



ARCH353
Principles of
URBAN DESIGN

“INDUSTRIAL DEVELOPMENT & MODERN CONCEPTS FOR URBAN DESIGN”



Introduction

This lecture topic will introduce to the students the historical development of how city forms were developed. It is a brief description about the creation of ancient Greek, Roman, & Egyptian city forms and its characteristic similarities and differences.

Students are also presented with a brief overview of middle-age Europe and its method of development for its city forms.

Reference:

The Economics of Slums in the Developing World

Benjamin Marx, Thomas Stoker, and Tavneet Suri

Journal of Economic Perspectives—Volume 27, Number 4—Fall 2013—Pages 187–210

A Contemporary Perspective on Slums

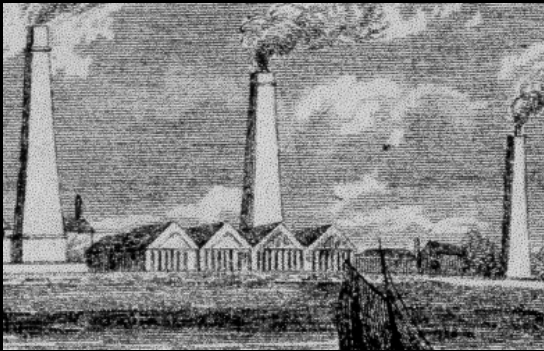
Slums were a distinctive feature of **European and US cities** during the Industrial Revolution, which both attracted migrants and offered them some access to economic opportunities.

For example, the Whitechapel area of East London attracted a vast number of poor rural migrants during the eighteenth and nineteenth century due to the new factories and shops of that part of the city.

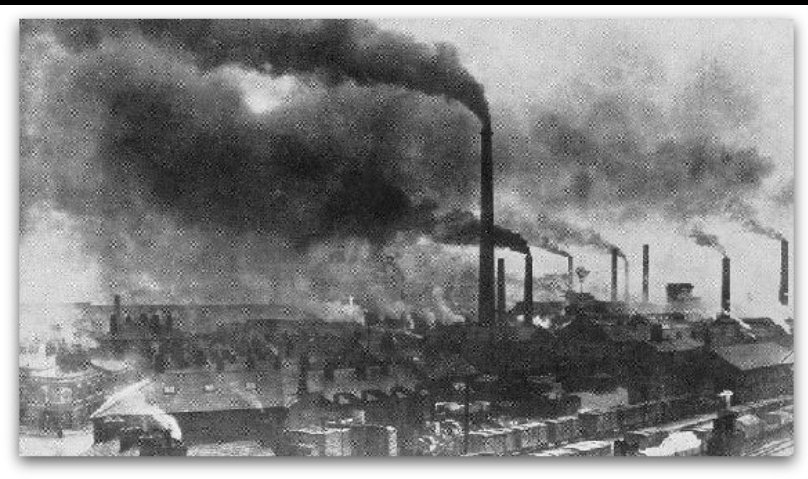
The Hell's Kitchen area of New York City on the Hudson River side of Manhattan attracted immigrants in large part because of its proximity to docks and railroads, as well as to the growing city nearby.



Squatters on Houston Street, New York City



The **Industrial Revolution** marks a major turning point in history; almost every aspect of daily life was influenced in some way. At approximately the same time the Industrial Revolution was occurring, Britain was undergoing an agricultural revolution, which also helped to improve living standards and provided surplus labour available for industry. This also led to the migration of people from the countryside to the cities for work .





Housing

Living conditions during the Industrial Revolution varied from “splendour” for factory owners, to “squalor” for workers. In 1844 Frederick Engels, described backstreet sections of Manchester and other factory towns , people lived in crude “shanties and shacks”, some not completely enclosed, some with dirt floors.

These shanty towns had narrow walkways between irregularly shaped lots and dwellings. There were no sanitary facilities. Population density was extremely high. Eight to ten unrelated mill workers often shared a room, often with no furniture, and slept on a pile of straw or sawdust. Toilet facilities were shared if they existed. Disease spread through a contaminated water supply. Urban people—especially small children—died due to diseases spreading through the cramped living conditions and from polluted water was common.

What were Slum houses like inside?

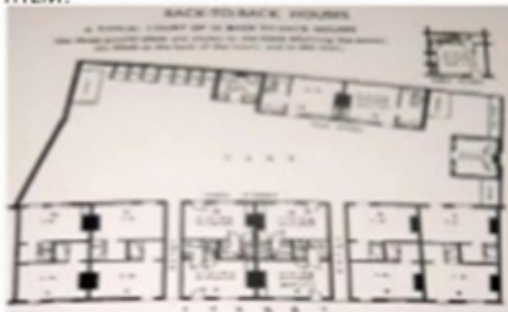
There was no toilet, no running water – sometimes not even windows or a fireplace! Rooms were cold, badly ventilated and running with damp. Worst of all were the cellar and attic dwellings in which the poorest families lived. Cellar rooms flooded in bad weather and might be an inch or so deep in stagnant water the whole year round. Attic rooms were cramped and stuffy, with no way of escaping if the building caught fire.



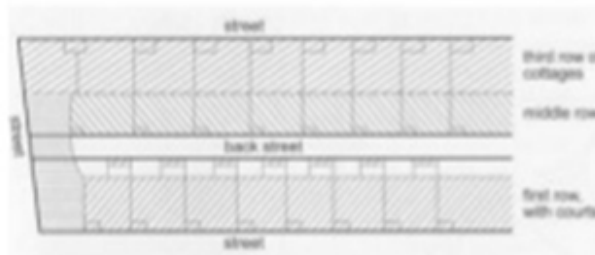
Architectural character of the cities

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



THE ROOTS جذور OF MODERN CONCEPTS: PLANNED INDUSTRIAL TOWNS المدن الصناعية المخطط لها



John Wood's design for a duplex workers' cottage.

