

ПРОФЕССИОНАЛЬНАЯ ОБРАЗОВАТЕЛЬНАЯ ОРГАНИЗАЦИЯ
АВТОНОМНАЯ НЕКОММЕРЧЕСКАЯ ОРГАНИЗАЦИЯ
«КОЛЛЕДЖ КУЛЬТУРЫ И СПОРТА»

**КОМПЛЕКТ КОНТРОЛЬНО-ИЗМЕРИТЕЛЬНЫХ
МАТЕРИАЛОВ ДЛЯ ТЕКУЩЕГО КОНТРОЛЯ**

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2 КУРС 3 СЕМЕСТР

Урок № 2-6. Тема 2. Система образования в России и за рубежом

Education in Russia

All Russian children have the right to education, but it is not only a right, it is a duty, too. Education in our country is compulsory and now lasts eleven years. It consists of primary education and secondary education.

Primary education starts at the age of 6 or 7 and continues for four years. After finishing primary school pupils go on to secondary school. The school year starts in September and ends in May. Generally there are 4 school terms with holidays up to 10 days between them. The summer holidays last from June to September.

Most schools in Russia are comprehensive, which take pupils of all abilities without entrance exams. As a rule, students go to school 5 days a week. But there are also specialized schools, lyceums and gymnasiums, which give profound knowledge in various academic subjects. In lyceums and gymnasiums students study 6 days a week.

After finishing the 9th form students must take 4 examinations. Then young people can choose to stay at school, enter a college or a technical school. But to enter a university they have to study for two more years (either at school or at college).

Higher education in Russia.

There are many colleges and universities in our country, but it is not easy to enter a university or college as the competition is rather fierce. Most of the colleges and universities are public and students do not have to pay for their education.

After 4 years of study students can pass examinations and get a bachelor's degree, after 5 years a specialist's degree and after 6 years a master's degree.

There are a lot of institutions of higher education in our country:

- the Moscow State University (Московский Государственный Университет)
- the Linguistic University, known as Maurice Thorez Institute of Foreign Languages (Лингвистический Университет, известный как Институт иностранных языков имени Мориса Терезы)
- People's Friendship University of Russia (Российский Университет Дружбы Народов)

They are well-known not only in Russia but also abroad.

Упражнение 1. Ответьте на вопросы.

1. When does the academic year begin in this country? 2. How many exams did you pass to enter the University? 3. Do you pay for your education? 4. Do students get grants? 5. What subjects do students study in the first year? 6. Which subject is the most interesting for you? 7. Is there a sport center in your University? 8. What degree do students get after four years of study? 9. What degree can a student get after two years of further study and research? 10. What new education system is introduced in this country? 11. What specialities do people get after graduating from a university? 12. Why is higher education important in the life of every country?

Упражнение 2. Сравните предложения в действительном и страдательном залоге, переведите их.

1. Students asked the lecturer many questions. The lecturer was asked many questions. 2. The monitor told the first-year students to come to the laboratory. The first-year students were told to come to the laboratory. 3. Usually a lab assistant shows the equipment to the students. Usually the equipment is shown to the students by a lab assistant. 4. Students watched the process with great attention. The process was watched with great attention. 5. Tomorrow our teacher will give us a new task. A new task will be given tomorrow. We shall be given a new task tomorrow. 6. Practice accompanies theory. Theory is accompanied by practice. 7. He asked me to bring a dictionary. He was asked to bring a dictionary. 8. The teacher told the students to sign their drawings. The students were told to

sign their drawings. 9. The dean will send the students to a big plant in summer. The students will be sent to a big plant in summer. 10. He taught us to use the lab equipment. We were taught to use the lab equipment.

Образование в Англии

Education in Britain is compulsory and free for all children.

Primary education begins at the age of 5 in England, Wales and Scotland, and 4 in Northern Ireland. It includes three age ranges: nursery for children under 5 years, infants from 5 to 7, and juniors from 7 to 11 years old. In nursery schools babies don't have real classes, they learn some elementary things such as numbers, colours and letters. Besides, they play, have lunch and sleep there. Children usually start their school education in an infant school and move to a junior school at the age of 7.

Compulsory secondary education begins when children are 11 or 12 and lasts for 5 years: one form to each year. Secondary schools are generally much larger than primary ones. Pupils in England and Wales begin studying a range of subjects stipulated under the National Curriculum. Religious education is available in all schools, although parents have the right to withdraw their children from such classes.

About 5 per cent of schoolchildren attend fee-paying private or public schools. Most of these schools are boarding ones, where children live as well as study. The most famous British public schools are Eton, Harrow and Winchester.

The large majority of British schools teach both boys and girls together. But grammar schools, which give state secondary education of a very high standard, teach boys and girls separately.

The school year in England and Wales starts in September and ends in July. In Scotland it runs from August to June and in Northern Ireland from September to June and has three terms. At 7 and 11 years old, and then at 14 and 16 at secondary school, pupils take examinations in the core subjects (English, Mathematics and Science).

The main school examination, the General Certificate of secondary education (GCSE) examination is taken at the age of 16. If pupils are successful, they can make their choice: they may either go to a Further Education College or a Polytechnic or they may continue their education in the sixth form. Those who stay at school after GCSE, study for 2 more years for 'A' (Advanced) Level Exams in two or three subjects which is necessary to enter one of British universities. Universities usually select students basing on their A-level results and an interview. After three years of study a university graduate gets the Degree of a Bachelor of Arts, Science or Engineering. Many students then continue their studies for a Master's Degree and then a Doctor's Degree (PhD).

Урок № 7-8. Тема 3. Колледжкакобразовательнаяорганизация

My college

After finishing secondary school young people can continue their education at different kinds of technical schools or colleges. Professional training makes it easier to get a higher education.

Our college is one of the oldest educational institutions in the city and in Russia.

Our college is rich in its traditions. Among its graduates there are outstanding people, well-known in our region.

The classrooms in our college are comfortable and well-designed. They are equipped with computers and multimedia projection units. There are laboratories for studying physics, chemistry and biology. In our college there are 4 computer classrooms where students learn to use the Internet to create their first computer programs and projects in different subjects. On the second floor there is a library with a reading room. There is also a large Assembly hall for concerts and performances. One of the most popular places among the students is a canteen. Nonresident students can live in the hall of residence.

In our college there are good sports facilities: a large gym, a stadium and a fitness room.

Today the college provides training in such specialties and professions as a welder, a car mechanic, a mechanic, an electrician and an accountant. Teaching practice takes place in the workshops. There are all kinds of tools and machines in the workshops.

Our students are hardworking. They always take part in different educational programs, quizzes and competitions and therefore achieve good results. Many of them get a scholarship. Experienced teachers help to create a friendly atmosphere for learning. They prepare students for entering the best universities of our country. Studying at the college is a hard work but a real pleasure.

Answer these questions:

1. What is the official name of our college?
2. When was our college founded?
3. Are you a first year student?
4. What can you say about your teachers?
5. Where is there your college?
6. Is your college old or modern?
7. What equipment can you see in the classrooms?
8. Where does teaching practice take place?
9. What sports facilities are there in our college?
10. Where can students live?
11. What is your future profession?
12. Who is the top manager of the college?
- 13.

Заполните пропуски предлогами *in, at, on, to, into, under, near*.

1. We live ... Moscow.
2. I get up ... seven o'clock and leave ... eight.
3. I usually walk ... the institute.
4. There are three rooms ... our flat.
5. There is a picture ... the wall and a small table ... the picture.
6. He comes ... the room and sits down ... the chair ... the table.
7. ... the evening we watch TV or read books.
8. We do not study... Sunday.
9. There are several newspapers ... the table.
10. The accident happened ... the bridge.

Урок № 9-10. Тема 4. Яимояспециальность.

The Life of a Student

While I (walk) across the campus (университетский городок) the other day, I (meet) my old friend Bill, whom I (see, not) since May. Naturally, we (stop) (talk) to each other for a few minutes. I asked him how he (do) in his classes that semester. He told me that he (take) a course in English that semester. He said that he (complete) the elementary course two semesters before, and by the next semester he (be) ready (take) the most difficult English course offered at this school. He also said that he (be) interested in getting his degree as soon as possible and he (ask, already) his adviser for permission to take the final examination. «I am glad (hear) that you (make) such good progress», I (say) to Bill. Then I asked him if he (can) tell me the secret of his success. He answered that the secret of his success (be) simple and he (study) at least two hours a day to improve his English.

After that I told Bill I (have) a little difficulty with my course in French at the moment. I said that I (study, not) very hard the last semester, but I (work) harder in the future.

Exercise 5. Comment on the following statements:

1. Opponents usually say that the young people are too passive and too lazy because they watch TV so much now.
2. We don't need the telephone, telegraph and television.

MY FUTURE SPECIALITY

I am a first-year student of Belarusian National Technical University. I study at the Civil Engineering Faculty. This faculty trains civil engineers. The whole process of studying deals with mastering new construction methods and progressive technology of production of building structures and materials.

While at school I was interested in physics and mathematics and after finishing school I decided to become a civil engineer. Everybody knows that it is a very useful and interesting profession nowadays. Our builders and civil engineers are busy with the expansion and modernization of the building materials industry, the introduction of new building machines and progressive speedy methods of construction. We begin to master our speciality from the first year of studying at the University. Besides physics and mathematics special engineering subjects such as strength of materials, descriptive geometry, theoretical mechanics, building materials, geodesy, architecture are taught at our faculty. A true engineer must also know a foreign language and use it in his future work. Our University Academic Staff goes hand in hand with the latest development in science. Many brilliant lecturers deliver lectures to us. The students in the laboratories, which are equipped with modern apparatus, appliances, machines and devices, do much work. Different stands, diagrams, tables and posters are at our disposal. We do laboratory tests and experiments on building materials and building structures. In this way we take part in scientific research. Many of us carry out research work and make reports about our experimental work at students' scientific conferences. Much of our time is spent in the reading halls of our library where we prepare for our seminars, full term tests and examinations. In summer many students of our faculty have their labour term. According to the academic plan the forth-year students of our faculty have their technological field training either in Minsk or in other towns. They are sent to work at different construction sites according to their speciality. This is of great use for them as they get acquainted with their future work and learn to employ in practice the knowledge they gained at the University.

During the 5th year of studying at the University we have two months' field training which is to broaden our engineering knowledge to get ready for the final and most important period in students' life that is the defence of graduation project in the presence of the State Examining Board. Prior to it one must choose a topic for it first. The work at the graduation project needs much time and effort. We are welcome to consult our professors on some vague items. After graduating from the University we'll work at building material factories, on construction sites, in

design and research institutions. Besides, our University provides us with everything necessary to prepare for a scientific career through a post-graduate course. In a word we do not look for a job, the job looks for us.

1. Answer the following questions:

1 Where do you study? 2 What faculty do you study at? 3 Are you a second-year student? 4 What specialists does the Civil Engineering faculty train? 5 What were you interested at school? 6 What are our builders and civil engineers busy with? 7 What subjects are taught at your faculty? 8 Why is it necessary to know a foreign language for an engineer? 9 Who delivers lectures in this University? 10 What do you do in the laboratories? 11 What are the laboratories equipped with? 12 Where do you read up for your seminars? 13 When do students have their field training? 14 What does it look like? 15 What do students do at the end of their studies at the University? 16 How do students work at their graduation projects? 17 Where will you work after graduating from the University? 18 In what way can graduates continue their studies? 19 Is it necessary to look for a job after finishing the Belarusian National Technical University?

2. Agree or disagree with the following statements:

1 You are the second-year student. 2 While at school you wanted to be a teacher. 3 Our builders and civil engineers are busy with the designing of the new houses. 4 At the University you study a foreign and Russian languages, history, pedagogics, logics and law. 5 Many brilliant lecturers deliver lectures to you. 6. Much work is done by the students in the special laboratories, which are equipped with modern apparatus, appliances, machines and devices. 7 All the students must carry their research work and make reports about their experimental work at students' scientific conferences. 8 Much of the time is spent in the National Library where students prepare for their seminars, full term tests and examinations. 9 In summer all the students of the faculty have their labour term. 10 You practice your knowledge gained at the University at different construction sites. 11 You'll have three months' field training during the fifth year of studying at the University. 12 The work at your graduation project won't take much time. 13 You'll defend your graduation project in the presence of the State Examining Board. 14 After graduating from the University you'll work according to your speciality. 15 It is rather difficult to find a job after finishing this University.

Урок № 11-12 Тема 5. Средства коммуникации в профессиональной деятельности.

At the Telephone

Mr. Smith: Can I use your telephone for a long distance call? I couldn't find a pay phone in the building.

Mr. Wilson: Sure.

Mr. S.: My wife is going to meet me in New York tomorrow. I want to tell her what time the train gets in.

Mr. W.: Here you are. New York you can dial the number direct. Dial 2 and then the number.

Mr. S.: There's no answer. I'll call later.

Mr. W.: You can use the telephone any time you want.

Mr. S.: Direct distance dialing is wonderful, isn't it?

.....
Operator: Trunk-service (междугородная), number, please?

Mr. Jones: London Victoria 2884. I say, operator, will you hurry it up for me as I have a train to catch in a few minutes?

O.: Unless your number is engaged, I can put you through almost at once. I am sorry, sir, your number is engaged. (After a few seconds.) I have got your number. Hold the line, please.

Mr. J.: Oh, it's you, Mary?

Mrs. Jones: Is it you, George, dear? How are you? So pleased to hear your voice again! When are you going to come back?

Mr. J.: I can't hear you, dear. Operator, will you try again.

O.: I think that's better now.

Mr. J.: Are you there? Is that you, Mary, dear? I say, can you hear me?

Mrs. J.: Yes, dear, I can.

Mr. J.: I shall be arriving at Waterloo Station at 5.40 this afternoon. Will you come and meet me?

Mrs. J.: Certainly, darling.

Mr. J.: There is something else I want to tell you. Get hold of Smith at the office, will you? Ask him to ring me up tomorrow in the morning.

O.: Your time is up. If you want to speak on, drop another sixpence, please.

Mr. J.: All right, dear, so long.

A Letter

Dear Sergei,

How are you? I have received your letter of 10-th June for which I thank you very much. I am sorry I haven't written to you sooner, but I have had many things to do. You know it was a very hard year for me. I spent my time getting ready for my exams and I was doing well in many subjects. After passing the exams I was enrolled into the University. The whole course of study is four years. My major subject is mathematics. It is my favourite and my hobby. I am good at it and do maths whenever I have a chance. I take many courses in this subject. I like to take part in mathematical competitions organized at our department and at the University. I think that mathematics is «the language of science» and plays an important part in many sciences. We are lucky to have a brilliant lecturer in mathematics this term. He has a talent to take a difficult subject and make it simple. You leave the lecture hall with a feeling that mathematics is the most interesting subject under the sun. Next term I'll do research in the field of computer engineering. And how do you feel about maths? Please, write to me, I am especially interested in your life in students' hostel.

Good-bye for the present,
your friend Mike

Упражнение 1. Напишите письмо личного характера опираясь на пример данный выше

Упражнение 2. Замените в каждом предложении выделенный глагол на другой глагол с тем же значением.

1. Did you **receive** a grant?
2. How many exams did you pass before you **entered** university?
3. Do you **take** notes in lectures?
4. Who **gives** the lecture in history?
5. My friend **studies** physics.
6. What research did you **conduct** last semester?

Урок № 13-14 Тема 6. Интернет. Использование Интернета в профессиональной деятельности.

The Internet

The Internet is a magnificent global network with millions and millions of computers and people connected to one another where each day people worldwide exchange an immeasurable amount of information, electronic mail, news, resources and, more important, ideas.

It has grown at a surprising rate. Almost everyone has heard about it and an increasing number of people use it regularly. The current estimate is that over 70 million people are connected, in some way, to the Internet — whether they know it or not.

With a few touches at a keyboard a person can get access to materials in almost everywhere. One can have access to full-text news-papers, magazines, journals, reference works, and even books. The Web is one of the best resources for up-to-date information. It is a hypertext-based system by which you can navigate through the Internet. Hypertext is the text that contains links to other documents. A special program known as «browser» can help you find news, pictures, virtual museums, electronic magazines, etc. and print Web pages. You can also click on keywords or buttons that take you to other pages or other Web sites. This is possible because browsers understand hypertext markup language or code, a set of commands to indicate how a Web page is formatted and displayed.

Internet Video conferencing programs enable users to talk to and see each other, exchange textual and graphical information, and collaborate.

Internet TV sets allow you to surf the Web and have e-mail while you are watching TV, or vice versa. Imagine watching a film on TV and simultaneously accessing a Web site where you get information on the actors of the film. The next generation of Internet-enabled televisions will incorporate a smart-card for home shopping, banking and other interactive services. Internet-enabled TV means a TV set used as an Internet device.

The Internet is a good example of a wide area network (WAN). For long-distance or worldwide communications, computers are usually connected into a wide area network to form a single integrated network. Networks can be linked together by telephone lines or fibre-optic cables. Modern telecommunication systems use fibre-optic cables because they offer considerable advantages. The cables require little physical space, they are safe as they don't carry electricity, and they avoid electromagnetic interference.

Networks on different continents can also be connected via satellites. Computers are connected by means of a modem to ordinary telephone lines or fibre-optic cables, which are linked to a dish aerial. Communication satellites receive and send signals on a transcontinental scale.

Упражнение 1. Переведите предложения с составными предложениями *dueto, thanksto, becauseof*.

1. Ships can communicate over long distances due to the radio. 2. Because of the earth's rotation there are days and nights on the earth. 3. Thanks to the radio it is possible to transmit human voice across the globe. 4. Due to the latest achievements in electronics it has become possible to develop supercomputers. 5. Because of their long life solar and atomic batteries are used to supply power to transmitters in spacecrafts. 6. Thanks to the development of radio telescopes radio astronomy has made great achievements. 7. Our century can be called «Space Age» because of the development of a new branch of science and technology — cosmonautics.

Упражнение 2. Выберите соответствующий модальный глагол.

1. Do you live far? (Can, must) we meet here at 7 o'clock? — We certainly (may, can). — I will see you later this evening, then. 2. Bill, would you help me? Sure, I'd be glad to help you. What (may, can) I do for you? 3. (Can, may) I take your pen? I've broken mine. 4. Do you know when Bob comes back from the University? I am afraid he (can, may) be very late. He has an examination tomorrow. He (can, must) study for the examination. 5. Do you have a stamp

(марка)? — No, I'm afraid I don't. You (may, must) go to the post office for this. 6. I'm very much interested in environment problems. I think we (must, may) learn to live in harmony with nature.

Урок №15-16 Тема 7. Средства массовой информации в профессиональной деятельности

Newspapers

The British people are probably the greatest newspaper readers in the world. This explains the fact that there are quite a lot of editions of different kind. Generally, all the newspapers are divided into two groups. On the one hand, there are “quality” newspapers, which publish analytical articles on serious topics, involving economy, politics and business issues. Among the “quality” papers are The Times, The Guardian, The Financial Times, The Independent. Their circulation is not large, but their reputation is unshakeable. On the other hand, there are “popular” papers, or “tabloids” which are considered entertaining rather than informative. People buy such kind of papers to learn the latest news on sports events, private life of celebrities and rumors. Their circulation is much larger compared to “quality” papers. They are usually less in size and use large letters for the headings to report sensational news.

The newspapers of this kind have the word “Daily” in the name. There are usually a lot of photographs, crosswords, sketches, and commixes in these papers. Among them the most popular are Daily Express, The Sun, Daily Mail, Private Eye, Daily Mirror, Daily Star and others. Besides newspapers of daily circulation, there are also the ones issued on Sundays. These may be either the supplements to the daily papers, or independent Sunday papers, which are larger in size than the daily ones and usually have several separate parts on different topics. They can be called family papers, as there is something to read for each member of the family: love stories, detective stories, facts from history, sport, art, and much more. These newspapers contain the word “Sunday” in their title. Besides, there are a great number of all kinds of magazines. All the newspapers and magazines in the UK are privately owned. Fleet Street in London, which was known as the home of many newspapers, has now lost its prominence — the offices of many newspapers have moved away from London, as the rent is very high.

Radio and Television. There are two main companies on the British Isles, which do the broadcasting over the country. They are the BBC (British Broadcasting Corporation) and the IBA (Independent Broadcasting Authorities). There are several minor broadcasting companies as well. In Britain there are four TV channels: the BBC I, the BBC II, the ITV (“I” stands for “independent”) and Channel IV. All of them are different, each channel having its own target group and providing the viewers with high quality of programmes to all tastes. Commercial TV stations broadcast entertainment programmes, light dramas, talk shows and documentaries, as well as sport programmes and news.

1. Answer the following questions:

1. Are the British people great newspaper readers?
2. What types of newspapers are there in the United Kingdom?
3. What do “quality” newspapers specialize in?
4. What is the main aim of “popular” newspapers?
5. Are Sunday newspapers larger or smaller in size than the newspapers issued on weekdays?
6. What articles can one read in Sunday papers?
7. Where were the offices of the largest British newspaper agencies previously situated?
8. What are the two main broadcasting companies in the United Kingdom?
9. What are the TV channels in the United Kingdom?
10. What kind of programmes do they broadcast?

2. Say whether the following statements are true or false:

1. Not many newspapers are published in the United Kingdom today.

2. Quality newspapers publish analytical articles about business and politics.
3. The Financial Times is a popular newspaper.
4. The circulation of “popular” papers is much larger compared to “quality” papers.
5. All the newspapers and magazines in the United Kingdom are owned by the state.
6. There are a lot of offices of newspaper agencies in Fleet Street.

3. Ask your friend five questions about newspapers he/she reads.

4. Speak about the newspapers you read.

5. Answer the questions about television in Russia.

1. How many TV channels are there?
2. Are there any local TV channels in your city/town?
3. Do you watch TV regularly?
4. What is your favourite channel? Why do you like it?
5. Do you watch TV regularly or occasionally?
6. What kinds of programmes do you like watching?
7. Do you watch news regularly?
8. Why is it essential to watch news programmes?

2 КУРС 4 СЕМЕСТР

Урок № 1-6 Тема 1. История строительства древних дорог и мостов

Roads. How it all started.

Most of us give very little thought to the roads we drive on every day, and tend to take them for granted – at least until they are closed for repairs, washed out in a flood and so on. However, only during the past forty years or so have we enjoyed the luxury of a vast, extensive, and well-maintained system of roads accessible to everyone. In the midst of our grumbling about potholes, traffic jams, and incompetent drivers, we forget how fortunate we truly are. Obviously, it was not always the case.

