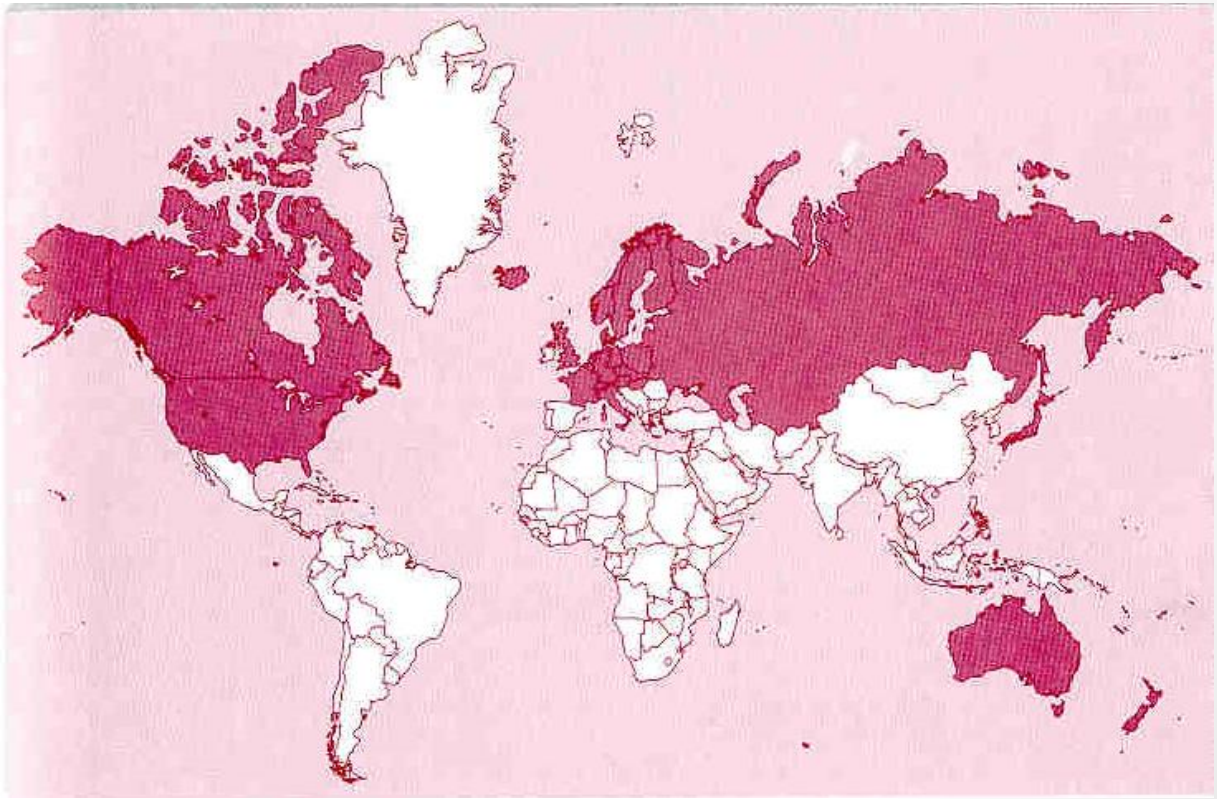
Town Planning during Industrial Revolution

Location

- Industrial revolution started specifically in Britain in 18th century.
- It swept across Western Europe and much of North America.
- Late to Asian country's

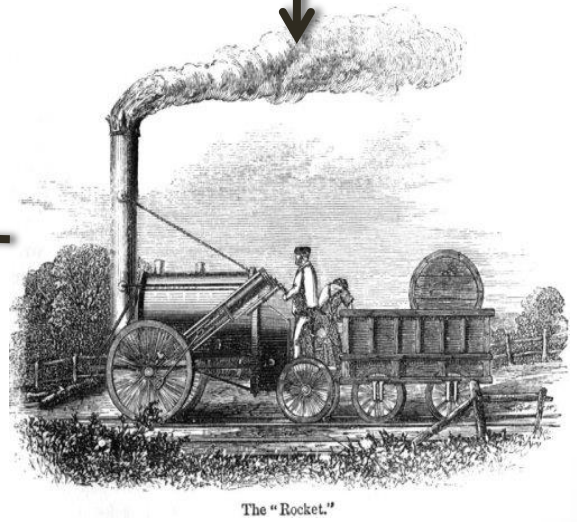


TRANSPORT

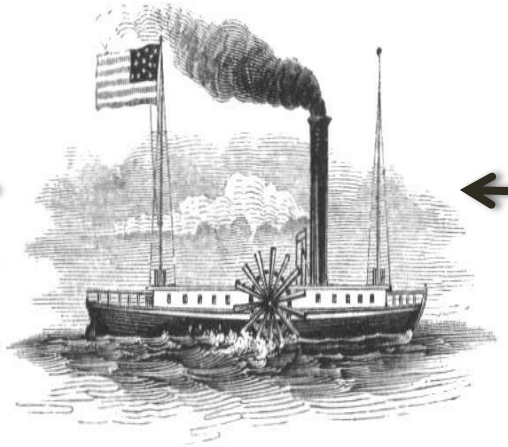
Canal barges pulled by mules

Ships powered by sails

Horse-drawn wagons, carts, and carriages



Trains



Steamships

Automobiles

TRANSPORT

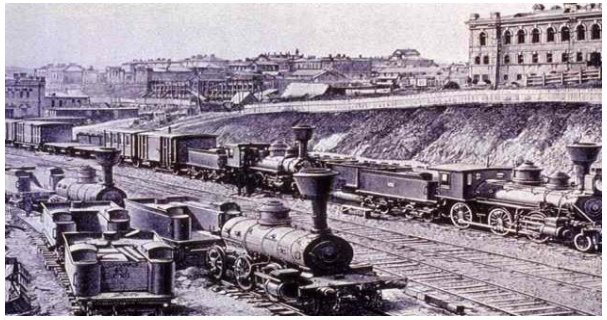
•**Rivers** played a major role in the transportation of finished products from the factories to the coast.
•The Severn, Thames, and the Trent were the most navigable rivers in England.