Around 1900, theorists began developing urban planning models to mitigate the consequences of the industrial age, by providing citizens, especially factory workers, with healthier environments.

At the same time in the Renaissance period عصر النهضة, a new theoretical approach to urban design emerged برز نهج النظرية للتصميم الحضري:

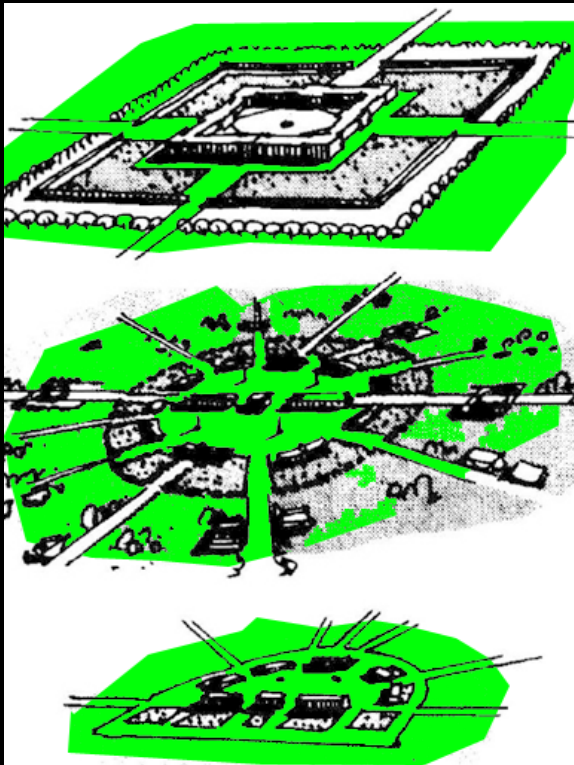
- The city as a place for all people to live , with emphasis التركيز on the needs of the people from the working class المدينة كمكان لجميع الناس للعيش، مع التركيز على احتياجات الشعب من الطبقة العاملة.



Robert Owen's "Village of Unity and Mutual Cooperation."

In 1799, Robert Owen a British man, built a self-sufficient **الاكتفاء الذاتي** industrial village with recreational **قرية الصناعية مع الترفيهية** and educational **والتعليمية** facilities.

After which many "Owen towns" were built in Britain and the US.



Ledoux's three plans for Chaux.

In his book called "Architecture" (1804) Ledoux, a French Architect published his ideas about designing a town for salt **الملح** workers in Chaux, France.

It was based on the concept of self-sufficiency **الاكتفاء الذاتي**. People can grow **تنمو** their own food in an *informal* building orientation.

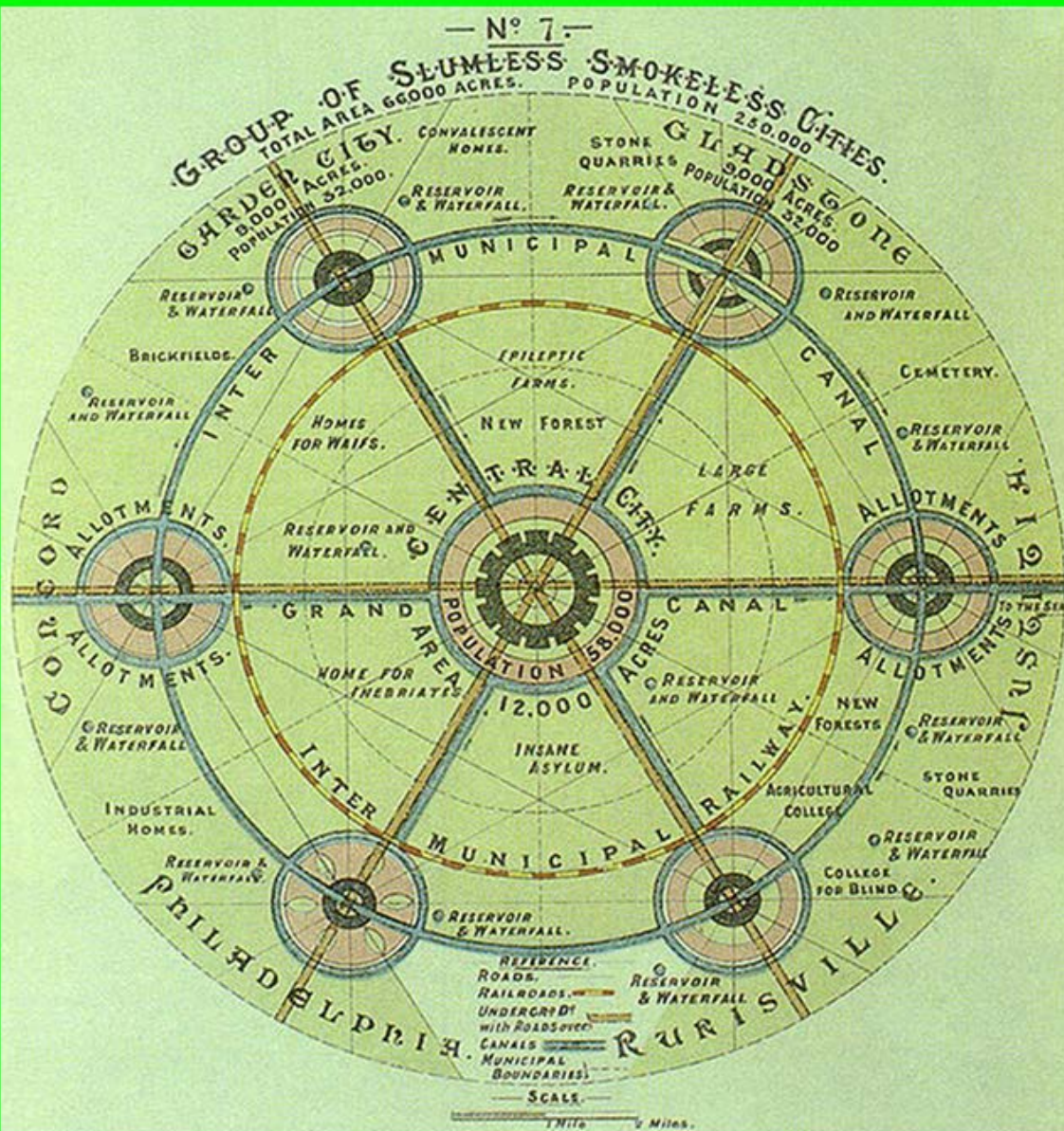
THE GARDEN CITY MOVEMENT : حركة جاردن سيتي

