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Кафедра иностранных языков

**ИНОСТРАННЫЙ ЯЗЫК
СТРОИТЕЛЬСТВО**

*Методические указания к практическим занятиям
для студентов специальностей строительного факультета*

**FOREIGN LANGUAGE
CONSTRUCTION**

**САНКТ-ПЕТЕРБУРГ
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Методические указания предназначены для студентов специальностей строительного факультета. Предлагаемый материал направлен на совершенствование навыков профессионально-ориентированного чтения на английском языке. Методические указания к практическим занятиям включают тексты на языке оригинала, специально разработанные упражнения и задания, способствующие развитию речевой, языковой и социокультурной компетенций студентов, необходимых для общения в сфере профессиональных интересов.

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ПРЕДИСЛОВИЕ

Данные методические указания «Иностранный язык. Строительство», предназначенные для практических занятий студентов 2 курса, продолжают серию учебных материалов по развитию речевых навыков на английском языке в рамках изучения дисциплины «Иностранный язык» по программе базового инженерного образования.

Цель: научить студентов пользоваться английским языком в сфере профессиональной деятельности; обучить метаязыку с его особенностями, развить навыки речевой деятельности в результате овладения новыми языковыми явлениями и моделями.

Основу методических указаний составил принцип позитивного развития личности студента через «Иностранный язык», принцип индивидуализации, совершенствования личностных качеств, способствующих реализации студентов в своей будущей профессии.

Методические указания состоят из тематических разделов, каждый из которых посвящен одному из аспектов, связанных со строительной отраслью. Предлагаемые тексты для чтения, разработанные лексические и грамматические упражнения учитывают особенности психофизического развития, образовательные потребности данной категории студентов. Методические указания включают тексты, как аутентичные, так и адаптированные, из оригинальных источников, ссылки на которые приведены в библиографическом списке.

Unit 1. Civil engineering as a discipline

Task 1. Discuss the following questions in pairs.

1. What aspects does civil engineering involve?
2. What are the educational requirements for becoming a civil engineer?
3. How does civil engineering contribute to the economic development of a country?

Task 2. Read the text and give a brief summary in two sentences.

Civil engineering is the field of engineering concerned with planning, design and construction of buildings and facilities. People who are qualified and experienced enough and who meet state requirements for practicing the profession are called civil engineers.

The industry is typically divided into specialty areas, with each area requiring different skills, resources, and knowledge. The area classifications typically used are residential (single- and multifamily housing), building (all buildings other than housing), heavy/highway (dams, bridges, ports, sewage-treatment plants, highways), utility (sanitary and storm drainage, water lines, electrical and telephone lines, pumping stations), and industrial (refineries, mills, power plants, chemical plants, heavy manufacturing facilities). Civil engineers can be involved in all of these areas of construction. Due to the differences in each of these market areas, most engineers specialize in only one or two of the areas during their careers.

Adapted from: Standard Handbook for Civil Engineers (Fifth Edition) p.1.2; The Civil Engineering handbook (Second Edition), p. 17.

Task 3. Read the text again. Mark the sentences T (true) or F (false).

1. Civil engineering is concerned with the planning, design, and construction of buildings and facilities.
2. Civil engineers do not need to get qualified in order to practice their profession.

3. The civil engineering industry is divided into branches such as residential, building, heavy/highway, utility, and industrial.

4. Civil engineers typically specialize in all areas of construction throughout their careers.

5. Each specialty area in civil engineering requires different skills, resources, and knowledge.

Task 4. Match the words in the box with the correct definition.

a. civil engineer, b. qualified, c. requirement, d. residential, e. dam, f. sewage, g. highway, h. utility, i. refinery, j. mill, k. power plant, l. facility

___ 1. Something needed or necessary.

___ 2. A public road, especially an important road that joins cities or towns together.

___ 3. Someone whose job is to plan and build public buildings, roads, bridges, etc.

___ 4. A service that is used by the public, such as an electricity or gas supply.

___ 5. A factory where a particular substance is produced.

___ 6. Having finished a training course, or having particular skills.

___ 7. The system of carrying away waste water and human waste from houses and other buildings through large underground pipes or passages.

___ 8. Relating to where people live.

___ 9. A wall built across a river that stops the river's flow and collects the water.

___ 10. A place, especially including buildings, where a particular activity happens.

___ 11. A factory where substances in their natural state, such as oil or sugar, are made pure.

___ 12. A building where electricity is produced.

Task 5. Choose at least 20 terms from Tasks 2-4 and make a glossary (write the terms out with translation in your notebook). Learn the words by heart.

Task 6. Translate the text from Task 2 into Russian in your notebook.

Task 7. Find Present Simple verb forms in the text from Task 2. Revise Present Simple and Present Continuous tenses. Open the brackets and fill in the gaps with the verb forms in these tenses.

1. Civil engineers ____ (get) higher education in technical universities.

2. Jack ____ (study) solid mechanics this term.

3. Technical education ____ (get) more and more popular.

4. My colleague ____ (be) good at designing.

5. The factory ____ (not work) on Sundays.

6. ____ this firm ____ (build) residential buildings?