• **RIVER-**

• **CANAL-**

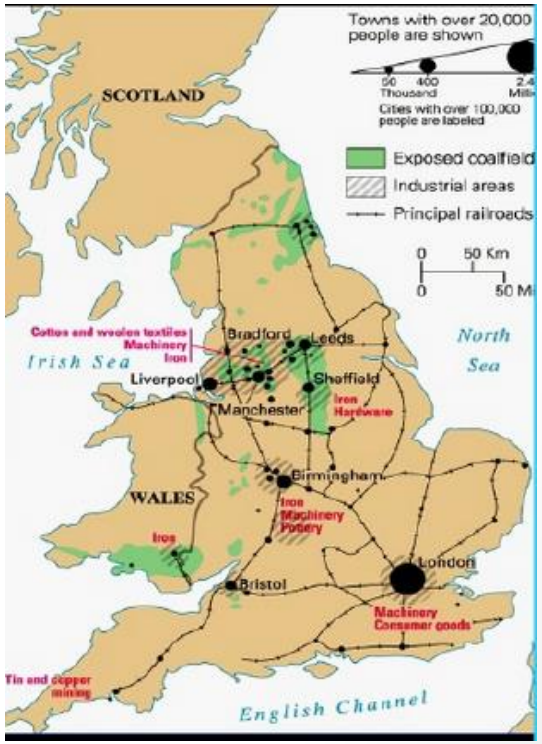
•The main **international seaports** of England were London, Bristol, and Liverpool
•The British began to build **canals** in the late 18th Century.
•In 1720**, roads** gained importance for the Industrial Revolution.
Turnpikes were established to charge a toll for the maintenance of roads.

•**ROADS-**

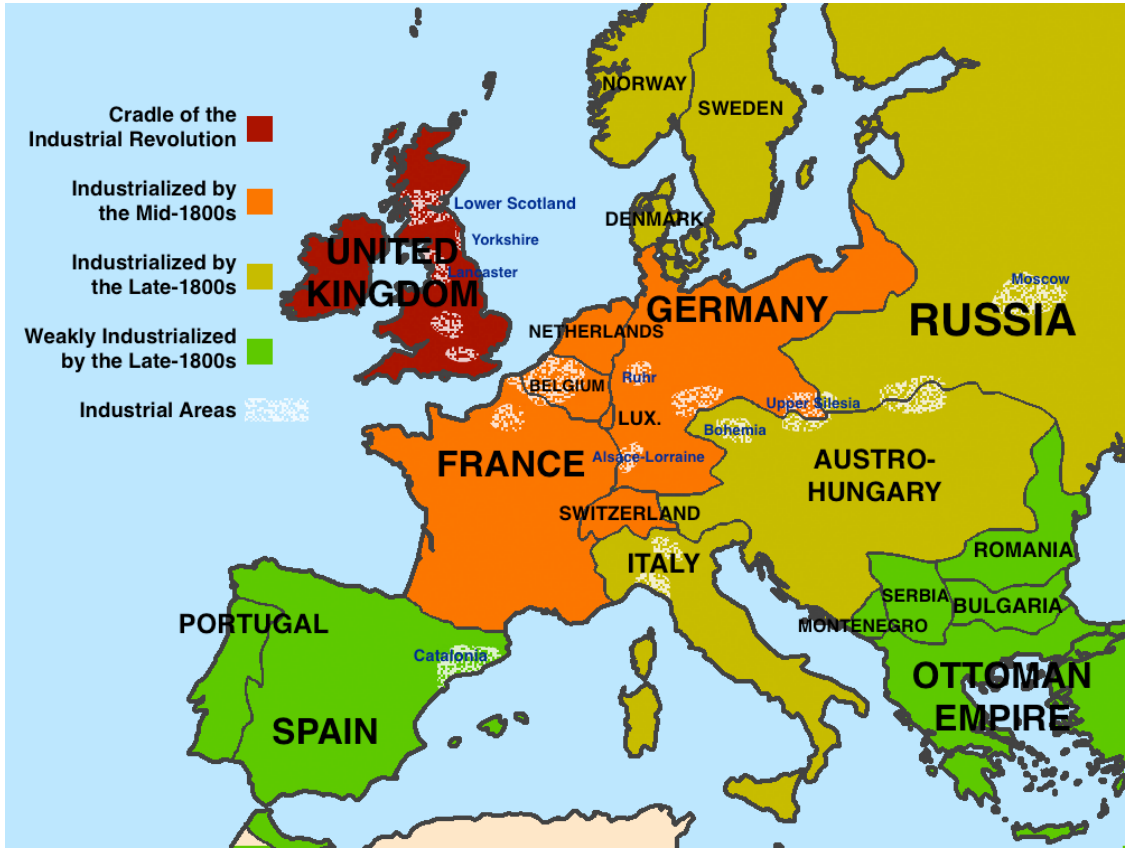


•**RAILWAYS-**

•**Railways** meant the end for canals .Railways were to transform Britain in the nineteenth century
• Robert Fulton made the first **steam-powered engine** to power a steamboat.



Spread



HOW IT SPREAD

Competition: With well established trade routes, awareness of competition increased. This led to increased pressure on production.

