Growing Cities

Cross Curricular Connection

By the end of the 1800s, the United States was quickly becoming an urban nation. A country that had once been filled with rural communities saw its citizens flocking to cities. Only 1 in every 15 Americans lived in communities larger than 8,000 people in 1830. By 1890, nearly 1 in every 3 Americans was living in a community larger than 8,000 people. Between 1860 and 1890, the cities of Philadelphia and Baltimore doubled in size. Cities such as Minneapolis and Omaha saw their populations increase exponentially. What drew Americans to cities in such great numbers? The Industrial Revolution in the early to mid-1800s led to developments in machinery and technology. The lure of better jobs caused people to move from rural areas to cities to work in the new factories and stores. These people could make more money in the city than they had working in mostly agricultural jobs in rural areas. The city offered people opportunity and excitement. Rapidly growing cities resulted in new developments and new challenges. Infrastructure and architecture were just two areas of city life that changed at the turn of the century.

Urban Planning

As more and more people moved to urban areas, city officials soon realized they had a problem on their hands. How could they make room for all of these people and keep cities safe, clean, and organized? An increase in population called for a new emphasis on infrastructure and urban planning. Infrastructure is the collection of resources and services needed to support a population. Sewer pipes, electricity, schools, and a police force are all examples of infrastructure. Urban planning is the idea that people can design a city to make it more livable for everyone.

Urban areas were often crowded and dirty, which prompted Progressive reformers to push for more urban planning.

Image source: Library of Congress

As American cities swelled, urban planning and infrastructure were little more than ideas. It was difficult for cities to find the funding to launch big public works efforts. City officials were often reluctant to spend money on infrastructure, but Progressive leaders pushed for social reform projects. One project was the development of Central Park in New York City. This park, still a jewel of New York City, was once the site of open sewage, roaming livestock, and run-down farms, but forward-thinking city leaders saw potential.

Beginning in 1856, ideas became plans, and plans became action: the land was cleared, the government set aside money for the park, and a design contest was held to choose a plan. The design team of Frederick Law Olmstead and Calvert Vaux was selected. Construction took 18 years, but in 1876, Central Park opened, complete with ponds, vast green spaces, and walking trails. It became an oasis within the city and an inspiration to the rest of the United States.

Urban planning took another step forward in 1902, when Ebenezer Howard published the book *Garden Cities of To-Morrow*. As the book's title implies, Howard envisioned cities with large green spaces, quiet residential streets, and winding roads, all meant to create a sense of calm serenity in urban areas with a population shift to calmer locations outside of the boisterous, large cities. In his introduction, Howard writes,

> *There are in reality not only, as is so constantly assumed, two alternatives—town life and country life—but a third alternative, in which all the advantages of the most energetic and active town life, with all the beauty and delight of the country, may be secured in perfect combination; and the certainty of being able to live this life will be the magnet which will produce the effect for which we are all striving—the spontaneous movement of the people from our crowded cities to the bosom of our kindly mother earth, at once the source of life, of happiness, of wealth, and of power.*

Many of today's suburban neighborhoods still follow the practice of green spaces in residential areas. As the idea of improving city areas became more widespread, people began to study the ways people live, and how to make living better and more efficient. In 1923, Harvard University started the first urban planning degree program in the United States. This program still exists today.

The Terminal Tower Building above, built in the 1920's, was the second tallest building until1967.

Image source: Library of Congress

Architecture

The Industrial Revolution brought improvements in many areas of technology, including architecture. Architecture is an area of study in which people design and construct buildings. People who study and practice architecture are called architects.

In the early 1800s, architects could not design buildings taller than a few levels, or stories, because the building materials and techniques of the time could not support larger structures. Also, the technology to lift and place building materials at great heights did not yet exist. The height of a building was also limited by how many flights of stairs people could climb before growing tired.

Two factors played a part in the development of buildings taller than ten stories, or skyscrapers: steel and elevators. Before steel, architects constructed buildings mostly using stone, brick, and other thick and heavy materials. If a very tall building was constructed out of these materials, it would collapse under its own weight. Furthermore, materials such as stone, brick, and concrete made it difficult to put in windows and ventilation systems. Steel, on the other hand, was both relatively light and very strong. Steel could support a building's weight without taking up a lot of space. This allowed architects to design buildings with many floors. One of the first skyscrapers was the Home Insurance Company building in Chicago, constructed in 1885. It was 10 stories tall, which seems very short in comparison to today's skyscrapers.

