

## Urban economies

9000 BCE Earliest structures constructed in Jericho, the oldest city in the world  
8000 BCE World population five million  
5000 BCE The Mesopotamian city of Ur (in present-day Iraq) first occupied  
4000 BCE Sun-baked brick consistently used in building structures  
3700 BCE Settlements grow throughout southern Mesopotamia, with Uruk emerging as the largest  
3500 BCE Beginnings of Egyptian civilization  
3200 BCE The fortification of Nippur (present day Iraq), a religious center in Mesopotamia where the supreme Sumerian god Enlil was worshipped  
3000 BCE Troy, a city in northwest Anatolia (now Turkey), established with fortified walls and mud-brick houses on stone foundations  
2600 BCE The cities of Mohenjodaro and Harappa in present-day Pakistan built with a grid of straight streets intersecting at nearly perfect right angles

1600 BCE A theory of urban planning first developed in China's Shang Dynasty to ensure social order and political control  
1200 BCE Troy destroyed in a major war, becoming the basis for Homer's epic tale of *The Iliad*  
800 BCE City states (independent cities with sovereignty over contiguous territory) begin forming in peninsular Greece, the Aegean islands, and western Asia Minor  
753 BCE Rome founded  
667 BCE With a group of citizens from the town of Megara, the Greek colonist Byzas founds Byzantium, renamed Constantinople in 330  
562 BCE After regaining Babylonian independence, Nebuchadnezzar II orders the complete reconstruction of the city's imperial grounds, including a series of eight gates along the perimeter (the most famous being the Ishtar gate)  
500 BCE Roman architects synthesize Etruscan and Greek architectural influences  
500 BCE Native American cultures, including the Adena and Hopewell, settle across the U.S.  
479 BCE Miletus, the first planned Greek city, built  
476 BCE The *Kaogong ji* (Manual of Crafts) offers written guidelines about the construction of cities, including the use of the grid: "a capital city should be square on plan. Three gates on each side of the perimeter lead into the nine main streets that crisscross the city and define its grid-pattern"  
447 BCE The Greeks build the Parthenon using limestone and other stone materials  
312 BCE An aqueduct system built in Rome, which brings water from as far as 57 miles away from the city  
200 BCE

One thing is sure. The earth is now more cultivated and developed now than ever before. There is more farming with pure force, swamps are drying up, and cities are springing up on unprecedented scale. We've become a burden to our planet. Resources are becoming scarce, and soon nature will no longer be able to satisfy our needs — Quintus Septimus Tertullianus

200 BCE First paved streets

200 BCE First settlement in Jenne-jeno in Nigeria, the earliest known urban settlement south of the Sahara

130 BCE Expansion of Han China to the Parthian empire

72 BCE Construction begins on the Colosseum

25 BCE The construction of the Pantheon, which features a 133-foot dome made of poured concrete

25 BCE Roman cities become linked to the Anatolian coast through the construction of 235 roads, which are designed primarily for military use and become important communication and trade routes

1 World population reaches 150 million

17 After an earthquake devastates Rome, Emperor Tiberius Caesar Augustus rebuilds and replaces the Greek style with Roman plans

100 A vast system of bridges and roads marked by milestones constructed in Rome

100 Roman Emperor Marcus Ulpius Nerva Traianus (Trajan) founds the northern African colonial city of Timgad, one of the best surviving examples of the grid system extensively used in Roman city planning

500 Teotihuacán, the largest pre-Columbian city in the Americas, covers over 11 square miles and has a population of 150,000

694 Fujiwara-Kyô, the imperial capital of Japan, adopts Chinese grid-planning principles, which later extend to Japanese imperial cities such as Nara and Kyoto

780 The caliphs of Baghdad establish an ordered system of government, build a network of roads, construct canals and aqueducts, and employ skilled architects

800–900 The Viking fortress raids against European mainland

1000 The kingdom of Chimú (now Peru) constructs the city of Chan Chan in ten walled districts with wide streets (some up to 80 feet wide) set up along a grid plan

1222 *Bastides*, villages laid out according to a geometric plan, extensively built throughout Gascony (now southwestern France)