Increased work hours

Insecure working Conditions

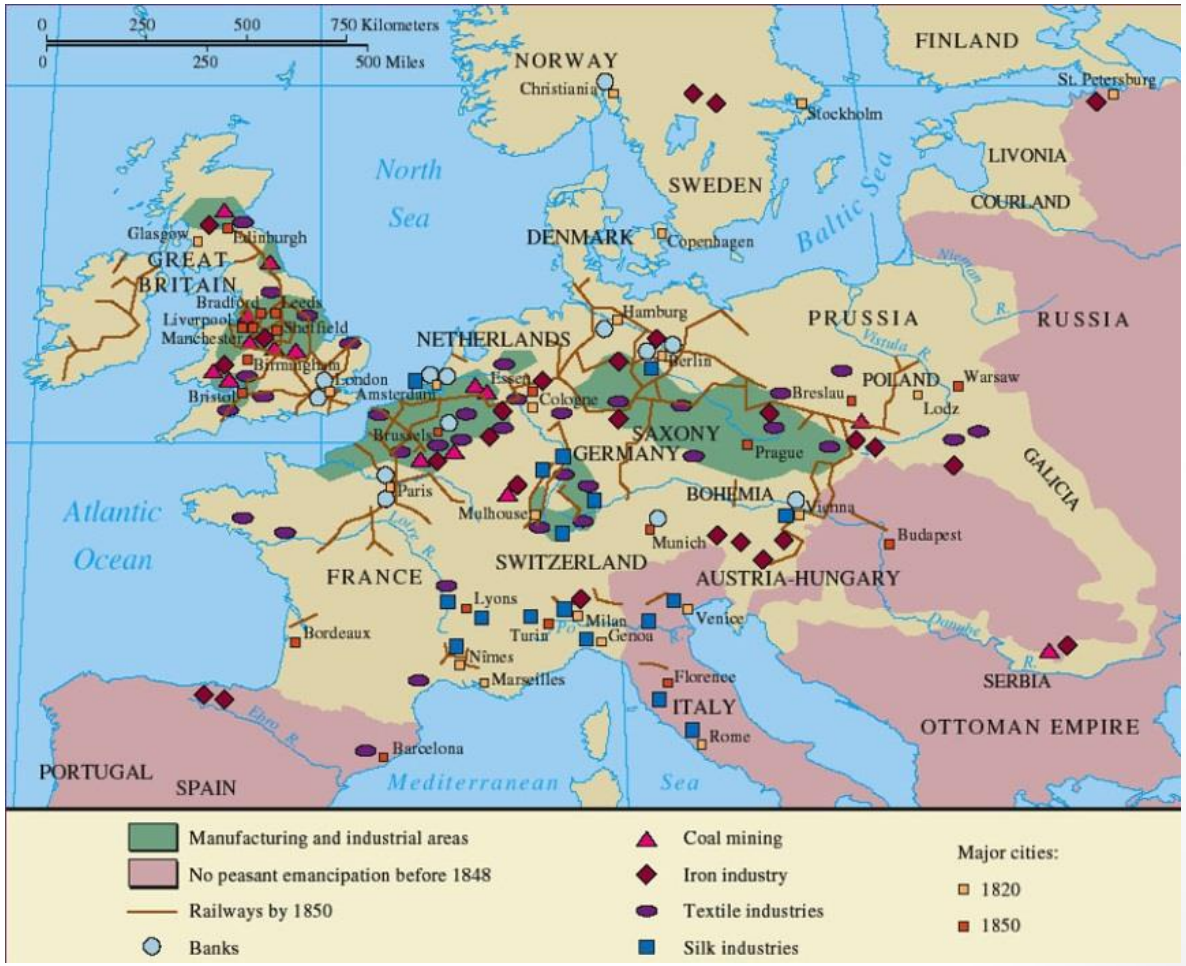
Living Standards
- Houses had to be in direct vicinity to factories
- Lodging of workers in overcrowded houses.

Formation of Slums:
- Lack of sanitation gave way to unhealthy living conditions

Geography/natural resources

Source: Beers, *World History: Patterns of Civilization*, 1983 (adapted)

- Wood was the main source of energy which was replaced by coal (more potent)
- Coal mines were available near the sea (cheap)



Culture and it impact on Architecture and City Planning

- Small industries and farming having very small amount of royal people
- After banks etc the lifestyle improved dramatically
- Middle class increased and this section also consumed most of the products and lived a royal life style
- mass of the people to achieve the income, education and leisure time necessary to enjoy fine books, good music, and beautiful sculptures and paintings
- inventions such as the printing press, radio and television that enabled works of culture to reach more people at lower cost, enabled men to acquire great wealth, part of which they returned to society by financing libraries, symphony orchestras, museums and scholarships for promising writers and artists, and encouraged the growth of democracy, thus providing the atmosphere of freedom so necessary for writers and artists to produce great works.

Increased work hours

Insecure working Conditions

Living Standards

•Houses had to be in direct vicinity to factories

•Lodging of workers in overcrowded houses.

Formation of Slums:

•Lack of sanitation gave way to unhealthy living conditions

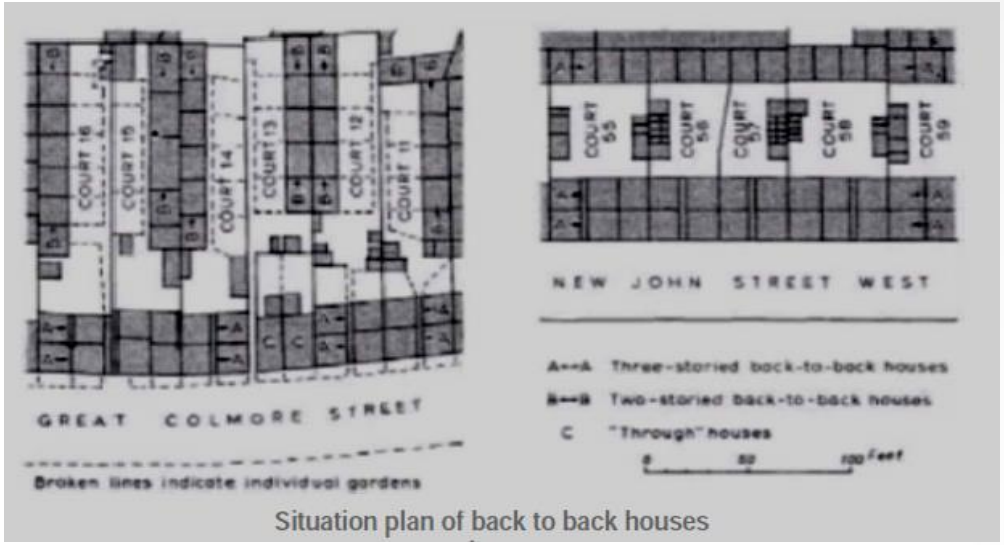
Political background

- Before industrialization public was rules by small social and political élite
- Before 17th century Britain was devastated by civil wars, fought to free themselves from an absolute monarch(charles 1st)
- Regime changed as a glorious revolution ,creating liberal, economic and political climate

Architectural character of the cities

•They are built in courts the principle is that **3 walls are shared with other houses reducing the amount of materials used**,.