7. My shift ____ (start) at 8 a.m. and ____ (finish) at 4 p.m.

8. What's that noise? – They ____ (drill) the wall.

9. I ____ (not do) any projects at the moment.

10. Right now we ____ (test) the new highway.

Task 8. Discuss the following questions in pairs.

1. What are the challenges of civil engineering?

2. How is civil engineering connected with other industries?

3. Imagine what changes might take place in civil engineering in future?

Unit 2. History of Construction

Task 1. Discuss the following questions in pairs.

1. What iconic historical structures in the world can you remember?

2. In what way were the technologies and methods of construction in the past different from those in our days?

Task 2. Read the text and give a brief summary in two sentences.

In prehistoric times people built simple shelters to protect themselves from inclement weather, predatory animals, and other

humans. As time passed and they learned more about building materials and methods, humans began to construct first huts, then castles and cathedrals, and ultimately skyscrapers and factories.

Engineers were developing new methods of construction during the Industrial Revolution to build higher and stronger structures. However, mass production methods in housing and construction appeared during World War II. They brought a new era to building construction in the postwar years. Builders began using more power tools and equipment. The use of huge cranes eliminated the backbreaking work of moving bricks, mortar, and cement from floor to floor in high-rise buildings.

Humankind's building skills today range from the construction of single-family houses and apartment buildings to tall buildings and specialized structures.

Adapted from: <https://www.stepbystep.com/The-History-of-Construction-167965/>

Task 3. Read the text again. Answer the questions to the text.

1. What were the primary reasons for building shelters in ancient time?
2. How did construction evolve from prehistoric times to the present?
3. What was the striking change in construction during the Industrial Revolution?
4. How did construction change during and after World War II?
5. How has the use of power-driven equipment changed the construction process?

Task 4. Fill in the gaps with the words from the box.

to range; castle; to develop; cathedral; mass production; engineer; to eliminate; power tool; to construct; skyscraper; bricks; mortar; crane

1. The factory patented a new tool and started its ____ ____ .
2. This ____ ____ operates with an electric motor.
3. The construction industry advanced and ____ed during the 20th century.

4. In order to _____ a building you need to hire a professional engineer to design the project first.

5. In London you can find different examples of buildings: a historic _____ called The Tower of London; a _____ (for example, St'Pauls); a _____ called the Shard, etc.

6. _____ and _____ were the primary materials for that building.

7. You can never totally _____ the possibility of human error.

8. They use a _____ to lift heavy plates to the upper levels.

9. Examples of our company's work _____ from simple apartment buildings to high-rise buildings.

10. A person who is specially trained to design and build bridges, roads, vehicles, buildings, and other structures is an _____ .

Task 5. Find synonyms for these words:

to construct; to develop; skyscraper; equipment; to eliminate; housing

Task 6. Choose at least 20 terms from Tasks 2-5 and make a glossary (write the terms out with translation in your notebook). Learn the words by heart.

Task 7. Translate the text from Task 2 into Russian in your notebook.

Task 8. Find Past Simple and Past Continuous verb forms in the text from Task 2. Revise Past Simple and Past Continuous tenses. Open the brackets and fill in the gaps with the verb forms in these tenses.

1. The contractor _____ (build) the warehouse two months ago.

2. The Romans _____ (construct) numerous aqueducts.

3. While the mason _____ (lay) bricks, a slab _____ (fall) right next to him. He was lucky to stay alive.

4. At first human shelters _____ (be) very simple.

5. While the client _____ (choose) the building materials, the project manager _____ (plan) the schedule.

6. When the Bronze Age _____ (come), people _____ (learn) making tools from copper and bronze.

7. People in prehistoric time _____ (not have) any power tools.

8. At 5 o'clock yesterday I ____ (work) on the project design.

9. The safety manager ____ (come) when the workers ____ (sit) on the edge of a beam.

10. Auguste de Montferrand ____ (design) Saint Isaac's Cathedral in the 18th century.

Task 8. Work in pairs. Imagine that Student A is an architect of the Roman Empire and student B is a civil engineer of our time. Compare and share your experience with the colleague from the other era.

Unit 3. Occupations in the construction industry

Task 1. Discuss the following questions in pairs.

1. What skills do people need to be good at building things?

2. What is the difference between being a builder on the site and a construction office worker?

Task 2. Read the text and give a brief summary in two sentences.

Since the old days the construction industry has been full of numerous employment options. Designing, planning, project management, and practical work are all part of this. Below are the possible occupations.

A construction manager's job is to ensure that the project is finished on schedule and budget. He or she oversees residential, industrial, civil projects, as well as commercial structures.

Responsibilities of an architect include creating architectural drawings, collaborating with clients and contractors, and ensuring compliance with building codes and regulations.

Before construction begins, a surveyor inspects potential job sites and measures and records data regarding the site's location, elevation, and contour.

Construction workers, also known as labourers, are the backbone of any construction project because they make the project a reality on the building site. Safety managers develop and implement safety rules, regulations, and procedures to reduce the danger of accidents or injuries on the job site.