The "Garden City" concept is one attempt to reduce *and solve social problems* حل المشاكل during the Period of Industrialization التصنيع الفترة in Europe. In 1902, social reformer Ebenezer Howard published his book "Garden Cities of Tomorrow", where he outlined his idea of a planned Social City المخطط مدينة الاجتماعية where people would live in harmony with nature العيش في وئام مع الطبيعة.

Initiated in 1898 by Sir Ebenezer Howard in the United Kingdom, Garden Cities were intended to be planned, self-contained communities surrounded by "greenbelts", containing proportionate areas of residences, industry and agriculture مجتمعات مكتفية ذاتياً محاطة "الأحزمة الخضراء"، التي تتضمن مجالات متناسبة من المساكن، والصناعة والزراعة.

THE THEORY:

To develop a city structure which contains the advantages of a city and of the countryside تطوير بنية . His idealised garden city would house 32,000 people on a site of 6,000 acres (2,400 ha), planned on a concentric pattern with open spaces المخطط على نمطاً متحدة مع public parks and six radial boulevards ستة شوارع شعاعي , 120 ft (37 m) wide, extending from the centre. The garden city would be self-sufficient and when it reached full population, another garden city would be developed nearby. Howard imagined a cluster of several garden cities as satellites of a central city of 58,000 people, linked by road and rail مجموعة من عدة مدن حديقة كالأقمار صناعية مدينة وسط الشعب 58,000، مرتبطة بالطرق البرية والسكك الحديدية The principle of organic planning is the structuring of the city into communities هيكلية المدينة إلى المجتمعات each of which is a self-contained unit for many of the immediate necessities of the residents.



Howard envisioned many satellite garden cities مدن حديقة الفضاءية around a central city, like London. They would all be linked ربط by roads and railways.

"Garden Cities of Tomorrow", was published in 1902 (2nd edition by Ebenezer Howard).