•it was very **compact** and streets were very tight and would not allow for light or sufficient air to enter the house.



Situation plan of back to back houses

•A lobby/living space and an upstairs room, the kitchen and toilets were communal and often shared between 16 households.

•Each house could have from 1 to 3 families living inside and even possible animals.

•The courtyards had privies (outdoor toilets) cooking, storage areas and cesspool (hole to receive waste from the house)

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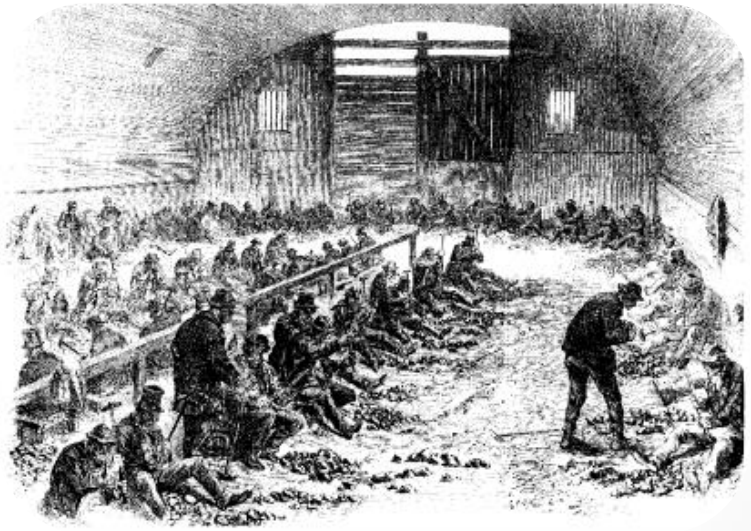
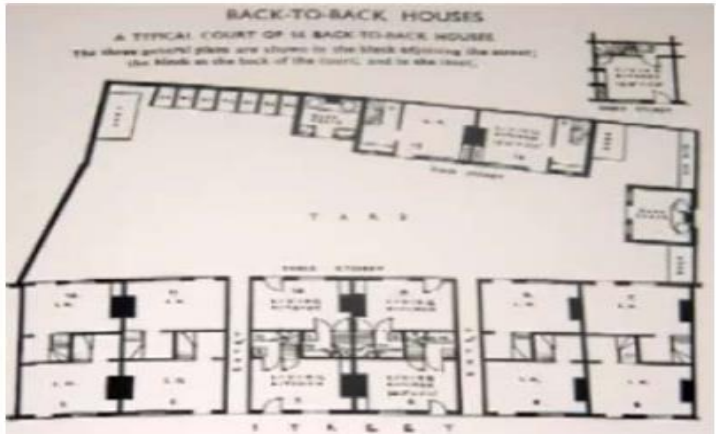


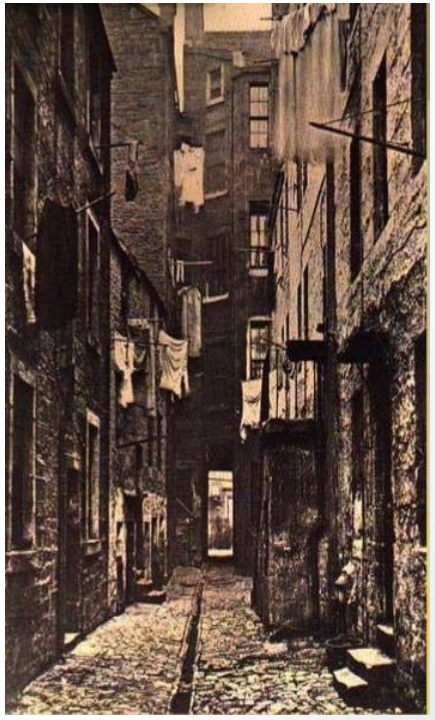
Architectural character of the cities

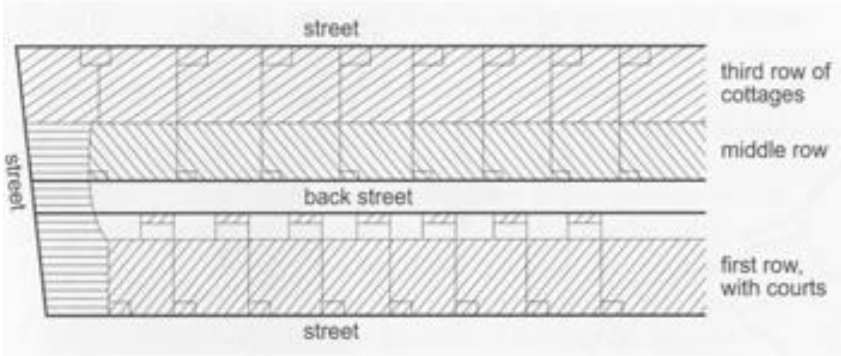
Back-back houses

- BUILT IN DOUBLE ROWS
- NO WINDOWS AT FRONT
- NO BACKYARDS
- A SEWER DOWN MIDDLE OF STREET
- BUILT CRAMMED CLOSE TOGETHER VERY NARROW STREETS BETWEEN THEM.