The range of further jobs is wide: an electrician, a plumber, a carpenter, a brick mason, a painter, etc. Every career path requires its own skills and qualifications.

Adapted from: <https://dailycivil.com/types-of-careers-jobs-in-construction-industry-in-2022/>

Task 3. Read the text again. Mark the sentences T (true) or F (false).

1. The construction industry offers a variety of job roles, including design, planning, and project management.

2. A construction manager is responsible for overseeing only residential projects.

3. An architect's responsibilities are limited to creating architectural drawings.

4. Construction workers are very important for any construction project.

5. Some jobs in the construction industry require specific skills or qualifications.

Task 4. Match the words in the box with the correct definition.

a. architect; b. brick mason; c. carpenter; d. to comply with; e. construction manager; f. contractor; g. drawing; h. to employ; i. labourer; j. occupation; k. plumber; l. surveyor; m. to collaborate; n. to measure; o. to record;
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___ 1. A person or company that signs a contract to supply materials or workers to perform a service or a job.

___ 2. A graphic representation by lines, tones, or colors of an object or idea.

___ 3. To act according to an order, set of rules, or request.

___ 4. A person who designs new buildings and is responsible for how they are built.

___ 5. To provide work to someone for pay; to hire.

___ 6. A person who is involved in the organization, coordination, and strategic effort applied to the construction activities.

- ___ 7. A person who builds walls or structures using bricks.
- ___ 8. A person's regular work or profession; job or principal activity.
- ___ 9. To set down some information in writing or register it in any other way for the purpose of further storing and reproduction.
- ___ 10. A person who does unskilled physical work, especially outside.
- ___ 11. To estimate the dimensions, quantity, or capacity of something.
- ___ 12. A person whose job is making and repairing wooden objects and structures.
- ___ 13. A person whose job is to measure and record the details of areas of land.
- ___ 14. A person whose job is to supply and connect or repair water pipes and devices.
- ___ 15. To work with someone else for a special purpose.

Task 5. Choose at least 20 terms from Tasks 2-4 and make a glossary (write the terms out with translation in your notebook). Learn the words by heart.

Task 6. Translate the text from Task 2 into Russian in your notebook.

Task 7. Find Present Perfect Simple verb form in the text from Task 2. Revise Present Perfect Simple and Present Perfect Continuous tenses. Open the brackets and fill in the gaps with the verb forms in these tenses.

1. The architect ___ (work) on this design for several months.
2. The contractor ___ (not employ) the carpenter yet.
3. Our plumber ___ (fix) five water pipes since yesterday.
4. They ___ (lie) to the construction manager since November.
5. I ___ (not see) the engineer today.
6. ___ you already ___ (measure) the beams?
7. ___ he ever ___ (record) data with this device?
8. The surveyor is tired because he ___ (collect) data outdoors all day long.
9. I have some news! We ___ just ___ (agree) to collaborate with a new contractor.

10. My son ___ always ____ (dream) to become a civil engineer.

Task 8. Work in pairs. Remember all the construction occupations that have been mentioned in the unit. Discuss what skills are needed for each of them. Discuss what advantages and disadvantages these jobs have.

Unit 4. Surveying

Task 1. Discuss the following questions in pairs.

1. What should be done prior to the construction?
2. What features might a land parcel have that must be taken into consideration while its exploiting?

Task 2. Read the text and give a brief summary in two sentences.

Surveying is a primary component of civil engineering and is going to become even a more popular specialization. This field will continue to undergo phenomenal changes due to technological developments in digital imaging and satellite positioning.

Modern surveying engineering encompasses several specialty areas, each of which requires substantial knowledge and training in order to attain proper expertise.

Plane surveying is widely applied in engineering practice. It implies the fundamentals of measuring distance, angle, direction, and elevation. These measured quantities are then used to determine position, slope, area, and volume – the basic parameters of civil engineering design and construction.

Geodesy, or higher surveying, deals with mathematical and physical aspects of modelling the size and shape of the earth, and its gravity field.

Photogrammetry and remote sensing encompass all activities involved in deriving qualitative and quantitative information about objects and environments from their images. Such imagery may be acquired at close range, from aircraft, or from satellites.

Adapted from: The Civil Engineering Handbook (Second Edition), p.53.

Task 3. Read the text again. Answer the questions.

1. What technological advancements have significantly changed the surveying field?
2. Explain the concept of plane surveying.
3. What does geodesy deal with?
4. How does photogrammetry and remote sensing contribute to surveying engineering?

Task 4. Match the names of different types of surveying with the proper explanations.