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

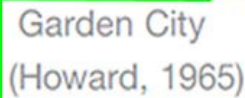


Suburbs: Parks & houses



Inner City: Factories and run down houses

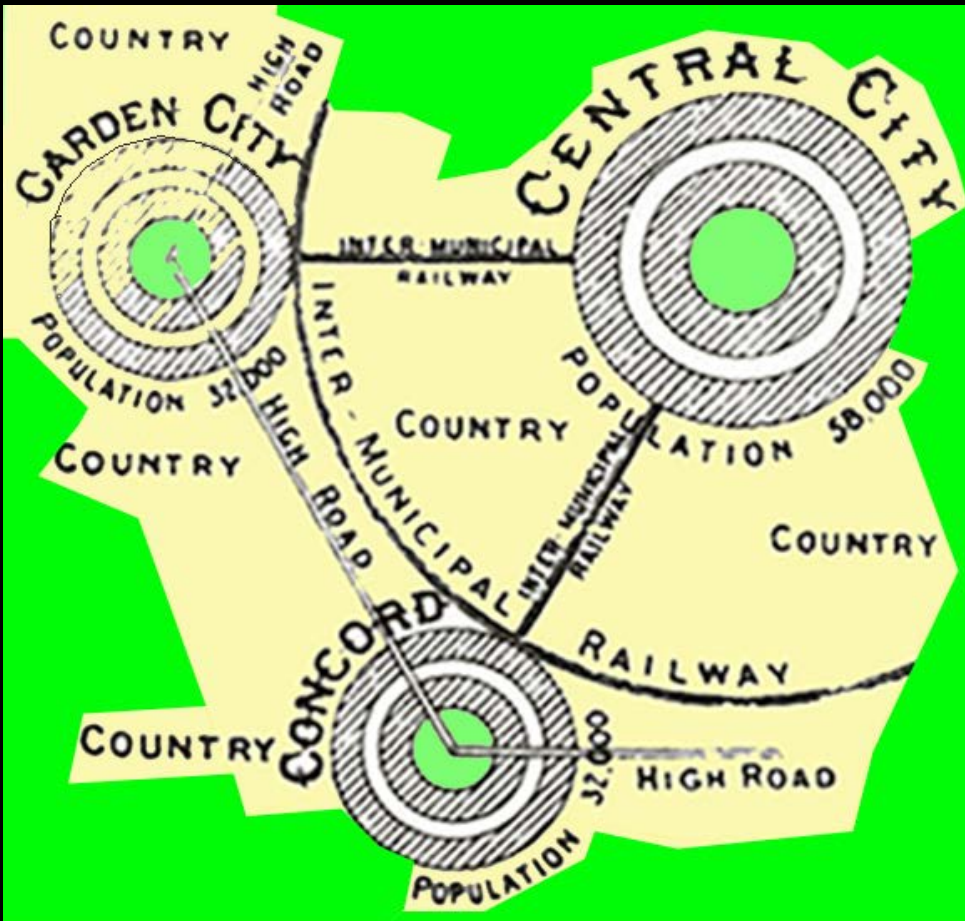
التابعة



- The Garden City consists of different zones, street types and green.
- The core in the centre الأساسية في وسط is about 4 km² and contains a central park, surrounded by a commercial, cultural and administrative zone منطقة الثقافية والإدارية.
- The core of this ideal city are the public buildings المباني العامة set in a central park
- Six magnificent boulevards ستة شوارع الرائعة connect the centre with the circumference, dividing the city into six parts.



- A wide road (Grand Avenue) and some smaller ring roads الطرق الدائرية are arranged circular around the centre, and together with the radial roads الطرق الشعاعية, they form the wards عنابر - living area.
- Every family has a house of a minimum size of 6m x 30m with a shared or owned garden. Social infrastructure (i.e. schools) is located along the Grand Avenue .
- The outer ring is supposed for small scale industries and manufactories to keep the inhabitants away from emission and a green belt and a circle railway mark the border to the countryside.

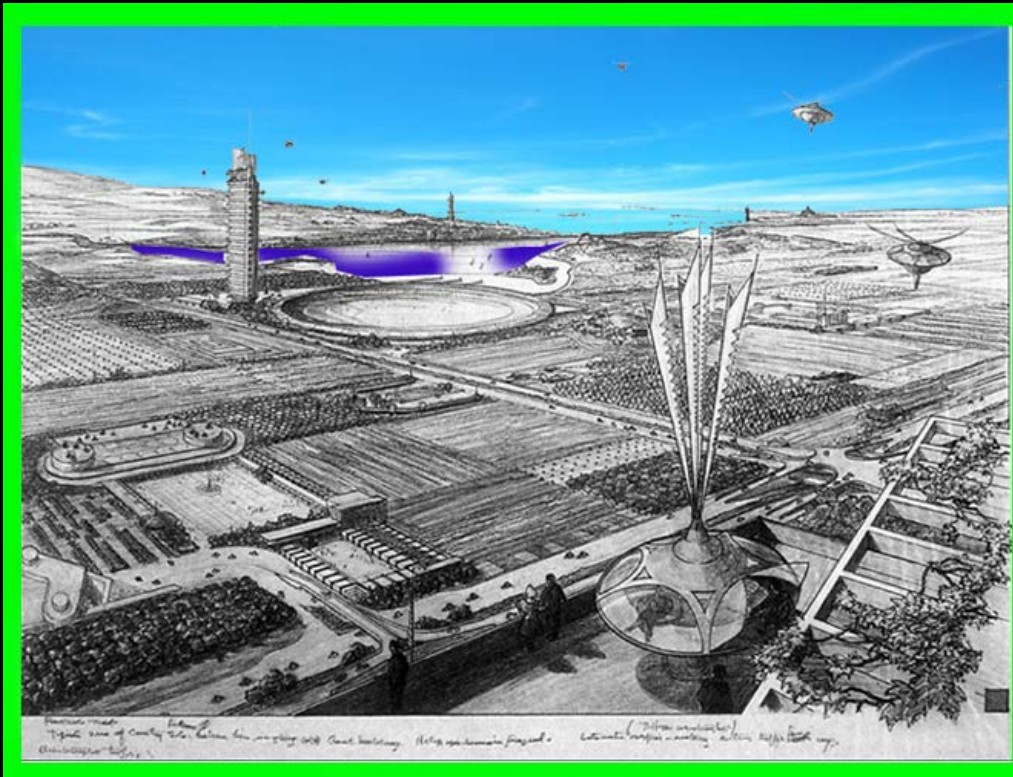


Open Country always nearby and
Rapid Communication exists between off-shoots

CITY EXPANSION

- the concept limits the city maximum population up to 32,000 people.
- a new city has to be created at a reasonable distance of about 7km away to protect the countryside.
- The town sits in a large tract of agricultural land owned by the municipality, being kept free of urban development by the self-interest of the city population.
- The cities are well connected through a railway system to exchange goods.