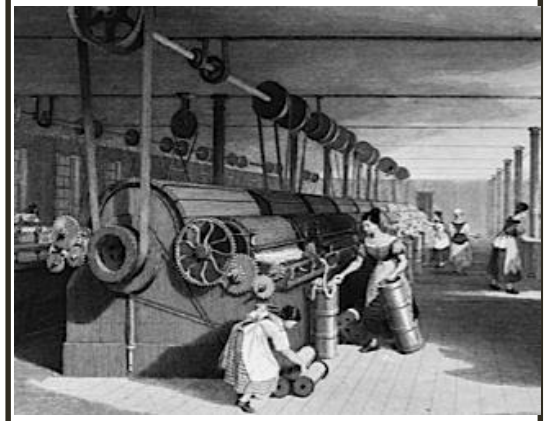


The "Dark Days" of Industrialization





Technological achievement and its reflection in planning



JETHRO TULL'S SEED DRILL

'first industrial revolution', characterized by developments in textiles, iron and steam led by Britain, to differentiate it from a 'second' revolution of the 1850s onwards, characterised by steel, electrics and automobiles led by the US and Germany

16 and 17th century Wedge wood –potter in London became famous manufactures found
Difficult carrying raw materials to factory ⟶ finished products to market

Parliament was ready to allow businessmen to build road and toll was charge by travellers

In staffecher road was constructed from factory to market and to national road which further expanded Connecting cities (France military)

Canals motorways were created by private entrepreneurs for transport in cheaper way

Difficult terrain leading to tunnels reducing the transport cost.

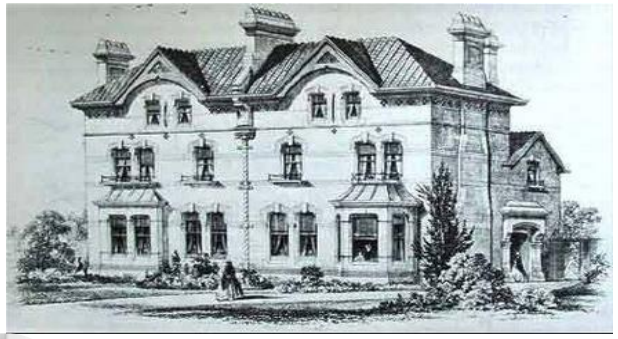
Canals connected the coast and network navigable rivers.

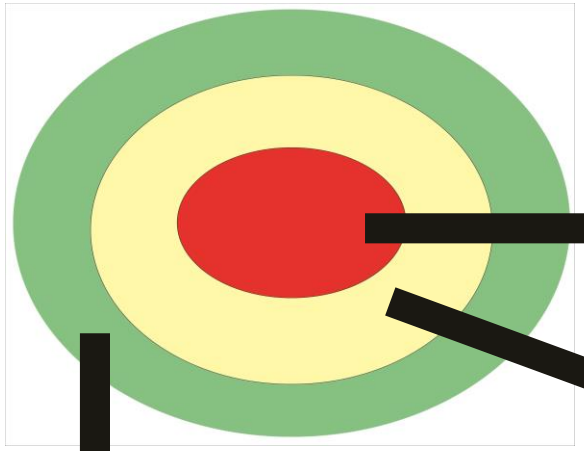
http://www.youtube.com/watch?v=JhF_zVrZ3RQ

Evolution of planning

The Middle Class

As the Working class struggled for a livelihood in the slums, the middle class factory owners lived in detached houses near the countryside



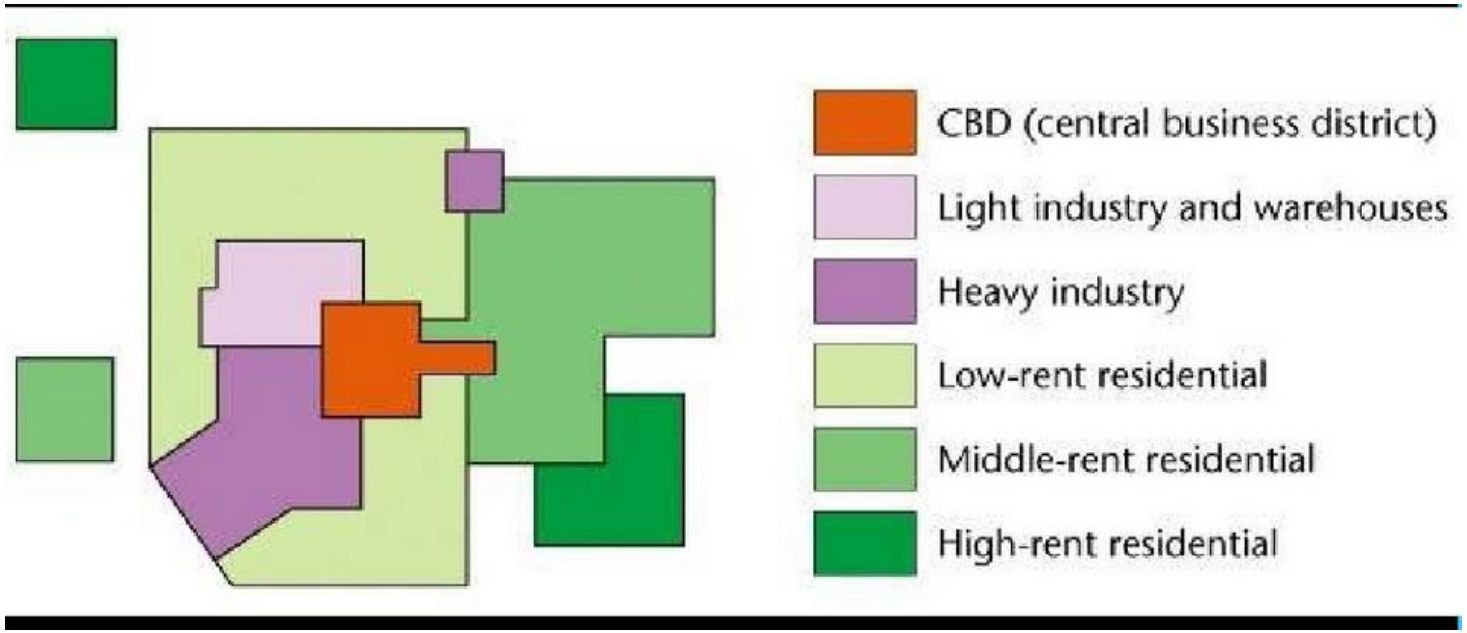


City centre: Shops and services

Suburbs: Parks & houses

Inner City: Factories and run down houses

Evolution of planning-LEED

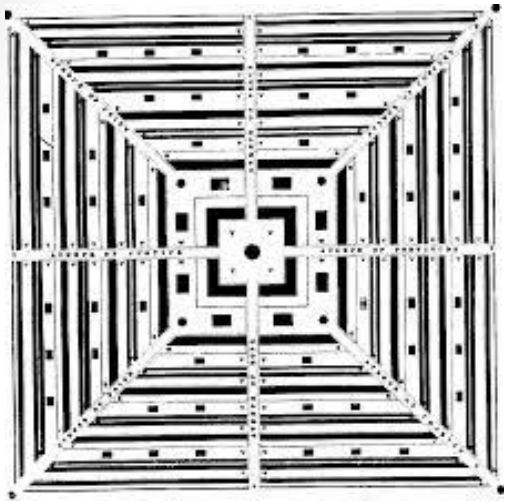


Pattern of land-use changed radically: It was determined by radial transport route beginning at town centre