A. Plane surveying B. Geodetic surveying C. Photogrammetry

1. deals with making topographic maps using images taken from different angles.	2. deals with small areas on the surface of the earth. Curvature of the earth is neglected.	3. deals with vast areas. Curvature has to be considered.
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Task 5. Fill in the gaps with the words in the box.

a. angle; b. digital; c. direction; d. distance; e. elevation; f. expertise; g. qualitative and quantitative; h. satellite; i. surveying; j. to apply; k. to encompass; l. to undergo

- ___ 1. ___ technology refers to electronic collecting, storing, analyzing and sharing information.
- ___ 2. The scientist carried out ___ and ___ analysis in his research.
- ___ 3. An ___ can be acute (between 0° and 90°), right (90°) and obtuse (between 90° and 180°).
- ___ 4. ___ images showed the Earth's surface in details although they were made from space.
- ___ 5. The field of ___ deals with making the accurate measurements of the Earth's surface.
- ___ 6. The project ___ great changes since it commenced.
- ___ 7. The satnav led us in the wrong ___ .
- ___ 8. You have to ___ your skills and knowledge in your work.

- ___ 9. The _____ between the objects was 300 metres.
- ___ 10. The plan of the territory ___ high- and lowlands, rivers and galleys.
- ___ 11. He is known for his ___ in plane surveying – he is a professional.
- ___ 12. The crop is not grown at high ___ above 1,000 metres.

Task 6. Choose at least 20 terms from Tasks 2-5 and make a glossary (write the terms out with translation in your notebook). Learn the words by heart.

Task 7. Translate the text from Task 2 into Russian in your notebook.

Task 8. Find verb forms expressing future in the text from Task 2. Revise verb forms with future meaning. Open the brackets and fill in the gaps with these verb forms (rely on the *hints*).

1. I think people ___ (develop) new surveying methods soon.
(*prediction*)
2. Look! He hasn't finished the work but he is packing his equipment. ___ he _____ (leave)? (*intention*)
3. The surveyor ___ (visit) our site next Monday at 10 a.m.
(*plan/arrangement*)
4. I ___ (apply) this technique next time, I promise.
5. They are closed. The office ___ (open) at 9 a.m. tomorrow.
(*timetable*)
6. We hope that our new engineer ___ (have) high qualifications.
7. It's 6 p.m. already. We ___ (not finish) the work on time.
(*prediction*)
8. ___ I ___ (help) you with the digital imaging? (*offer*)
9. I _____ (show) you the direction. (*offer*)
10. The student ___ (take) his final exam tomorrow morning.
(*plan/arrangement*)

Task 9. Discuss the following questions in pairs.

1. What does the job of a surveyor involve?
2. Why is surveying important?
3. How do types of surveying differ from each other?
4. Who might hire a surveying specialist?

Unit 5. Construction of unique buildings and structures (skyscrapers, bridges, aqueducts, etc.)

Task 1. Discuss the following questions in pairs.

1. What makes a building or a structure unique in your opinion?
2. Can you remember any complex buildings or structures over the globe that are unique?

Task 2. Read the text and give a brief summary in two sentences.

In the past decades, an increasing number of tall buildings and complex structures such as the Burj Khalifa in Dubai, the Bird's Nest Stadium in Beijing, and the London Aquatic Center were built. These projects demand that the civil and structural engineers have the ability to handle the increasing difficulty in designing even more complicated projects such as tall buildings or structures with complex geometries.

The effective design of these types of structures is based on a clear understanding of the behaviour of the structures, relevant analysis of theory and methods, knowledge of effective numerical modelling software, and of specific design principles.

High-rise buildings and skyscrapers as well as large-scale complex structures, such as stadiums and airport terminals, can be treated as complex and unique structures due to the complexity of their structural type.

Offshore oil platforms and offshore wind turbines are subject to more severe environmental loadings such as huge waves, strong winds, etc. They also need special design considerations and therefore can also be treated as complex structures.

Adapted from: Design and Analysis of Tall and Complex Structures. p.177-178

Task 3. Read the text again. Mark the sentences T (true) or F (false).

1. There haven't been any new tall buildings and complex structures over the past decades.
2. Complex structures and tall buildings require an ability to create complicated design.
3. In order to create a proper design of a complex structure, it is necessary to have various skills and knowledge of theory and practice.
4. Skyscrapers belong to complex structures while stadiums and airport terminals do not.
5. Due to the strong impact of natural conditions, offshore oil platforms also belong to the complex and unique structures.

Task 4. Match the words in the box with the correct definition.

a. stadium; b. complicated; c. environmental; d. offshore; e. oil platform;
f. relevant; g. software; h. to demand; i. to handle; j. to increase;
k. wind turbine; l. *(be)* subject to

- ___ 1. Relating to the air, water, and land in or on which people, animals, and plants live.
- ___ 2. Computer programs.
- ___ 3. A tall structure with blades that are blown round by the wind and produce power to make electricity.
- ___ 4. Involving a lot of different parts, in a way that is difficult to understand.
- ___ 5. To need or require something.
- ___ 6. A large structure that carries equipment that is used to get petroleum from under the sea.
- ___ 7. To have or experience a particular thing, especially something unpleasant.
- ___ 8. To deal with, have responsibility for, or be in charge of.
- ___ 9. A large structure consisting of many rows of seats surrounding an area of land on which sports are played.
- ___ 10. To (make something) become larger in amount or size.
- ___ 11. Correct or suitable for a particular purpose.

___ 12. Away from or at a distance from the coast.

Task 5. Choose at least 20 terms from Tasks 2-4 and make a glossary (write the terms out with translation in your notebook). Learn the words by heart.