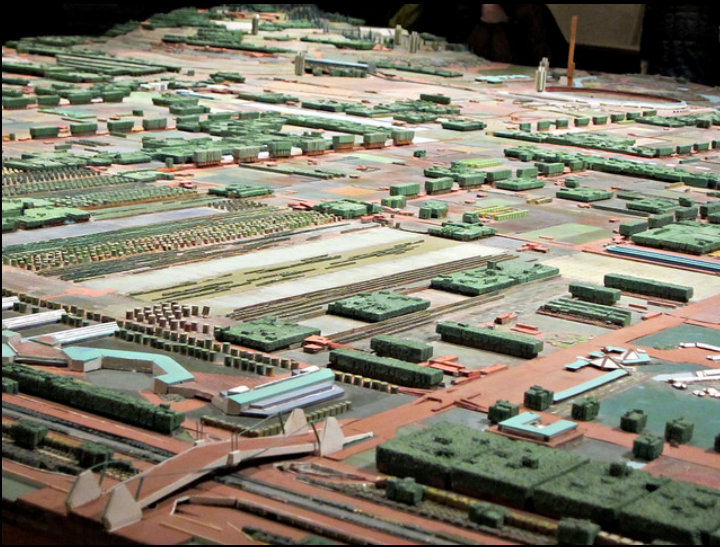
"BROADACRE CITY" : - ARCHITECT FRANK LLOYD WRIGHT



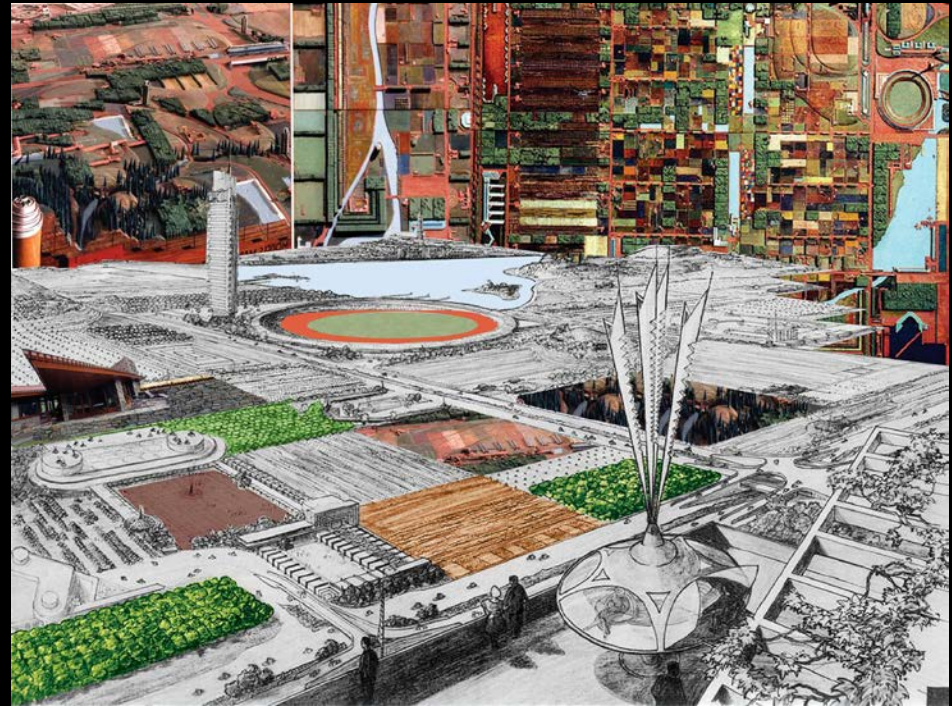
The "Broadacre City" plan of 1935 is a large grid of arterials spread across the countryside, with most of the internal space devoted to single-family homes on large lots. هو انتشار شبكة كبيرة من أرتيرials مع معظم المساحة الداخلية لجميع أنحاء الريف، المخصصة لأسرة واحدة والمنازل في الكثير كبيرة .

Each family would be given an acre of land, and the largest "villages" would have no more than 10,000 people.

Areas are also carefully set aside for small farms, light industry, orchards recreation areas, and other urban facilities. المرافق الحضرية. Public needs like water and power would never be privately owned.



“BROADACRE CITY” : -ARCHITECT FRANK LLOYD WRIGHT



A network of superhighways connects the region, so spatially dispersed facilities are actually very close in terms of travel time . يربط شبكة من طريق الرئيسي في المنطقة، ومكانيا مرافق المشتتة فعلا قريبة جداً من حيث وقت السفر .
Broadacre City was never built, but the idea of a city with locally-produced food, power and other goods continues to inspire to this day.

In many ways, Wright's Broadacre City resembles يشبه American suburban developments of the post-WW II period.

THE CITY IS LIKE A 'SYMBOL'

والمدينة مثل 'رمز'

According to Kevin Lynch (1981) there are three (3) main representations تمثيلات which is used to explain city form المدينة الذي يستخدم لشرح شكل المدينة (3). تمثيل الرئيسي

1. City as Machine المدينة كما آلة

The idea "City as Machine" was developed by the writings of French-Swiss architect Le Corbusier. According to LeCorbusier, Architecture should be as efficient and simple as the industrial machines that had led in the modern age . وفقا ليكوربوسير، ينبغي أن يكون الهيكل الكفاءة وبسيطة كالآلات الصناعية التي أدت في العصر الحديث .
Like the house, the city was seen by some modernist architects as 'a machine for living in' ورأى المدينة مثل 'آلة للعيش' .
المنزل، وبعض المهندسين المعماريين الحداثة كـ "آلة للذين يعيشون"

CITY AS MACHINE:

CASE EXAMPLE : THE "RADIANT CITY"

— ARCHITECT LE'CORBUSIER



He planned two modern utopias modeled on this idea of the city as machine: the "Contemporary City" of 1922 and "Radiant City" of 1935. Both cities would have massive skyscrapers housing millions of people — rich and poor
سيكون كل من المدن الضخمة ناطحات السحاب السكنية الملايين من الناس — الغنية والفقيرة.

Parks and green areas would divide these massive cities into zones of productivity and leisure
الحدائق والمساحات الخضراء أن تقسيم هذه المدن الضخمة إلى مناطق إنتاجية وأوقات الفراغ.
Different land uses were located in separate districts
الاستخدامات المختلفة للأراضي تقع في مناطق منفصلة forming a rigid geometric pattern
نمط هندسي نظام with a sophisticated system
طرقات سريعة والنقل بالسكك الحديدية of superhighways and rail transit.