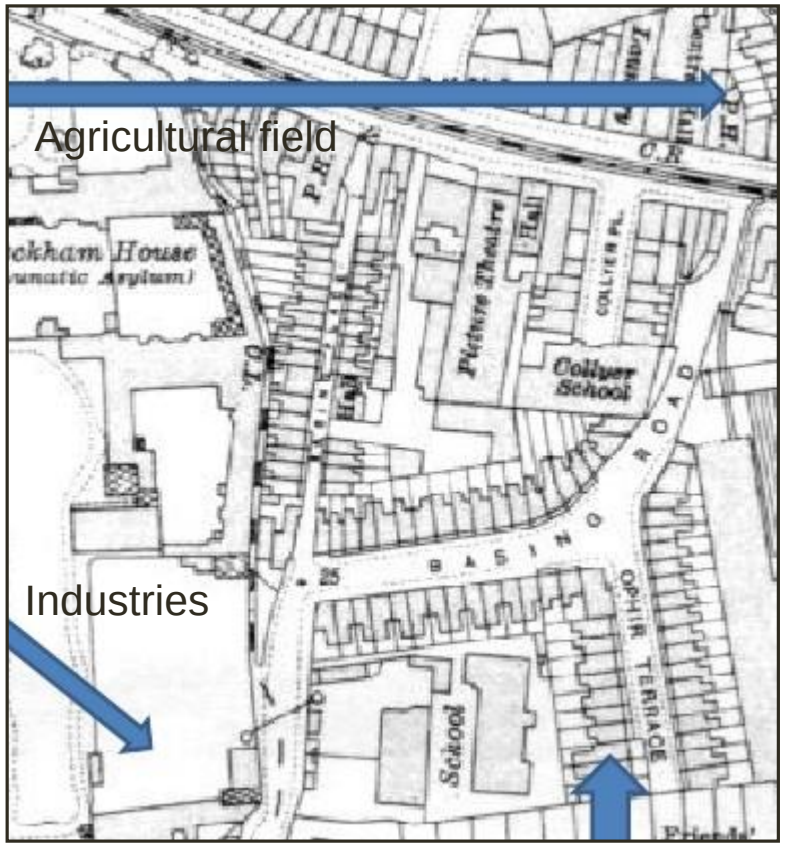
- **Low rent residential area** is near to industrial district (heavy and low industries and warehouses)

- **High rent residential areas** are in the outskirts of cities (suburbs)

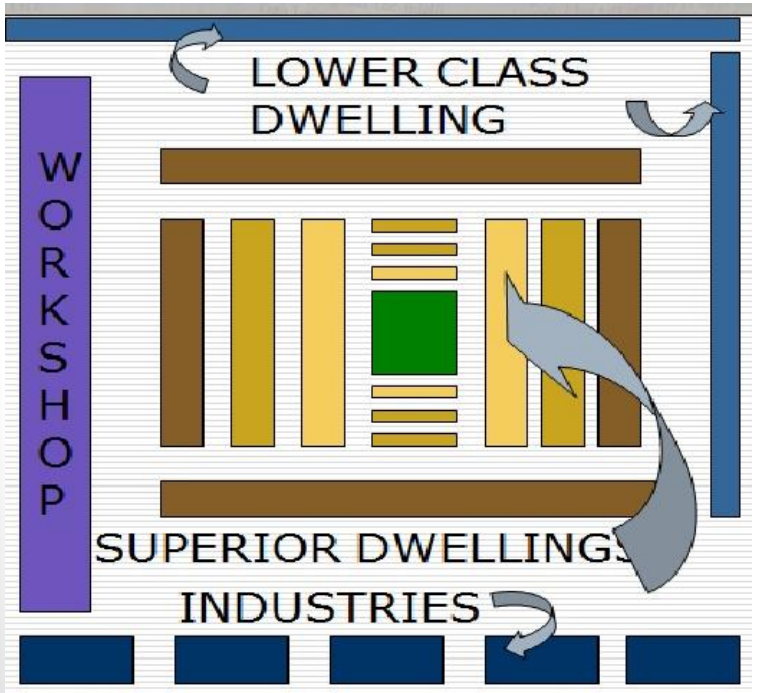
UTOPIAN PROPOSALS - Robert Owen and J S Buckingham



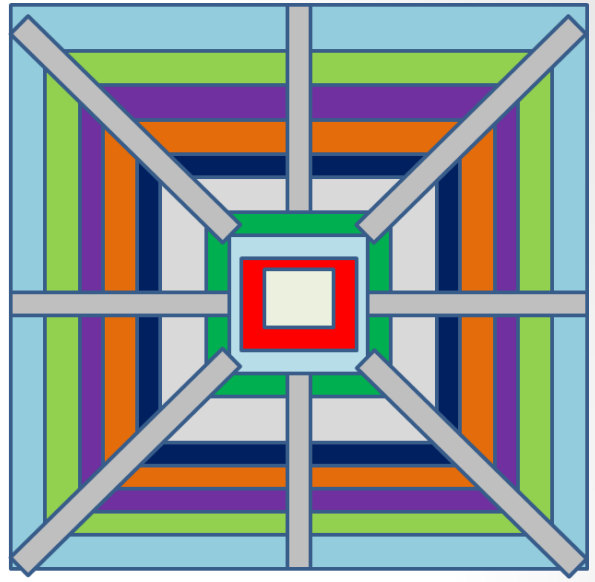
Focused attention upon the growing evils of the urban environment