From the earliest times, one of the strongest indicators of a society's level of development has been its road system – or lack of one. Increasing populations and the advent of towns and cities brought with it the need for communication and commerce between those growing population centres.

A road built in Egypt by the Pharaoh Cheops around 2500 BC is believed to be the earliest paved road on record – a construction road 1,000 yards long and 60 feet wide that led to the site of the Great Pyramid.

The various trade routes, of course, developed where goods were transported from their source to a market outlet and were often named after the goods which travelled upon them. For example, the Silk Route stretched 8,000 miles from China, across Asia, and then through Spain to the Atlantic Ocean. However, carrying bulky goods with slow animals over rough, unpaved roads was a time consuming and expensive. As a general rule, the price of the goods doubled for every 100 miles they had to travel.

Some other ancient roads were established by rulers and their armies. The Old Testament contains references to ancient roads like the King's Highway, dating back to 2000 BC. This was a major route from Damascus in Palestine, and ran south to the Gulf of Aqaba, through Syria to Mesopotamia, and finally on to Egypt. Later it was renamed Trajan's Road by the Romans, and was used in the eleventh and twelfth centuries by the Crusaders.

Мосты. Туннели. Виды мостов. Первые мосты (из истории мостов). Ошибки при строительстве мостов. Строительство туннелей. Соппротивлениематериалов.

HISTORY OF BRIDGE BUILDING

Read the text, translate it.

History of bridges

The first bridges were made by nature itself – as simple as a log fallen across a stream or stones in the river. The first bridges made by humans were probably spans of cut wooden logs or eventually stones, using a simple support and crossbeam arrangement. Some early Americans used trees or bamboo poles to cross small wells to get from one place to another. A common form of sticks, logs, and deciduous branches together involved the use of long fibres woven together to form a rope used for binding and holding together the materials used in early bridges. The Arkadiko Bridge is one of four Mycenaean arch bridges, part of a former network of roads in Greece. Dating to the Greek Bronze Age (13th century BC), it is one of the oldest arch bridges still in existence and use. Several intact arched stone bridges from the Hellenistic era can be found in the Peloponnese in southern Greece. The greatest bridge builders of antiquity were the ancient Romans. The Romans built arch bridges and aqueducts that could stand in conditions that would damage or destroy earlier designs. Some stand today. An example is the Alcántara Bridge, built over the river Tagus, in Spain. The Romans also used cement, which reduced the variation of strength found in natural stone. One type of cement, called pozzolana, consisted of water, lime, sand, and volcanic rock. Brick and mortar bridges were built after the Roman era, as the technology for cement was lost then later rediscovered. An ancient Indian treatise mentions the construction of dams and bridges. The use of stronger bridges using plaited (переплетенный) bamboo and iron chain was visible in India by about the 4th century. A number of bridges, both

for military and commercial purposes, were constructed by the Mughal administration in India. Although large Chinese bridges of wooden construction existed at the time of the Warring States (476-221 BC), the oldest surviving stone bridge in China is the Zhaozhou Bridge, built from 595 to 605 AD. Rope bridges, a simple type of suspension bridge, were used by the Inca civilization in the Andes Mountains of South America, just prior to European colonization in the 16th century. During the 18th century there were many innovations in the design of timber bridges by Hans Ulrich, Johannes Grubenmann, and others. The first book on bridge engineering was written by Hubert Gautier in 1716. A major breakthrough in bridge technology came with the erection of the Iron Bridge in Coalbrookdale, England in 1779. It used cast iron for the first time as arches to cross the river Severn. With the Industrial Revolution in the 19th century, truss systems of wrought iron were developed for larger bridges, but iron did not have the tensile strength to Alcántara Bridge 108 support large loads. With the advent of steel, which has a high tensile strength, much larger bridges were built, many using the ideas of Gustave Eiffel. In 1927 welding pioneer Stefan Bryła designed the first welded road bridge in the world.

Урок № 7-13 Тема 2. Страноведение

The United Kingdom of Great Britain and Northern Ireland

To the west of the continent of Europe lie two large islands. The larger of them is called Great Britain, and the smaller, Ireland. These two and 5,500 smaller islands form the British Isles. The island of Great Britain consists of England, Scotland and Wales. The isle of Ireland is divided into Northern Ireland and the Irish Republic. England, Scotland, Wales and Northern Ireland form the United Kingdom of Great Britain and Northern Ireland. The UK (the United Kingdom) is the official name of the country, occasionally referred to as Great Britain, which is, strictly speaking, only a geographic name. Great Britain is washed by the Atlantic Ocean and the Irish Sea from the west, by the North Sea from the north and west. It is separated from the European continent by the English Channel. The narrowest part of the English Channel is called the Strait of Dover. The UK is not a very large country. Its territory is about 244,000 square kilometers, and no point of the country is more than 120 kilometers away from the sea. At the same time, the population of the UK is the third largest in Europe, comprising about 60 million people. It is incorrect to call everybody who lives in the United Kingdom "English", as this is the name only for those who live in England. The residents of Wales are named Welsh, while the people of Scotland are called Scottish. The correct common name for English, Scottish and Welsh is British. Those who live in Northern Ireland are called Irish.

The climate of the British Isles is generally mild; it is seldom cold in winter and never too hot in summer. This is due to the warm current of the Atlantic Ocean, Gulf Stream. Britain was always known as the country of fogs, but now it is not quite so because of the climatic changes: there is maybe less fog than in any other European country.

There are no high mountains and long rivers in the UK. The highest mountain is Ben Nevis in the Highlands of Scotland, and the longest rivers are the Severn and the Thames. Geographically, the UK has a very convenient position, being located on the crossroads from Europe to America. This is one of the reasons why Britain was (and is up to the present time) one of the leading world powers. The capital of the country is London. It is situated on the river Thames.

Britain has an ancient and glorious history. It used to be the great empire "where the sun never sets". It gave the world many famous scientists, writers, political leaders and explorers, such as Newton, Darwin, Drake, Shakespeare, Churchill and others.

For centuries monarchs ruled Britain. The constitutional monarchy is still preserved in the country, though it is practically no more than a tradition and a tribute to the past. Queen Elisabeth II is Head of State.

Her power is limited by the parliament, which is elected every four years. The leader of the party that has won the majority during the elections becomes the Prime Minister. In fact, he becomes the head of state and forms the Cabinet. The second largest party forms the official Opposition.

Answer the following questions:

1. What are the names of the islands situated to the west of the continent of Europe?
2. What parts does the island of Great Britain consist of?
3. How many parts is Ireland divided into?
4. What is the official name of Great Britain?
5. Name the seas and oceans the country is washed by.
6. How large is the territory of the UK?
7. How are the people living in the UK called?
8. Why is the climate of the British Isles moderate?
9. What is the highest mountain in the UK?
10. What are the longest and most important rivers in the UK?
11. What is the capital of the country?
12. Prove that the UK has a very convenient position.

13. Give the names of famous people of Great Britain.
14. What type of state is the UK?
15. Who rules the country in fact?
16. How often do the elections take place?
13. Say what these figures refer to in the

Open the brackets and use the adjective in the corresponding degree of comparison.

1. The (large) island is known as Great Britain, the (small) is Ireland.
2. The (high) mountain in Scotland is Ben Nevis.
3. The (long) river in Great Britain is the Severn, the Thames is (important).
4. The arctic zone has (cold) climate.
5. The (narrow) part of the English Channel is called the Strait of Dover.
6. Among the Russian lakes (deep) is the Baikal.
15. Make up sentences about Russia and Great Britain

Canada

Canada is located in North America. It is the second largest country in the world, but the population of the country is only about 30 million people. Most of the population is concentrated along the southern border, in the cities such as Montreal, Ottawa and Toronto. Canada is an independent country, though formally Elizabeth II, Queen of the United Kingdom, is recognized as Head of State. The country consists of two territories and ten provinces. There are two official languages in Canada — English, which is the language of about 60% of the population, and French. The majority of French-speaking population is concentrated in the province of Quebec.

The country is mainly agricultural. It is well known as an exporter of wheat and oats. It is also rich in natural resources. It is one of the main producers of electric power.

Australia

The continent of Australia is situated between the Indian Ocean and the Pacific Ocean. Australia is the sixth largest country in the world. The country's official name is Commonwealth of Australia. It is unique, because it is at the same time a continent, the smallest one in the world. Australia is a very young country. The explorers from Europe unanimously called it a wonderful continent. There are really a lot of wonders: strange animals and wildlife, unusually mild weather, warm winters, etc. Even the sun rises there in the west, which is strange for Europeans. Besides, there is great stock of mineral resources: gold, oil, coal and much more.

The Commonwealth of Australia is a federation of six states: South Australia, New South Wales, Queensland, Victoria, Tasmania, and Western Australia. The central part of the country is scarcely populated. The majority of the inhabitants live along the seashore or on the islands surrounding the continent: Tasmania is probably the most famous of them.

There are not very many cities in Australia. Agriculture is very well developed there. It is the world's leading manufacturer of wool. The largest and the most famous city is Sydney. It was the capital of the Olympic games in 2000. The capital of the country is Canberra, which is a remarkable city, with lakes, parks and skyscrapers.

New Zealand

New Zealand is a country in the Pacific Ocean, situated to the southeast from Australia. The country consists of two main islands and a number of smaller ones. All of them belong to the large group of Polynesian Islands. As one of the former colonies of Great Britain, now New

Zealand is a member of the Commonwealth. It is formally the constitutional monarchy, Queen Elizabeth II being Head of State. The Queen appoints the governor who rules in her name. But, as well as in

the UK, the Queen and her representatives have little or no power. In fact, the Prime Minister is the ruler. New Zealand is a rich country, most of its wealth being due to agricultural activities. The rate of life in New Zealand is really high. Auckland is the largest city in the country. The capital of New Zealand is Wellington. English is the official language in the country, though in some schools Maori, which is the language of the native population, is taught as well.

Answer the questions about Canada, Australia and New Zealand.

1. Where is the country situated?
2. What is the size of the country?
3. What are its main cities? What is the capital of the country?
4. Where is the majority of the population concentrated?
5. What is the most important sphere of economy of the country?
6. Is the country rich in natural resources? What are they?
7. Who is formally recognized as Head of State in Canada?
8. What is the official language of the country?

Think of the beginning of the following sentences:

1. ... is located in North America.
2. ... between the Indian Ocean and the Pacific Ocean.
3. ... of two territories and ten provinces.
4. ... is concentrated in the province of Quebec.
5. ... belong to Polynesian Islands.
6. ... an exporter of wheat and oats.
7. ... a wonderful continent.
8. ... due to agricultural activities.

Compare the countries. Use the following adjectives and adverbs in the superlative degree:

large; small; densely populated; cold; young; wonderful

New York

New York, or the Big Apple, as the Americans often call it, is the largest city in the USA and in the whole world. It stands in the mouth of the Hudson River. The people of New York City (NYC) live within five boroughs of Manhattan, Brooklyn, Queens, the Bronx and Staten Island. Manhattan Island, the oldest part of the city, was bought from the Native Americans for the amount of goods worth \$ 26.

Now it is one of the busiest financial and cultural centre in the world, offering the visitors a unique collection of experiences and attractions. There is a wide choice of internationally acclaimed theatres, restaurants and museums, historic parks and churches.

Manhattan is also a district of business and finance. In Wall Street there are offices of large companies and banks, as well as New York Stock Exchange, which dominates the business life of the whole world. New York is an international city. On the map of Manhattan one can find Little Italy with the Italian restaurants and its own way of life, Brighton Beach, where the immigrants from the former Soviet Union live and Chinatown, inhabited by the Chinese. NY is also famous for its fine department stores and boutiques. In the evening you can enjoy one of its many nightclubs, the ballet, opera, a show or concert. Broadway is the centre of nightlife. It is the longest street in New York with many sights.

The best way to go around NY is on foot. One word applies to driving your own car in Manhattan: don't! Streets are jammed and the parking is scarce and astronomically expensive.

However, NYC is a paradise for walkers, who enjoy the finest window shopping and people-watching. When proper caution is exercised, most areas are safe. It is best to use well-lighted, busy streets at night. You can also travel anywhere you want by subway and buses. Subway, though rather in attractive and not so well organized as in Moscow, runs 24 hours a day. The fare is \$ 1.50 for a single journey, payable with tokens. Free bus and subway system maps are available from hotels, tourist information centres and subway stations.

However one gets around New York, it is important to know some basic geography: Fifth Avenue divides the city between East and West. Street numbers begin at Fifth Avenue, so Two W. (west) 57th Street is just a few steps to the west of the Fifth Avenue, while Two E. (east) 57th Street is just to the east. Most streets in Manhattan are one-way. With a few exceptions, traffic on even-numbered streets travels east, and traffic on odd-numbered streets travels west. To New Yorkers, "downtown" does not connote the city centre. Rather, "downtown" simply means "south" and "uptown" means "north".

Thousands of tourists come to New York every day to see the Statue of Liberty, which is situated on Liberty Island and is a symbol of American democracy. It has a torch of Freedom in her right hand.

New York is famous for its skyscrapers, among which are the Chrysler Building and the Empire State Building.

The unprecedented terrorist attack on September 11, 2001 disguised the face of New York. Two twin towers, which used to form the World

Trade Centre, were destroyed as the result of the planes crash. This was the tragic day for the people of the USA and for the whole world. Two towers were in ruins in the matter of minutes. The life of the big city was paralyzed completely for more than a month. Now the WTC is under reconstruction.

Prove that:

New York is a large city;

the best way to travel around New York is on foot;

there are a lot of attractions in New York;

New York is an international city;

it is quite easy to find one's way in New York;

New York plays an important role in the financial life of the whole world;

the system of public transport in New York is well developed.

Урок № 14-15. Тема 3. Современные мосты и дороги в изучаемых странах «Строительство»

*Строительные конструкции. Каменная, кирпичная кладка. Строительные материалы.
Свойство материалов. Композитные материалы. Железные материалы.
Пластмассовые материалы.*

1. *Gravel* is known to have been used extensively in the construction of roads by soldiers of the Roman Empire. A granular surface can be used with a traffic volume where the average annual daily traffic is 1,200 vehicles per day or less. There is some structural strength as the road surface combines a sub base and base and is topped with a seal aggregate with emulsion. The decision whether to pave a gravel road or not often depends on traffic volume. Obviously, it is not as durable as concrete or asphalt pavements, but relatively cheap.

Pavers generally have the form of pre-cast concrete blocks, are often used for aesthetic purposes. *Pavers* are rarely used in areas with high-speed vehicle traffic.

Brick, cobblestone, sett pavements were once common in urban areas throughout the world, but fell out of fashion in most countries, due to the high cost of labor required to lay and maintain them, and are typically only kept for historical or aesthetic reasons. In some countries, however, they are still common in local streets.

2. *Aggregate Materials.* Aggregates are broken pieces of stone, obtained by blasting and crushing a parent rock or stone boulders in a designated size; or by screening suitable gravels from natural sources. However, coarse aggregates obtained from natural sources are sometimes polished or weathered due to formation and transportation modes. Therefore, natural sources may be ideal for fine aggregate (natural sand) than coarse aggregates. However Tanzania is a large territory with variable geology, aggregates produced in the country are mainly from *granite* and *gneiss* rocks in the upcountry regions, *basalt* in the volcanic regions and *limestone* in the coast regions. Granite, gneiss and basalt are hard and strong enough to resist heavy loads, while limestone is porous and soft; hence, so weak to sustain heavy loads. Aggregate is used in a concrete mix as an extender (bulking material) to reduce cost and control shrinkage, in pavement layers as base course material (CRS and CRR), as chipping for surface dressing and it takes up about 95% of asphalt mixes. Additionally, graded aggregate is used to improve the strength (CBR) of weak soils (known as 'mechanical stabilization'). However, before being used in any mix, aggregate should be clean and strong enough to resist forces (e.g. crushing, abrasion, impact, etc.) and durable under exposure conditions (e.g. heat, chemical attack, etc.). Soft aggregate (e.g., limestone, sandstone, etc.) should not be used where high strength is required (unless it is the only option and design modification is made to accommodate such weak aggregate). Aggregate particles should have angular shape to form tight interlock and rough enough to produce frictional resistance in a mix. Flaky or elongated aggregates should be avoided, as they break and do not pack tightly during compaction. For aggregate to produce adequate density and stability during compaction, it should contain a wide range of particle sizes (from fine to coarse) that can fill the mix matrix. Some of the common tests used to examine the quality of aggregate are; Grading, Shape test (FI and EI), ACV, TFV, AIV, LAA, SG, Sulphate Soundness, Organic test, Clay lumps, etc.

3. Concrete revolutionises road construction

A new type of concrete for road building has been developed as an alternative to asphalt or traditionally made concrete in pavements. The material is more energy efficient, means less potholes and maintenance, is cheaper to make and is ready for use immediately after it has been laid, helping to reduce road closure times and traffic jams. Another key benefit is that, when it is disused, the material can be taken away, crushed and recycled for use in a new pavement.

The new roller-compacted concrete (RCC), which has been developed by researchers at the University of Sheffield and EU partners as part of the EcoLanes project, consists of dry mix concrete reinforced with recycled steel fibres from waste tyres, and is 12 per cent cheaper than

conventional road construction. It also reduces construction time by 15 per cent, bringing a 40 per cent reduction in energy consumption over its lifetime.

The new concrete material uses a very different consolidation method, roller compaction, which means that the dry mix requires less cement than conventional concrete and is stable enough for light traffic straight after being laid. Finding a suitable reinforcement material that is also compatible with roller compaction technology, such as fibre reinforcement, was the initial challenge that led to the Ecolanes project.

The researchers undertook a number of successful demonstrations in different countries to ensure the technology could operate under a range of climatic conditions. Concrete laid with roller compaction technology utilises a similar technology as that of asphalt construction, making it ideal for future construction projects.

The success of the Ecolanes project, which started in 2006, has meant the team are developing new guidelines that assume the benefits of fibre reinforcement and allow for the design of thinner pavements. It could also lead to tyre recycling plants that produce tyre wire for these new concrete applications, which would have the advantage of increasing the profitability of tyre recycling and helping the industry comply with EU landfill directives.

However, work still needs to be done to convince the construction industry to introduce new codes of practice that accept fibre-reinforced RCC. The researchers are aware that they need to develop their guidelines so that they can be used in codes.

The next focus for their research will now move to recycled aggregates, as they are suitable for fibre reinforcement and would help reduce costs further.

4. https://constructionreviewonline.com/2018/05/geo-synthetics-in-road-construction/huesker-stabilenka-reinforcement/Geosynthetics_trends_in_road_construction

Geo synthetics like any other product in the construction industry is trying to keep up with the market trend through advancement and emerging trends. According to Valery Weyn Director at Geotextiles East Africa, a Kenyan based company that offers specialist Geo-Synthetic materials and solutions for civil, coastal and hydraulic Engineering, waste, environmental, Mining, Architectural and Landscaping industries. Stress-relieving geotextiles or SAMI's are becoming more popular in road construction more so in East Africa as they are designed to provide a cost effective alternative to conventional construction methods.

Из истории строительства. Строительство гражданских зданий. Новые направления в городском строительстве.

Строительные профессии. Новые направления маркетинга. Современные методы управления в строительной отрасли.

Construction

Construction is the process of preparing for and forming buildings and building systems. Construction starts with planning, design, and financing and continues until the structure is ready for occupancy.

Far from being a single activity, large scale construction is a feat of human multitasking. Normally, the job is managed by a project manager, and supervised by a construction manager, design engineer, construction engineer or project architect. For the successful execution of a project, effective planning is essential.

Those involved with the design and execution of the infrastructure in question must consider the zoning requirements, the environmental impact of the job, the successful scheduling, budgeting, construction site safety, availability and transportation of building materials, logistics, inconvenience to the public caused by construction delays and bidding, etc.

New construction techniques and sustainability

As efficiency codes have come into effect in recent years, new construction technologies and methods have emerged. University Construction Management departments are on the cutting

edge of the newest methods of construction intended to improve efficiency, performance and reduce construction waste.

New techniques of building construction are being researched, made possible by advances in 3D printing technology. In a form of additive building construction, similar to the additive manufacturing techniques for manufactured parts, building printing is making it possible to flexibly construct small commercial buildings and private habitations in around 20 hours, with built-in plumbing and electrical facilities, in one continuous build, using large 3D printers. Working versions of 3D-printing building technology are already printing 2 metres (6 ft 7 in) of building material per hour as of January 2013, with the next-generation printers capable of 3.5 metres (11 ft) per hour, sufficient to complete a building in a week. Dutch architect Janjaap Ruijssenaars's performative architecture 3D-printed building is scheduled to be built in 2014.

In the current trend of sustainable construction, the recent movements of New Urbanism and New Classical Architecture promote a sustainable approach towards construction, that appreciates and develops smart growth, architectural tradition and classical design. This is in contrast to modernist and short-lived globally uniform architecture, as well as opposing solitary housing estates and suburban sprawl. Both trends started in the 1980s.

Building construction

Building construction is the process of adding structure to real property or construction of buildings. The vast majority of building construction jobs are small renovations, such as addition of a room, or renovation of a bathroom. Often, the owner of the property acts as laborer, paymaster, and design team for the entire project. However, all building construction projects include some elements in common – design, financial, estimating and legal considerations. Many projects of varying sizes reach undesirable end results, such as structural collapse, cost overruns, and/or litigation. For this reason, those with experience in the field make detailed plans and maintain careful oversight during the project to ensure a positive outcome.

The National Cement Share Company of Ethiopia's new plant in Dire Dawa.

Commercial building construction is procured privately or publicly utilizing various delivery methodologies, including cost estimating, hard bid, negotiated price, traditional, management contracting, construction management-at-risk, design & build and design-build bridging.

Residential construction practices, technologies, and resources must conform to local building authority regulations and codes of practice. Materials readily available in the area generally dictate the construction materials used (e.g. brick versus stone, versus timber). Cost of construction on a per square meter (or per square foot) basis for houses can vary dramatically based on site conditions, local regulations, economies of scale (custom designed homes are often more expensive to build) and the availability of skilled tradespeople. As residential construction (as well as all other types of construction) can generate a lot of waste, careful planning again is needed here.

Дороги России.

Общие сведения о дорогах.

Управление дорогами. Условия улучшения условий на дороге. Важность хороших дорог.

Влияние плохих дорог. Управление на дороге.