Task 6. Translate the text from Task 2 into Russian in your notebook.

Task 7. Find Passive Voice verb forms in the text from Task 2. Revise Passive Voice verb forms. Open the brackets and fill in the gaps with the Passive verb forms.

1. Many tall buildings ____ (build) in Moscow last year.
2. The project ____ (not finish) yet.
3. Probably the old bridge ____ (dismantle) next year.
4. At present, the biggest stadium ____ (design) by our architect.
5. No complex building can ____ (create) without a surveyor and an engineer.
6. The new plan ____ (make) before the manager told to make it.
7. New skyscrapers ____ (construct) every year.
8. While the slab ____ (lift) on top of the building, it got stuck.
9. The services must ____ (pay) for within two days.
10. The materials ____ (buy) by next month.

Task 8. Work in pairs or in small groups. Imagine you are members of a project aimed to construct a unique building or structure. Describe what you are going to construct. Discuss the steps of your project and challenges that you might face.

Unit 6. Underground construction

Task 1. Discuss the following questions in pairs.

1. What examples of underground structures can you remember?
2. How is surface and underground construction different?
3. What is similar about surface and underground construction?

Task 2. Read the text and give a brief summary in two sentences.

Underground engineering is an old subject. In fact, it originated when people lived in caves and scratched into the rock or stiff clay and dug the first underground structures. However, underground engineering is also a new technology, and its theories and methods are still in development.

Subsurface space is used in a variety of ways in the form of tunnels, mines, shelters, etc. If you look back in the past, you will see that people have dug tunnels and structures for four millennia already, some of which are still in use today.

The design and construction of subsurface structures have become increasingly more manageable and safer. Construction methods, skills, and knowledge have evolved over the years, showing the importance of empirical learning in underground engineering.

The 21st century is the century of underground engineering, and many cities in the world are excavating for subways, underground roads, utilities, underground plants, and other kinds of different underground facilities.

Adapted from: Underground Engineering, pp. vii, 1-2.

Task 3. Read the text again. Answer the questions.

1. Why is underground construction considered an old discipline?
2. What are the types of subsurface structures?
3. What has changed about underground construction over the years?

Task 4. Fill in the gaps with the words in the box.

a. manageable; b. mine; c. plant; d. rock; e. subway; f. to dig; g. to evolve; h. to originate; i. tunnel; j. utilities
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- ___ 1. They are building a new underground power ___ to generate electricity for the city.
- ___ 2. The work has been divided into smaller, more ___ sections.
- ___ 3. The ___ excavated while tunneling can be utilized beneficially.
- ___ 4. This discipline ___ from China.

- ___ 5. The _____ include gas electricity and water supply.
- ___ 6. Most local men in Sagan-Nur work in the coal _____ .
- ___ 7. A passage through a mountain or underground is called a _____.
- ___ 8. The methods of the construction industry have to _____ and correspond to the new demand.
- ___ 9. The West District was allowed to _____ a tunnel linking it to the East District.
- ___ 10. An urban underground railway system is called “ _____ ” in North America.

Task 5. Choose at least 20 terms from Tasks 2-3 and make a glossary (write the terms out with translation in your notebook). Learn the words by heart.

Task 6. Translate the text from Task 2 into Russian in your notebook.

Task 7. Find example of Conditional sentence in the text from Task 2. Revise Conditionals. Open the brackets and fill in the gaps of conditional clauses with the proper verb forms.

1. If you ___ (dig) a tunnel, you have to excavate a lot of rock.
2. If I see the chief engineer tomorrow, I ___ (tell) him the news.
3. If the builders arrived on time, we _____ (start) the work on time. What a pity, that they are in a traffic jam.
4. If you _____ (come) to the meeting, you would have seen the project yourself.
5. The subway is closed when its workers ___ (be) on strike.
6. I wouldn't accept that technology if I ___ (be) you.
7. I ___ (not go) to the meeting unless you tell me who is invited.
8. Underground construction _____ (not evolve) if people hadn't practiced it for thousands of years.
9. Provided that we _____ (repair) the utilities next month, there will be less emergency shutdown cases.
10. They wouldn't start building that subsurface structure if they ___ (have) any problems with the project documentation.

Task 8. Talk to your partner starting with the prompts.

1. If I were the project manager of a tunnel construction, I would have to take care about
2. If I had to choose between surface and underground construction, I would choose ... because
3. When I graduate from the university, I

Unit 7. Materials used in construction

Task 1. Discuss the following questions in pairs.

1. What materials can be used in construction?
2. Why is the choice of the materials so important?
3. How is the environmental issue linked to the construction materials?

Task 2. Read the text and give a brief summary in two sentences.

Building material is any material that can be used for construction purpose such as materials for house building. Wood, cement, aggregates, metals, bricks, concrete, clay are the most common type of building material used in construction. The choice of these should be based on their cost effectiveness for building projects. Many naturally occurring substances, such as clay, sand, wood and rocks, even twigs and leaves have been used to construct buildings. Apart from naturally occurring materials, many man-made products are in use, some more and some less synthetic. The manufacture of building materials is an established industry in many countries and the use of these materials is typically segmented into specific specialty trades, such as carpentry, plumbing, roofing and insulation work.