Housing for worker with garden in front



IN 1849 published a treatise entitled “national evils and practical remedies” in which he described his plan for a model town for an “associated temperance community of about 10,000 inhabitants



1000 houses 20 feet wide

Arcades for workshops

560 houses 28 feet wide

Retail shops

296 houses 38 feet wide

Winter promenade arcade

120 houses 54 feet wide

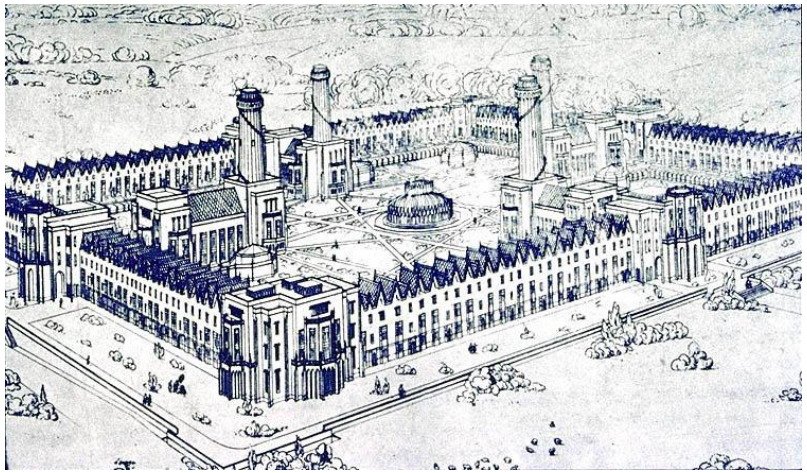
Public buildings, churches

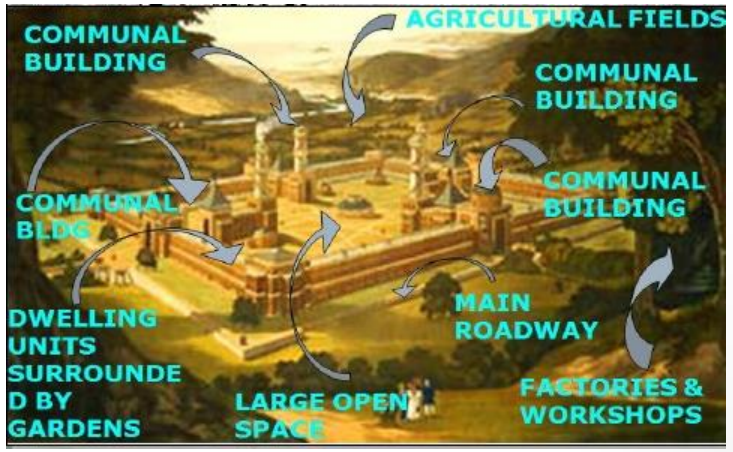
24 mansions 80 feet wide

Central square

Utopian Design objectives

URBAN DESIGN OBJECTIVES	PERFORMANCE CRITERIA
•Character	A distinct sense of place responding to the local context
•Continuity and enclosure	Continuity of frontages, defined public &private spaces
•Quality of public realm	safe, attractive, lively and functional public space
•Ease of movement	An accessible, well connected, pedestrian friendly
•legilibility	A readily understandable, easily navigable environment
•Adaptability	flexible & adaptable public & private environment
•diversity	A varied environment offering a range of experiences





Town planning: **The Garden City**

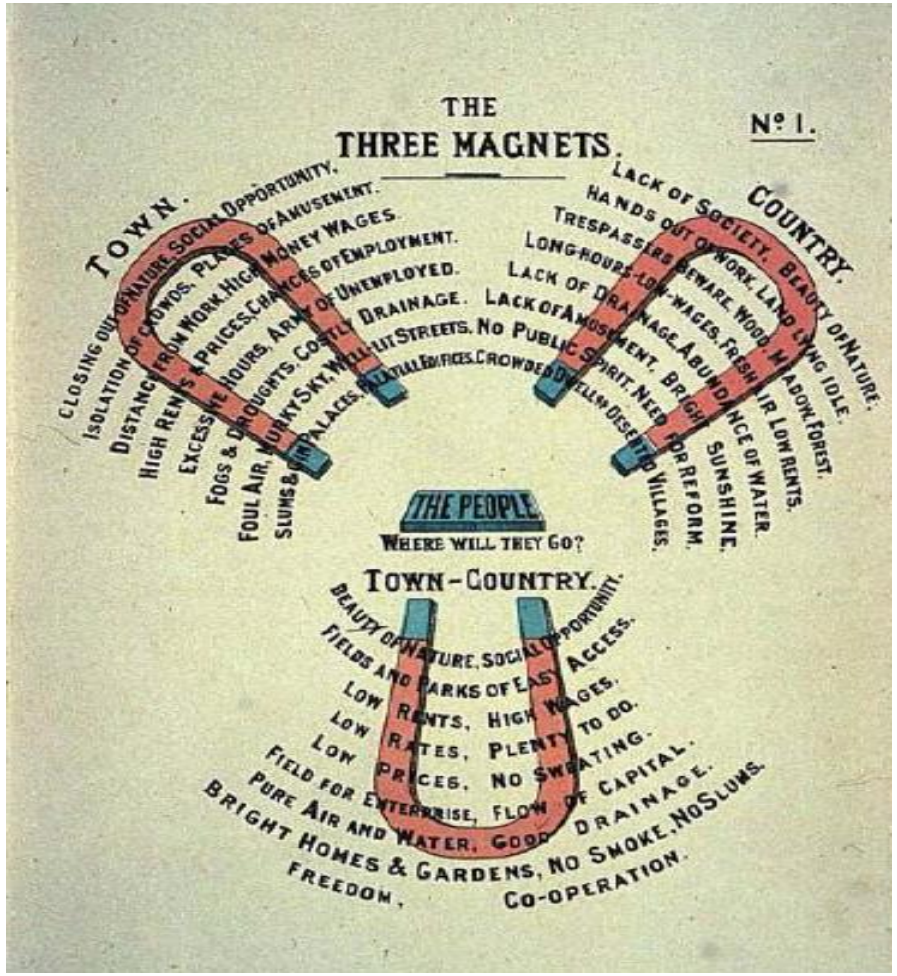
The Garden City Concept

Formulated by Ebenezer Howard in 1898.