TYPES OF ROADS

There are many different types of roads, from multilane freeways and expressways to two-way country roads. One important quality of a road is known as control of access. This term describes how vehicles are allowed to enter and exit a road. By controlling access to a road, the road can support more traffic at higher speeds. Roads can be classified into three broad categories: highways, urban or city streets, and rural roads. Each type of road controls access to different degrees. Each type also differs in

location, the amount of traffic it can safely handle, and the speed at which traffic can safely travel.

Highways are high-speed roads designed to connect major cities. There are many different types of highways. Highways differ in the amount of access control they have and in the amount of traffic they are designed to carry.

Highways with fully controlled access can handle the most traffic and are built to the highest construction standards. Freeways and expressways are examples of fully controlled access highways. Vehicles that enter and exit these types of highways can do it only at certain points along the highway, generally by using special entrance and exit ramps. The ramps allow vehicles to access the road without disturbing the flow of traffic. Intersections with other roads are avoided by using either bridges known as overpasses to carry one roadway over another or short tunnel-like structures called underpasses to carry one roadway under another. Shoulders on the edges of highways allow drivers of disabled vehicles to make repairs or await assistance without blocking traffic. Highways with fully controlled access generally have two or more lanes for each direction of travel and often include medians (dividers in the middle of the road) to separate traffic moving in opposite directions.

Some highways offer only partial control of access. These highways handle less traffic than highways with fully controlled access. They may intersect other roads at the same level (called at-grade) rather than using overpasses or underpasses. One benefit of highways with partially controlled access is that they are much cheaper to construct than highways with fully controlled access. Many highways in the USA are roads with partially controlled access.

Urban streets, which cover cities, towns, and most suburbs, allow vehicles to access properties such as homes and businesses. Urban streets are used by private motor vehicles, public transportation, bicycle traffic, and pedestrians. Urban streets also accommodate underground public-utility facilities, such as electrical wiring, water and sewage pipes, and telecommunications lines. In addition, these streets must often be built around existing buildings and other barriers, such as parks and rivers. Rather than shoulders, urban streets usually have raised edges called curbs, which provide a barrier between the street and the sidewalk.

Urban streets are generally two-way paved roads that intersect each other frequently, allowing a high degree of access but at slow speeds. Traffic lights and signs help regulate the movement of vehicles along these streets and control the access to some streets.

Most urban streets are used to get quickly from one point to another and can accommodate high volumes of traffic. In large cities they are often similar to highways in construction even though they are located within city limits.

Rural roads are found in areas of the country outside cities, towns, and suburbs. Rural roads are classified into local and arterial roads. Because of the light traffic and extensive mileage on these roads, design standards are relatively low. Rural roads may or may not have shoulders. Local rural roads provide access to individual properties and farms. In many areas rural roads may be unpaved gravel roads. Two travel lanes, one for each direction of travel, can accommodate normal traffic on local rural arterial roads provide a high-speed network for heavier traffic between major towns in rural areas. They range from two-lane roadways to multilane highways. These roadways are designed to carry more traffic than local roads and are usually constructed to higher standards. Rural arterial roads often have shoulders and may have more than one lane in each direction.

Read and translate the text to learn more about the basic steps in road construction.

The zone which is marked to lay the road is called the road zone or right-of way. The higher is the technical classification of the road, the wider is the right-of way for its construction. The road zone includes such parts of a road as a carriageway, road shoulders, inner and outer slopes, and other parts. The road surface strip within the limits of which motor vehicles run is called a carriageway. Usually it is reinforced by means of natural or artificial stone aggregates. These stone aggregates form the pavement. The strips of the ground which adjoin the carriageway are called the road shoulders. The shoulders render lateral support to the pavement. In future the pavement will always be made of solid materials within the limits of the carriageway. To lay the carriageway at the required level above the ground surface a formation or roadbed is constructed. It is constructed in the form of embankments or cuttings with side ditches for drainage and the diversion of water. 25 The formation includes borrow pits – shallow excavations from which the soil was used for filling the embankments. It also includes spoil banks. Spoil banks are heaps of excessive soil remaining after the excavation of cuttings. The carriageway and shoulders are separated from the neighbouring land by slopes. The cuttings and side ditches have inner and outer slopes. The junction of the surface of the shoulders and the embankment slope is called the edge of the roadbed. The distance between the edges is called the width of the roadbed.

Read the words and learn them by heart.

1. to ensure – обеспечивать
2. vehicle – транспортное средство
3. rigid – жесткий
4. semirigid – полужесткий
5. wheel – колесо
6. multilayer – многослойный
7. surfacing – покрытие
8. pavement base – основание дорожного покрытия
9. sub-base – дополнительный слой основания
10. subgrade – грунт земляного полотна
11. abrasion – износ
12. course – основной слой покрытия
13. wearing course – слой износа
14. gravel – гравий
15. slag – шлак

3 КУРС 5 СЕМЕСТР

Урок № 1-6. Тема 9Города. Городские мосты и дороги.

Moscow

Moscow was founded in 1147 by Prince Yuri Dolgoruky. It stands on the Moskva River. Since the time of its foundation the history of Moscow is inseparable from the history of the country. At first it was a little town on the boundary of the Kiev Russia. Some time passed and it developed into a prosperous city. It became the capital of Russia during the rule of Ivan the Third. Peter the Great moved the capital to St Petersburg, but Moscow still played an important role in the life of Russia. In 1918 the Soviet government moved from Petrograd to Moscow, and thus the ancient city became the capital of the country for the second time.

At present Moscow is the largest city in the Russian Federation, the seat of the government, the political, educational and cultural centre of the country. The population of Moscow is over nine million people, and the city is growing from day to day. Moscow being an ancient city, one can come across the sights on every step.

The heart of Moscow is the Kremlin and Red Square. It is not only a historic centre, but also a unique architectural ensemble, famous all over the world. The Kremlin includes over twenty towers joined by the wall. Each tower has its own name; the most famous one is the Spasskaya Tower with its chimes. On the territory of the Kremlin there are beautiful ancient cathedrals, Tsar Bell and Tsar Cannon and the Armoury Museum — the exhibition of the treasures of the Russian tsars, including icons, crowns, coaches, presents from monarchs of other countries and ceremonial dresses. The Spasskaya Tower overlooks Red Square and the Pokrovsky Cathedral, which is famous all over the world for its exotic beauty.

Not far from the Kremlin Arbat begins. It is the best-known street of the city. There is no traffic, so one can walk and enjoy watching the crowds of people strolling by. Arbat is the main tourist attraction after the Kremlin.

But Moscow is not only the Kremlin and Arbat. The best way to describe Moscow is probably to say that it is like any other metropolis in the world - lines of cars (and traffic jams!), hurrying people, tall buildings, elegant restaurants, night clubs and much more. Its appearance is not always attractive, but, beyond any doubt, fascinating and capturing!

1. Find in the text the English equivalents of the following words and word combinations and use them in the sentences of your own:

Москва основана; неотделима; на границе; процветающий город; во время правления; древний город; культурный центр; уникальный архитектурный ансамбль; выставка сокровищ; автомобильные пробки; вне всякого сомнения

2. Answer the following questions:

1. When was Moscow founded? 2. What river does it stand on? 3. When did Moscow become the capital of Russia for the first time? 4. Where was the capital moved under the rule of Peter the Great? 5. What did the Soviet government do in 1918? 6. How large is the population of Moscow? 7. What is called the heart of Moscow? 8. How many towers are there in the Moscow Kremlin? 9. What sights can visitors see on the territory of the Kremlin? 10. What is Arbat famous for?

3. Fill in the following blanks with the words from the text:

1. Moscow ... by Prince Yuri Dolgoruky. 2. Moscow developed ... a city. 3. St. Petersburg became the capital of Russia, but Moscow still ... role in the life of the country. 4. Moscow is the ... city of Russia, its population being over nine million people. 5. The Kremlin is ... of Moscow. 6. On the territory of the Kremlin one can see 7. Pokrovsky Cathedral ... famous for its exotic beauty. 8. Arbat is ... street of the city.

London

London, the capital of the UK, was founded in AD 43 by the Roman invaders as a settlement and a fortress. At first it had the name of Londinium. Due to its convenient position in the mouth of the river Thames the settlement grew and developed into a city. In the 11th century London became the capital of England. For centuries it was a prominent port through which wealth and prosperity came to the country.

Being an important trade and political centre, the city enjoyed greater independence than the other cities of the medieval England and even had the right to elect the head of the city, Lord Mayor. The picturesque ceremony of the elections of Lord Mayor of London is still held every year and attracts thousands of tourists.

The city was built rather chaotically, the streets being narrow and dirty. It grew and developed together with the developing of the nation. In 1666 the Great Fire of London destroyed the most part of the city, which was rebuilt, but the old planning remained untouched.

Historically and geographically London can be divided into three parts: the City, the West End and the East End. The City is the financial centre of the country, with offices of large firms and banks and the Stock Exchange.

The West End has always been considered a place where aristocrats lived. There is a great number of sights and attractions: the Houses of Parliament, Westminster Abbey, St Paul's Cathedral, the Nelson Column, to mention just a few of them. London's beautiful parks are also there: Hyde Park, St. James' Park, Regent's Park are favourite places for Londoners to visit and relax. One may also go shopping in the West End — Piccadilly Street and Oxford Street both present a wide choice of expensive shops and boutiques.

The East End was previously considered the place where not well- to-do people lived. The identity of the East End as a place of deprivation and poverty persisted until well after the Second World War, becoming overlaid with certain gangster glamour in the 1960s. At the beginning of the twenty-first century, London east of the City is still seen as having a different character, claiming a certain independence of look from the rest of metropolis; but its cultural status has been transformed. Parts of the East End are believed to house the highest population of artists in Europe, and the East End is now considered a bohemian district. The ugly docks, which for years disguised the face of the East End, are now closed, and new hotels, stadiums and apartment houses are being built.

Now London extends much more than the City, the West End and the East End. Its suburbs grow rapidly. London and its suburbs are called Greater London.

As well as it is impossible to say that Moscow is a typical Russian city, nobody can call London a typical British one. In fact, it has become a multinational metropolis, being inhabited by people from all over the world. It is always busy and crowded. It certainly has its own face — millions of faces. Maybe, this is the reason why people say: "When a man is tired of London, he is tired of life."

1. Answer the questions about London.

1. When was London founded?
2. What name did it have at first?
3. Why did the town grow and develop into a city?
4. When did it become the capital of England?
5. Prove that London enjoyed more independence than any other city of medieval England.
6. What happened to the city in 1666?
7. Name the three parts of London.
8. What part of London is known as the financial centre of the whole country?
9. Are there many attractions in the West End? What are they?
10. Where are Hyde Park, St. James' Park and Regent's Park situated?
11. What are the most famous places in London to do the shopping?
12. How was the East End transformed recently?
13. What is Greater London?
14. Prove that London is a multinational city.

2. Think of the beginning of the sentences.

1. ... as a settlement and a fortress.
2. ... the settlement developed into a city.
3. ... through which wealth came to the country.
4. ... enjoyed greater independence than the other cities of the

medieval England. 5. ... is still held every year. 6. ... the streets being narrow and dirty. 7. ... but the old planning remained untouched. 8. ... where offices and banks are situated. 9. ... where aristocrats lived. 10. ... to mention just a few of them. 11. ... are favourite places for Londoners to visit and relax. 12. ... present a wide choice of expensive shops. 13. ... are believed to house the largest population of artists in Europe. 14. ... new hotels, stadiums and apartment houses are being built. 15. ... are called Greater London. 16. ... being inhabited by people from all over the world.

9. Prove that :

- London is an old city;
- London has always been playing an important role in the life of the country;
- London enjoyed greater independence than the other cities in England;
- the planning of London is chaotic;
- there are a lot of tourist attractions in the West End;
- the East End has always been different from the rest of metropolis;
- London grows rapidly;
- London is a multinational metropolis

Washington, DC

Washington, DC is the capital of the United States of America. It is situated in the mouth of the Potomac River, in the District of Columbia (DC), not belonging to any state. The city is unique in its own way — it was specially designed as the capital of the USA. The architect, who drew up the plan of the city, Pierre l'Enfant, wanted it to be very convenient. The place for the capital was chosen by the first president, George Washington, and in 1800 the Government moved there.

There are a lot of Governmental offices, but probably the best known, as well as the most important for the country's life are the White House and the Capitol. The White House is the official residence of the President of the United States. It was built in 1799. It is a three-storeyed house where the President and his family live. At the same time it is the place where official receptions are held and the administration gathers for the meetings. The Capitol is the seat of the Congress. The corner stone of the Congress was laid by George Washington in 1790. The Congress has two chambers: the House of Representatives and the Senate.

The city of Washington, DC is rather large and very beautiful, being at the same time different from all the other cities in the USA, because there are no skyscrapers. According to the law, no house in Washington, DC must be higher than the Capitol.

Washington, DC has the population of about 900,000 people. Being the administrative centre of the country, it doesn't have any industry. They say, nothing is produced in Washington, DC except wastepaper. Thousands of documents are drafted, approved or denied in the city every day. People living there either belong to the administration, or are employed in the service industry. Besides, thousands of tourists come to see the capital of the country. There is a lot to be seen: Thomas Jefferson Memorial, the Library of Congress, the Washington Monument and much more. The Washington Monument is the most remarkable of these: it is a column rising 160 metres, and from the top of it the visitors can enjoy the view over the city. Among the attractions of the capital it is necessary to mention the museums: the National Gallery of Art, the National Museum of History and Technology, and others.

1. Answer the following questions:

1. Where is Washington, DC situated? 2. Why is the city unique? 3. When did the government move to Washington, DC? 4. Where is the official residence of the President of the USA situated? 5. What is the Capitol? 6. How many chambers are there in the Congress? 7. Why aren't there any skyscrapers in Washington, DC? 8. What is the population of the city? 9. Is there any industry in Washington, DC? 10. What are the main attractions of the city?

2. Translate into English.

Вашингтон, округ Колумбия, — не очень крупный город по американским меркам. В нем проживает около 900 тысяч человек. Это очень красивый город со множеством интересных мест и достопримечательностей, главные из которых — Белый дом и Капитолий. Белый дом является официальной резиденцией президента Соединенных Штатов, где он живет со своей семьей, работает и устраивает официальные приемы. Капитолий — место заседания парламента страны. Американский парламент состоит из двух палат — палаты представителей и сената. Первый камень Капитолия заложил первый президент США Джордж Вашингтон в 1790 году.

New York

New York, or the Big Apple, as the Americans often call it, is the largest city in the USA and in the whole world. It stands in the mouth of the Hudson River. The people of New York City (NYC) live within five boroughs of Manhattan, Brooklyn, Queens, the Bronx and Staten Island. Manhattan Island, the oldest part of the city, was bought from the Native Americans for the amount of goods worth \$ 26.

Now it is one of the busiest financial and cultural centre in the world, offering the visitors a unique collection of experiences and attractions. There is a wide choice of internationally acclaimed theatres, restaurants and museums, historic parks and churches.

Manhattan is also a district of business and finance. In Wall Street there are offices of large companies and banks, as well as New York Stock Exchange, which dominates the business life of the whole world. New York is an international city. On the map of Manhattan one can find Little Italy with the Italian restaurants and its own way of life, Brighton Beach, where the immigrants from the former Soviet Union live and Chinatown, inhabited by the Chinese. NY is also famous for its fine department stores and boutiques. In the evening you can enjoy one of its many nightclubs, the ballet, opera, a show or concert. Broadway is the centre of nightlife. It is the longest street in New York with many sights.

The best way to go around NY is on foot. One word applies to driving your own car in Manhattan: don't! Streets are jammed and the parking is scarce and astronomically expensive. However, NYC is a paradise for walkers, who enjoy the finest window shopping and people-watching. When proper caution is exercised, most areas are safe. It is best to use well-lighted, busy streets at night. You can also travel anywhere you want by subway and buses. Subway, though rather inat- tractive and not so well organized as in Moscow, runs 24 hours a day. The fare is \$ 1.50 for a single journey, payable with tokens. Free bus and subway system maps are available from hotels, tourist information centres and subway stations.

However one gets around New York, it is important to know some basic geography: Fifth Avenue divides the city between East and West. Street numbers begin at Fifth Avenue, so Two W. (west) 57th Street is just a few steps to the west of the Fifth Avenue, while Two E. (east) 57th Street is just to the east. Most streets in Manhattan are one-way. With a few exceptions, traffic on even-numbered streets travels east, and traffic on odd-numbered streets travels west. To New Yorkers, "downtown" does not connote the city centre. Rather, "downtown" simply means "south" and "uptown" means "north".

Thousands of tourists come to New York every day to see the Statue of Liberty, which is situated on Liberty Island and is a symbol of American democracy. It has a torch of Freedom in her right hand.

New York is famous for its skyscrapers, among which are the Chrysler Building and the Empire State Building.

The unprecedented terrorist attack on September 11, 2001 disguised the face of New York. Two twin towers, which used to form the World Trade Centre, were destroyed as the result of the planes crash. This was the tragic day for the people of the USA and for the whole world. Two towers were in ruins in the matter of minutes. The life of the big city was paralyzed completely for more than a month. Now the WTC is under reconstruction.

1. Ask and answer 15 questions about New York.

2. Prove that

New York is a large city; the best way to travel around New York is on foot; there are a lot of attractions in New York; New York is an international city; it is quite easy to find one's way in New York; New York plays an important role in the financial life of the whole world; the system of public transport in New York is well developed.

22. Translate into English.

Нью-Йорк — самый большой город в мире. Центральная часть Нью-Йорка представляет собой остров, который называется Манхэттен. Множество мостов соединяет остров с другими частями города. Манхэттен одновременно является культурным и финансовым центром города. Жизнь здесь кипит днем и ночью. Движение автотранспорта в городе очень интенсивное, поэтому неизбежны пробки. В любое время года здесь много туристов, которых привлекают достопримечательности города: музеи, ночные клубы, рестораны, парки. Самый известный — Центральный парк, который занимает площадь около двух квадратных миль. Там же находится Нью-йоркский зоопарк.

Урок № 7-13. Тема 2 История строительства ранних мостов и дорог.

Roads. How it all started.

Most of us give very little thought to the roads we drive on every day, and tend to take them for granted – at least until they are closed for repairs, washed out in a flood and so on. However, only during the past forty years or so have we enjoyed the luxury of a vast, extensive, and well-maintained system of roads accessible to everyone. In the midst of our grumbling about potholes, traffic jams, and incompetent drivers, we forget how fortunate we truly are. Obviously, it was not always the case.

From the earliest times, one of the strongest indicators of a society's level of development has been its road system – or lack of one. Increasing populations and the advent of towns and cities brought with it the need for communication and commerce between those growing population centres.

A road built in Egypt by the Pharaoh Cheops around 2500 BC is believed to be the earliest paved road on record – a construction road 1,000 yards long and 60 feet wide that led to the site of the Great Pyramid.

The various trade routes, of course, developed where goods were transported from their source to a market outlet and were often named after the goods which travelled upon them. For example, the Silk Route stretched 8,000 miles from China, across Asia, and then through Spain to the Atlantic Ocean. However, carrying bulky goods with slow animals over rough, unpaved roads was a time consuming and expensive. As a general rule, the price of the goods doubled for every 100 miles they had to travel.

Some other ancient roads were established by rulers and their armies. The Old Testament contains references to ancient roads like the King's Highway, dating back to 2000 BC. This was a major route from Damascus in Palestine, and ran south to the Gulf of Aqaba, through Syria to Mesopotamia, and finally on to Egypt. Later it was renamed Trajan's Road by the Romans, and was used in the eleventh and twelfth centuries by the Crusaders.

Bridge Construction

1. Learn the following words:

invention -- изобретение

to undertake (undertook) --предпринимать

self-taught -- самоучка

court --двор

keen-- острый, страстный

device -- устройство

to appoint -- назначать

temporary --временный

arch --арка

mechanic -- механик

according to --согласно

span-- пролёт

to dare -- осмеливаться

single -- одинарный

2. Read and translate the text. Give the title of the text.

The history of Russian science and technique proves that talented Russian people made great inventions and designed engineering constructions which had never been undertaken before.

Such was Kulibin, one of the most talented self-taught engineers at the court of Catherina II. From his early childhood Kulibin showed a keen interest to all kinds of mechanical devices and liked to build models of different machine details. He realized that in order to master a secret mechanism it was necessary to study mathematics and physics.

The instruments necessary for his work were not to be got in Nizhniy Novgorod where he lived. He succeeded to get to Petersburg where he was appointed mechanic to the Academy of Science and since then he spent all his free time and all his money on new inventions.

In Petersburg Kulibin undertook a very difficult engineering problem – to design a bridge across the Neva as there was not a single permanent bridge in the city to provide a crossing at any season of the year. Temporary pontoon bridges had to be taken to pieces at high water.

Kulibin was the first to think of an arched bridge. According to his plan the bridge was to have a single span leaving free water for ships and barges. Arched bridges of similar construction had not been built before, but no engineer dared even to think of construction a bridge with a three hundred meter span. This was a construction which even now is used in modern bridge building.

3. Answer the following questions:

1. What does the history of Russian science and technique prove?
2. What was Kulibin?
3. Why was it necessary for him to study mathematics and physics?
4. What town did Kulibin live?
5. Why did he decide to get to Petersburg?
6. Where did Kulibin work in Petersburg?
7. What did he design?
8. Is Kulibin's construction used even now in modern bridge building?

4. Make up a dialogue according to the questions.

5. Retell the text given above.

6. Read and translate the following sentences into Russian. Find the construction "Complex Object" in each sentence.

1. Do you want me to help you?
2. They didn't expect us to come back so soon.
3. I want you to understand me.
4. I would like you to read this book.
5. I expect you to write to me.
6. I want him to go home.
7. What do you want him to do for you?

7. Translate the following sentences into English using Complex Object

1. Я не хочу, чтобы ты заболела.
2. Мне бы хотелось, чтобы он закончил эту работу.
3. Хотите ли вы, чтобы мы сегодня встретились?
4. Мы не ожидали, что они нас заметят.
5. Мне бы хотелось, чтобы работа была сделана вовремя.
6. Вы хотите, чтобы мы обсудили этот вопрос сегодня?
7. Мы не ожидали, что вы вернётесь так рано.

Урок № 14-15. Тема 3. Выдающиеся основоположники строительства мостов, тоннелей и дорог.

THOMAS TELFORD

1. Two famous British road John Loudon MacAdam and Thomas Telford can truly be said to be the originators of modern road-making, for their work at the end of the 18th and beginning of 19th century revolutionized the practice of road construction not only in Britain but also abroad. These two Scotsmen born in 1756 and 1757, respectively, differed in their methods considerably, but between them they produced roads, bridges, aqueducts, canals and harbors which gave an enormous impetus to trade throughout the country, and it may well be said of them that during their lives they advanced the civilization of Britain by a hundred years.