1227 At the time of Genghis Khan's death, the Mongol empire stretches from the Caspian Sea to the Sea of Japan

1325 Aztecs of Mexico found the city of Tenochtitlan (now Mexico City) on an island in Lake Texcoco

1350 World population climbs to 300 million

1366 Paris forces butchers to dispose of animal wastes outside the city; similar laws will be disputed 400 years later in Philadelphia and New York

1370 Paris's first underground sewer system built to drain into a tributary of the Seine river

1496 The Spanish begin to use the Roman grid system to plan cities colonized in the Americas

1516 The word *ghetto* first used to describe the area in Venice (the Venetian Ghetto) where Jews are forced to live

1550 Suleyman, Sultan of the Ottoman empire, begins a series of building projects, including bridges, mosques, and palaces to make Istanbul a center of visual art, music, writing, and philosophy in the Islamic world

1573 King Phillip II of Spain compiles the *Laws of the Indies* to guide the construction and administration of the colonies; one law specifies that a rectangular central plaza should be built and serve as the terminus for eight principal streets

1600 Several cities in western Anatolia become major artistic and commercial centers

1606 Extensive roads built in France, largely for military purposes

1606 Mannheim (in present-day Germany) becomes the first Renaissance city laid out using a grid plan

1633 *Statute of the Streets*, London's first organized written statement about city cleaning regulations, published

1661 John Evelyn writes *Fumifugium* (or *The Inconveniencie of the Aer and Smoak of London Dissipated*), the first book on pollution in London that proposes greening the city with public parks and plants

1666 The worst fire in London's history destroys a large part of the city, including most of its civic buildings, old St. Paul's cathedral, and about 13,000 homes

1667 With Gianlorenzo Bernini's completion of the piazza of St. Peter and Michelangelo's earlier group of buildings on the Capitoline, Rome features sweeping, monumental views

1681 Colonial Governor William Penn's plan for Pennsylvania states, "in clearing the ground, care be taken to leave one acre of trees for every five acres cleared"

1700 World population reaches 600 million

1756 British engineer John Smeaton pioneers the use of portland cement in concrete, using pebbles and powdered brick as aggregate

1800 World population climbs to 900 million; the growth of urban centers contributes to this population explosion

1805 Napoléon Bonaparte commissions the construction of 182 new miles of underground sewers in Paris

1807 The first public street lighting using gas lamps takes place in Pall Mall, London

1811 New York's state legislature adopts The Commissioners' Plan to facilitate the development and sale of land in most of Manhattan and create a regular grid of streets without regard to the island's topography

1816 Baltimore becomes the first U.S. city to light its streets with gas

1832 The use of boys for sweeping chimneys outlawed in the U.K.

1834 The Royal Institute of British Architects created

1838 With the publication of *Oliver Twist*, Charles Dickens heightens awareness of social problems such as the dangerous and unsanitary living conditions of child and adult laborers in workhouses, with the majority located in London

1843 Birkenhead Park breaks ground as the U.K.'s first publicly developed park

1851 Joseph Paxton designs the Crystal Palace for London's Great Exhibition of 1851 to showcase the U.K.'s industrial and military achievements

1851 50% of England's population resides in London, compared to 20% in 1800

1853 Napoléon III hires Baron Georges-Eugène Haussmann, who reconstructs Paris with wide straight avenues in a hub-and-spoke design, a new system of water supply and drainage, large public parks, and apartment buildings with consistent façades

1853 The New York legislature designates a 700-acre area in Manhattan from 59th to 106th Streets for the creation of Central Park

1857 The installation of the first safe passenger elevator in New York's Haughwout Department Store) facilitates the construction of buildings more than five stories tall

1860 Horse-drawn streetcars operate in most major U.S. cities, including Baltimore, Boston, Chicago, Cincinnati, and New York

1864 Octavia Hill pioneers slum improvement and the profession of housing management by transforming three economically depressed London tenements (Paradise Place, Freshwater Place, and Barrett's Court) into safer, cleaner communities

1865 The mass production of steel in the U.S. using the Bessemer process provides a critical development for future skyscraper construction

1868 J. P. Knight builds first traffic signal in the U.K.

1869 Frederick Olmsted designs Riverside, Illinois, one of the first planned communities

1871 The Great Chicago Fire destroys more than 2,000 acres; the city quickly rebuilds and spurs major economic development

