
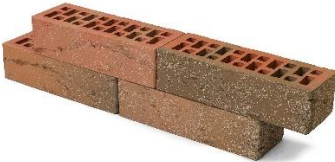



A HISTORY OF CONSTRUCTION

1.1. Vocabulary

Ex. 1. Match the words to their Russian equivalents.

1. expand	a. фасад
2. dwelling 	b. кирпичная кладка
3. civil engineering	с. хижина
4. bricklaying 	d. чугун
5. branch 	e. расширять
6. facade	f. ветвь
7. cast iron	g. гражданское строительство
8. hut	h. жилище

Ex. 2. Match the words to their definitions.

1. paved road	a. a type of dwelling that is partially dug into the ground and covered with a roof
2. millwork	b. any structure built by humans to provide protection from weather, animals, or other dangers
3. lean-to	c. lasting or intended to last for a long time; not temporary
4. permanent	d. woodwork produced in a mill, such as moldings, doors, and window frames
5. man-made shelter	e. a road with a hard surface made of concrete, asphalt, or bricks

6. pit-house	f. simple shelters made by leaning one side against a tree or wall and the other side sloping to the ground
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Ex. 3. Complete the sentences with the following words:

windbreak, temporary, stick, storefront, porch, resistance

I like to sit on the _____(1) and watch the sunset.

The building has good _____(2) to fire which makes it safe.

He found a _____(3) while hiking in the forest.

The store's bright _____(4) caught my eye as I walked by.

We are living in a _____(5) apartment until our house is ready.

The trees in the _____(6) protect the crops from harsh winds.

1.2. Reading

Ex. 1. Read the text.

A Brief History of the Construction Industry

Tracing the history of construction can be tricky since there's no clear definition of what exactly constitutes construction. For example, can we consider pit-houses construction? What about grass shelters? Early humans manipulated their environment to protect themselves from the elements in a number of ways. These were usually temporary structures like lean-tos or windbreaks. Tools were made from animal bones and stone. Building materials included sticks and branches, grass, mud, and animal skins.

The First Evidence of Construction in the World

The temporary nature of prehistoric structures means that most evidence has long been lost to the elements. Archaeologists and historians can only make assumptions based on the clues left behind. Olduvai Gorge site in Tanzania, with the blue sky, and the earliest example of one of these clues is at the Olduvai Gorge in Tanzania. There, archaeologists discovered a 1.8 million-year-old stone circle that resembles the foundations of stick or grass huts built by hunter-gatherers.

If the Olduvai Gorge site is the first evidence of construction, it predates modern humans, meaning that construction is older than mankind as we know it.

However, this is disputed, as some experts say it's hard to know how the stone formation at Olduvai Gorge was used. Instead, many historians say that the first

evidence of man-made shelter is in Terra Amata, France. Dating back to 400,000 B.C., these temporary huts likely provided shelter for early humans to use during the hunting season.

Experts also agree that the earliest evidence of large-scale buildings is in Mesopotamia. In addition to dwellings, the Mesopotamians built palaces, temples, and ziggurats, often using advanced bricklaying techniques. Mesopotamia is also home to civilization's oldest known roads. In the cities of Ur and Babylon, archaeologists uncovered paved roads dating back to 4000 B.C., which were primarily used for trade.

Ancient Egypt, Greece, Rome, and China also made significant advances in construction. The pyramids of Egypt, the temples of Greece, and the imperial palaces of China continue to marvel and inspire us to this day. Imhotep, who lived circa 2650–2600 B.C., is often regarded as the first known engineer and architect. The 50,000-mile-long Roman road system stretched from Britain to Syria, and was remarkable because of the Romans' obsession with creating the straightest possible routes between cities in their massive empire.

How Construction Has Changed Over the Years

As more people settled in cities, the scale and scope of construction grew. Humans built increasingly sophisticated permanent structures where they could live, work, and gather together, as well as the infrastructure to support sedentary living. Implementing these projects required engineers and architects, coordination of materials, as well as rules to guide construction, and the industry as we know it began to take shape in the 16th century.

Architecture and engineering began to be viewed as separate professions that required specialized education. Andrea Palladio (born 1508 A.D.) is widely regarded as the first modern architect. Known for experimentation and use of materials to suit his clients' needs, Palladio designed palaces and country estates for Italian nobles. His work heavily influenced the architects that followed, with his use of a classical temple facade as a roofed entrance porch being the most notable.

John Smeaton (born 1724 A.D.) is often referred to as the “father of civil engineering,” and is most well-known for his water, roads, bridges, and millworks projects. His most famous project is the Eddystone Lighthouse in Cornwall, United Kingdom, which was the first structure of its kind to be built with interlocking stone. He also founded the first engineering society in the world, the Society of Civil Engineers.

