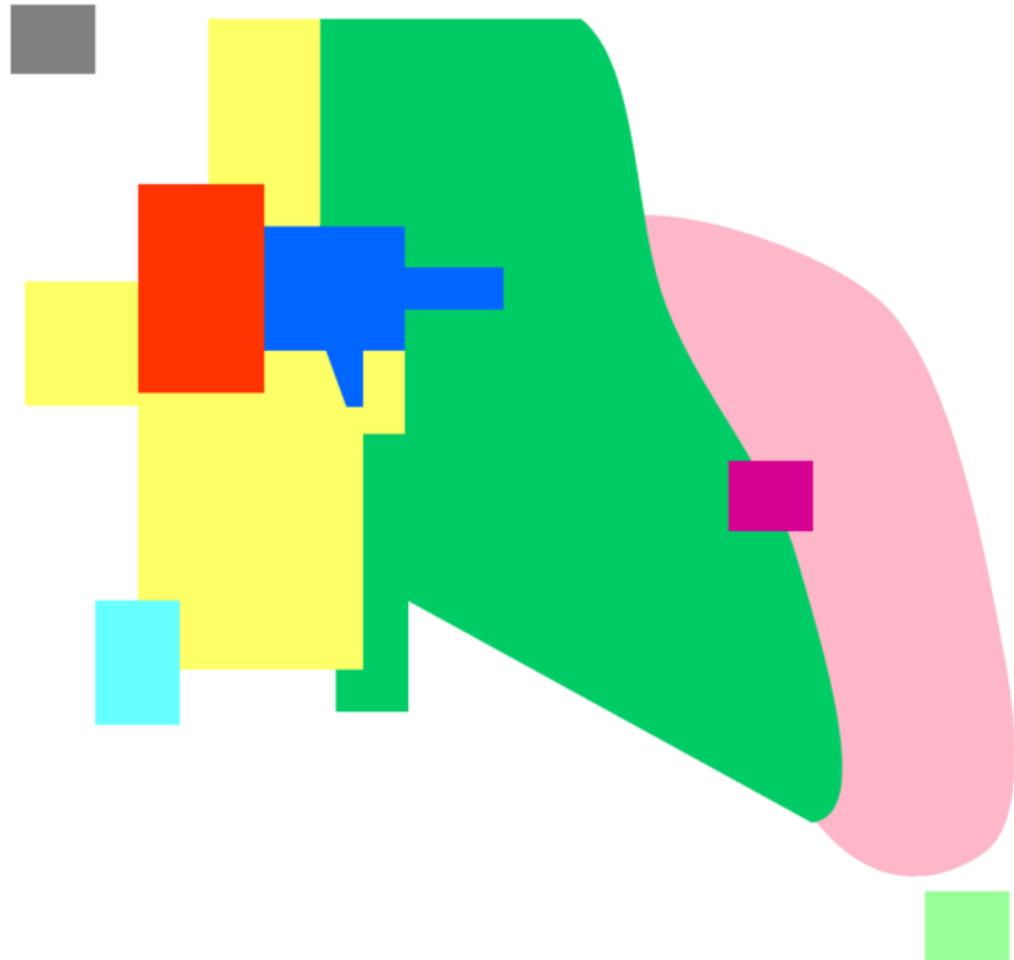
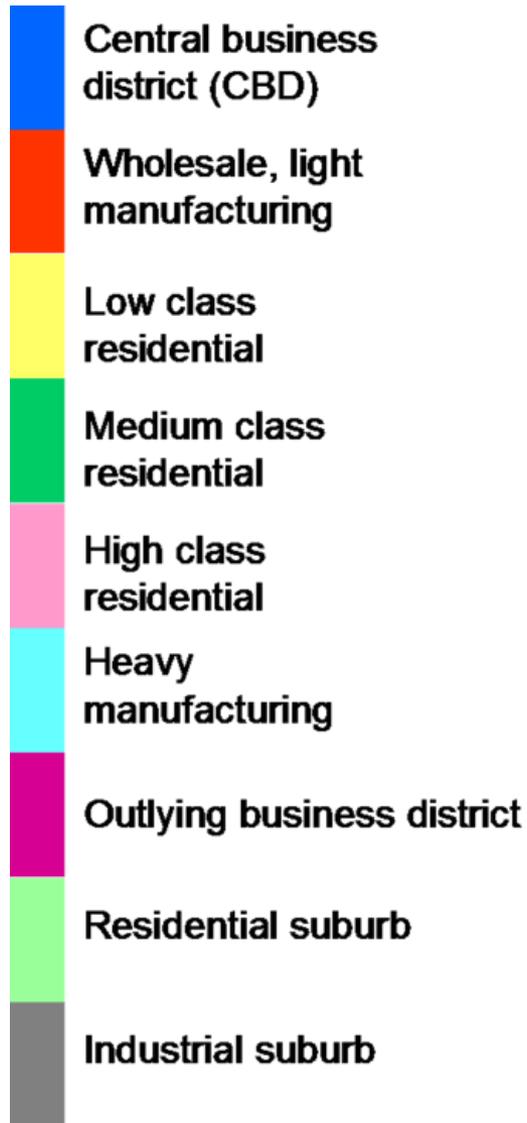


Harris and Edward Ullman in their book "Nature of Cities"

Why this model was proposed?

- This model was prepared because of diversity of function, it may not be possible for one commercial centre or one CBD to cater all the population

10 Zones of Multiple Nuclei



Harris & Ullman's Multiple Nuclei Model

Europe	Far East	America
<ul style="list-style-type: none"> ➤ CBD has open space called hollow pattern ➤ It is generally occupied by parks or some monumental structure. 	<ul style="list-style-type: none"> ➤ CBD has circular roads and towering buildings. ➤ They are not hollow 	<ul style="list-style-type: none"> ➤ CBD has sky scrapers mixed with parks
<ul style="list-style-type: none"> ➤ Land use pattern is non-residential wholesale marketing costly items. E.g. handicrafts, electronic, etc. 	<ul style="list-style-type: none"> ➤ Land use pattern mainly consists of government offices, administrative buildings, etc. 	<ul style="list-style-type: none"> ➤ Land use pattern consists of government offices, government enterprises only
<ul style="list-style-type: none"> ➤ Roads are circular having wide spacing between them with no congestion. ➤ The height of buildings is low. 	<ul style="list-style-type: none"> ➤ The system of roads is complex consisting of flyovers, tunnels etc. 	<ul style="list-style-type: none"> ➤ The roads are widely spaced with parks

What do you think about CBD structure in Pakistan?

Urban Land Use

URBAN LAND USE

Residential

- Upper class
- Middle class
- Lower class

Marketing

- Retail
- wholesale

Industrial

- Light manufacturing
- Heavy manufacturing

Institutional land use

- Health services
- Education
- Recreation

Hypermarkets

- MNCs
- Costly items