Construction materials can be generally categorized into two sources, natural and synthetic. Natural materials are those that are unprocessed or minimally processed by industry, such as lumber or glass. Synthetic materials are made in industrial settings after much human manipulations, such as plastics and petroleum based paints.

Adapted from: <https://theconstructor.org/building/types-of-building-materials-construction/699/>

Task 3. Read the text again. Mark the sentences T (true) or F (false).

1. Building material is naturally occurring material used for construction purpose.
2. In a building project, the choice of the materials depends on their cost effectiveness.
3. There is a special industry dealing with the manufacture of building materials.
4. Natural materials are unprocessed or minimally processed by industry, for example wood, rock, glass.
5. Synthetic materials are artificial, i.e. man-made compounds, such as plastics, paints, twigs or clay.

Task 4. Match the words in the box with the correct definition.

a. aggregate	b. brick	c. cement	d. clay	e. concrete	f. cost effectiveness
g. lumber	h. metal	i. to occur	j. to process	k. substance	l. synthetic

- ___ 1. A fine grey powder made of a mixture of calcined limestone and clay, used with water and sand to make mortar, or with water, sand, and aggregate, to make concrete.
- ___ 2. Mineral materials, such as sand or stone, used in making concrete.
- ___ 3. A construction material made of a mixture of cement, sand, stone, and water that hardens to a stonelike mass
- ___ 4. A natural earthy material that is plastic when wet, consisting essentially of hydrated silicates of aluminum: used for making bricks, pottery, etc.
- ___ 5. Producing good results without costing a lot of money.
- ___ 6. A hard, shiny material such as iron, gold, or silver which heat and electricity can travel through.
- ___ 7. A specific type of matter, especially a homogeneous material with a definite composition.
- ___ 8. Wood that is used for building.
- ___ 9. To treat and change the substance or material by adding chemicals.
- ___ 10. Not of natural origin; prepared or made artificially.
- ___ 11. To exist or be present in a particular place.

___ 12. A molded rectangular block of clay baked by the sun or in a kiln until hard and used as a building and paving material.

Task 5. Choose at least 20 terms from Tasks 2-4 and make a glossary (write the terms out with translation in your notebook). Learn the words by heart.

Task 6. Translate the text from Task 2 into Russian in your notebook.

Task 7. Find examples of Modal verbs in the text from Task 2. Revise the grammar topic of modal verbs and modal expressions. Open the brackets and fill in the gaps with the proper modal verbs.

1. You ___ (*modal verb of advice*) take into account the cost effectiveness.

2. Clients ___ (*modal verb of ability*) choose finishing materials from this booklet.

3. We ___ (*modal verb of ability, not*) finish the project on time because the materials hadn't been delivered on time.

4. The trainee ___ (*modal verb of possibility*) be able to operate the machines at the end of the training period.

5. My colleague hasn't come to the meeting, he ___ (*modal verb of logical assumption*) be ill. He is never absent without a descent excuse.

6. ___ (*modal verb of request*) you help me with this draft?

7. You ___ (*modal verb of obligation*) process the ore to get minerals from it.

8. They ___ (*modal verb of absence of necessity*) use metal.

9. We ___ (*modal verb of prohibition*) use synthetic materials for this cottage.

10. We ___ (*modal verb of obligation*) change the supplier of building materials last week.

Task 8. Work in pairs. Tell your partner if you agree or disagree with the statement. Give reasons.

1. Alternative materials, such as recycled plastic or bamboo, have great perspectives in construction industry.

2. Different climates and weather conditions do not affect the choice of materials much.
3. People prefer natural materials to synthetic ones.

Unit 8. Types of buildings (residential, commercial, industrial)

Task 1. Discuss the following questions in pairs.

1. What do people build for accommodation purpose?
2. What do people build for commercial use?
3. What do people build for industrial use?

Task 2. Read the text and give a brief summary in two sentences.

The facility needs of a society are varied. Each of these different facility needs is manifested as a different sector of the construction industry. Let's look at four basic sectors: residential building, commercial building, heavy civil construction, industrial construction.

To begin with, residential construction addresses the housing needs of a society. Housing construction takes many forms: individual homes, apartments, townhouses, and prefabricated units such as modular and manufactured homes.

Commercial building sector primarily involves meeting the needs of commerce, trade, and government. This is the category that includes banks, schools, office buildings, hotels, shopping malls, theatres, universities, hospitals, etc.

Civil sector includes roadways, bridges, tunnels, dams, airports, and railways. Basically, it deals with any work that is associated with infrastructure, transportation, and how we move about.

Manufacturing plants, electrical generating facilities, oil refineries, pipelines, steel mills are all examples of industrial construction projects. This sector is highly specialized and requires firms with vast resources and significant construction and engineering expertise.

Adapted from: Construction Management. JumpStart, pp.10-18.

Task 3. Read the text again. Mark the sentences T (true) or F (false).

