


ENVIR 202: Lesson No. 5

Urbanization & Health



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ENVIR 202: Lesson 5 1

❖ What is . . .
❖ Urban?

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Definitions

❖ Countries differ in the way they classify population as "urban"

- > Density
- > Number of residents
- > Percent population not dependent on agriculture
- > Provision of public utilities and services

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Definitions

- ❖ A listing of country definitions is published annually in the United Nations Demographic Yearbook.
 - Typically, a community or settlement with a population of 2,000 or more is considered urban.
- ❖ Urbanization:
 - Growth in the proportion of a population living in urban areas.

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Urbanization Trends

- ❖ Industrialization
- ❖ Global urbanization
- ❖ Megacities
- ❖ The Livable City

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Migration Factors

	Push	Pull
Economic	Hardship	Opportunity
Political	Persecution	Freedom
Cultural	Deficit	Diversity
Environmental	Burden	Quality

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Early Pull Factor


- ❖ **"The air of cities makes you free"**
 - 17th Century German proverb
 - After one year and one day in the city
 - Legally released from feudal bonds and became freemen

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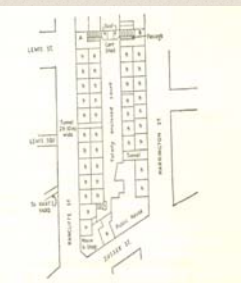
Industrialization 19th & 20th Centuries

In 1851, a boy born in inner Liverpool had a life expectancy of only 26 years, compared with a boy born in the small market town...who could expect to live to 57.

London's Great Stink: The Sour Smell of Success By Professor Martin Daunt



Building Pattern – the Courtyard system



- ❖ No means to remove sewage and refuse
- ❖ So that the courts, alleys, and streets served as waste receptacles

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Fredrich Engels -1845

...In one of these courts there stands directly at the entrance a privy without a door, so dirty that inhabitants can pass into and out of that court only by passing through foul pools of urine and excrement. Below it on the river there are several tanneries which fill the whole neighborhood with the stench of animal putrefaction.

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Urban Diseases

- ❖ Cholera and typhoid from polluted water
- ❖ Typhus - spread by lice
- ❖ 'summer diarrhea' - flies feeding on horse manure and human waste; contaminated food
- ❖ Tuberculosis- leading cause of death in 19th Century
- ❖ Other respiratory diseases

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Causes

- ❖ Crowded and poor housing conditions
- ❖ Poor sanitation infrastructure
- ❖ Inadequate drinking water
- ❖ Inadequate hygiene
- ❖ Child labor
- ❖ Undeserving poor


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Miasmas to Germ Theory

- ❖ A belief that diseases were the result of "bad air" or directly related to foul odor
- ❖ The discovery that diseases may be caused by microorganisms

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Early Sanitary Reforms

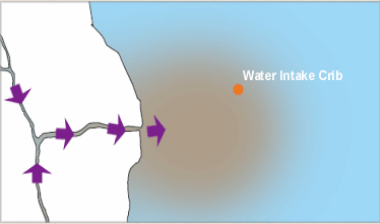


Edwin Chadwick

- ❖ Launches modern public health
- ❖ The field of urban planning

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"Typhoid Fever City"



Water Intake Crib

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Chicago

- ❖ 1891, typhoid death at 1,997
 - death rate 174 per 100,000 persons
 - exceeded typhoid deaths of any other city
- ❖ water polluted by
 - human waste, tanneries, glue factories, animal carcasses from the Chicago Stock Yard
- ❖ Columbian Exposition
 - Should we drink the water?

Sanitary and Ship Canal Opened January 1889

Typhoid Death Rates in Chicago 1871-1900
Deaths per 100,000 population

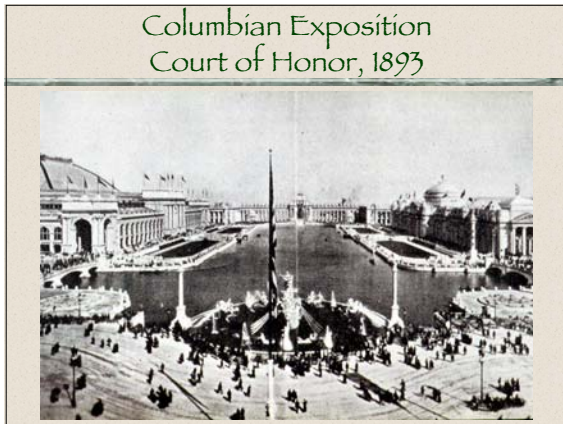
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Chicago Sanitary District

- ❖ One of the first regional authorities in the country
- ❖ 1892
 - Sanitary & Ship Canal

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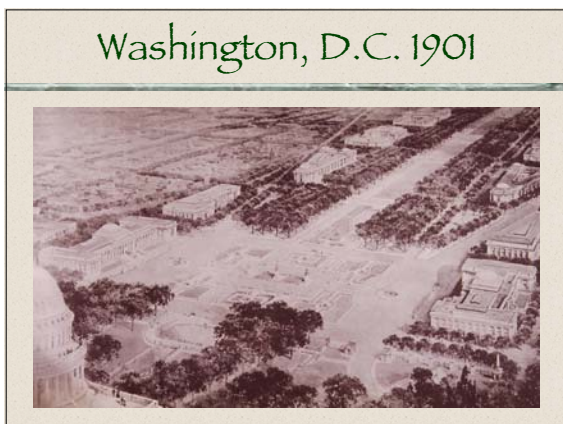
Columbian Exposition, Chicago 1893