2. At the end of the 18th century the living conditions in Scotland were so bad that the government had fears that the countryside might become depopulated through emigration. In 1802 Thomas Telford was sent to the highlands (Scotland) to determine methods for their development and improvement. When he went on tour in Scotland he found neither roads nor carts there, as all goods were carried by ponies or women. In the southern highlands he found the stone-covered roads of general Wade (see text 2C) to be in disuse, primarily because they had been built to lead to military strategic positions and not to the ports or market centers. He wrote a report saying that there was a great need for improving communications by means of roads and bridges.

3. Thomas Telford's proposals were accepted and in 1803 he started putting them into effect. His industry in so doing is testified by the 1470 km of new roads and 1117 bridges constructed during the following 18 years. This road system illustrated how good road communications can revolutionize conditions in a depressed economic area. He perfected the broken stone-method of construction for which he is famous. He recognized that the main enemies were the natural ones of storm, flood and frost. Hence, he provided for maintenance to ensure that the roads were kept well drained and damage caused by winter frost was promptly repaired.

4. Thomas Telford's most renowned achievement as a road-maker was the reconstruction of the London- Holyhead road. The construction used on this roadway is illustrative of the thoroughness with which Telford approached road-building (see Fig.2.1). He first laid a foundation layer of hand- packed stones varying in depth from 227 to 177 mm at the centre and from 127 to 76 mm at the sides. Each stone was placed in position with its broadest end downward. The specification required that the top face of each block be not more than 101.5 mm wide and that the interstices between adjacent stones be filled with fine chippings. The center 5.5. mm of the road was then covered with stones in two layers about 101 mm and 51 mm thick, the size of the individual stones being such that each could be passed through a ring 63.5 mm in diameter. This formed the "working" portion of the highway and the layers were left to be consolidated by the traffic. The side portions, each 1.8 m wide, were then made up of broken or clean gravel, and leveled off to give a cross-fall of not more than 152 mm on a 9.14 m wide section. Over all was then placed a binding layer of gravel about 37.5 mm thick, the watering-in and consolidation being again left mainly to the weather and the traffic. Since the interstices in the foundation layer were sufficiently large to admit water from the surface, cross- drains were often provided beneath this layer at intervals of about 90 m, so that such water could be discharged into side ditches.

5. Not only did Telford develop a structurally sound method of road construction, but he also paid particular attention to the alignment of roads. It is recorded that the old road in Anglesey rose and fell a total vertical distance of 1079 m between its extremities 38.5 km apart; its replacement, built by Telford.

Road cross-section in Telford's construction:

- 1) 38 mm gravel
- 2) 51 mm broken stone

- 3) 101 mm (63 mm max size)
- 4) 179 mm stones (101 mm wide)

Answer the questions on text, consulting the indicated passages of the text.

1. In what century did the two famous British road-makers live and work? (1)
2. What was their contribution to the civilization of Britain? (1)
3. Why was Telford sent to Scotland in 1802? (2)
4. What was the condition of road transport there in those days? (3)
5. Why did no one use General Wade's roads? (3)
6. When did Telford start putting his construction programme into effect? (4)
7. What was the economic effect of his road system? (4)
8. What method of road construction is Telford famous for? (4)
9. What was Telford's attitude to road maintenance? (4)
10. What did he pay particular attention to? (6)

In each of the five paragraphs of the text find the sentence (or part of the sentence) expressing the main idea of the paragraph. Write it out.

Write a brief summary of the text (not more than 200 words). Do not include unnecessary facts.

ROBERT PHILLIPS

In Britain the man who perhaps might be termed the pioneer of road design is a certain Robert Phillips. As early as 1736 he presented a paper to the Royal Society entitled "A Dissertation concerning the Present state of the High Roads of England, Especially of those near London, wherein is proposed a new Method of Repairing and maintaining Them". In this paper Phillips gave a very comprehensive account of the bad practices which were employed in road-making and maintenance. He was concerned with the clay and gravel roads then in use and emphasized that a layer of gravel if resting upon a well-drained soil, would be beaten by the traffic into a solid road surface.

Answer the questions on the text

1. What types of roads were in use in the 18th century?
2. What was Phillips's method of building better roads?

JOHN METCALF

1) Road-making remained a lost art in Britain until about 1765 when John Metcalf became widely known. Born of humble parentage in 1717, he contracted smallpox (заболел ветрянкой), became blind (слепой) at the age of six. However, he had a full and varied life and was in turn a musician, soldier, waggoner, horse-trader and eventually when he was well over forty years old, a road-maker. In 1765 this Yorkshireman was given the contract to construct three miles of turnpike road between Harrowgate and Boroughbridge; the efficiency and stability with which he constructed this section was so impressive that eventually he was given contracts to build some 290 km of roadway in his native country, including all the necessary bridges, culverts and retaining walls. In constructing the road he emphasized that it should have a good foundation and used large quantities of excavated road material in order to raise the roadbed and on top of this he placed a surface layer of gravel. The carriageway was arched to throw off the rainwater which was then drained away by capacious ditches on either side of the road.

2) Perhaps the most individualistic of his road achievements, however, was his approach to building roads over soft ground. Instead of avoiding boggy terrain as had been the custom until that time, he devised a special type of road to go across it. This consisted of constructing his normal roadway on top of a raft sub-base composed of bundles of heather (вереск) carefully prepared and placed in position on the soft ground.

Ответьте на следующие вопросы по тексту

1. Какие две особенности метода дорожного строительства Джона Меткафа особенно его прославили?
2. Как Меткаф строил дорогу?
3. Самое оригинальное достижение Меткафа?

GENERAL WADE'S ROADS

The most famous of the British roads of the early part of the 18th century were those constructed by General Wade in the southern highlands of Scotland. These roads, construction of which began in 1726, were military roads in the same sense as the Roman roads were military roads: they were constructed to ensure that the near success of the Scottish Insurrection of 1715 was not repeated. They followed from a visit to Scotland by General Wade in 1724, when he was officially asked to determine what measures were necessary for the development of the country. His recommendation, to build a road system, was accepted by the government and he was given 500 soldiers to carry out the construction.

General Wade's roads were planned to make homes of the clans easily accessible to the forts and garrison stations located at strategic positions throughout the highlands. In addition they were intended to have the pacific purpose of improving the general conditions in the highlands, which were at that time deplorably backward. The difference between the old traveled ways and their formal replacements is best signified by the inscription on the monument erected to General Wade on the road from Inverness to Fort William: "Had you seen these roads before they were made, you would lift up your hands and bless General Wade".

JOHN LOUDON MACADAM

1) John Loudon Macadam was the first true highway engineering specialist. It was he who made highway-making an economical art. For some reason roads fascinated him and when he was made a Trustee of his local turnpike Macadam began to take a great interest in all matters relating to roads and their administration. Between 1798 and 1816 his favourite past-time was to travel about the south-west studying the roads and devising means for their betterment.

2) Macadam is best known for the method of road construction he suggested, which, in modified form bears his name today. The two fundamental principles which he emphasized were: 1) that it is the native soil which really supports the weight of the traffic, that while it is preserved in a dry state it will carry any weight without sinking and 2) the use of broken stone in road construction to form a solid hard surface. These concepts are as valid today as they were over a century and a half ago.

3) Under Macadam's system of construction (see Fig.2.2) the foundation was shaped to get a certain cross-fall (no more than 76 mm on a 9.14 m wide road), thereby giving good side drainage to the foundation as well as a uniform constructional thickness throughout the entire width of the road. Macadam held little respect for costly stone-paved foundations and instead considered two 101 mm layers of 76 mm broken stone to be quite satisfactory. On top of these he placed a finishing layer of angular stone fragments no greater than 25.4 mm in size, consolidated first by ramming them into the interstices and then by the traffic. Macadam relied upon the road metal to produce under traffic sufficient fine particles to fill the remaining interstices and bind the whole lot together into a smooth hard waterproof surface.

Road cross-section in Macadam's construction:

- 1) 51mm brokenstone
- 2) 25 mmmaxsize
- 3) 101 mmbrokenstone
- 4) 101 mm (76 mmmaxsize)

1. While Macadam is famous for his method of construction, his roads were actually not so good and it is doubtfully indeed whether any of the original Macadam roads have survived.

Упражнение I. Переведите обращая внимание на страдательный залог.

1. The term engineer has been applied in Italy, France and England to the builders of war machines and fortifications. 2. The French "genie" officers were also entrusted with public works of a civilian character. 3. This custom can be traced back to the Middle Ages. 4. Each

project was accompanied by a memorandum. 5. The difficulties have had to be overcome in the past. 6. The art of road-making seems to have been forgotten. 7. They were ordered by the authorities to keep lights in all windows. 8. Two such men, both Scotsmen, had been born in the following year. 9. They can be said to be the originators of modern roadmaking.

Упражнение 2. Переведите

1. The history of the road you have read was written by an English civil engineer. 2. The girl you love knows more about Macadam than you. 3. The road you have planned proved to be excellent for safe traffic.

1. The difficulties in road building you have heard of during the lectures can be easily overcome by well-trained road engineers. 5. The experiments Macadam carried out were rather expensive for him.

Урок № 14-15. Тема 4 Строительство как производственная отрасль

The creation of the necessary environment for human existence, its character and comfortability determined by the level of social development, culture, scientific and technical achievements have always been the main purpose of construction.

The main branch of economic and social city development determines a significant increase in the volume of capital construction, since the housing is followed by the construction of public buildings, schools, cafes, beauty shops, dry-cleaning and so on.

The cutback's of spending in footing and foundations in the total costs of the constructions can give a significant money and material saving. Nonetheless it is very important to make an attempt to decrease these expenditures without a decrease in house safety that is to avoid the unreliable and non-durable house construction, that can cause a partial or complete house destruction.

Monolithic reinforced concrete designs are widely used in modern construction engineering. The works connected with concrete are still contain a lot of hard and time-taking processes. Lately have many technical designs appeared, that tend to decrease work time-taking and to increase the quality of the monolithic constructions. Monolithic housing constructed of concrete give more expression to city districts and make it possible to reduce the construction costs for 10-15 percents.

The negative results of human activities caused the changes that have acquired global character and have made a threat for breaking the nature equilibrium. It can lead to the obstacles for future social development.

Buildings influence the environment greatly. Their appearance results in significant changes in the air, water and soil at the construction site. It leads to the appearance artificially planted trees instead of the natural plantings. The evaporation regime also changes. The average temperature at the construction site is higher in the comparison with other areas.

Ill-conceived technologies, organization and the work it self determine large energy and material spending and a high level of air, water and soil pollution. The process of construction is comparatively short. The interaction of buildings or constructions and the environment, its character and results are determined by a long-term operation. It brings the importance of this operation in terms of ecological characteristic of the construction, i.e. its influence on the ecological situation as a result of its long operation.

When designing new projects it is very important to take into account the ecological results of decision making. The ecological approach should determine the house planning, construction and operation.

So the future of our civilization is in our hands.

Elements of buildings

The ultimate purpose of building techniques is to create a stable structure opposing to different forces. Forces acting on any member of a building are, first, its own weight and, second, the loads it carries, principally from other members but also from persons, furnishings, wind, etc. Their action encounters a reaction in opposing forces that hold the member in place by resisting at its joints and within the member itself. These forces are called stresses, and they vary according to the strength of materials and the form of the member. The kinds of stress are compression, which resists crushing; tension, which resists pulling apart; and bending, which occurs when one part of a member is in compression and the other is in tension.

Any building consists of some basic structural elements. According to their functions all the elements are subdivided into load-bearing and non-load-bearing. The former carry the loads of the upper parts of a building and that of snow, wind, etc. The latter, or so-called enclosing units, separate the building from the environment and give privacy to the adjacent rooms and spaces. Some bearing elements, walls for instance, may be considered as enclosing units too.

Walls can be both internal and external. There are retaining walls that are load-bearing and walls attached to the frame of a building and acting only as enclosing ones or curtain walls. The

bearing external and internal walls connected with floors form a stiff box (framework) which is able to resist horizontal forces, those of wind, for instance.

Walls can be classified according to their functions into party walls, cross walls, end walls, side walls; or materials used for the construction: log (timber, wooden) walls, masonry walls of stone, slag blocks, brick, concrete blocks and facing panels.

In addition, outer walls can form different elevations according to their position: front (or facade) elevation; back (or rear) elevation and side elevation.

Floors divide a building into storeys or levels. They carry their own weight and that of partitions, screens, equipment, furniture and people and transmit these loads into walls, columns and beams. Floors can be ground, first, second as well as basement and semi-basement ones.

Stairs are means of communication, a part of a circulation area. They consist of steps or treads which constitute runs of stairs. Stairs are contained in staircases or they are open, or free-standing ones. The access to a staircase is called an entrance door or simply entrance or entry.

Partitions or screens rest on floors and divide a building into individual rooms or spaces. They can be movable, solid, glazed and timber ones or other types and materials.

Windows are enclosing elements and serve for lighting and ventilation. They consist of lights and frames, the latter have mullions and transoms. The upper part of a window opening is a window head, the lower being a sill. There can be top-hung windows, sliding windows, pivoted windows, revolution windows, fixed windows and many others.

Doors are enclosing elements and serve for ensuring the communication between the interiors of a building and the environment. They can be inner doors, entrance doors, or sliding doors, folding doors, or casement doors, French doors, etc.

Ceilings are not the main structural elements of a buildings; they are overhead inside surface of rooms or spaces. Nowadays the most widespread type of ceiling in building practice is a suspended one.

1. Answer the questions to the text.

1. What is the main aim of building techniques?
2. What are the forces/loads acting upon every element of a building?
3. What is a stress?
4. What kinds of stresses do you know?
5. What types are all the elements subdivided into according to their functions?
6. What are the load-bearing elements? enclosing units?
8. What types of walls do you know?
9. What kinds of windows can you name?
11. Are doors load-bearing elements? What do they serve for?
12. What types of doors are there in the building practice?

2. Read the following international words. What Russian words do they associate with?

Basic, to classify, column, communication, compression, element, to form, function, individual, material, limit, person, position, practice, reaction, slag block, stable, stress, structure, technique, type, view.

3. Put the correct word into each gap.

1. If they want ... they have to open a large window.
a) combination; b) ventilation; c) partition.
2. Each beam in this structure ... as a supporting element.
a) transmits; b) acts; c) opposes.
3. The ... is of reinforced concrete.
a) classification; b) structure; c) function.
4. Walls act as ... elements.
a) footing; b) lying; c) enclosing.

5. Roofs and walls keep out phenomena of ...
a) environment; b) basement; c) development.
6. Four vertical prestressed concrete columns are attached to the ...
a) force; b) formwork; c) framework.
7. Doors are ... between the door-frames.
a) finished ; b) applied ; c) positioned.
8. Party walls are sound ...
a) developed ; b) standardized ; c) insulated.

4. Give Russian equivalents to the following word combination.

- building techniques
- forces acting on any member of a building
- elements lying below main level
- opposing forces
- basic structural elements
- load-bearing and non-load-bearing elements
- walls attached to the frame of a building
- walls acting only as enclosing elements
- enclosing elements serving for lighting and ventilation
- building distinguished by pleasant elevations

5. Using the dictionary find the right translation (part B) of the word combinations (part A).

A

Party wall, cross wall, end wall, side wall, top-hung window, sliding window, pivoted window, revolution window, sliding door, folding door, casement door, French door.

B

Двустворчатая дверь, верхнеподвесное откидное окно, квартироразделяющая стена, складывающаяся дверь, раздвижное окно, поперечная стена, застекленная дверь, боковая стена, распашное окно, раздвижная дверь, торцевая стена, поворотное окно.

6. Put in the proper preposition (of, in, into, from, onto, to, for, between).

1. South Ural State University is the largest higher school ... our city.
2. It started to function in 1943 with a handful... people.
3. The construction lasted ... many years.
4. The natural forest is the beautiful background ... the University complex.
5. Have you graduated ... the University?
6. The dwelling to move ... was built in the country.
7. Floors carry their own weight and that of partitions and transmit this loading ... walls and beams.
8. There is a covered passage ... two blocks of the University.

7. Translate the following sentences into Russian paying attention to the meaning of the words "floor", "stor(e)y", "level".

floor – 1) перекрытие; 2) пол; 3) этаж.

stor(e)y – этаж

level – уровень

1. The structure is a steel frame with precast concrete floors and non-load-bearing panel and brick walls.
2. The construction is of load-bearing brick walls with reinforced concrete floor slabs.
3. The first floor plan was divided into ten classrooms and a long corridor.
4. All the equipment was placed on the floor in the main hall.
5. The block is four storeys in height and is zigzag shaped on plan to give privacy to each flat.

6. The door on the left of the main window leads to offices on the upper floors.
7. The block contains fifty-six three-room dwellings and eighty-two two-room flats at fifth floor level.
8. The site of this building was occupied by two houses destroyed in the war and has been developed as two five-storey blocks of offices with ground floors shops.

8. Use the predicates of this sentences in Passive Voice and translate them.

Model: The company built this plant last year.

This plant was built by the company last year.

1. Industrial plants produce the equipment for building industry.
 2. The workers will build the hotel in the nearest future.
 3. The architect uses the large area between columns.
 4. Students occupy two hostel blocks.
 5. Builders provide the better dwelling.
 6. They make these structural elements under off- site conditions.
 7. Builders do much to reduce the work on the construction site.
 8. They use the "box" type of structures for these blocks of flats.
- 9. Translate the following sentences. Mind the predicates in Passive Voice.**

1. Window head is painted white.
2. Sun is not seen on the sky for half a year in the polar region of our country.
3. Circulation area is shown on the plan.
4. Communication means are greatly modified over the resent years.
5. The second floor is constituted of the course of rooms.
6. Furniture was changed in the main block of our University last year.
7. Various services are located in the basements of buildings.
8. Individual requirements of inhabitants are considered during the first stage of construction.
9. This little town is situated at the bottom of the hill.
10. More then one million people may be contained at Metro station at once.

10. Fill in the gaps with the appropriate words.

1. The ultimate purpose of building techniques is to create a ... structure.
2. Stresses vary according to the ... of materials and the ... of the member.
3. The kinds of stresses are ... which resists pulling apart, and ... , which resists crushing.
4. ... occurs when one part of a member is in compression and the other is in tension.
5. ... elements carry the loads of the upper parts of a building and that of snow, wind and other atmospheric precipitates.
6. Enclosing units separate the building from the ... and give privacy to the ... rooms.
7. Outer walls can form different ... according to their position.
8. Floors divide a building into
9. The most widespread type of ... in building practice is a suspended one.

11. Match the beginnings of the sentences (A) to their ends (B) using the information from the text.

A

1. Forces acting on any member of a building are ...
2. Some bearing elements...
3. The bearing external and internal walls connected with floors form ...
4. Partitions or screens rest on floors and divide ...
5. Windows can be ...
6. Doors can be ...
7. Partitions can be ...

B

- a. may be considered as enclosing units too.
- b. top-hung, sliding, pivoted, revolution and many others.

- c. its own weight and the loads it carries from other members and also from persons, furnishings, wind, etc.
- d. movable, solid, glazed and timber ones or other types and materials.
- e. a building into individual rooms or spaces.
- f. sliding, inner, entrance, folding, casement, French, etc.
- g. a stiff box (framework) which is able to resist horizontal forces.

Building Construction

Building construction is the techniques and industry involved in the assembly and erection of structures, especially those used to provide shelter. Building construction is an ancient human activity. It began with the need for a controlled environment to regulate the effects of climate. Human shelters were at first very simple and perhaps lasted only a few days or months. Gradually more durable structures began to appear. The first shelters were dwellings, but later other functions, such as food storage and ceremony, were housed in separate buildings. Some structures began to have symbolic as well as functional value, marking the beginning of the distinction between architecture and building.

The history of building is marked by a number of tendencies. One is the increasing durability of the materials used. Early building materials were leaves, branches, and animal hides. Later, more durable natural materials--such as clay, stone, and timber--and, finally, synthetic materials – such as brick, concrete, metals, and plastics – were used. Another is a search for buildings of ever greater height and span; this was made possible by the development of stronger materials and by knowledge of how materials behave and how to exploit them to greater advantage. A third major trend involves the degree of control over the interior environment of buildings: increasingly precise regulation of air temperature, light and sound levels, humidity, and other factors that affect human comfort. Another trend is the change in energy available to the construction process, starting with human muscle power and developing toward the powerful machinery used today.

At present building construction is complex. The design process for buildings is highly organized and consists of research establishments that study material properties, officials who adopt safety standards and designers who determine user needs and design a building to meet those needs.

The construction process is also highly organized; it includes the manufacturers of building products and systems, the craftsmen who assemble them on the building site, the contractors who employ and coordinate the work of the craftsmen, and consultants who specialize in such aspects as construction management, quality control, and insurance.

Building construction today is a significant part of industrial culture, which can produce a widely varied built environment to serve the diverse needs of society.

1. Answer the questions to the text.

1. What does “building construction” mean?
2. What marked the distinction between architecture and construction?
3. What tendencies are there in the history of building?
4. What natural building materials do you know?
5. What made possible the erection of high and long buildings?
6. How has the construction methods been changing in the course of time?
7. What constitutes the design process?
9. What can you say about the construction process?

2. Agree or disagree with the statements.

1. Building construction is relatively new form of human activity.
2. First dwellings were at first very simple and perhaps lasted only a few days or months.
3. Natural materials are clay, stone, and timber.
4. One of the trends involves the control over the exterior environment of buildings.

5. Building construction is developing from the powerful machinery towards human muscle power.
6. The design process for buildings consists of research establishments, officials and manufacturers of building products.

3. Translate the following international words.

Activity, architecture, climate, comfort, consultant, control, to coordinate, effect, factor, function, industry, natural, material, metal, to organize, plastic, process, to regulate, social, standard, symbolic, synthetic, system, temperature, tendency, ventilation.

4. Find the antonyms.

early exterior
 natural late
 interior complicated
 durable at once
 advantage fragile
 powerful synthetic
 gradually disadvantage
 simple weak

5. Find the synonyms.

1. to involve a) to consist; b) to include; c) to imply.
2. to erect a) to assemble; b) to work; c) to construct.
3. dwelling a) build; b) building; c) builder.
4. to exploit a) to use b) to employ; c) to operate.
5. significant a) simple; b) complicated; c) important.
6. control a) operation; b) regulation; c) modification.
7. diverse a) safe; b) varied; c) durable.
8. to affect a) to influence; b) to employ; c) to determine.