1878 Haussmann's system of separate underground passages for drinking water and sewage in Paris becomes 360 miles long

1879 First electric public street lights used in Cleveland, Ohio

1880 A new wave of immigrants arrives in U.S. cities instead of the countryside, as immigrants had done for 250 years

1881 New York creates a department of street cleaning, even though cleaning does not occur regularly until 1894

1887 Electrical streetcars introduced in Richmond, Virginia

1888 The word *urbanization* added to the English language to explain the phenomenon of large numbers of people forming cities in relatively small areas

1889 Gustave Eiffel completes the Eiffel Tower for Paris's Exposition Universelle; the building remains the world's tallest building until 1930

1901 Frank Lloyd Wright builds his 49<sup>th</sup> building

1893 The World's Columbian Exposition in Chicago, with more than 200 electrically lit Beaux-Arts buildings on 630 acres, leads to a resurgence of classical architecture in urban planning

1895 The Home Insurance Building in Chicago (at LaSalle and Adams Streets), the first building supported entirely by a steel frame, becomes the first skyscraper

1895 Octavia Hill actively campaigns to save open spaces for recreation; major successes in London include Parliament Hill Fields and Vauxhall Park

1896 The Roland Park Shopping Center, a strip mall in Baltimore, Maryland, becomes the U.S.'s first shopping center

1897 The first favela, a Brazilian slum, created in Rio de Janeiro when 20,000 veterans from the Canudos war arrive with no place to live

1898 Ebenezer Howard publishes *Tomorrow: A Peaceful Path to Social Reform* proposing garden cities, self-sufficient entities ringed by an agricultural belt and intended to provide rural districts with the economic opportunities and amenities of large industrial cities

1899 Louis Sullivan completes the Carson Pirie Scott Building in Chicago, which fuses ornamentation with modular construction and design

1900 World population reaches 1.6 billion, in part because of wider public access to health care

1902 Daniel Burnham completes the Flatiron building, whose triangular shape responds to the awkward intersection of Broadway and 5<sup>th</sup> Avenue in New York

1908 Sears Roebuck offers houses by mail and ships all materials via railroad boxcars

1909 Burnham and Edward Bennett write the *Plan of Chicago*, which inspires the creation of a greenbelt around the metropolitan area and new road, river, and rail transportation

1909 Chicago planners decide to transform Michigan Avenue from a trading post into a commercial street

1914 Le Corbusier (Charles-Edouard Jeanneret) develops the Maison-Domino, a basic building prototype for mass production with free-standing pillars and rigid floors; this model provides the foundation for many projects he realizes over the next ten years

1916 Chicago architect Arthur Aldis forms the Lake Forest Improvement Trust to build Market Square, an integrated shopping complex of 28 stores, 12 office units, 30 apartments, a gymnasium, and a clubhouse

1922 In a design competition for its headquarters, the Chicago Tribune selects the neo-gothic design of Howells & Hood over the modernist designs of Eliel Saarinen, Walter Gropius, and Adolf Loos; the Tribune Tower built in 1925

1922 J. C. Nichols creates Country Club Plaza in Kansas City, Missouri, the first suburban shopping district It's not in the suburbs.

1924 The invention of aerated autoclaved concrete, a nonorganic, nontoxic, airtight material that can be used in non- or load-bearing exterior or interior wall, floor, and roof panels, blocks, and lintels

1924 The completion of Chicago's Wrigley Building, whose shape is patterned after the Seville Cathedral's Giralda Tower in Spain

1927 R. Buckminster Fuller designs the Dymaxion dwelling machine to fulfill the need for affordable, mass-produced, easily transportable and environmentally efficient housing. This project was never put into production.