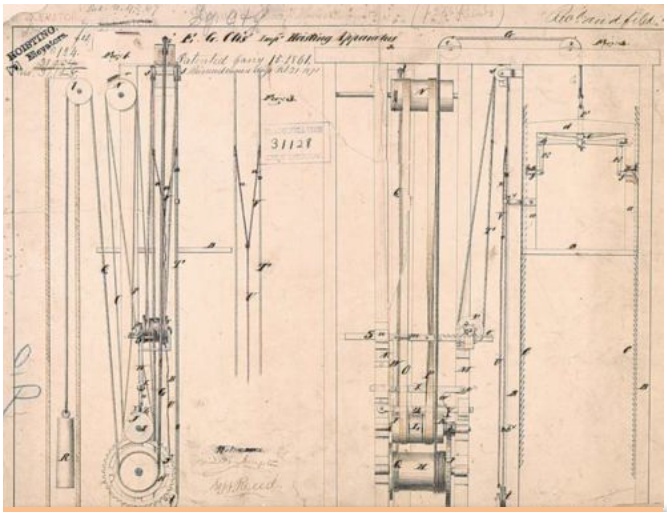
Architects around the world, led by Chicago's Daniel Burnham and John Root, soon began building skyscrapers with steel frame "skeletons." In these buildings, a steel frame inside the building, not the brick or stone walls on the outside of the building, would bear the load—or support the weight—of the entire building. This new steel frame design allowed architects to begin building taller and taller structures.

Taller buildings changed the way the modern city was structured. Skyscrapers allowed a building to have a lot of vertical space while taking up very little horizontal space. With this development, more people could live and work comfortably on a single city block.

Another important innovation in architecture was the elevator. People had been using ropes, pulleys, and platforms to lift heavy objects for hundreds of years. However, these "lifts" could be very dangerous. Any slip of the hand or break in the rope would cause the load to drop quickly. For this reason, the technology was usually used to lift objects, but not people.

At the 1853-1854 World's Fair in New York City, a man named Elisha Otis demonstrated an elevator with an automatic safety brake. If the cables holding the elevator broke, a clamp would shut, stopping the elevator's fall. This made elevators more reliable and much safer for passengers, allowing for their use in buildings. In 1857, the first passenger elevator was installed in a department store in New York City.

It was powered by steam and rose only 50 feet per minute. The invention of the Otis elevator also changed how the floors in a building were valued. Before the elevator, the lower floors of a building were the most desirable because they were the easiest for people to access. The invention of the elevator meant that all floors could be easily accessed. Soon, the top floors were more desirable for living because they were farthest away from the noise and pollution of the street.



Elisha Otis submitted this drawing of his design for an elevator as part of his patent application.

Image source: National Archives

The rapid growth of cities in the late 1800s and early 1900s resulted in new technology and new challenges. Cities struggled to provide infrastructure to their many new residents. Urban planning and growth inspired advances in building technology, which allowed architects to design taller buildings. These developments and challenges set the stage for urban development in the second half of the 1900s.

After reading the passage, answer the following questions:

1. What is infrastructure?
   - **A.** the rapid growth of a city
   - **B.** the use of steel in skyscraper construction
   - **C.** the poor conditions in a crowded neighborhood
   - **D.** the resources and services needed to support a population

2. Which sentence best describes the transformation that occurred on the land that is now home to New York City's Central Park?
   - **A.** A park was destroyed to make way for skyscrapers.
   - **B.** Run-down farms were cleared, plans were created, and a park was built.
   - **C.** Famers refused to sell their land, funding fell through, and the park almost did not happen.
   - **D.** One designer proposed a plan, a private investor funded the project, and the park was built in two years.

3. What contributed to the ability to construct taller buildings?
   - **A.** elevators that could carry passengers safely
   - **B.** improved infrastructure such as sewer lines
   - **C.** heavy building materials such as brick and stone
   - **D.** the use of multiple staircases to access top floors

4. In what ways did the Industrial Revolution change city life in the United States during the late 1800s and early 1900s? Provide at least two examples using details from the passage in your answer.