1. There are two basic categories of construction: residential building and commercial construction.
2. Residential construction is about building homes, apartments for accommodation.
3. Hospitals, banks, shopping malls belong to commercial building sector.
4. Construction sector connected with infrastructure and transportation is called industrial.
5. Examples of civil construction sector are refineries or manufacturing plants.

Task 4. Match the words in the box with the correct definition.

a. apartment	b. prefabricated	c. commercial	d. expertise
e. infrastructure	f. pipeline	g. railway	h. residential
i. resources	j. roadway	k. steel mill	l. townhouse

- ___ 1. Manufactured (a building or section of a building, for example) in advance, especially in standard sections that can be easily shipped and assembled.
- ___ 2. Skill or knowledge in a particular area.
- ___ 3. A long pipe, especially underground, used to transport oil, natural gas, etc., over long distances.
- ___ 4. A room or suite of rooms designed as a residence and generally located in a building occupied by more than one household.
- ___ 5. A factory where steel is made.
- ___ 6. Something that a country, person, or organization has that they can use.
- ___ 7. A way that vehicles drive on.
- ___ 8. Related to buying and selling goods and services.
- ___ 9. Related to the place where people live.
- ___ 10. The metal tracks that trains travel on.
- ___ 11. A house that is joined to another house.

___ 12. Fundamental facilities serving a country, city, or area, as transportation and communication systems, power plants, and roads.

Task 5. Choose at least 20 terms from Tasks 2-4 and make a glossary (write the terms out with translation in your notebook). Learn the words by heart.

Task 6. Translate the text from Task 2 into Russian in your notebook.

Task 7. Find examples of non-finite verb forms in the text from Task 2. Revise Infinitive and Gerund grammar topic. Open the brackets and fill in the gaps with these verb forms.

1. They tried ___ (finish) building the new railroad on time but they failed.

2. Try ___ (use) this primer, I like it better.

3. She doesn't remember ___ (lock) the apartment. She has to come back and check if it is locked.

4. Please, remember ___ (rent) a townhouse in Winville for summer.

5. We are running out of petrol. Let's stop ___ (fuel) the car.

6. Please stop ___ (smoke) in my car.

7. The project manager decided ___ (fire) the builder.

8. We are interested in ___ (get) specialists with engineering expertise.

9. I can't afford ___ (buy) this apartment.

10. I suggest ___ (send) the goods by railroad.

Task 8. Take two minutes to prepare a short description of your perfect residential building. Present your ideas to the group. Compare your ideas.

Unit 9. Structural elements (foundation, walls, roof, columns, etc.)

Task 1. Discuss the following questions in pairs.

1. Discuss the structural elements mentioned in the heading.
2. What other structural elements can you add?
3. Are all of the elements necessary?

Task 2. Read the text and give a brief summary in two sentences.

Practically every building has the basic elements as follows: foundation, plinth, walls and columns, sills, lintels, doors and windows, floors, roofs, steps, stairs and lifts.

Foundation is the most important part of the building. It is the lowest part of the building and transfers the load of the building to the ground. Further, the portion of the wall between the ground level and the ground floor level is called plinth. It is usually of stone masonry. If the foundation is on piles, a plinth beam is cast to support wall above floor level. The function of the plinth is to keep the ground floor above ground level, free of dampness.

Walls and columns transfer the load of the structure vertically downwards to the foundation. Apart from this, walls enclose the building area into different compartments and provide privacy.

Roof is the topmost element of the building which provides top cover to the building. It should be leakproof.

The higher the building is, the more complicated its structure is.

Adapted from: <https://civilmint.com/components-of-a-building/>

Task 3. Read the text again. Answer the questions.

1. What are the basic structural elements of most buildings?
2. What is the most important part of the building? Why?
3. What is a plinth?
4. What are the functions of the walls?
5. What is special about the topmost part of the building?

Task 4. Match the words from the box with the numbers in the picture.

column, door, floors, foundation, lintel, plinth, roof, sill, steps, wall, window

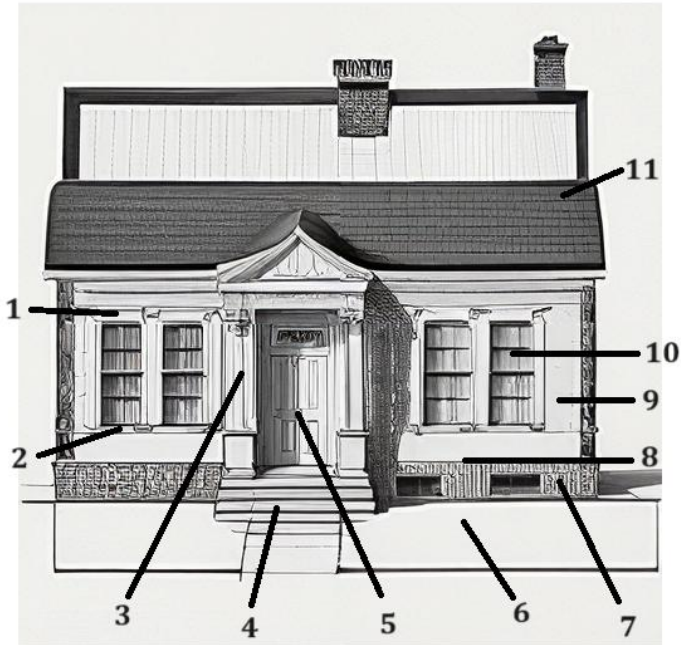


Figure 1. Structural elements of the building.