Le Corbusier, the French modernist architect wanted to reform the polluted industrial city by building “towers in a park” where workers might live high above the streets, surrounded by green space and far from their factories إصلاح المدينة الصناعية الملوثة ببناء "أبراج في حديقة" حيث قد يعيش العمال عالية فوق الشوارع، وتحيط به المساحات الخضراء وبعيدة عن المصانع.

His idea was radical for the 1930s, and it was his diagrams of it that really captured the imagination. Le Corbusier's beautiful scheme for "towers in a park," would influence planners for decades to come مخطط جميل "أبراج في حديقة"، ستؤثر على المخططين لعقود قادمة.

His plan, proposed numerous high-rise buildings each surrounded by green space. Each building was set on what planners today would derisively refer to as “superblocks,” and space was clearly delineated between different uses (in the above diagram, this includes “housing,” the “business center,” “factories” and “warehouses”) تم تعيين كل بناء على ما المخططين اليوم السخرية تشير إلى أنها "سوبر بلوكس"، وكان الفضاء بوضوح بين الاستخدامات المختلفة (في الرسم التخطيطي أعلاه، وهذا يشمل "السكن" و "مركز الأعمال"، "مصانع" و "مخازن").

- ENG DON ARTURO SORIA Y MATA



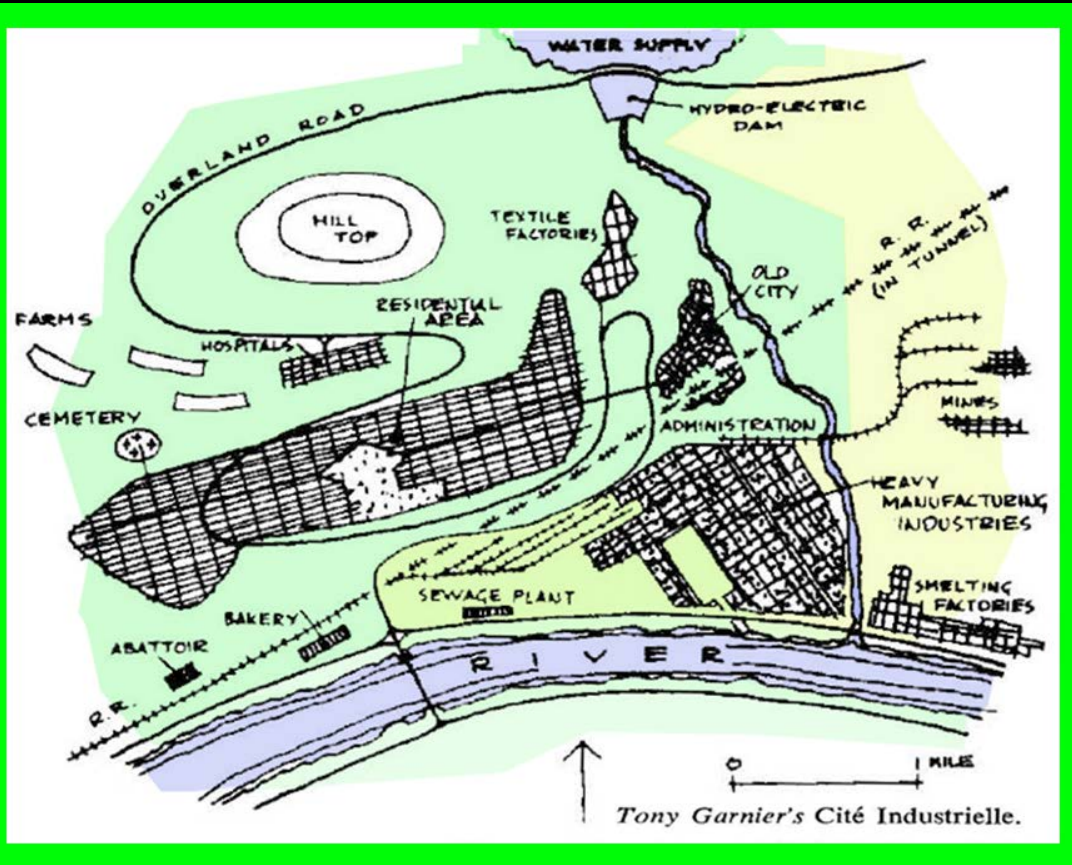
In 1882 a Spanish engineer Don Arturo Soria y Mata suggested the idea of the "**Linear City**" الخطية مدينة. He proposed that Houses and buildings could be set alongside linear utility systems جنباً إلى جنب مع أنظمة المرافق الخطية supplying water, communications, and electricity.

Besides that , it would solve problems of transport and sanitary *الصحية* conditions.

It is a design of a city surrounded by nature and a central area for services *المدينة تحيط بها الطبيعة ومنطقة مركزية للخدمات*.

CASE EXAMPLE : “UNE CITE’ INDUSTRIELLE” (*THE INDUSTRIAL CITY*)

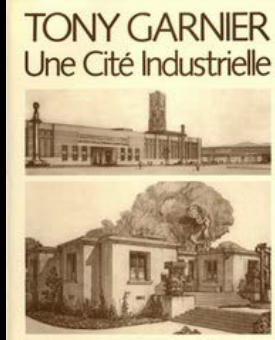
- ARCHITECT TONY GARNIER



From 1901-1904, Tony Garnier, a French Architect built a hypothetical Industrial town المدينة الصناعية افتراضية which he called “*Une Cité Industrielle*” (*The Industrial City*).