6. Fill in the gaps with the corresponding words.

value, to exploit, to adapt, human, include, materials, properties, durability

1. Building construction is an ancient ... activity.
2. Cathedrals and palaces possess symbolic ... while blocks of flats and shops a functional one.
3. The construction process is highly organized and ... manufacturers, workers and contractors.
4. Research is being done to increase the ... of building materials.
5. If you want to ... this material to greater advantage you should know its
6. Shelters were one means by which human beings were able ... themselves to a wide variety of climates.
7. One of the first building ... were leaves and animal hides.

7. Put the prepositions into the sentences and translate them.

1. First dwellings appeared ancient people wanted control the effects the climate. (to, of, because)
2. There were several tendencies the history building. (of, in)
3. Methods construction has been changing the course time starting human muscle power powerful machinery. (of, with, towards, in, of)
4. Construction is a process has developed thousands years and numerous civilization. (through, that, of, over)
5. The major building projects were built a carefully designed plan the time construction them was much greater. (for, to, of, since)

8. Make up sentences out of given words.

1. Is, process, highly, the design, organized.
2. Shelters, simple, at first, human, were, very.

3. Today, is, culture, of, building, industrial, construction, a part.
4. To have, structures, as well as, began, symbolic, value, functional.
5. People, of ever greater, a search for, began, height and span, buildings.
9. **Match the beginnings of the sentences (A) to their ends (B) using the information from the text.**

A

1. The design process consists of ...
2. The construction process includes ...
3. The distinction between architecture and building appeared when ...
4. The interior environment of buildings involve ...
5. A designer is a person who ...
6. Contractors are persons or companies who ...
7. The duties of consultants include ...

B

- a. research establishments, official institutions and designers.
- b. manufacturers, craftsmen, contractors and consultants.
- c. the increasing durability of the materials, buildings of greater height and span, the control over the interior environment and the change in energy available to the construction.
- d. structures began to have symbolic as well as functional value.
- e. regulation of air temperature, light and sound levels, humidity, etc.
- f. determines user needs and designs a building to meet those needs.
- g. employ and coordinate the work of the craftsmen.
- h. construction management, quality control, and insurance.

CONSTRUCTION

Man has always been a builder. The kind of house he built in the beginning depended on the climate, on his enemies and on the building material at hand. The first houses in many parts of the world were made of wood, for in those days the greater part of the earth was covered with forests. In other regions the most convenient building material was stone. Although houses were built without cement, the remains of a few of them still exist.

The ancient Egyptians built very simple houses by present standards. Having dried the bricks in the sun they put up four walls and above these they placed a flat roof. The roof was flat because there was very little rain in Egypt. Although their buildings were simple in construction, the Egyptian art of building was very beautiful. Their pyramids and monuments, sphinxes and palaces arouse our wonder to this day. The first lessons in the art of making columns were given to the world in ancient Egypt.

In our country architecture flourished for the first time in Kiev Russ. Unfortunately, only a few of the church buildings of that period have remained. The churches of the time were strong buildings with thick walls and small windows. They often had to serve as fortresses during enemy invasions. Tourists from all over the world come to see the famous Cathedral of St. Sophia in Polotsk the cornerstone of which was laid in 1037 to commemorate the victory over the Pechenegs. Since then the architecture and structural materials have been greatly changed. A very advanced construction technique today is the use of precast concrete. According to this method the reinforced concrete units are manufactured at a factory and are then simply assembled at the construction site. This method helped our country to restore its economy after the Second World War, when many residential as well as industrial buildings were destroyed. The first blocks made of prefabricated units appeared in the villages in the Volgograd and Moscow regions. At present, the building industry is the largest in Belarus and it holds an important place in the National Economy of our country. Many highly educated civil engineers, who are trained at Belarusian universities, skilled and unskilled workers are engaged in construction. Builders use many new materials such as reinforced concrete, precast concrete, light weight concrete, gas concrete, many decorative materials, oil paints, wall paper. Synthetics

are among them. Such traditional materials as stone, brick, wood are in great use as well. Various elements and components are assembled on the site. Now everywhere in Belarus vibro-rolled panels are being widely used in construction. The assembly method is developing into the main method of apartment and industrial construction. All the working processes are mechanized. Modern construction can't be imagined without building machinery. Lorries, cranes, bulldozers, excavators are available at all construction sites of Belarus. Prefabricated structures are transported by lorries and immediately hoisted into position.

Finished blocks of prefabricated flats with interior decoration are assembled on many construction sites. Transport brings a complete flat to the prepared foundations of a building. A powerful gantry-crane lifts the 18 – 20 ton flat and carefully sets it on the foundation. After the final inspection, electricians, plumbers and gas-men can begin their work. As a result our country builds more than any other country of the former Soviet Union. Thanks to special government's programmes thousands of Belarusian people get flats every year. Flats have all modern conveniences, such as hot and cold water supply, central heating, lifts, ventilating plants, etc. The building industry is paid much attention in our country as it affects greatly the general level of living.

1 Answer the following questions:

1 What did the kind of house depend on? 2 What materials were the first houses made of? 3 Were they strong? 4 What country was the first to use brick to build houses? 5 What houses were built in ancient Egypt? 6 Why did Egyptians use a flat roof? 7 The Egyptian art of building was very beautiful, wasn't it? 8 What arouse our wonder to this day? 9 Where were given the first lessons in the art of marking columns? 10 Where did architecture flourish for the first time in our country? 11 In what way can you describe the churches of the old time? 12 What purposes did they often serve? 13 What do tourists come to see usually? 14 What new materials help to speed up the rate of building? 15 What method helped our country to restore its economy after the Second World War? 16 Who are engaged in construction nowadays? 17 What new materials are used by our builders? 18 Do they use any traditional materials? 19 What sort of panels is being widely used in construction in Belarus? 20 What is the main method of apartment and industrial construction? 21 What machines are used at all construction sites? 22 Where are the finished blocks of prefabricated flats with interior decoration assembled? 23 With the help of what a complete flat brings to the prepared foundations of a building? 24 What is the role of a powerful gantry-crane? 25 Who begins to work after the last inspection? 26 Why is the building industry paid great attention in our country?

12 Agree or disagree with the following statements: 1 Man has always been an inventor. 2 The kind of house he built in the beginning depended on his mood. 3 In some regions the most convenient building material was wood. 4 The ancient Egyptians built very fantastic houses. 5 Having dried the bricks in the sun they put up four walls, and above these they placed a thick roof. 6 The Egyptian art of building was very beautiful. 7 The first lessons in the art of marking columns were given to the world in ancient Greece. 8 In our country architecture flourished for the first time in Kiev Russ. 9 The churches of the time were small buildings with thin walls and without windows. 10 These churches had to serve as dwellings for the poor people. 11 The cornerstone of the famous Cathedral of St. Sophia in Polotsk was laid in 1237 to commemorate the victory over the Pechenegs. 12 Since the old times the architecture and structural materials were not changed. 13 A very advanced construction technique today is the use of timber. 14 The first blocks made of prefabricated units appeared in the villages in the Vitebsk and Minsk regions. 15 At present, the building industry is the largest in Belarus. 16 Many highly-educated civil engineers, who are trained abroad, are engaged in construction. 17 Synthetics are greatly used in construction. 18 Various elements and components are assembled at the plants. 19 Our builders do not use such traditional materials as stone, brick and wood. 20 Prefabricated

structures are transported by gantry-cranes. 21 Lorries, cranes, bulldozers, excavators are available at all construction sites of Belarus. 22 After the final inspection, engineers, electricians and architects can finish their work. 23 The building industry is not paid much attention in our country.

3 КУРС 6 СЕМЕСТР

Урок № 1-7 Тема 16. Строительные материалы. Свойства материалов.

Building Materials and Joints

(Основные строительные материалы и крепления)

1. It is impossible to imagine construction of a building without building materials. There are natural and artificial building materials. Learn the words from the vocabulary and classify them (1) into *materials* and *joints*, and then classify building materials (2) into *natural* and *artificial*.

Joints are Materials are.... is an artificial building material. is a natural
--

Fittings арматура

Concrete бетон

Bitumen битум

Bolt болт

Screw винт

Nail гвоздь

Gravel гравий

Board доска

Wood, timber древесина

Sheet material железо (кровельное)

Brick кирпич

Glue клей

Paint краска

Linoleum линолеум

Sand песок

Saw-timber пиломатериалы

Slab плита

Stone камень

Glass стекло

Glass wool стекловата

Ruberoid рубероид

Roofing felt толь

Pipe труба

Roofing slate шифер

Putty шпаклевка

Cement цемент

Tile черепица

Exercises

2. Describe building materials with the help of the following words :

Hard- ?, soft - ? , light - ? , heavy - ?

3. Say what building materials are used to make different parts of building or other building materials e.g.:

Boards and sheet metal are used (используются) to make a roof. Concrete is used (используется) to make a foundation.

4. Imagine you want to put up:

a) a hen house

b) a dog house

c) a country house

d) a castle.

What building materials do you **need**?

To make/create a ... I need...(I use...) Для того, чтобы изготовить...мне требуется...(Я использую...)

.....is / are necessary for ... Необходим/ы для....

Besides I want ... Кроме этого мне нужно ...

I can't do without ... Не могу обойтись без ...

5. You are in a "Building Materials" shop. You buy some roofing slates for the roof of your house and some glass wool. Let one student be a shop-assistant and you are a customer (client).

- Can I help you? (What can I do for you?)
- I want ... (Please, I'd like ...)
- Oh...haveyougot ...
- I alsoneed ...
- How much does it cost?
- Shall I pay you or at the cash-desk?
- Very good, do you want any ...
- Whatabout ...?
- Whatelse?
- I can offer you a wide choice of

6. Continue the sentences with the right name of a certain building material:

1. A building material made *by mixing* (при помощи смешивания) cement with sand, gravel is ...
2. Small stones with coarse sand used for roads and path *are called*(называются) ...
3. Hard solid substance of a tree below the bark is ...
4. A block of clay *moulded* (имеющий определенную форму) and baked by fire is ...
5. Thick flat piece of stone, wood is a ...
6. Grey powder which *after being wetted* (смешанная с водой), becomes hard like stone is ...

Cultural Note

8. This is the famous Cathedral of Christ the Saviour. Describe what building materials were used in the construction of this magnificent church.

9. Read the article from Internet about the cathedral and say what you have learned from it:

The **Cathedral of Christ the Saviour** (*khramKhristaSpasitela*) in Moscow may be the largest Orthodox church in the world. The building is magnificent, but not as old as it looks: it was rebuilt in 2000 after the original was demolished by Stalin.

History

The idea for this church dates from the early 19th century. When the last of Napoleon's soldiers left Moscow, Tsar Alexander I signed a manifesto dated December 25, 1812, declaring his intention to build a cathedral in honor of Christ the Savior. The cathedral would "signify Our gratitude to Divine Providence for saving Russia from the doom that overshadowed Her" and acts as a memorial to the sacrifices of the Russian people.

Plans were drawn and a site was chosen but before construction began, Alexander I was succeeded by his brother Nicholas. Profoundly Orthodox and patriotic, the new Tsar disliked the Neoclassical design that had been endorsed by his brother.

Alexander commissioned his favourite architect Konstantin Thon to create a new design, modeled after the [Hagia Sophia](#) in Constantinople. The present site was chosen by the Tsar in 1837; a convent and church already standing on the site had to be relocated.

Construction began in 1839 and the cathedral didn't emerge from its scaffolding until 1860; elaborate frescos by some of the best Russian painters continued in the interior for another 20

years. The cathedral was consecrated on the day Alexander III was crowned, May 26, **1883**. A year earlier, Tchaikovsky's "**1812 Overture**" debuted there.

After the Revolution, the prominent site of the cathedral called out for redevelopment by the **Soviets**, who planned to replace the church with a monument to socialism, known as the Palace of Soviets. It would rise in modernistic buttressed tiers to support a gigantic sculpture of Lenin, arm raised in blessing, perched atop a dome. On December 5, 1931, the Cathedral of Christ the Saviour was **dynamited** and reduced to rubble.

Funds for the largest building in the world remained unavailable, however. A foundation hole gaped on the site until under Nikita Khrushchev it was transformed into a huge **public swimming pool**.

With the end of the Soviet rule, the Russian Orthodox Church received permission to rebuild the Cathedral of Christ the Saviour (February 1990). A temporary cornerstone was laid by the end of the year.

A construction fund was opened in 1992 and foundations began to be poured in the fall of 1994. The lower church (Church of the Transfiguration) was consecrated in 1996, and the completed Cathedral of Christ the Saviour was consecrated **August 19, 2000**.

Home Reading

Read an extract about the invention of some building material. Give a good translation of the text. Give answers to the following questions: 1) what was invented? 2) Who was the inventor?

Wonderful Invention

We live in the world of reinforced concrete. Modern houses and skyscrapers are built of reinforced concrete as are also tunnels and dams and bridges.

Who was the genius that created this wonderful material?

Reinforced concrete was first made in 1861 by the French gardener Monier. He needed tubs, but he had no money to buy them. Monier decided to make the tub from clay like a flower pot.

There was no clay at hand but he found some cement. Monier began to shape his tub from cement.

For this purpose he took two wooden tubs, one larger than the other, put one into the other and in between poured cement.

When the cement hardened he broke up both wooden tubs and obtained a large cement tub barrel.

The tubs were heavy and bulky, but the trouble was that they were weak.

The gardener had to place iron bars along the tub to make it stronger or in other words to reinforce it and put another layer above the bars to make it look nice.

A strange thing happened. The barrel proved to be unusually strong. Then Monier began to make the walls thinner, and still the barrels remained very strong. This was how reinforced concrete was born.

Tasks:

I

Translate,

using the text: изобретать, изобретение, бетон, небоскреб, бадья, с этой целью, помеха, слабый, необычайно сильный, железные прутья, тонкий, тяжелый.

II

Найдите 2-ую форму следующих глаголов:

To invent

To be

To reinforce

To have

To create

To make
To need
To begin
To shape
To find
To pour
To obtain
To put
To break
To prove

III

Agree or disagree?

1. Monier was a genius who created the reinforced concrete.
2. Monier was an Italian inventor.
3. Monier invented reinforced concrete in the 19th century.
4. Monier made tubs from clay.
5. The first tub was weak.
6. The iron bars helped to make the tubs stronger.

IV

Give the answers to the following questions:

1. Who was the genius that created the reinforced concrete?
2. Why did Monier invent the reinforced concrete?
3. What building materials did Monier use to make tubs?
4. How did he make his first tub?
5. Were his first tubs strong or weak?
6. How did Monier reinforce them?
7. Was reinforced concrete a wonderful invention?
8. How is reinforced concrete used nowadays?

V

Translate the annotation to the text from Russian into English:

Железобетон был изобретен французским садоводом Монье в 19 веке. Монье был беден(poor) и не мог (could not)купить бадьи для сада. Он решил сделать их из глины, но глины также(also) не было. Тогда он взял цемент и залил его между двумя бочками, вставленными (put) одна в другую. Новая (the new) бадья оказалась слабой. Монье поместил железные прутья вдоль бадьи и положил еще один слой цемента. Бочка оказалась очень прочной и был получен новый строительный материал – железобетон.

Урок № 8-15 Тема 17. Строительные конструкции.

Building Construction

New words to learn:

1. (dis)advantage (n.) – преимущество (недостаток)
2. affect (v.) – воздействовать, влиять
3. assembly (n.) – монтаж, сборка
4. clay (n.) – глина
5. concrete (n.) – бетон
6. construction (n.) – строительство
7. determine (v.) – определять
8. durable (adj.) – долговечный, прочный
9. employ (v.) – нанимать
10. environment (n.) – окружающая среда
11. erection (n.) – сооружение, возведение
12. exploit (v.) – использовать
13. property (n.) – свойство
14. quality (n.) – качество
15. span (n.) – пролет; протяженность
16. structure (n.) – конструкция, строение
17. technique (n.) – метод, способ, технология

Read and translate the text:

Building Construction

Building construction is the techniques and industry involved in the assembly and erection of structures, especially those used to provide shelter. Building construction is an ancient human activity. It began with the need for a controlled environment to regulate the effects of climate.

Human shelters were at first very simple and perhaps lasted only a few days or months. Gradually more durable structures began to appear. The first shelters were dwellings, but later other functions, such as food storage and ceremony, were housed in separate buildings. Some structures began to have symbolic as well as functional value, marking the beginning of the distinction between architecture and building.

The history of building is marked by a number of tendencies. One is the increasing durability of the materials used. Early building materials were leaves, branches, and animal hides. Later, more durable natural materials--such as clay, stone, and timber--and, finally, synthetic materials – such as brick, concrete, metals, and plastics – were used. Another is a search for buildings of ever greater height and span; this was made possible by the development of stronger materials and by knowledge of how materials behave and how to exploit them to greater advantage. A third major trend involves the degree of control over the interior environment of buildings: increasingly precise regulation of air temperature, light and sound levels, humidity, and other factors that affect human comfort. Another trend is the change in energy available to the construction process, starting with human muscle power and developing toward the powerful machinery used today.

At present building construction is complex. The design process for buildings is highly organized and consists of research establishments that study material properties, officials who adopt safety standards and designers who determine user needs and design a building to meet those needs.

The construction process is also highly organized; it includes the manufacturers of building products and systems, the craftsmen who assemble them on the building site, the contractors who employ and coordinate the work of the craftsmen, and consultants who specialize in such aspects as construction management, quality control, and insurance.

Building construction today is a significant part of industrial culture, which can produce a widely varied built environment to serve the diverse needs of society.

1. Answer the questions to the text.

1. What does "building construction" mean?
2. What marked the distinction between architecture and construction?
3. What tendencies are there in the history of building?
4. What natural building materials do you know?
5. What made possible the erection of high and long buildings?
6. How has the construction methods been changing in the course of time?
7. What constitutes the design process?
9. What can you say about the construction process?

2. Agree or disagree with the statements.

1. Building construction is relatively new form of human activity.
2. First dwellings were at first very simple and perhaps lasted only a few days or months.
3. Natural materials are clay, stone, and timber.
4. One of the trends involves the control over the exterior environment of buildings.
5. Building construction is developing from the powerful machinery towards human muscle power.
6. The design process for buildings consists of research establishments, officials and manufacturers of building products.

3. Translate the following international words.

Activity, architecture, climate, comfort, consultant, control, to coordinate, effect, factor, function, industry, natural, material, metal, to organize, plastic, process, to regulate, social, standard, symbolic, synthetic, system, temperature, tendency, ventilation.

4. Find the antonyms.

early exterior
natural late
interior complicated
durable at once
advantage fragile
powerful synthetic
gradually disadvantage
simple weak

5. Find the synonyms.

1. to involve a) to consist; b) to include; c) to imply.
2. to erect a) to assemble; b) to work; c) to construct.
3. dwelling a) build; b) building; c) builder.
4. to exploit a) to use b) to employ; c) to operate.
5. significant a) simple; b) complicated; c) important.
6. control a) operation; b) regulation; c) modification.
7. diverse a) safe; b) varied; c) durable.
8. to affect a) to influence; b) to employ; c) to determine.

6. Fill in the gaps with the corresponding words.

value, to exploit, to adapt, human, include, materials, properties, durability

1. Building construction is an ancient ... activity.
2. Cathedrals and palaces possess symbolic ... while blocks of flats and shops a functional one.
3. The construction process is highly organized and ... manufacturers, workers and contractors.
4. Research is being done to increase the ... of building materials.
5. If you want to ... this material to greater advantage you should know its

6. Shelters were one means by which human beings were able ... themselves to a wide variety of climates.

7. One of the first building ... were leaves and animal hides.

7. Put the prepositions into the sentences and translate them.

1. First dwellings appeared ancient people wanted control the effects the climate. (to, of, because)

2. There were several tendencies the history building. (of, in)

3. Methods construction has been changing the course time starting human muscle power powerful machinery. (of, with, towards, in, of)

4. Construction is a process has developed thousands years and numerous civilization. (through, that, of, over)

5. The major building projects were built a carefully designed plan the time construction them was much greater. (for, to, of, since)

8. Make up sentences out of given words.

1. Is, process, highly, the design, organized.

2. Shelters, simple, at first, human, were, very.

3. Today, is, culture, of, building, industrial, construction, a part.

4. To have, structures, as well as, began, symbolic, value, functional.

5. People, of ever greater, a search for, began, height and span, buildings.

9. Match the beginnings of the sentences (A) to their ends (B) using the information from the text.

A

1. The design process consists of ...

2. The construction process includes ...

3. The distinction between architecture and building appeared when ...

4. The interior environment of buildings involve ...

5. A designer is a person who ...

6. Contractors are persons or companies who ...

7. The duties of consultants include ...

B

a. research establishments, official institutions and designers.

b. manufacturers, craftsmen, contractors and consultants.

c. the increasing durability of the materials, buildings of greater height and span, the control over the interior environment and the change in energy available to the construction.

d. structures began to have symbolic as well as functional value.

e. regulation of air temperature, light and sound levels, humidity, etc.

f. determines user needs and designs a building to meet those needs.

g. employ and coordinate the work of the craftsmen.

h. construction management, quality control, and insurance.

Урок 16-20. Тема 18. Машины и оборудование для строительства и эксплуатации инженерных сооружений.

TextA

FORKLIFTTRUCK

Forklift trucks are basically small trucks that are utilized for the lifting and moving of heavy loads, using an extended attachment. This attachment protrudes outwards from the front or the side. These vehicles are designed for particular loads and applications and have specific design characteristics, components, and similar controls and performance. These trucks are extensively used in the construction industry, warehouses, and industrialized units for loading and shifting tasks. To shift loads, the prongs are inserted below the pallet and then raised by a mast. Forklifts may be powered hydraulically, electrically, or with internal combustion engines. These trucks are designed for indoor or external applications. The truck has a specified lifting capacity that should not be exceeded. It has either solid or pneumatic tires. To ensure protection, safety rails and revolving turntables are normally fitted for the counterbalance and prevention of tilting. The forklift truck is now considered essential equipment for a large number of applications. The main components of a forklift are:

The Truck Frame is the base of the machine to which the mast, axles, wheels, counterweight, overhead guard and power source are attached. The frame may have fuel and hydraulic fluid tanks constructed as part of the frame assembly.

The Counterweight is a heavy cast iron mass attached to the rear of the forklift truck frame. The purpose of the counterweight is to counterbalance the load being lifted. In an electric forklift the large lead-acid battery itself may serve as part of the counterweight.