1930 Chrysler Building built with 77 floors in New York

1931 Empire State Building built with 102 floors in New York

1931 Aluminaire House, the first all steel and aluminum house in the U.S., built using standardized hardware as an experiment in mass-produced housing

1935 Shantytowns appear across the U.S. due to the Great Depression

1936 Cincinnati real estate developers launch the Urban Land Institute, an independent research institute that analyzes responsible patterns for long-term urban growth

1938 American architect and theorist Lewis Mumford publishes *The Culture of Cities*, a seminal book on city planning

1940 Strip malls reshape cities by building on car-accessible streets away from densely populated urban areas

1947 William Levitt builds Levittown, New York, widely regarded as the archetype for postwar U.S. suburbs

1948 The United Nations (U.N.) adopts the Universal Declaration of Human Rights, which includes a right to adequate housing

1949 Fuller designs his Wichita House, an aluminum ready-made home not requiring a foundation

1949 Charles and Ray Eames build the Eames House out of modular elements

1950 World population reaches 2.4 billion

1950 68% of the world population lives in developing countries  
1950 30% of the world population lives in urban areas  
1950 New York becomes the first city with more than 10 million inhabitants  
1950 8 cities now have 5 million inhabitants or more  
1951 Mies van der Rohe completes the 860-880 Lake Shore Drive buildings, which feature his trademark glass and steel curtain walls  
1955 Raphael Soriano designs the first mass-produced steel house  
1956 The population in U.S. suburbs increases by 46% over 1950  
1956 Lucio Costa and Oscar Niemeyer begin construction of Brasilia, a planned city built to replace Rio de Janeiro as Brazil's capital; Brasilia's futuristic buildings, bird-like layout, and other design elements make the city a UNESCO (United Nations Educational, Scientific, and Cultural Organization) world heritage site in 1987  
1957 Monsanto House of the Future opens in Disneyland, providing visitors a glimpse of life with picture phones, height-adjustable sinks, dishes washed by ultrasonic waves, and atomic food preservation  
1961 Jane Jacobs publishes *The Death and Life of Great American Cities*, which reconsiders the functionality, strengths, and weaknesses of cities  
1961 Lewis Mumford writes *The City in History*, critiquing urban sprawl and arguing that urban planning should encourage an organic relationship between people and their living spaces  
1962 Chicago creates the Robert Taylor Homes to house more than 27,000 residents in 28 identical buildings  
1964 As part of a plan to rejuvenate downtown Chicago, Bertrand Goldberg completes Marina City; he later compares the way of life in these buildings to "living above the store, . . . [t]here is no commuting problem, except to get downstairs to work. . . . The high population density makes all services available cheaply and quickly"  
1965 U.S. Department of Housing and Urban Development (HUD) founded to develop and execute policy on housing and cities  
1965 The Million Programme (Miljonprogrammet) initiated in Sweden with an aim of building one million new homes within a ten-year period; by 1974 the goal is surpassed  
1965 van der Rohe completes Chicago's Daley Center; the initial rust of its Cor-Ten steel exterior forms a protective coating around the metal  
1967 Moshe Safdie builds Habitat, a modernist modular mountain in Montreal, Canada  
1967

The circuited city of the future will not be the huge hunk of concentrated real estate created by the railway. It will take on a totally new meaning under conditions of very rapid movement. It will be an information megalopolis — Marshall McLuhan, *The Medium Is the Message*

1968 Curitiba, Brazil, develops an urban plan focused on sustainability emphasizing strict controls on urban sprawl, a reduction of traffic in the downtown area, preservation of the historic sector, and a convenient and affordable public transit system  
1968 Prince Hall Masons builds Oriental Masonic Gardens in New Haven, Connecticut, which consists of 148 units on 12.5 acres; the factory-assembled residences cluster in fours around a utility core

1968 The U.S. Civil Rights Act (also known as the Fair Housing Act) outlaws most housing discrimination and establishes the Government National Mortgage Association to expand the availability of mortgage funds for moderate income families using government guaranteed mortgage-backed securities

1969 Chicago's John Hancock Center built with 100 floors, making it one of the world's tallest mixed-use buildings

1970 After relaxing laws prohibiting buildings higher than 100 feet high, London has six new skyscrapers, each between 300 and 400 feet

1972 The U.S. has 13,174 shopping centers

1973 The World Trade Center built with 110 floors in New York

1973 Chicago's 110-floor Sears Tower replaces the World Trade Center as the tallest building until 1996

1974 The U.S. Housing and Community Development Act creates the Section 8 program, in which tenants pay about 30% of their income for rent, while the rest is paid with federal money

1974 Paris outlaws buildings more than eight stories high within the city center

1975 Seoul, South Korea, has the highest rate of growth of any city (with its population doubling every nine years), followed by Baghdad, Iraq, and Bogota, Colombia