The Industrial Revolution and Construction

The rise of the construction profession coincided with the rise of modern science in the 17th and 18th centuries. Scientific breakthroughs enabled architects and

engineers to experiment with a wider array of materials and forms. Combined with the technological advances made during the industrial revolution in the 19th century, these innovations sparked a wave of change in construction.

In 1709, Abraham Darby developed a new method of iron smelting that allowed for the mass production of cast iron, setting the foundation for a series of innovations:

Darby's grandson oversaw the construction of the first iron bridge, built in the U.K. in 1781. After the 32-yard bridge survived a serious flood in 1795, other builders created their own iron structures.

As the U.S. expanded rapidly throughout the 19th century, cast iron was the metal of choice for many new structures. From storefronts to water systems, builders widely used cast iron for its low cost, strength, and resistance to fire.

Cast iron was also the primary material used for railway construction until it was replaced by wrought iron in the 1820s.

The advances in mass production led to the emergence of prefabrication. The first modular homes were conceived in 1830. In the U.S., the Sears Roebuck company sold houses by mail-order up until the 1940s. Builders also used prefabrication for non-residential structures. Made up of glass and cast iron, the Crystal Palace in London was first assembled in 1851. It was then taken down and reassembled in a South London suburb where it remained until it was destroyed by a fire.

One of the most impactful innovations of the Industrial Revolution was the Bessemer process, which made steel production cheaper and more affordable. From 1890 to 1895, up to 80% of steel was produced by the Bessemer process. Iron railways were replaced with steel, and by 1900, you could wrap all of the steel railways around the globe 10 times. While the Brooklyn Bridge, the world's first major steel suspension bridge, isn't totally made up of Bessemer steel, its builders benefitted from the overall accessibility of materials.

With the introduction of steel girders, buildings could reach new heights. Combined with the invention of mechanized construction equipment and Elisha Otis' safer design for elevators, Bessemer steel also ushered in the age of skyscrapers. The world's first skyscraper, Chicago's Home Insurance Building, was built in 1885. Initially built to be 10 stories high, the building was later expanded to 12 floors in 1890.

Ex. 2. In the text, find the following phrases:

1. хижины, построенные охотниками-собирателями
2. значительные успехи в строительстве
3. дорожная система протягивалась от

4. инфраструктура для поддержки малоподвижного образа жизни
5. крытое входное крыльцо
6. более широкий спектр материалов

Ex. 3. Answer the questions.

1. What is the difficulty in tracing the history of construction?
2. What were some early building materials used by humans to protect themselves from the elements?
3. Where is the first evidence of construction found, and what does it suggest about the age of construction?
4. What is Terra Amata, and why is it significant in the history of construction?
5. Which civilization is credited with the earliest large-scale buildings, and what types of structures did they build?
6. Who is Imhotep, and why is he important in the history of architecture and engineering?
7. How did the rise of cities impact the scale and scope of construction projects?
8. Who is Andrea Palladio, and how did his work influence modern architecture?
9. Who is John Smeaton, and why is he known as the "father of civil engineering"?
10. How did the Industrial Revolution impact the field of construction, and what were some key innovations during this time?

1.3. Grammar

	Passive voice			
	Present Simple	Past Simple	+ V3(ed)	значение
I	am	was		действие совершается над подлежащим
You/We/They	is	were		
He/She/It	are	was		

Ex. 1. Read the text and complete the table.

The advances in mass production led to the emergence of prefabrication. The first modular homes were conceived in 1830. In the U.S., the Sears Roebuck company sold houses by mail-order up until the 1940s. Builders also used prefabrication for

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One of the most impactful innovations of the Industrial Revolution was the Bessemer process, which made steel production cheaper and more affordable. From 1890 to 1895, up to 80% of steel was produced by the Bessemer process. Iron railways were replaced with steel, and by 1900, you could wrap all of the steel railways around the globe 10 times. While the Brooklyn Bridge, the world's first major steel suspension bridge, isn't totally made up of Bessemer steel, its builders benefitted from the overall accessibility of materials.

Active Voice	Passive Voice
The advances in mass production led to...	The first modular homes were conceived...

Ex. 2. *Open the brackets. Use Passive Voice.*

1. The Eiffel Tower ____ (build) in 1889.
2. The pyramids ____ (construct) thousands of years ago.
3. The city limits ____ (expand) every year.
4. A pencil ____ (use) for writing.
5. A new species of butterfly ____ (find) in the forest.
6. Technology products ____ (innovate) very quickly nowadays.

Ex. 3. *Rewrite the sentences using Passive Voice.*

1. Archaeologists and historians can only make assumptions.
2. Archaeologists discovered a 1.8 million-year-old stone circle.
3. Palladio designed palaces and country estates.
4. The Sears Roebuck company sold houses.
5. The Mesopotamians built palaces, temples, and ziggurats.
6. He also founded the first engineering society in the world.