The Cab is the area that contains a seat for the operator along with the control pedals, steering wheel, levers, switches and a dashboard. The cab area may be open air or enclosed, but it is covered by the cage-like overhead guard assembly.

The Overhead Guard is a metal roof supported by posts at each corner of the cab. It helps to protect the operator from any falling objects. On some forklifts, the overhead guard is an integrated part of the frame assembly.

The Power Source may consist of an internal combustion engine that can be powered by gas, gasoline or diesel fuel. Electric forklifts are powered by either a battery or fuel cells that provide power to the electric motors. The electric motors used on a forklift may be either DC or AC types.

The Tilt Cylinders are hydraulic cylinders that are mounted to the truck frame and the mast. The tilt cylinders pivot the mast to assist in engaging a load.

The Mast is the vertical assembly that does the work of raising and lowering the load. It is made up of interlocking rails that also provide lateral stability. The interlocking rails may either have rollers or bushings as guides. The mast is either hydraulically operated by one or more hydraulic cylinders or it may be chain operated with a hydraulic motor providing motive power. It may be mounted to the front axle or the frame of the forklift.

The Carriage is the component to which the forks or other attachments are mounted. It is mounted into and moves up and down the mast rails by means of chains or by being directly attached to the hydraulic cylinder. Like the mast, the carriage may have either rollers or bushings to guide it in the interlocking mast rails.

The Load Back Rest is a rack-like extension that is either bolted or welded to the carriage in order to prevent the load from shifting backward when the carriage is lifted to full height.

Active vocabulary:

- utilize– использовать
- lift– поднимать
- protrude– выдвигать
- warehouse– склад
- shift– сдвиг; сдвигать

- prong– зубец, вилы
- insert– вставлять
- solid– твердый, сплошной, целый
- pneumatic– пневматический
- protection– защита
- prevent– предотвращать
- tilt– наклонять, опрокидывать
- guard– предохранительное приспособление
- fluid– жидкость
- switch– переключатель, переключать
- engage– зацеплять, занимать
- roller– ролик, каток
- carriage– шасси, рама, несущее устройство
- rest– опора, подставка, стойка
- weld– сваривать

Exercise 1. Answer the following questions:

1. Where are forklift trucks used?
2. How may forklifts be powered?
3. What main components of a forklift do you know?
4. What is the purpose of the counterweight?
5. What may the power source consist of?
6. What component does the work of raising and lowering the load?

Exercise 2. Define the part of speech of the following words:

Attachment, basically, outwards, application, specific, similar, extensively, construction, internal, capacity, particular, hydraulically, pneumatic, essential, equipment, operator, electrically, combustion, external, prevention, balance, lateral, stability, different, extension, carriage, backward, stability, various, structure, replaceable.

Exercise 3. Define the tense of the predicates and translate the following sentences:

1. Forklift trucks are designed for different applications.
2. Warehouses needed more efficient equipment.
3. The machine was operated according to the rules which had been specified by the manufacturer.
4. During World War I different types of material handling equipment were being developed.
5. Forklift trucks employment will be expanded by adding new attachments.
6. Forklift trucks will tilt when a specified lifting capacity has been exceeded.
7. The cab contains a seat for the operator.
8. The carriage is moving up and down the mast rails.
9. By 1967 Toyota had introduced its forklift truck both in Japan and in the USA.
10. Installation of rails has ensured operator's protection.
11. While working the operator is being protected by the overhead guard.
12. Through the 1920s and 1930s different companies were developing forklift trucks.

Exercise 4. Translate Text B without a dictionary:

Text B

FORKLIFT DEVELOPMENT

The middle 19th century through the early 20th century saw the developments that led to today's modern forklifts. The Pennsylvania Railroad in 1906 introduced battery powered platform trucks for moving luggage at their Altoona, Pennsylvania train station. World War I saw the development of different types of material handling equipment in the United Kingdom by

Ransomes, Sims and Jeffries of Ipswich. This was in part due to the labour shortages caused by the war. In 1917 Clark in the United States began developing and using powered tractor and powered lift tractors in their factories. In 1919 the Towmotor Company and Yale & Towne Manufacturing in 1920 entered the lift truck market in the United States.

Constant development and expanded use of the forklift continued through the 1920s and 1930s. World War II, like World War I before, accelerated the use of forklift trucks in the war events. Following the war, more efficient methods for storing products in warehouses were being applied. Warehouses needed more maneuverable forklift trucks that could reach greater heights. New forklift models were made to meet this need. In 1956 Toyota introduced its first lift truck model, the Model LA, in Japan and sold its first forklift in the United States in 1967.

Notes:

- luggage– багаж
- labour shortage– нехватка рабочей силы
- store– хранить

Text C

COMPACT UTILITY TRACTORS

Popular additions to compact utility tractors and farm tractors are Front End Loaders, also referred to as a FEL. Compact Utility Tractors, also called CUTs are small tractors, typically with 18 to 50 horsepower (37 kW) and used primarily for grounds maintenance and landscape work. There are 2 primary designs of compact tractor FELs, the traditional designed style and the curved arm style.

John Deere Tractor manufactures a semi-curved loader design that does not feature the one piece curved arm, but also is not of the traditional two piece design. New Holland AG introduced a compact loader with a single piece curved arm on its compact utility tractors. Similar one piece curved arm loaders are now available on compact tractors on many brands including Case/Farmall, and some Montana and Kioti tractors. Kubota markets traditional loader designs on most of its compact tractors but now features a semi-curved loader design similar to the John Deere loader design on several of its small tractors.

While front end loaders on CUT size tractors are capable of many tasks, given their relatively small size and low capacities when compared to commercial loaders, the compact loaders can be made more useful with some simple options. A toothed bar is commonly added to the front edge of a loader bucket to aid with digging. Some loaders are equipped with a quick coupler, otherwise known as a Quick Attach (QA) system, the QA system allows the bucket to be removed easily and other tools to be added in its place. Common additions include a set of Pallet Forks for lifting pallets of goods.

Notes:

- utility– утилитарный, практичный, простой
- semi—полу
- coupler– соединительная муфта, зажим

Exercise 1. Translate the following sentences:

1. Warehouses needed more maneuverable forklift trucks than the equipment used earlier.
2. The sideshifter allows an easier placement of a load.
3. Loading should be carried out as quickly as possible.
4. The larger machines are used, the heavier loads are lifted.
5. A telescopic handler is more a crane than a forklift.
6. The advantage of the telehandler is also its biggest limitation.
7. The more the working radius increases, the more quickly the lifting capacity decreases.
8. Most telehandlers utilize a computer which will warn the operator and stop further work if necessary.
9. A front loader is more often a wheeled tractor than a track mounted one.
10. Loaders are not so efficient for digging as backhoes.
11. Wheels provide better mobility than tracks.

Text D

DRAGLINE EXCAVATOR

Dragline excavation systems are heavy equipment used in civil engineering and surface mining. In civil engineering the smaller types are used for road and port construction. The larger types are used in strip-mining operations to move overburden (soil layers) above coal. Draglines are amongst the largest mobile equipment, and weigh in the vicinity of 2000 metric tonnes, though specimens weighing up to 13,000 metric tonnes have also been constructed.

A dragline bucket system consists of a large bucket which is suspended from a boom (a large truss-like structure) with wire ropes. The bucket is manoeuvred by means of a number of ropes and chains. The hoist rope, powered by large diesel or electric motors, supports the bucket and hoist coupler assembly from the boom. The drag rope is used to draw the bucket assembly horizontally. By skillful manoeuvre of the hoist and the drag ropes the bucket is controlled for various operations.

In a typical cycle of excavation, the bucket is positioned above the material to be excavated. The bucket is then lowered and the drag rope is then drawn so that the bucket is dragged along the surface of the material. The bucket is then lifted by using the hoist rope. A swing operation is then performed to move the bucket to the place where the material is to be dumped. The drag rope is then released causing the bucket to tilt and empty. This is called a dump operation.

The bucket can also be 'thrown' by winding up to the jib and then releasing a clutch on the drag cable. This would then swing the bucket like a pendulum. Once the bucket had passed the vertical, the hoist cable would be released thus throwing the bucket. On smaller draglines, a skilled operator could make the bucket land about one-half the length of the jib further away than if it had just been dropped. On larger draglines, only a few extra metres may be reached.

Draglines have different cutting sequences. The first is the side cast method using offset benches*; this involves throwing the overburden sideways onto blasted material to make a bench. The second is a key pass. This pass cuts at the toe of the new high wall and also shifts the bench further towards the low wall. This may also require a chop pass if the wall is blocky. A chop pass involves the bucket being dropped down onto an angled highwall to scale the surface. The next sequence is the slowest operation. However, this pass moves most of the material. It involves the access to bottom of the material to lift it up to an elevated bench level. The final cut if required is a pull back, pulling material back further to the low-wall side.

The primary limitations of draglines are their boom height and boom length, which limit where the dragline can dump the waste material. Another primary limitation is their dig depth, which is limited by the length of rope the dragline can utilize. A dragline is most efficient excavating material below the level of its base. While a dragline can dig above itself, it does so inefficiently and is not suitable to load piled up material (as a rope shovel can). Despite their limitations, and their extremely high capital cost, draglines remain popular with many mines, due to their reliability, and extremely low waste removal cost.

Active Vocabulary:

- surface– поверхность
- mining– горное дело, разработканедр
- strip– полоса, снимать (слой)
- specimen– образец, экземпляр
- draw– тащить, тянуть
- release– освободить, отпустить
- throw– бросать
- skilled– квалифицированный
- drop– падать, ронять
- sequence– последовательность, следование
- involve– включать, вовлекать
- waste– отходы, пустая порода

Exercise 1. Answer the following questions:

1. What types of draglines are used for road construction?
2. What does a dragline bucket system consist of?
3. What means is the bucket manoeuvred by?
4. How is the typical cycle of excavation performed?
5. How many cutting sequences do draglines have?
6. What are the primary limitations of draglines?
7. Why do draglines remain popular?

Exercise 2. Translate the following sentences paying attention to the infinitives:

1. The frame may have fuel and hydraulic fluid tanks.
2. The overhead guard helps to protect the operator from falling objects.
3. Pole attachments are used to lift rolls.
4. The tilt provides an ability to operate on non-level ground.
5. While steering, it is unnecessary to apply steering force to maintain a constant rate of turn.
6. To combine the gravitational and centrifugal forces means to produce a tip-over accident.
7. A forklift should not be used as a personnel lift.
8. The most common task of a telescopic handler is to move the loads.

Exercise 3. Translate the following sentences paying attention to the infinitive constructions:

1. This attachment enables the operator to move the forks.
2. As the boom extends it causes the vehicle to become increasingly unstable.
3. A loader is known to be a heavy equipment machine often used in construction.
4. Draglines are considered to be the largest mobile equipment.
5. UDD is claimed to represent the first fundamental change to draglines for almost a century.
6. Two hoist and one drag ropes permit the operator to have better control.

Exercise 4. Translate Text B without a dictionary:

Text E

DRAGLINE EXAMPLES

The coal mining dragline known as Big Muskie, owned by the Central Ohio Coal Company (a division of American Electric Power), was the world's largest mobile earth-moving machine, weighing nearly 13,000 metric tons and standing nearly 22 stories tall. It operated in Guernsey County, in the US state of Ohio from 1969 to 1991, and was powered by 13,800 volts of electricity.

The British firm of Ransomes & Rapier produced a few large (1400– 1800 ton) excavators, the largest in Europe at the time (1960s). Power was from internal combustion engines driving electric generators. One, named Sundew, was used in a quarry from 1957 to 1974. After its working life at the first site in Rutland was finished it walked 13 miles to a new life at Corby; the walk took 9 weeks.

Smaller draglines were also commonly used before hydraulic excavators came into common use, the smaller draglines are now rarely used other than on river and gravel pit works. The small machines were of a mechanical drive with clutches. Firms such as Ruston and Bucyrus made models such as the RB10 which were popular for small building works and drainage work. Several of these can still be seen in the English Fens of Cambridgeshire, Lincolnshire and parts of Norfolk. Ruston's is a company also associated with drainage pumping engines. Electric drive systems were only used on the larger mining machines, most modern machines use a diesel-hydraulic drive, as machines are seldom in one location long enough to justify the cost of installing a substation and supply cables.

Notes:

- pit– яма, шахта, карьер
- justify– оправдывать

- substation– подстанция

Text F

TUNNEL BORING MACHINES

Part I

A tunnel boring machine (TBM) is a specially designed machine which is used to excavate tunnels with a circular cross section through a variety of soil and rock strata. That they can bore through hard rock, sand, and almost anything in between is one of their advantages. Tunnel diameters can range from a metre (done with micro-TBMs) to almost 16 metres to date. Tunnels of less than a metre or so in diameter are typically done by horizontal directional drilling rather than TBMs.

Tunnel boring machines are used as an alternative to drilling and blasting (D&B) methods. The reason of this is that a TBM has the advantages of limiting the disturbance to the surrounding ground and producing a smooth tunnel wall. This significantly reduces the cost of lining the tunnel, and makes TBM suitable to use in heavily urbanized areas. The major disadvantage is that TBMs are expensive to construct, difficult to transport and require significant infrastructure. The biggest is built by Herrenknecht AG of Schwanau, Germany to dig the 57 km Gotthard Base Tunnel. It has a diameter of 9.58 meters.

Tunnel boring machines have one or two large metal cylinders (shields) mounted on a trailing support mechanism. The front of the shield has a rotating cutting wheel. Following the cutting wheel there is a chamber where the excavated material (sand, rock, or any soil mix) is either mixed with water to make a slurry or left as it is. A system to remove the excavated material completes the tunnel boring machine.

In basic terms, the TBMs work like an earthworm with cycles of digging forward and dragging the rear end afterwards. A series of hydraulic systems pushes the TBM forward (excavating the soil) while the rear end of it is braced against the tunnel wall. When the TBM head has excavated at its maximum length (this depends on many variables including TBM type, soil type, etc) the front end of the TBM is braced against tunnel wall and the rear end is pulled forward. These cycles continue until the complete tunnel has been excavated.

Part II

Behind the shield, inside the finished part of the tunnel, several support mechanisms which are part of the TBM are located: dirt removal, slurry pipelines if they are applicable, control rooms, and rails for transport of the precast segments. The cutting wheel will typically rotate at 1 to 10 rpm (depending on the size and stratum), cutting the rock face into chips or excavating soil (muck). Depending on the type of TBM, the muck will fall onto a conveyor belt system and be carried out of the tunnel, or be mixed with slurry and pumped back to the tunnel entrance. Depending on rock strata and tunnel requirements, the tunnel may be cased, lined, or left unlined. This may be done by bringing in precast concrete sections that are jacked into place as the TBM moves forward, by assembling concrete forms, or in some hard rock strata, leaving the tunnel unlined and relying on the surrounding rock to handle and distribute the load. While the use of a TBM eliminates the need for large numbers of workers at increased pressure, a caisson system is sometimes formed at the cutting head. Workers entering this space for inspection, maintenance and repair need to be medically "fit to dive" and trained in the operation of the locks.

Modern TBMs typically have an integrated shield. What type of TBM, a single or double shielded, will be chosen depends on the type of rock strata and the excavation speed required.

Double shielded TBMs are normally used in unstable rock strata, or where a high rate of advancement is required. Single shielded TBMs, which are less expensive, are more suitable to hard rock strata.

In urban tunneling it is required that the ground surface should be undisturbed. This means that ground falling must be avoided. The normal method of doing this is to maintain the soil pressures during and after the tunnel construction. There is some difficulty in doing so,

particularly in varied rock strata (e.g., boring through a region where the upper portion of the tunnel face is wet sand and the lower portion is hard rock).

TBMs with positive face control are used in such situations. There are three common types: Earth pressure balance (EPB), Bentonite slurry (BS), and compressed air (CA). The compressed air method is the oldest, although it is falling out of application due to the difficult working conditions it imposes. Both types (EPB and BS) are clearly preferred over open face methods in urban environments as they offer far superior ground control.

Exercise 1. Answer the following questions:

1. What materials can TBMs bore through?
2. Why are the TBMs used as an alternative to drilling and blasting methods?
3. What main components does a TBM have?
4. What cycles does the TBM's work consist of?
5. How may the tunnel be finished?
6. Where are double shielded TBMs normally used?
7. What requirements should be met in urban tunneling?
8. Why are EPB and BS types preferred in urban environment?

Exercise 2. Translate the following sentences paying attention to attributive clauses:

a) without a conjunction:

1. A system the excavated material is removed with completes the TBM.
2. The purpose the counterweight is used for is to balance the load.
3. The speed the cutting wheel rotates with depends on the size.
4. The air the piston compresses is heated to the point of ignition;

b) with different meanings of "which":

1. The carriage is the component to which the forks are mounted.
2. To put the load on high places requires a crane, which is not always practical or time-efficient.
3. Most telehandlers utilize a computer which uses sensors to monitor the vehicle.
4. Some machines are equipped with outriggers, which extend the lifting capability.
5. The operator is able to "steer" the load, which can be useful.
6. The house is able to rotate without limit due to a hydraulic distribution valve which supplies oil to the undercarriage components.
7. The weight is raised, which may involve the use of hydraulics.

Exercise 3. Translate Text B without a dictionary:

Text G

TBMs INVENTION

The first successful tunneling shield was developed by Sir Marc Isambard Brunel to excavate the Thames Tunnel in 1825. However, this was only the invention of the shield concept and did not involve the construction of a complete tunnel boring machine, the digging still having to be accomplished by the then standard excavation methods.

The very first boring machine ever reported to have been built was Henri Joseph Maus' Mountain Slicer. Commissioned by the King of Sardinia in 1845 to dig the Frejus Rail Tunnel between France and Italy through the Alps, Maus had it built in 1846 in an arms factory near Turin. It basically consisted of more than 100 percussion drills mounted in the front of a locomotive-sized machine, mechanically power-driven from the entrance of the tunnel. Unfortunately, the Revolutions of 1848 affected the financing of the project and the tunnel was not completed until 10 years later, by using also innovative but rather less expensive methods such as pneumatic drills.

In the United States, the first boring machine to have been built was used in 1853 during the construction of the Hoosac Tunnel. Made of cast iron, it was known as Wilson's Patented Stone-Cutting Machine, after its inventor Charles Wilson. It drilled 10 feet into the rock before breaking down. The tunnel was eventually completed more than 20 years later, and as with the

Frejus Rail Tunnel, by using less ambitious methods. In the early 1950s, F.K. Mitry won a diversion dam contract for the Oahe Dam in Pierre, South Dakota, and consulted with James S. Robbins to dig through what was the most difficult shale to excavate at that time, the Pierre Shale. Robbins built a machine that was able to cut 160 feet in 24 hours in the shale, which was ten times faster than any other digging speed at that time.

The breakthrough that made tunnel boring machines efficient and reliable was the invention of the rotating head, conceptually based on the same principle as the percussion drill head of the Mountain Slicer of Henri Joseph Maus. But its efficiency was improved by reducing the number of grinding elements while making them to spin as a whole against the soil front. Initially, Robbins' tunnel boring machine used strong spikes rotating in a circular motion to dig out of the excavation front, but he quickly discovered that these spikes, no matter how strong they were, had to be changed frequently as they broke or tore off. By replacing these grinding spikes with longer lasting cutting wheels this problem was significantly reduced. Since then, all successful modern tunnel boring machines have rotating grinding heads with cutting wheels.

Notes:

- concept– идея
- percussion drill– ударный бур
- diversion dam– отводная плотина
- shale– сланец, сланцевая глина

Text H

EXCAVATORS An excavator is in a list of extremely useful machines utilized in the construction industry, and other useful applications. It has increased the speed of work to a great extent. Efforts have to be made to reduce the excavator weight, and make it a quiet function. It consists of an undercarriage that has wheels or tracks for the provision of mobility. Active research is being constantly conducted to improve the excavator characteristics, namely more ground clearance, less noise, and improvement in ride. The older excavators had an extended counterweight that was suspended at the machine rear. It was to provide additional lifting capability and the force for digging. The modern excavators have been designed so that the counterweight remains inside the track width during swinging. Thus the movement is safe and the maneuverability of the excavator increases during operation in restricted areas. The common excavators are fitted with diesel engines that generate hydraulic pressure for the numerous excavator operations. In modern excavators there are electric motors that obtain power by fuel cells. The fuel cells are efficient and environmentally friendly. Furthermore, the fuel cells are much lighter and smaller than a diesel engine. The operator cabin is being made more spacious and comfortable.

The fundamental mechanism of an excavator consists of the undercarriage that includes the tracks, track frame, blade and the final drive. The final drive has a hydraulic motor and gears that provide drive to the tracks. The operator's cabin, engine, counterweights, hydraulic and fuel tanks are to be attached to the undercarriage to enable the excavator to swing 360° without any hindrance. The main function of the excavator engine is to drive the hydraulic pumps that provide oil at a high pressure to the slew motor, rams, track motors, and several accessories. Mostly, the boom can move only up and down, or in addition also shift towards the left and right of the machine. An arm is attached to the boom end that imparts the force for digging into the ground. A bucket is fixed at the arm end for carrying the soil. In addition, there are numerous other categories of attachments with the excavator that are used for boring, crushing, lifting and ripping.

In recent years, hydraulic excavator capabilities have expanded far beyond excavation tasks with buckets. The range of attachments had to be enlarged to make this possible. With the appearance of hydraulic powered attachments such as a breaker, a grapple or an auger, the excavator is frequently used in many applications other than excavation.

Active Vocabulary:

extent– степень, мера effort– усилие, попытка quiet– тихий research– исследование restrict– ограничивать generate– производить, генерировать cell– элемент, батарея final drive– главная передача hindrance– помеха, препятствие pump– насос accessories– принадлежности impart– давать, придавать bore– сверлить, бурить crush– дробить, размельчать appearance– появление, внешний вид auger– сверло, бурав

Exercise 1.

Answer the following questions:

1. How has an excavator influenced the speed of work? 2. What does an excavator consist of? 3. What excavator characteristics need improvement? 4. Why are modern excavators equipped with fuel cells? 5. What components does the undercarriage include? 6. How can the boom move? 7. What attachments have expanded excavator applications?

Exercise 2. Translate the following sentences and define the functions of ed-forms:

1. Powered machines have increased the speed of work to a great extent. 2. Quick-attach systems simplified attachments mounting. 3. A bucket is fixed at the arm end. 4. The machine could not swing when used in tight turn areas. 5. Modern excavators are fitted with electric motors. 6. The counterweight provided additional lifting capacity. 7. Machines are more environmentally friendly if fitted with fuel cells. 8. Hydraulic devices have expanded excavator applications. 9. A loader is a machine employed in construction.