The City Beautiful Movement
Early 20th Century

- ❖ To remove social ills of the city
 - The beautiful city would inspire civic loyalty and moral rectitude of the impoverished
- ❖ American cities brought at par with European cities
 - Haussmann's Paris
 - Nash's London
- ❖ A more inviting city would bring the upper classes back to work and shop

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Urban Parks

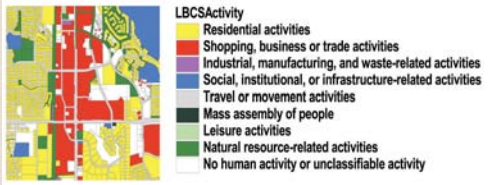


- ❖ Frederick Law Olmstead
 - > 1803-1922
- ❖ father of landscape architecture
- ❖ The Urban Park
 - > The lungs of the city
 - > “ to supply to the hundreds of thousands of tired workers, who have no opportunity to spend their summers in the country, a specimen of God’s handiwork...”

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The Zoning System

- ❖ The use of public regulatory power (police power) to specify how private land may be developed and used
- ❖ Nuisance control and public safety
- ❖ Upheld by the Supreme Court in 1926 (Euclidean)




LBCS Activity

- Residential activities
- Shopping, business or trade activities
- Industrial, manufacturing, and waste-related activities
- Social, institutional, or infrastructure-related activities
- Travel or movement activities
- Mass assembly of people
- Leisure activities
- Natural resource-related activities
- No human activity or unclassifiable activity

Donora Incident - 1948

- ❖ Temperature inversion trapped fumes from smelter smokestacks at street level for 4 days
- ❖ 20 deaths; 6000 sick



The left diagram shows normal conditions with smoke rising from smokestacks. The right diagram, labeled 'inversion', shows a layer of smoke trapped near the ground by a layer of warmer air above.

Great London Smog - 1952

- ❖ Dr. H.A. des Vœux
 - > 1905- Meeting of the Public Health Congress
 - > "it required no science to see that there was something produced in great cities which was not found in the country, and that was smoky fog, or ...'smog.'"

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Bhopal, India -1984

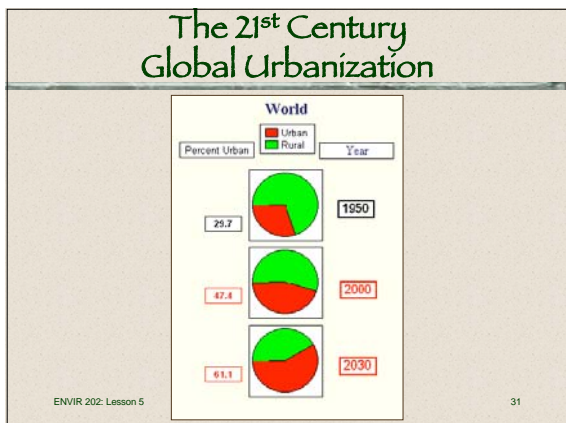
- ❖ 36 metric tons of highly toxic methyl isocyanate gas released
 - > >500,000 exposed;
 - > 20,000 died
 - > many of them squatters living near the plant

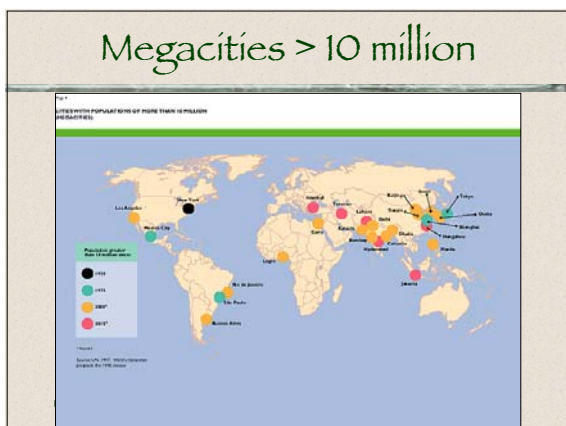
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Jilin, China- 2005

- ❖ 100 tons of benzene and nitrobenzene released into river
- ❖ 90% of 3.8 million residents of Harbin rely on river for drinking water

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- ### Population Health Scale of Impact
- ❖ Global pandemics
 - > Avian Flu
 - > HIV
 - ❖ Urban air pollution
 - ❖ Urban slums
 - ❖ Water quality
 - ❖ Food Security
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Air Quality


Source: WRI






Urban Slums

- ❖ It is expected that by 2020, 85% of the poor in Latin America, and about 40-45% of the poor in Africa and Asia will be concentrated in towns and cities
- ❖ Consequence of migration and rapid urbanization where people need to find adequate ways to secure food and income



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The Livable City



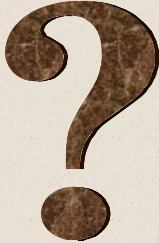
Europe



South America

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Questions




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Suggested Readings

- ❖ Cities of Tomorrow, E. Howard 1902
 > <http://www.library.cornell.edu/Reps/DOCS/howard.htm>
- ❖ Land Use & Society, R. Platt, 1996
- ❖ The Monster at Our Door: The Global Threat of Avian Flu, Mike Davis, 2005

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Next Lesson



Demographic Transitions

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