It was located in an imaginary site consisting of a high plateau and a flat valley, along the side of a river هضبة عالية وادي مسطح، على طول الجانب من النهر.

CITY AS MACHINE:

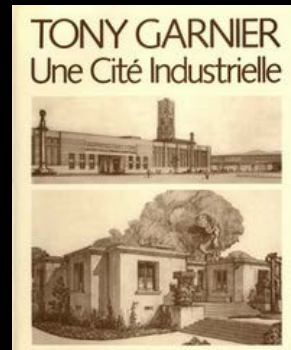


THE INDUSTRIAL CITY

The plateau الهضبة is location for the residential buildings & the valley for factories. An imaginary old town was also incorporated in the plan.

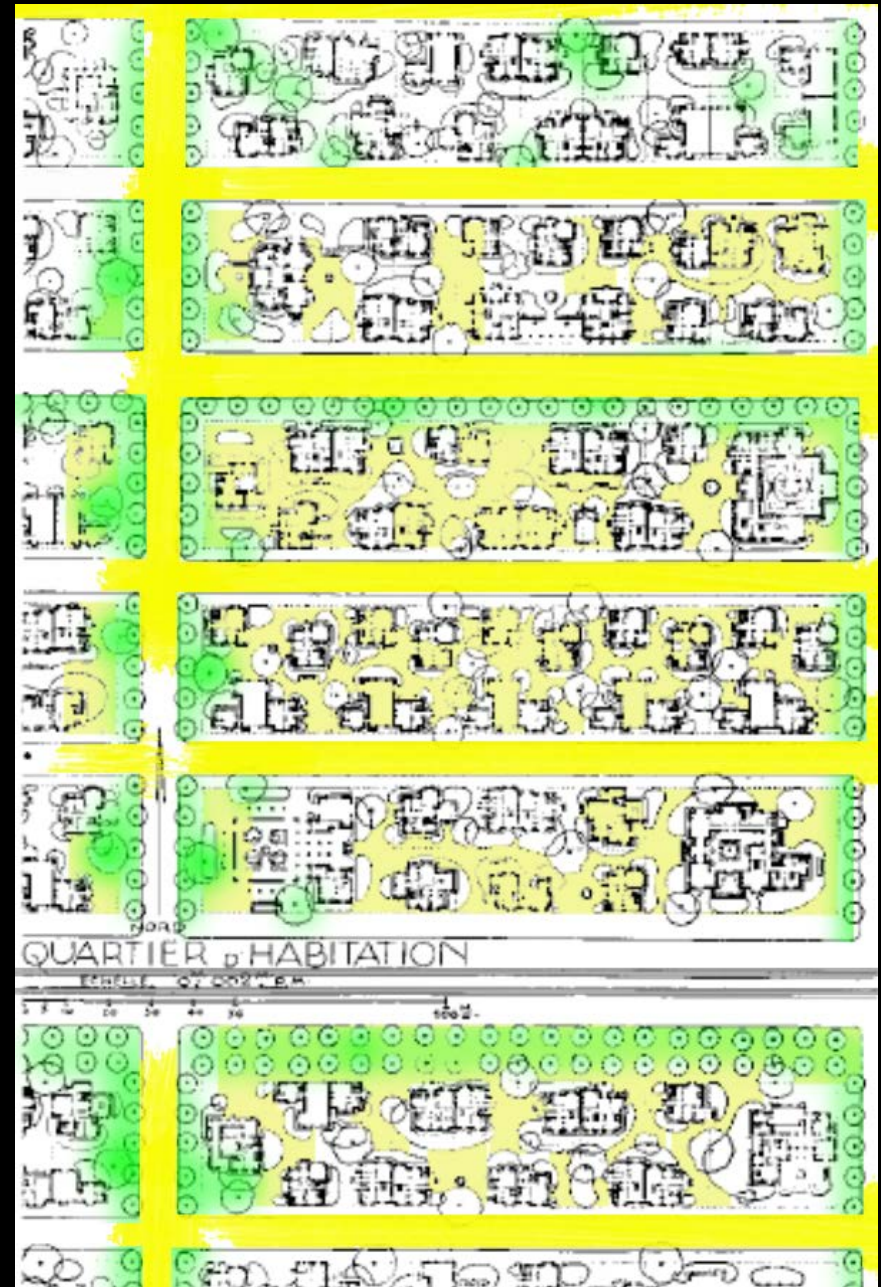
A Dam السد would furnish hydro-electric power الطاقة الكهربائية. He planned the zoning of the city with locations for complementary facilities are placed close together توضع مرافق متكاملة قريبة من بعضها البعض.

- project was to be served by a linear transport route with the land uses segregated and arranged in linear fashion استخدمت الأراضي المعزولة ورتبت بطريقة خطية along its length. Like the work of Le Corbusier, emphasis is on the transport system.