Text I

COMPACT EXCAVATOR

Excavators come in a wide variety of sizes. The smaller ones are called mini-excavators or compact excavators. A compact hydraulic excavator or mini excavator is a tracked or wheeled vehicle with an approximate operating weight from 0.7 to 7.5 tonnes. It generally includes a standard backfill blade and features independent boom swing. The compact hydraulic excavator is also referred to as a mini excavator.

The compact hydraulic excavator is somewhat different from other construction equipment in that all movements and functions of the machine are accomplished through the transfer of hydraulic fluid. The compact excavator's workgroup and blade are activated by hydraulic fluid acting upon hydraulic cylinders. The excavator's slew (rotation) and travel functions are also activated by hydraulic fluid powering hydraulic motors. Most compact hydraulic excavators have three distinct assemblies: house, undercarriage and workgroup.

The house structure contains the operator's compartment, engine compartment, hydraulic pump and distribution components. The house structure is attached to the top of the undercarriage via a swing bearing. The house, along with the workgroup, is able to rotate or slew upon the undercarriage without limit due to a hydraulic distribution valve supplying oil to the undercarriage components.

Slewing refers to rotating the excavator's house assembly. Unlike a conventional backhoe, the operator can slew the entire house and workgroup upon the undercarriage for spoil placement.

The undercarriage consists of rubber or steel tracks, drive sprockets, rollers, idlers and associated components/structures. The undercarriage supports the house structure and the workgroup.

The workgroup of a compact hydraulic excavator consists of the boom, dipper or arm, and attachment (e.g. auger, bucket or breaker). It is connected to the front of the excavator's house structure via a swing frame allowing the workgroup to be hydraulically pivoted left or right to achieve offset digging for trenching parallel with the tracks.

The primary purpose of boom swing is for offset digging around obstacles or along foundations, walls or forms. A secondary use is cycling in areas too narrow for cab rotation. Independent boom swing is one of the major advantages of a compact excavator over other excavation equipment. The backfill blade is used for grading, levelling, backfilling, trenching, and general dozer work. The blade can be used to increase dump height and digging depth depending on its position in relation to the excavator's workgroup, this makes it very versatile.

There are two distinct classes of compact excavators, conventional tail swing units that have a rear counterweight that will extend beyond the tracks when the house rotates, and zero-tail swing units with a house whose diameter stays within the width of the tracks through full rotation. Zero-tail swing units allow the operator to focus on digging and not watching where he or she is swinging.

Active Vocabulary:

approximate– приблизительный; приближаться

backfill– засыпка (траншей)

accomplish– совершать, выполнять

transfer– переносить, передавать

house– корпус

contain– содержать

compartment– отделение

valve– клапан

entire– полный, целый

spoil– земля, вынутая при земляных работах

sprocket– цепное, зубчатое колесо; звездочка

idler– направляющий шкив, ролик

dipper– ковш

achieve– достигать, добиваться

offset– ответвление, отвод

obstacle– препятствие, помеха

conventional– обычный, традиционный

Exercise 1. Answer the following questions:

1.What does a compact excavator include and feature? 2.How does hydraulic excavator differ from some other construction equipment? 3.How is the house structure attached to the top of the undercarriage? 4.What is one of the major advantages of a compact excavator? 5.What is the backfill blade used for? 6.How many and what classes of compact excavators are there?

Exercise 2. Read Text A and define the part of speech and the function of the underlined words.

Exercise 3. Translate the following sentences paying attention to ingforms:

1.Lifting and moving of heavy loads is accomplished by using a forklift truck. 2.Safety rails and revolving turntables are normally fitted for the prevention of tilting. 3.A counterweight is utilized for balancing the load being lifted. 4.The mast does the work of raising and lowering a load. 5.The interlocking rails may either have rollers or bushings as guides. 6.The function of a battery powered platform truck introduced in 1906 was moving the luggage. 7.During World War I different types of material handling equipment were being developed. 8.In 1917 Clark in the USA began developing and using powered tractors. 9.Allowing the operator to move forks the sideshifter provides easier positioning of a load. 10.A loader can move stockpiled building materials from the ground level.

4 КУРС 7 СЕМЕСТР

Урок № 1-8 Тема 20. Инженерные сооружения

Bridge Construction

The history of Russian science and technique proves that talented Russian people made great inventions and designed engineering constructions which had never been undertaken before.

Such was Kulibin, one of the most talented self-taught engineers at the court of Catherina II. From his early childhood Kulibin showed a keen interest to all kinds of mechanical devices and liked to build models of different machine details. He realized that in order to master a secret mechanism it was necessary to study mathematics and physics.

The instruments necessary for his work were not to be got in Nizhniy Novgorod where he lived. He succeeded to get to Petersburg where he was appointed mechanic to the Academy of Science and since then he spent all his free time and all his money on new inventions.

In Petersburg Kulibin undertook a very difficult engineering problem – to design a bridge across the Neva as there was not a single permanent bridge in the city to provide a crossing at any season of the year. Temporary pontoon bridges had to be taken to pieces at high water.

Kulibin was the first to think of an arched bridge. According to his plan the bridge was to have a single span leaving free water for ships and barges. Arched bridges of similar construction had not been built before, but no engineer dared even to think of construction a bridge with a three hundred meter span. This was a construction which even now is used in modern bridge building.

1. Answer the following questions:

1. What does the history of Russian science and technique prove?
2. What was Kulibin?
3. Why was it necessary for him to study mathematics and physics?
4. What town did Kulibin live?
5. Why did he decide to get to Petersburg?
6. Where did Kulibin work in Petersburg?
7. What did he design?
8. Is Kulibin's construction used even now in modern bridge building?

2. Make up a dialogue according to the questions.

3. Read and translate the following sentences into Russian. Find the construction "Complex Object" in each sentence.

1. Do you want me to help you?
2. They didn't expect us to come back so soon.
3. I want you to understand me.
4. I would like you to read this book.
5. I expect you to write to me.
6. I want him to go home.
7. What do you want him to do for you?

4. Translate the following sentences into English using Complex Object

1. Я не хочу, чтобы ты заболела.
2. Мне бы хотелось, чтобы он закончил эту работу.
3. Хотите ли вы, чтобы мы сегодня встретились?
4. Мы не ожидали, что они нас заметят.
5. Мне бы хотелось, чтобы работа была сделана вовремя.
6. Вы хотите, чтобы мы обсудили этот вопрос сегодня?
7. Мы не ожидали, что вы вернётесь так рано.

Tunnel Construction

The tunnel construction dates back to 1857, when French and Italian engineers undertook the gigantic task of building the Mont Ceris tunnel. It was the main railway line from south-eastern France to north-eastern Italy. The tunnel, nearly 8 miles long, is of great technical interest, because air compressor and rock drills operated by compressed air were first used. It was also the first large project on which dynamite was employed for breaking the rock. But when it was started, drilling was done by hand. Black gunpowder was used for breaking the rock.

For the first 4 years the tunnel advanced only 9 inches a day on each side and if it had continued at this rate, it would have taken 75 years to complete. With the introduction of compressed air drills and dynamite progress went ahead and was accelerated to 6 foot a day.

When the proposed road or railway is obstructed by a hill, a waterway or some construction, the engineer designing the project has to decide to construct a tunnel through or under the obstacles. In making decision, he has not only to consider the economic aspect, but also weigh up all the constructional advantages and disadvantages of tunneling or the alternative method of passing around or over the obstacle. In practice tunneling proves to be less expensive than any other alternative system.

Should a motorway pass under or over a large waterway? For a narrow waterway it is not a problem, the water is always bridged. The choice often falls on a bridge because it can carry more vehicles per hour. Bridge and tunnel combinations form the best solution for crossings of great length.

It is easy to predict that in the next decades an increasing number of important tunnels will be built, and that the existing methods of building will be improved and perfected and new techniques will be developed.

1. Answer the following questions:

1. What year does the tunnel construction date back?
2. What equipment and methods were used when the main railway line from south-eastern France to north – eastern Italy was being built?
3. What decisions do the engineers make when the proposed road or railway is obstructed by some obstacles?
4. Does tunneling prove to be less expensive than any other alternative system?
5. What forms the best solution for crossing of great length?

2. Make up a dialogue according to the questions.

3. Open the brackets read and translate the sentences into Russian.

1. Would you like me (read) now?
2. I want her (learn) foreign languages.
3. I saw him (go) out of the house.
4. The teacher advised us (use) dictionaries.
5. Her father doesn't allow her (go) to the cinema alone.
6. We expect our basketball team (win) next game.
7. I saw them (open) the window.

Dam Construction

Dams have a history as long as such branches of civil engineering as bridge building, road construction and laying down of canals. Dams represent some of the most impressive achievements of engineering over the centuries. Dams were built to supply water to towns and cities, to irrigate dry lands, to provide a source of power and to control floods.

In antiquity Romans built very big dams many of which lasted for a very long time. It was a result of their better methods of construction based on better materials, especially hydraulic mortar and concrete. Moreover, great attention was paid to hydraulic problems to ensure that the water could not percolate through the dams and that when it overflowed them, spillways were provided.

Урок № 8-15. Тема 21. Проблемы загрязнения окружающей среды в ходе строительства и эксплуатации инженерных сооружений.

The creation of the necessary environment for human existence, its character and comfortability determined by the level of social development, culture, scientific and technical achievements have always been the main purpose of construction.

The main branch of economic and social city development determines a significant increase in the volume of capital construction, since the housing is followed by the construction of public buildings, schools, cafes, beauty shops, dry-cleaning and so on.

The cutback's of spending in footing and foundations in the total costs of the constructions can give a significant money and material saving. Nonetheless it is very important to make an attempt to decrease these expenditures without a decrease in house safety that is to avoid the unreliable and non-durable house construction, that can cause a partial or complete house destruction.

Monolithic reinforced concrete designs are widely used in modern construction engineering. The works connected with concrete are still contain a lot of hard and time-taking processes. Lately have many technical designs appeared, that tend to decrease work time-taking and to increase the quality of the monolithic constructions. Monolithic housing constructed of concrete give more expression to city districts and make it possible to reduce the construction costs for 10-15 percents.

The negative results of human activities caused the changes that have acquired global character and have made a threat for breaking the nature equilibrium. It can lead to the obstacles for future social development.

Buildings influence the environment greatly. Their appearance results in significant changes in the air, water and soil at the construction site. It leads to the appearance artificially planted trees instead of the natural plantings. The evaporation regime also changes. The average temperature at the construction site is higher in the comparison with other areas.

Ill-conceived technologies, organization and the work it self determine large energy and material spending and a high level of air, water and soil pollution. The process of construction is comparatively short. The interaction of buildings or constructions and the environment, its character and results are determined by a long-term operation. It brings the importance of this operation in terms of ecological characteristic of the construction, i.e. its influence on the ecological situation as a result of its long operation.

When designing new projects it is very important to take into account the ecological results of decision making. The ecological approach should determine the house planning, construction and operation.

So the future of our civilization is in our hands.

Pollution

The British, like many other Europeans, are becoming more and more worried (беспокоиться) about their environment. Here are some of the environmental problems that they face. As the population of large cities like London, Birmingham and Manchester continues to grow, pollution problems become worse. The air in many towns and cities is being polluted by traffic (транспорт, движение) and industry. The number of cars and lorries is growing all the time. On the one hand, they bring mobility to millions of people, but on the other hand, they need bigger, better and more expensive roads, which often ruin the countryside (сельская местность). Traffic in cities is getting worse and worse. Water pollution has become a serious problem in many British rivers. People living near airports suffer from the noise of increasingly larger and more powerful jet airliners taking off and landing.

Прочитайте текст. Расскажите по-английски о результатах исследования, проведенного Всемирной организацией здравоохранения.

Ecological Problems of Big Cities

There are over 150 supercities in the world with population from one to 15 million and more. Tokyo, New York, London, Mexico City, Rio de Janeiro and Moscow are just a few of the cities which have become supercities.

People in the supercities suffer from polluted environment: bad water, bad air and noise. A new term, urban (городской) climate, is used now for such cities. It means high temperature, oppressive atmosphere and intensive smog.

Some experts consider that it is practically impossible to protect the big cities from pollution. The World Health Organization (WHO) studied air pollution around the world for over eight years. It measured two things: the level of sulphur dioxide (SO₂) in the air and the level of smoke. Sulphur dioxide and smoke pollute water and have serious effect on forest, buildings and health of people.

In the WHO report it is shown that the cities with the most considerable level of CO₂ in the air are Milan, Teheran, Prague, Santiago and Sao Paulo. However, some cities with clean air get worse in winter. Helsinki, for example, becomes one of the cities with the largest proportion of it in the air in winter. This must be connected with the heating of houses. One can also mention (упоминать) Glasgow and Warsaw which suffer in the same way.

4 КУРС 8 СЕМЕСТР

Урок №1-4. Тема 23. Поиск работы, Трудоустройство.

Supporting Documents for a Job Application

Documents You May Need to Submit With a Job Application.

When you're applying for a job, an employer may want more information than just a copy of your resume and cover letter. The company may request what is known as "supporting documentation" to complete your application. Knowing what to include and how to include it will help you stay in the running for the role.

What Are Supporting Documents?

Supporting documentation for a job application can include a resume, a cover letter, educational transcripts, writing samples, Veterans' Preference documents, portfolios, certifications, a reference list, letters of recommendation, and other documentation as specified in the job posting. The information that is required varies depending on the job and the employer's hiring requirements.

Curriculum Vitae (CV)

Samples and Writing Tips

When applying for certain positions in the US, as well as jobs internationally, you may be required to submit a curriculum vitae rather than a resume. A curriculum vitae, or CV, includes more information than your typical resume, including details of your education and academic achievements, research, publications, awards, affiliations, and more.

What to Include in a Curriculum Vitae

A curriculum vitae, commonly referred to as a "CV," is a longer (two or more pages), more detailed synopsis than a resume. Your CV should be clear, concise, complete, and up-to-date with current employment and educational information.

The following are examples of information that can be included in your curriculum vitae. The elements that you include will depend on what you are applying for, so be sure to incorporate the most relevant information to support your candidacy in your CV.

- **Personal details and contact information.** Most CVs start with contact information and personal data but take care to avoid superfluous details, such as religious affiliation, children's names, and so on.
- **Education and qualifications.** Be sure to include the names of institutions and dates attended in reverse order: Ph.D., Masters, Undergraduate.
- **Work experience/employment history.** The most widely accepted style of employment record is the chronological curriculum vitae. Your career history is presented in reverse date order starting with the most recent appointment. More emphasis/information should be placed on your most recent jobs.
- **Skills.** Include computer skills, foreign language skills, and any other recent training that is relevant to the role applied for.
- Training / GraduateFieldwork / StudyAbroad
- Dissertations / Theses
- Researchexperience
- Teachingexperience
- Publications
- Presentations, lectures, andexhibitions
- Grants, scholarships, fellowships, andassistantships
- Awardsandhonors
- Technical, computer, andlanguageskills
- Professionallicenses, certifications, andmemberships

How to Write A Cover Letter

The cover letter is a tool to help introduce yourself in a memorable, personal way during a job application.

A well-crafted cover letter goes over information on your resume and expands this information for the reader, taking them on a guided journey of some of your greatest career and life achievements.

When starting to write any cover letter, it is always best to plan the content of your letter based on the requirements of the job you're applying for.

What is a Cover Letter?

Your resume is intended to lay out the facts, but your cover letter is meant to convey more personality. The cover letter is your first introduction to the person who may hire you, and its goal should be to make you as memorable as possible, in a good way.

That means writing a unique cover letter for every job you apply to. No templates. No pre-written nonsense. The format of your cover letter should also match the company and the industry you're applying to.

There is no "official format" for your cover letter or the information you include in it, but your cover letter should be visually organized, and orderly in its presentation of information.

What to Include in Your Cover Letter?

You shouldn't try to fit your whole career and life into the space of a cover letter.

Your cover letter should be a carefully curated selection of stories from your career that gives the reader a clear idea of who you are and how you can add value to their company.

The Society for Human Resources surveyed organizations on resumes, cover letters, and interviews and found the top three things that must be included in a cover letter are:

- How a candidate's work experience meets job requirements.
- How a candidate's skills meet job requirements.
- Why a candidate wants to work at the organization.

Your cover letter needs to provide this information and leave the reader convinced that you are the right person for the job.

To accomplish this, you should be using the requirements of the job to dictate the content of your cover letter and following these best practices.

Show how you can solve *specific* problems

Saying you're a 'problem-solver' is about as helpful as explaining your preference for chocolate croissants over regular croissants. Don't tell them about your amazing problem-solving skills. Explain the details of a particular problem you were key in solving and how exactly you employed your skills to solve it. Better yet, if you know the company has a particular problem you could help solve, outline how you can help solve it.

Pick an appropriate voice and tone

You should write like yourself, but you should also pick the appropriate voice and tone for the company you're applying to.

Researching the company will help dictate the tone you want to use, which may differ greatly, depending on where you apply. For example, the tone of your letter for a legal consulting firm will likely differ from a tech startup.

Tell your story

Telling stories from your career is a great way to demonstrate your skills and give hiring managers some insight into your personality and work style.

When looking for the right stories to tell, always look to the requirements for the position in the job description.

It is also helpful to research the company further online to get a sense for the company's culture. Before drafting your cover letter, compare your skills with the requirements for the position.

It can be helpful to use Venn diagrams to brainstorm and find what competencies you want to highlight and what specific experiences you want to share. After you create this diagram and identify what falls into both circles, overlapping subjects will direct and inspire the content of your cover letter.

Honesty is the only policy

Dishonesty on your cover letter isn't in your best interest.

Implying or stating that you have a skill that you don't actually have will come back to bite you upon being asked to use that skill in the interview or on the job.

Vocabulary

- ComputerEngineer – инженер / специалист по вычислительной технике
- SoftwareEngineer – инженер-программист, разработчик программного обеспечения
- softwareengineering – проектирование программного обеспечения
- develop – развивать, разрабатывать
- currentrelease – текущая версия
- design – план, проект / планировать, проектировать
- showcaseproduct – презентовать, представлять продукт
- bootcamp – учебный лагерь, начальная учебная программа
- advanced – передовой, продвинутый
- programminglanguage – язык программирования
- setup – установить, настроить
- developmentenvironment – среда разработок, среда проектирования
- Engine – движок, ядро
- multithreaded – многопоточный
- Chapter – здесь: землячество, студенческое сообщество
- Fraternity – братство, студенческая организация
- varsity – студенческая спортивная команда

Exercise 1. Read the example of CV below and write your own version of CV for job application.

FirstNameLastName

Street

City, State, Zip

(555) 555-5555

name@email.com

OBJECTIVE

Computer Engineer / Programmer

EXPERIENCE

Computer Company, Software Engineer

August '03 – present

Software Engineer on Company Soft Manager. Duties include developing current release using C++ and Java, assisting in design of next release (J2EE), traveling to standard meetings at SNIA to represent Company Soft Manager and semi-annual consumer conference to showcase product, and working closely with new developers in India Tech Center.

Computer Company Training Program

June '03 – August '03

Member of the Computer Company Bootcamp program, an intensive 3 month training program for choice software engineers. The three month program covered advanced topics in software engineering, SQL, C++, J2EE, XML, Windows 2000 Server, Unix, UML, and various Company products.

Consultant

January '03 – June '03

Consultant for high school in the outer Boston area. Tutored the programming instructors for the programming class in the Java programming language. Helped to set up development environment for the classroom.

Company Inc, Software Engineer

January '01 – September '01

Developer on the Company engine team. Worked on new functionality in the 7.0 release of the Company Dynamic Engine. Developed in C++ in Unix and Windows Visual Studio. Also worked on a solo project to add multithreaded capabilities to Company's engines.

TECHNICAL

- Languages: C++, Java, C, ASP.NET, SQL
- Applications: MS VisualStudio, Eclipse
- ApplicationServer: JBoss, Tomcat
- OperatingSystems: Windows, Unix, Linux
- DatabaseSystems: SQL Server, MySQL
- Certifications: CCNA, UnicenterCertifiedEngineer

EDUCATION

ABC College, Troy, NY, May 2002

Major: Computer Science, Minor: Management

ACTIVITIES

Brother of Delta Chapter Fraternity

— President (January 2001 – May 2002)

— Scholarship winner at Delta Leadership Conference

Member of College Varsity football team (Sept. 1998 – Dec. 2000)

Exercise 2. Using phrases below write your own resume for job application as a financial analyst.

- *An ambitious financial analyst with three years of work experience seeks a challenging position in financial reporting market to help you improve your business through the excellent financial analysis.*
- *Confident professional with a diversified four years work experience in tax accounting in growing public accounting enterprise, seeks a tax manager's position.*
- *Young, enthusiastic management accounting degree holder, willing to relocate, seeks a management accountant position for offering expertise to the firm in capital budgeting and line of business analysis.*
- *Dynamic financial accountant with six years of expertise in M&A, long term financial projections and company law seeks a challenging position in a corporate firm.*
- *With a goal to help the firm achieve its financial objectives, a chartered accountant with 10 years of work experience seeks a managerial position in strategic planning and decision making department of the firm.*
- *A motivated fresher seeks a data entry position in an accounting firm where skills of spreadsheet development, troubleshooting and accounting knowledge can be utilized to boost company's profitability.*
- *With a work experience of two years, I wish to offer my skills in payroll/accounting to a mid or large size firm, thereby aiming to help the company to meet its financial objectives.*

Урок № 3-5. Тема 2. Деловая документация

Деловой английский как путь к успеху современного специалиста

The dynamic social and economic changes of the modern society define the main personal and professional qualities and skills of the young specialist.

We think, that the course of "Business English" gives us the great possibility to master all the necessary professional qualities and skills of the modern specialist.

It is known that Business English and, more widely, business communication are relatively new spheres for those who learn English. We consider, that these subjects have become increasingly interesting as for the students and as for the teachers of English over the past years with the invention of market economy and the social and cultural changes in all over the world. More and more frequently people from different spheres of activity would like to get a better idea of the business world and the English used for business purposes. We understand that it is rather difficult to master these fairly new and rather complicated subjects but it is necessary for us as for the young specialists and it is possible working step by step.

We know that English is a means of human communication in speech and writing; it is also a living and constantly changing entity. Over the past several decades, English has acquired a global presence. It is a preferred and increasingly accepted means of international and intercultural communication. It is the language of politics and diplomacy, the language of science and modern informational technologies and more important for the present course of lectures, the language used in business contexts.