The picture was generated with <https://chat-gpt.pictures/>

Task 5. Choose at least 20 terms from Tasks 2-4 and make a glossary (write the terms out with translation in your notebook). Learn the words by heart.

Task 6. Translate the text from Task 2 into Russian in your notebook.

Task 7. Find examples of comparative and superlative forms in the text from Task 2. Revise the grammar topic of Degrees of Comparison. Open the brackets and fill in the gaps with the comparative or superlative form.

1. The green building is ___ (high) than the blue one.
2. The new door is ___ (good) than the old one.
3. It is probably ___ (tiny) door I've ever seen.
4. ___ (hot) room in the building is under the roof.
5. The thicker the plinth is, the ___ (expensive) the project gets.
6. These are ___ (bad) bricks in this store.
7. Which wallpaper looks ___ (nice) – plain or striped?
8. Carl is ___ (young) engineer in our company.
9. Jack was hired because he was ___ (educated) than the other applicants.
10. Students don't enroll for this course because it is _____ (interesting) course of all.

Task 8. A roleplay. Student A is the client who needs to build a three-storey office building. Student B is the contractor who is going to design and build it. Discuss the details of the project: structural elements, building materials, etc.

Unit 10. Construction safety

Task 1. Discuss the following questions in pairs.

1. When and where do people have to follow safety rules?
2. Why is it important to follow the safety rules?

Task 2. Read the text and give a brief summary in two sentences.

In the dynamic world of construction, the significance of health and safety cannot be overstressed. The construction industry, known for its high-risk environment, demands a vigilant approach to prevent any accidents and ensure the well-being of its workforce.

The nature of construction work, which often involves working at heights, operating heavy machinery, and handling potentially dangerous

materials, increases the risk of workplace accidents a lot. These risks underscore the critical need for comprehensive health and safety measures.

Safety training is the cornerstone of a safe construction site. Every worker, from the ground level to management, should undergo regular safety training tailored to their specific roles and the risks associated with them. This training should cover the correct use of equipment, emergency procedures, and the importance of using personal protective equipment (PPE).

Adapted from: <https://www.constructionplacements.com/health-and-safety-in-construction-guide/>

Task 3. Read the text again. Mark the sentences T (true) or F (false).

1. Health and safety regulations are extremely important in the construction industry.
2. In construction, there is a high risk to safety only while works at height.
3. The builders working on the construction site must undergo the safety training while the project managers don't have to do it.
4. Safety training covers such topics as the proper use of PPE, safety instructions of equipment operation, actions to be done in emergency situations.

Task 4. Fill in the gaps with the proper word(s) from the box.

a. comprehensive	b. emergency procedures	c. health and safety
d. heavy machinery	e. high-risk	f. personal protective equipment
g. to operate	h. to prevent	i. to tailor
j. workforce	k. workplace accident	

1. Occupational ____ deals with the protection of workers' well-being.
2. We must carry out a _____ and detailed survey of the accidents rate.
3. Children and the elderly are in a ____ group for this virus.
4. Please, wear ____ when you work with the machine.
5. The _____ include evacuation plan, first aid, etc.

6. A tractor, an excavator, a backhoe are all examples of _____ .
7. The factory will not _____ next month, it will be closed for renovation.
8. The refinery employs only highly-skilled _____ .
9. If you comply with the rules, you will avoid the _____ .
10. You can _____ the course adapting it to your needs.
11. Following the safety regulations will _____ the accidents.

Task 5. Choose at least 20 terms from Tasks 2-4 and make a glossary (write the terms out with translation in your notebook). Learn the words by heart.

Task 6. Translate the text from Task 2 into Russian in your notebook.

Task 7. Find examples of quantifiers in the text from Task 2. Revise the grammar topic of Quantifiers. Open the brackets and choose the best word(s) expressing quantity.

1. In China there are (*many/much/a lot/little*) of skyscrapers.
2. How (*many/much/little/a lot of*) money do you invest in this project?
3. There are too (*many/much/some/any*) problems with this contractor.
4. I don't have (*some/no/a lot/any*) questions.
5. The instructor has (*some/any/much/a little*) remarks.
6. There is (*many/no/few/a few*) doubt that the guidelines are correct.
7. There is (*little/much/few/many*) traffic in this part of the city – you can quickly get wherever you need.
8. Can I have (*a lot/a few/a little/few*) water, please?
9. Unfortunately, we have very (*little/a little/few/a few*) skilled workers.
10. The factory has at its disposal only (*few/a few/little/a little*) workshops.

Task 8. A roleplay. Student A is an employer, student B is an employee of a construction company. Discuss the safety rules at construction site and in office.

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