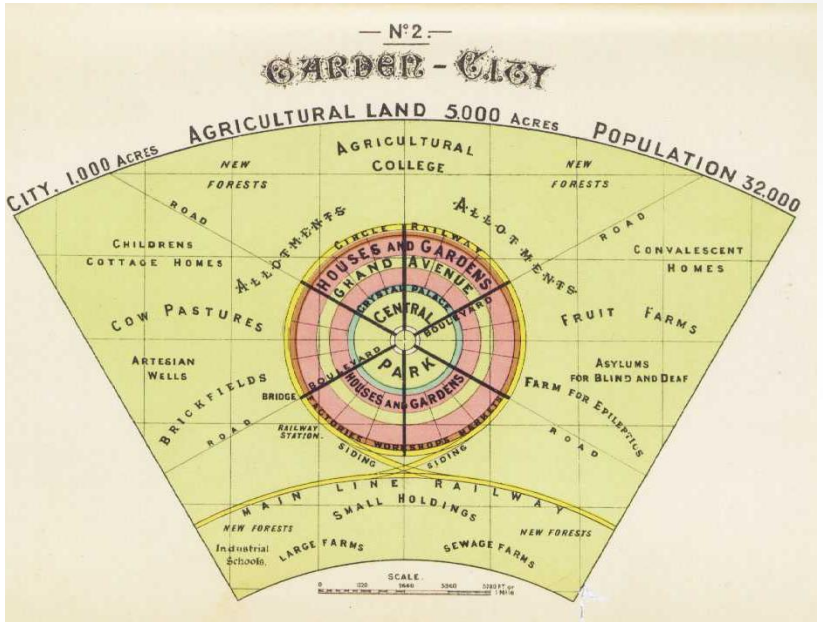
Country lifestyle
Appreciation of the beauty of nature and a high level of residential amenity.

Commerce and trade
Access to services, facilities and commerce.

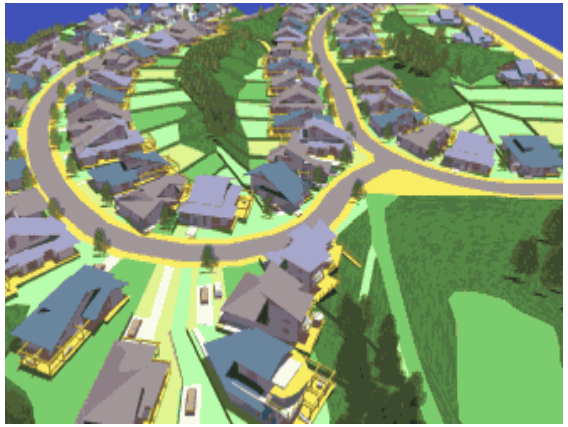
Town lifestyle
Access to safe, pleasant housing as well as the opportunity for social interaction and the opportunity to participate in the community



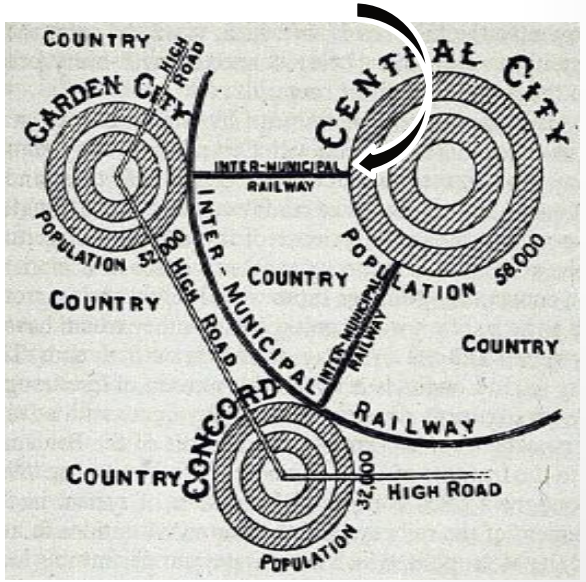
Howard combined both town &country into a City with its own green-belt to prevent undesirable expansion from within or encroachment from outside the city



Industry was to be close but not unpleasant to residential areas, this was meant to be an answer to unproductive, tiresome and uneconomical commuting.



When each settlement reached 50,000 people, another garden city would be set up nearby linked by road and rail



Source
Review of "A hundred years of town planning and the influence of Town Planning" by Max Steuer
Reinterpreting the Garden City Concept by Robert Freestone
http://grahamwebber.blogspot.in/2004/11/ebenezer-howard-and-garden-city.html

Review and Analysis

THE UTOPIANS

- **Rorbert Owen proposed Self – Supporting industrial towns**
- Communal buildings at the center ,
- surroundinded by dwellings (grouped about a large open space)
- Main roads encircled the entire area, on one side were factories , workshops.
- Beyond these, was the Agricultural belt.

- **J.S. Buckingham's proposal–multitude features**
- Industries about half a mile way from town
- Finner houses near the center & humbler dwellings and workshops at periphery

Drawbacks and loopholes for failure :

- Most of the Utopian proposals remined **unexecuted**.
- These projects represented **2 extremes:**

1. congested urban areas with 6 – 7 stories of tenements – resulting into slums
2. Single houses were built at outskirts – which were unaffordable by the working class

MODEL TOWNS

- Extensive Community Facilities were introduced to workers
- Intended to improve the housing conditions of the workers.
- Small area were experimented.
- First Model town : Bessbrook, Ireland
- Followed by were at Holland, Bourneville, Italy, Liverpool, etc.

Reasons for failure :

- These model towns were very few, contributing little solutions to real problems of housing in factory centers
- Ambitious proposals remained as diagrams.
- Natural features were ignored.
- Henceforth, grid became the basic pattern leading to gridiron plan of cities.

THE GARDEN CITY