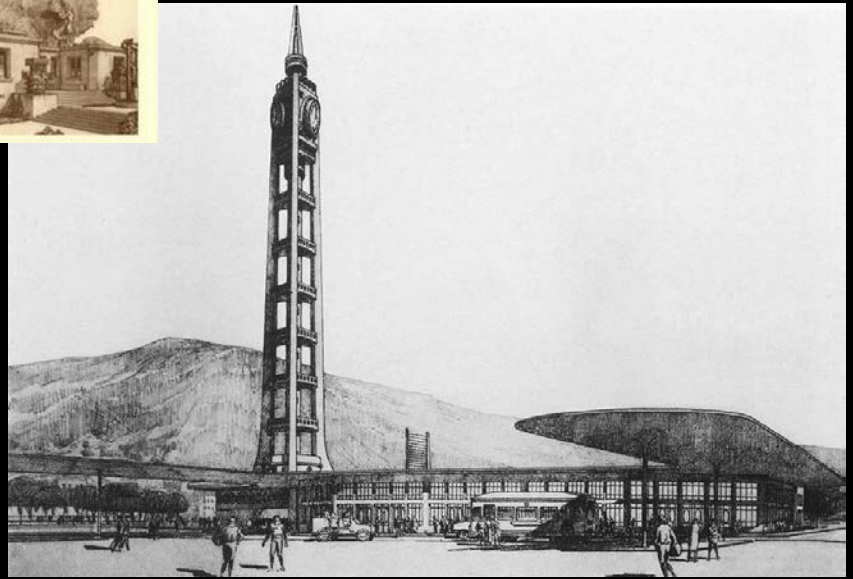
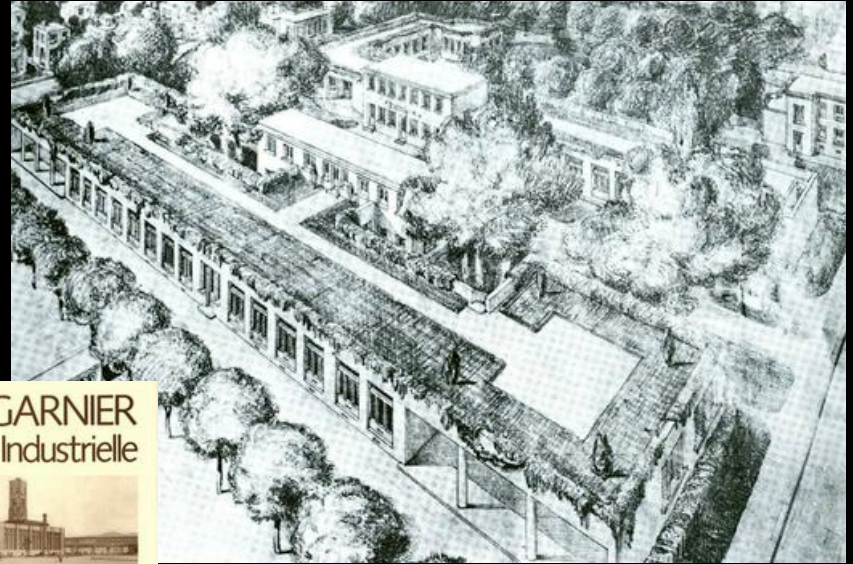
City as Machine include:

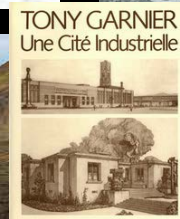
- application of building codes and regulations, land use zoning قوانين ولوائح البناء واستخدام الأراضي تقسيم المناطق and other planning standards معايير التخطيط ..
- The goals of development would include good access وصول جيدة, economic and technical efficiency, quality of life الكفاءة الاقتصادية والتقنية، ونوعية الحياة including good health.





TONY GARNIER
Une Cité Industrielle







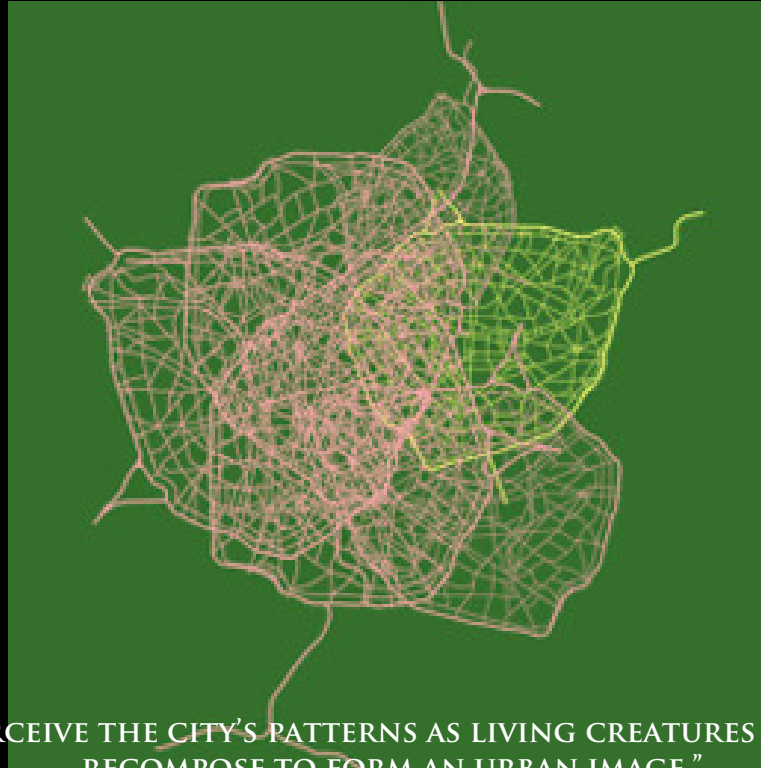
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THE CITY AS ORGANISM

-المدينة ككائن حي



"I PERCEIVE THE CITY'S PATTERNS AS LIVING CREATURES THAT I
RECOMPOSE TO FORM AN URBAN IMAGE."

-LEE JANG SUB
ARTIST

أنا تصور أنماط المدينة المخلوقات الحية كما أنني إعادة يؤلف لتشكيل الصورة الحضرية

WASALLAM