1981 Development begins on Seaside, Florida, one of the first examples of what becomes known as new urbanism, an urban design movement favoring pedestrian-friendly towns planned to restrict urban sprawl

1985 Norman Foster completes the Hongkong and Shanghai Bank in Hong Kong; one of the few skyscrapers not to have elevators as the primary traffic carrier, it features elevators that stop every few floors and escalators that connect passengers to adjoining floors

1985 World population reaches 5 billion

1986 The World Bank and the International Finance Corporation spend a total of \$4.4 billion on Urban Housing projects since 1972

1987 The nonprofit Washington D.C.-based Conservation International founded to protect water and wilderness areas with high biodiversity, the Earth's biologically richest and most endangered regions, worldwide

1990 The 100 largest urbanized areas in the U.S. grow an additional 14,545 square miles as compared to 1970 ; 75% of the U.S. population lives in metropolitan areas

1990 A prototype of Avi Freeman's Grow Home built in Montreal, and 1,000 of these smaller cost-effective homes are built in the first year of development

1991 Society Tower built with 63 floors in Cleveland, Ohio

1992 The first Green Map published in New York, helping to revive interest in the city's natural sites

1992 The 2,870 apartment-unit Pruitt-Igoe residential complex, which was built by Minoru Yamasaki in 1956, deemed a failed public housing project and then destroyed

1993 Landmark Tower built with 70 floors in Yokohama, Japan

1993 The U.S. Green Building Council formed to promote environmentally responsible and profitable buildings

1993 A group of architects begins the Congress for the New Urbanism, which encourages new development practices to restore existing urban centers and towns, reconfigure sprawling suburbs, and conserve natural environments

1995 Bolivia creates Madidi National Park, one of the largest national parks on Earth, extending over 30 million acres

1995 A collaborative global Green Map program developed to identify, promote, and link ecological and cultural resources worldwide

1995 Wes Jones designs the Technological Cabins in the High Sierra Mountains, using standard 20-foot shipping containers as the basic building module

1995 *The Green Imperative* by Victor Papanek published, furthering the cause of ecologically and ethically centered design

1995 The Urban Redevelopment Authority in Pittsburgh, Pennsylvania, purchases an industrial slag heap from the Duquesne Slag Company, originally used to dispose steel manufacturing residue; the property redeveloped as Summerset, a 700+ home community

1996 IKEA retailer launches BoKlok homes, offering flat-pack, take-away homes

1996 Disney unveils the town of Celebration, near Orlando, Florida

1997 Foster and Partners complete Commerzbank in Frankfurt, Germany, widely considered the world's first environmentally sensitive high-rise; the building features gardens every six floors and double-glass walls that ventilate offices naturally

1997 Urbanized land grows by 47% compared since 1982, while the U.S. population grows by 17%; the resulting decrease in land density described by the U.S. Bureau of Census Data on Urbanized Areas as urban sprawl

1997 Baiyoke Tower II built with 85 floors in Bangkok, Thailand

1997 Critic Plaza and Sky Central Plaza built in Guangzhou, China, with 80 floors each

1997 Eco Expo West Environmental World's Fair Exposition, Tradeshow, and Conference held

1997 *Cities for a Small Planet* by Richard Rogers published, proposing a plan for cities to become sustainable

1997 In spite of growing by 60% its total metropolitan population, Atlanta, Georgia, loses 11.4% in population density compared to 1982, mostly because of expansion in outlying suburban cities and unincorporated surrounding counties

1997 Approximately 25 million acres of land, primarily forest and cropland, converted to developed uses in the U.S.

1997 China's urban population grows to 380 million from 191 million in 1980

1998 The Petronas Twin Towers built with 88 floors in Kuala Lumpur, Malaysia

1999 The World Green Building Council formed to share technical knowledge and advancement of national green building information

1999 Architecture for Humanity founded to promote architectural and design solutions to global, social, and humanitarian crises

1999 Africa experiences a growth rate of 4.87%, making it the continent with the fastest rate of urbanization

1999 The pace of land development increases 50% compared to the previous decade

2000 Architect Rocío Romero builds her first L.V. prefab home in Laguna Verde, Chile; the homes are sold in a kit that produces a two bedroom, two bath, one-story dwelling starting at \$30,000

2000 World population 6.1 billion

2000 The Critical Ecosystem Partnership Fund created to provide urgent funding to local conservation groups in biodiverse hotspots

2000 Architect Michael McDonough builds his e-House 2000 using sustainable technologies, emerging building techniques, and advanced computing

2000 More than 90% of population growth in developing nations is in cities

2000 Richard M. Daley, mayor of the City of Chicago, states his goal of making the city the “greenest city in North America”

2000 22 cities worldwide have 5 million inhabitants or more, and 402 cities have a population of 1 to 5 million

2000 The LEED (Leadership in Energy and Environmental Design) Green Building Rating System launched to standardize performance-based evaluation of the impact of buildings on their surroundings

2000 Beihai, China, has the highest rate of city growth at 9.3%, Aparecida de Goiania, Brazil, has the second highest, and Kimhae, Korea, has the third highest

2000 The Murray Grove Apartments, the first multistory housing development, built in a factory

2000 Freedom Ship International, Inc., proposes the construction of a residential, commercial, and resort community on a mobile sea platform that would travel for two years and never leave international waters; insufficient funding has stalled its completion

2001 University of Virginia researchers build a network of sensors for the home to monitor the daily activities of senior citizens

2001

For in the end, this generation will be defined not only by what we create, but by what we refuse to destroy. We are all conservationists, united in pursuit of the dream that we can leave the world an even better place than we enjoyed — John Sawhill, President of the Nature Conservancy

2001 75% of countries have constitutions or national laws that promote the realization of the right to adequate housing

2002 *PreFab* by Allison Arieff and Bryan Burkhart published

2002 The U.S. has 7,448 protected land areas, which cover 578,000 square miles (1,500,000 km<sup>2</sup>), almost 16% of the land area of the United States. This amount is one-tenth of the protected land area of the world.

2002 Massachusetts Institute of Technology’s House\_n project proposes that houses should move toward a mass-customization process from building design to electronics

2002 Conservation International operates in 30 countries with a total investment in conservation over \$315 million

2002 *Future of Life* published by E. O. Wilson, offering ideas on environmental sustainability through governmental, scientific, and private sector assistance

2003 Two International Finance Center built with 88 floors in Hong Kong

2003 12.65% of the Earth is protected land area

2003 The Robert Redford Building in Santa Monica, California, becomes the first U.S. building with a Version 2 Platinum LEED rating, the highest level for sustainable design

2003 The World Bank and the International Finance Corporation spend \$10.3 billion on Urban Housing projects since 1987

2004 More than 175 Green Maps have been published in cities worldwide

2004 Taipei 101 Tower built with 101 floors in Taiwan

2004 *Forbes* magazine lists modernist prefab homes as one of the top 25 products of the year

2004 Hong Kong real estate values drop by 70% compared to 1997 levels

2005 Chicago launches its Green Roof Grants Program, offering building-owners grant money to plan and install green roofs that improve air quality, conserve energy, and reduce storm water runoff

2005 The Mayors Climate Protection Agreement, which strives to reduce greenhouse gas emissions and meet Kyoto Protocol targets through anti-sprawl land-use policies and urban forest restoration projects, passed by the U.S. Conference of Mayors

2005 The City of Chicago initiates the Green Permit Program, which offers expedited permits for sustainable buildings

2005 Skidmore, Owings & Merrill begins construction on the Burj Dubai in the United Arab Emirates; upon completion in 2008, it will likely become the tallest building in the world

2005 China expects 75 million more farmers to move to cities over the next five years, one of the biggest mass migrations in history

2006 Challenging the assumption that “cities that sprawl and . . . the citizens living in them . . . are self indulgent and undisciplined,” Robert Breugmann argues in *Sprawl: A Compact History* that consumer choice and demand for space and mobility are the real catalysts for sprawl

2006 More than 800 million people are engaged in some form of urban farming, home gardening, or working in commercial livestock, aquaculture, forestry, or greenhouse operation

2006 580,000 residents of Beijing displaced as a third of the city’s old center destroyed since 2003

2006 98 million acres of U.S. land considered developed lands; 377 million acres agricultural lands; and 832 million acres grazing lands

2006 The City of Chicago approves the Green Roof Improvement Fund, which awards grants for retrofitting buildings with green roofs