The Dictionary of General Business English Terminology defines the term business in the phrase the world of business. Business means a person, firm, company or other organization which makes or produces a product, buys and sells goods or provides some kind of service. For the purpose of making a profit; trading generally; the practice of commerce. A standard definition reads as follows: Business English is the language used in business contexts.

The course "Business English" that we have in our university contains the following blocks: Socializing and Telephoning Business correspondence Business documents and contracts Business meetings Presentations Negotiating and the Media. While learning them we get the basis and essence of business and the skills of writing a good resume, summary of our background.

The course "Business English" gives the opportunity to study professional and union newsletters, magazines, and other economical publications and lets us get the skills which can improve our chances for employment.

What is a **Business Document**?

The document (from Latin documentum is "a sample, the certificate, the proof") is the material object which containing some information in the recorded form (look) and has been specially intended for its transfer in time and space.

The official definition in the legislation of Russia:

The document is the material carrier with recorded on it in any form information (a text, a sound recording, the image and (or) their combination) which has the requisites, allowing to identify it, and it is intended for transfer in time and space for public use and storage

- The federal law No. 77-FZ "About an obligatory copy of documents.

Official Business Documents are characteristic of those people working in business: an executive, a department manager, or a specialist in business and technology. But also many people must learn and can write them: fill out the Customs Declaration, write Power of Attorney, Visa Application Form, and complete an International Pet Passport and so on. The first kind of letters may be Business Contracts.

There are three stages of transactions involving business contracts: first — negotiation of terms, second - drafting documents reflecting these terms, and third — litigation to enforce or to avoid executing of these terms.

Nowadays more and more agreements are made in English, for English is a universal business language. Joint ventures, bank loans, and trademark licenses are frequently written in English

Read, translate and discuss the text. Make use of the vocabulary notes.

Contracts and their features

Contract is an agreement between the parties involved that creates a binding obligation. In general, contracts may be either oral or written. Certain classes of contracts must be written and signed. These are contracts involving the sale and transfer of real estate, and contracts to guarantee or answer for the miscarriage, debt, or default of another person. A contract forms the basis of a transaction between the Buyers and the Sellers.

Essential clauses of contract

Some of the items are necessary in any contract: legal title of the contracting parties, subject of the contract, quality, price, delivery and payment terms. As a rule a contract contains a number of clauses, such as:

Subject of the Contract.

Quality and Price of goods.

Terms of Payment.

Delivery.

Inspection and Test.

Guarantee.

Packing and Marking.

Arbitration.

Transport.

Insurance and other conditions.

Subject of contract

This section names the product for sale or purchase. It also indicates the unit of measure generally employed in foreign trade for specific commodities. Contracts for bulk cargo contain a stipulation «about» or «plus or minus... per cent», denoting the permitted quantity tolerance.

Quality and Price of goods

The quality of machines and equipment is to be in conformity with the technical specification of the contract. The quality of raw materials and foodstuffs is determined, as a rule, by standards, by sample or by description. The price stated in a contract may be firm, fixed or sliding.

Firm price. Firm prices are not subject to change in the course of the fulfillment of the contract.

Fixed price. It is the price governing in the market on the day of delivery or for a given period.

Sliding prices. These prices are quoted for machinery and equipment which require a long period of delivery.

Arbitration

In case of a breach of contract the injured party may go to court to sue for money damages, or for the contract to be rescinded, for injunction, or for specific performance if money damages would not compensate for the breach. Specific performance of a contract is the right by one contracting party to have the other contracting party perform the contract according to the precise terms agreed therein.

Answer the questions:

1. Why are standard contracts widely used?
2. What are the essential items of a contract?
3. What information is contained in different sections of a contract?
4. How is quality determined in the contract?
5. What sort of prices may be indicated in a contract?

Payment

A cheque is a written order to a Bank given and signed by someone who has money deposited there to pay a certain amount mentioned in the cheque to a person named on it. In the place of the chequesystem Banks provide an international system of Bank Transfers. The Seller gives TT or mail remittance terms to a Buyer when he is a trusted customer or agent. It involves risk as the Seller ships goods without any assurance of getting payment

Правила деловых переговоров

Negotiations are complex because one is dealing with both facts and people. It is clear that negotiators above all must have a good understanding of a subject. They must be aware of the company's general policy, initial bargaining position as well as fallback position.

However, awareness of these facts may not necessarily suffice to reach the agreement. The role of human factor must be taken into account. The approach and strategy in negotiations are influenced by cool, clear logical analyses. But the personal needs of the actors must therefore be considered. These needs might include the need for friendship, goodwill, credibility, recognition of status and authority, a desire to be appreciated and promoted as well as the need to get home earlier on Friday evening.

Researches, who have studied negotiations, recommend separate people from facts. Moreover, while negotiations indirect and impersonal forms should be used. Furthermore, a really tough negotiator should be hard on the facts but soft on the people.

Language also varies according to negotiating style adopted: it can be either a co-operative or a competitive mode. Cooperative style is based on win-win principles when both parties want to benefit from the deal. This style is often accepted within one company or between companies with longstanding relations when common goals are being pursued. Competitive negotiation style can be appropriate for one-off contracts when the aim is to get the best results possible without considering future relations and risks of the breakdown of negotiations. Moreover, the language can become hostile and threatening.

In reality negotiations are a complex mode of co-operative and competitive styles. Negotiating successfully implies dealing with four main components of negotiations: people, facts, co-operation and competition.

Business Documents

A company uses documents to communicate, transact business and analyze its productivity. Business documents range from brief email messages to complex legal agreements. Some documents are prepared by employees and business owners, while others are drafted by professionals from outside of the company, such as accountants and lawyers. Since documents provide proof of an organization's dealings and may be referred to for years to come, it is important that they be well written.

Emails and Memorandums

Co-workers typically use email to convey information to each other. Before email became prevalent, memorandums were used for intraoffice messages. Memos are still used in situations where a message is meant to accompany a specific file and in cases that require more privacy than an email.

Business Letters for Outside Communication

Business letters are used to communicate with individuals outside of the office. Recipients may include customers, colleagues in other businesses, service providers, professionals who advise the business, government officials and job applicants. A business letter is usually formatted in block style, in which all of the elements of the letter, except the letterhead, are aligned with the left margin.

It can be emailed or delivered by mail. If a letter is sent in the text of an email, the sender includes his name, job title and contact information at the bottom of the email.

Business Reports for Conveying Information

Business reports convey information in a format that is more formal and usually longer than a letter. Reports cover a variety of topics, such as safety compliance, sales figures, financial data,

feasibility studies and marketing plans. They may include statistics, charts, graphs, images, case studies and survey results. Some reports are published for the benefit of investors. If a report is periodic, such as a monthly sales report, a template is used for convenience and to enable comparison with previous reports.

Transactional Documents to Conduct Business with Clients

A company uses documents to transact business with its clients. To save time, these documents may be formatted as a form, such as an order form, transmittal page, invoice or receipt. The types of transactional documents used vary somewhat by the nature of a business. An insurance agent, for example, generates insurance applications and policies, while a lender uses loan applications and mortgage documents.

In some fields, businesses enter into agreements and contracts with others; these documents might be drafted by the company's lawyer.

Financial Documents to Manage the Business

A business uses financial documents to stay within its budget, prepare budget proposals and file tax returns. These documents include receipt records, payroll reports, paid bills, bank statements, income statements, balance sheets and tax reporting forms. These documents may be prepared by the company's accountant.

A business owner uses these documents to determine the financial success of the company and to identify areas that are unproductive. A department head might use financial documents to prepare a budget proposal.

Урок № 8-10. Тема 25. Современный офис в строительной сфере

The Profession of a Builder

When you entered the college you became a student. Now you are a student and you enter the profession of a builder. What do you know about your future profession?

1. Translate the following phrases into English:

Профессия строитель, важная и полезная профессия, хорошо оплачиваемая профессия, я приобретаю нужную и хорошо оплачиваемую профессию, необходимые современные удобства, необходимые жилищные условия, необходимые новые методы строительства, важная жилищная проблема, стараться переехать в квартиру, стараться переехать в свой дом, обеспечивать людей квартирами, обеспечивать людей жильем, обеспечивать людей домами, решать жилищную проблему, применять новые методы строительства, применять новые строительные материалы, иметь необходимые современные удобства в квартире.

My Future Profession

I study at the Yuryevets Agricultural College. I am a full-time, second year student. I study in the building department. I want to be a builder. I have chosen this profession because it is very useful, important, noble and interesting in my opinion. That is why I try to do my best to gain more knowledge in the line and working habits. The main task of a construction is to solve housing problem, in another words, to supply people with comfortable apartments and modern conveniences. Nowadays new apartments are very expensive and not many people can afford moving to new flats with improved housing conditions. The raising of all kinds of construction must meet the demands of people in apartments. To solve this problem it is necessary not only to apply new methods of construction but to produce modern building materials. The most commonly used building materials are divided into natural and artificial building materials. The main artificial building materials are cement, concrete, plastics, brick. The main natural building materials are stone, sand, lime, timber and clay.

I. Make the plan of the text.

II. Discuss the text:

1. Where do you study?
2. What year and departments are you in?
3. What do you want to be?
4. Why have you chosen this profession?
5. What is the main task of a construction?
6. What must meet the demand of people?
7. What is necessary to do to solve a housing problem?
8. Into what groups are building materials divided?
9. What are the main natural building materials?
10. What are the main artificial building materials?

III. Say:

- a) why the profession of a builder is useful;
- b) what improved modern conveniences are;
- c) what building materials you know;
- d) how to solve housing problems of people?

Read the text one more time and say:

- a) what building professions are mentioned in it;
- b) what the main tasks have a builder, an architect, a civil engineer, a sanitary engineer;
- c) why the profession of a builder is honorable;
- d) what you must know to become a qualified builder or an architect.

Read the article and find out some information about the Holy Trinity St. Sergius Lavra.

The Holy Trinity St. Sergius Lavra

History

The monastery was founded as Holy Trinity Monastery by Sergius of Radonezh when he, with his brother Stephen, established a cell and a simple chapel to begin lives of ascetic seclusion in the forest wilderness at the Makovets Hill north of Moscow, Russia. They dedicated the chapel to the Holy Trinity. As people learned about him, many came to his isolated cell for guidance. Among these people were other ascetics who built cells near by. In time the number grew to twelve monks and the beginnings of a hermitage was established. In 1355, Sergius produced a charter for the monastery that formed a model for organization of Holy Trinity and was used also by his many disciples who were to found over 400 monastic communities. The charter formed the plan for growth of the monastery that included adding arefectory, kitchen, and bakery.

With the growth and increased fame of Holy Trinity, the influence of Sergius increased as he supported the princes of Moscow. A highlight of this support was Sergius' blessing of Grand Prince Dmitri Donskoy and his forces as Dmitri left to meet and defeat the Tatars in the Battle of Kulikovo in 1380, a battle in which two of Sergius' monks, Peresvet and Oslyabya, accompanied Dmitri into battle.

Sergius died in 1392 just before the Tatars returned and devastated the monastery later in the year. Again in 1408 the monastery was attacked and burned during the campaign of the Tatar Khan Edigei against Moscow. The Abbot Nikon found the relics of Sergius miraculously preserved in the ruins of the monastery when he began rebuilding. Abbot Nikon built a wooden church in which the relics of Sergius were placed.

After each attack Abbot Nikon led the rebuilding of the monastery. In 1422, the same year that Sergius was declared the patron saint of the Moscovite Russian state, construction in the Suzdal-Vladimir style of a stone cathedral began. The builders were a team of Serbian monks who had taken refuge in Holy Trinity after the Battle of Kosovo in Serbia. The cathedral, which replaced the Church of St. Sergius over which it was built, was dedicated to the Holy Trinity. The relics of St. Sergius are kept in this cathedral. Andrei Rublev and DaniilChyorny, the great iconographers of the day, took part in decorating Holy Trinity Cathedral with frescos.

In time, the tradition arose for the Moscow royalty to be baptized in the cathedral as well as holding thanksgiving services. With donations from the nobles, the monastery became very rich, even to maintaining an army of 20,000. It owned about one hundred estates that were worked by over 106,000 serfs. However, the right to own such property was taken from the monastery in 1764.

The Church of the Descent of the Holy Spirit (Dukhovsky) was commissioned by Ivan III in 1476. This church, built by artisans from Pskov, is one of the remaining examples in Russia of a church with a belltower on top of it. The Church of St. Nikon, commissioned by Basil III, was completed in 1548, a year after Nikon was canonized. At the western wall of the Nikon church a chapel called Serapion's Tent was built over the tomb of St. Serapion, the archbishop of Novgorod.

As the sixteenth century progressed a major cathedral, modeled after the Dormition Cathedral in the Moscow Kremlin, was commissioned in 1559 by Ivan IV, commonly labeled "the Terrible." Construction of the Uspensky (Dormition) Cathedral took twenty-six years. It was built to commemorate the conquests of Kazan and Astrakhan. The interior, including the iconostasis, was the work of a number of artists: notably Simon Ushakov whose masterpiece icon of the Last Supper adorns the iconostasis and the violet and blue frescos of the interior walls done by Yaroslav masters in 1684.

The wooden walls around the monastery were replaced during the middle of the sixteenth century by thick stone walls. The walls that stretched for 1.5 kilometers were dotted by twelve towers. The strong walls were instrumental in the defense of the monastery during the siege by Polish forces from 1608 to 1610. Again in 1618, Wladyslaw IV besieged Holy Trinity unsuccessfully. Throughout the remainder of the century construction of more structures took place. These included a royal palace ordered by Peter I for his father, Tsar Alexei, that now houses the Theological Academy. In 1686, a refectory/church dedicated to St. Sergius was added that for a while was the largest hall in Russia. The Church of John the Baptist's Nativity was

added in the last decade of the seventeenth century. This church was commissioned by the Stroganov family and was built over one of the gates to the monastery. Also the century witnessed the building of monks' cells, a hospital in 1635, and a chapel over the St. Sergius Well that was discovered in 1644 and from which the faithful draw holy water.

The monastery was favored by Elizabeth, and she commissioned the Church of the Virgin of Smolensk and an 98 meter tall belltower, built between 1741 and 1769 by the architects Ivan Michurin and Dmitri Ukhtomsky. This was then the tallest structure in Russia.

In 1742, a seminary was founded at the monastery. In 1814, the seminary was replaced by the Moscow Academy that was transferred from Moscow to the monastery. Additionally, the monastery supported a number of sketes in SergiyevPosad.

Following the assumption of power by the Bolsheviks in late 1917, the Lavra was closed in 1920 by the new Soviet government, with its buildings being assigned to various governmental institutions. Notwithstanding rescue efforts by Pavel Florensky and his followers, many of the sacramental valuables of the Lavra were lost or transferred to other places during these years. The monastery bells were destroyed in 1930, including the 65 ton Tsar-Bell.

In 1945, the Bolsheviks returned the Holy Trinity Lavra to the remnants of the Orthodox Church that existed within Russia. The return was part of the legalization of the Church in recognition of its efforts in defense of the country during the Nazi invasion of World War II (The Great Patriotic War). The first liturgy at the monastery was conducted on April 16, 1946 in the Dormition Cathedral. The monastery remained the seat for the Patriarch until the patriarchate was allowed the use of Danilov Monastery in Moscow in 1983.

1. Give the summary of the article.
2. Make up 5 questions according to the contents of the article to ask your mates and the teacher.

Урок № 11-13. Тема 26. Строительные профессии и ремесла.

Building Professions and Trades

1. There are many building trades and professions. In fact, they are various and numerous. Each of them is necessary and useful. Read the names of the following building professions and say what of them are:

I. a) dangerous; (опасный)

b) interesting;

c) difficult; (сложный)

d) laborious (трудоемкий)

II. a) you like very much

b) you don't like very much

steel erector арматурщик

steeple-jack верхолаз

bulldozer driver бульдозерист

building surveyor геодезист

work safety engineer инженер по технике безопасности

crane driver крановщик

roofer кровельщик

house-painter маляр

foreman мастер

mechanic механик

assembler монтажник

construction site chief начальник строительства

paper hanger обойщик

parquet floor layer паркетчик

slater плиточник

carpenter плотник

work superintendent прораб

plumber сантехник

welder сварщик

fitter слесарь

glazier стекольщик

joiner столяр

plasterer штукатур

electrician электрик

civil engineer инженер-строитель

sanitary engineer инженер по санитарной технике

architect архитектор

2. Read the names of building professions from the beginning to the end and from the end to beginning, read together with the group and on your own.

3. Introduce yourself according to the model:

How do you do! Let me introduce myself. My name is ...

I am...

4. Act out small dialogue in pairs:

- How do you do! Let me introduce myself. My name is ...

I am a new construction-site chief.

- How do you do. Glad to see you. I am a foreman.

* * *

- Excuse me, are you a foreman?

- No, I am not.

- And what are you?

- I am a house-painter.

* * *

13. Where is the crane driver?

14. He is having a short break for a dinner.

* * *

- I'd like to know what you are busy with?

- We are constructing a building of a new school.

5. Substitute, where possible, some words in the above dialogues into other.

6. Read the dialogue between a foreman and a construction-site chief. What questions does the construction site chief ask the foreman and why? What information does the construction site chief learn from the foreman?

- How do you do! Let me introduce myself. My name is ...

I am a new construction-site chief.

- How do you do. Glad to see you. I am a foreman.

- I'd like to know what you are busy with.

- We are constructing a building of a new school.

- How many floors are there in this building?

- It is a three-storey building. We have already finished it and now we are doing the interior finish of the building.

- All right. What workmen are employed in the construction?

- There are some joiners, carpenters, plasterers, bricklayers, roofers.

- Thank you for the information.

- You are welcome. Will you enter the building with me?

- All right let's go together and you will show me the building.

- Let's.

7. Read the dialogue one more time and try to reproduce the role of the foreman and of the construction site chief correspondingly.

- I -

- How do you do! Let me introduce myself. My name is ...

I am a new construction-site chief.

- Здравствуйте. Рад Вас видеть. Я – мастер.

- I'd like to know what you are busy with.

- Мы строим здание новой школы.

- How many floors are there in this building?

- Это трехэтажное здание. Мы его уже закончили , и сейчас мы выполняем отделку интерьера здания.

- All right. What workmen are employed in the construction?

- Есть несколько столяров, плотников, штукатуров, каменщиков, кровельщиков.

- Thank you for the information.

- Пожалуйста. Пожалуйста, пройдемте со мной внутрь здания.

- All right let's go together and you will show me the building.

- Давайте.

1. II -

- Здравствуйте. Разрешите представиться. Меня зовут ... Я новый начальник строительства.

- How do you do. Glad to see you. I am a foreman.

- Хотелось бы знать, чем вы заняты.

- We are constructing a building of a new school.

- Сколько этажей в здании?

- It is a three-storey building. We have already finished it and now we are doing the interior finish of the building.

- Хорошо. Какие рабочие заняты в строительстве?
- There are some joiners, carpenters, plasterers, bricklayers, roofers.
- Спасибо за информацию.
- You are welcome. Will you enter the building with me?
- Ладно. Давайте зайдём вместе и вы покажете мне здание.
- Let's.

- III -

- Здравствуйте. Разрешите представиться. Меня зовут ... Я новый начальник строительства.
- Здравствуйте. Рад Вас видеть. Я – мастер.
- Хотелось бы знать, чем вы заняты.
- Мы строим здание новой школы.
- Сколько этажей в здании?
- Это трехэтажное здание. Мы его уже закончили, и сейчас мы выполняем отделку интерьера здания.
- Хорошо. Какие рабочие заняты в строительстве?
- Есть несколько столяров, плотников, штукатуров, каменщиков, кровельщиков.
- Спасибо за информацию.
- Пожалуйста. Пожалуйста, пройдемте со мной внутрь здания.
- Ладно. Давайте зайдём вместе и вы покажете мне здание.
- Давайте.

Home Reading

8. Read and translate the text about the famous British architect.

Sir Christopher Wren (1632 - 1723)

Christopher Wren by Sir Godfrey Kneller.

Wren was an English scientist and mathematician and one of Britain's most distinguished architects, best known for the design of many London churches, including St Paul's Cathedral.

Christopher Wren was born on 20 October 1632 in East Knoyle, Wiltshire, where his father was rector. His father later moved to Windsor and Wren was educated at Westminster School and then Oxford University. He showed an early talent for mathematics and enjoyed inventing things, including an instrument for writing in the dark and a pneumatic machine. In 1657, Wren was appointed professor of astronomy at Gresham College in London and four years later, professor of astronomy at Oxford. In 1662, he was one of the founding members of the Royal Society, along with other mathematicians, scientists and scholars, many of whom were his friends.

Wren's interest in architecture developed from his study of physics and engineering. In 1664 and 1665, Wren was commissioned to design the Sheldonian Theatre in Oxford and a chapel for Pembroke College, Cambridge and from then on, architecture was his main focus. In 1665, Wren visited Paris, where he was strongly influenced by French and Italian baroque styles.

In 1666, the Great Fire of London destroyed much of the medieval city, providing a huge opportunity for Wren. He produced ambitious plans for rebuilding the whole area but they were rejected, partly because property owners insisted on keeping the sites of their destroyed buildings. Wren did design 51 new city churches, as well as the new St Paul's Cathedral. In 1669, he was appointed surveyor of the royal works which effectively gave him control of all government building in the country. He was knighted in 1673.

In 1675, Wren was commissioned to design the Royal Observatory at Greenwich. In 1682, he received another royal commission, to design a hospital in Chelsea for retired soldiers, and in 1696 a hospital for sailors in Greenwich. Other buildings include Trinity College Library in Cambridge (1677 - 1692), and the facade of Hampton Court Palace (1689 - 1694). Wren often

worked with the same team of craftsmen, including master plasterer John Groves and wood carver Grinling Gibbons

Wren died on 25 February 1723. His gravestone in St Paul's Cathedral features the Latin inscription which translates as: 'If you seek his memorial, look about you.'

Cultural Note

St Paul's Cathedral

From Wikipedia, the free encyclopedia

This article is about the cathedral church of the diocese of London. For other cathedrals consecrated to Saint Paul, see Cathedral of Saint Paul (disambiguation).

St Paul's Cathedral is an Anglican cathedral on Ludgate Hill, the highest point in the City of London, England, and is the seat of the Bishop of London. The present building dates from the 17th century and was designed by Sir Christopher Wren. It is generally reckoned to be London's fifth St Paul's Cathedral, all having been built on the same site since AD 604. The cathedral is one of London's most famous and most recognisable sights. At 365 feet (111m) high, it was the tallest building in London from 1710 to 1962, and its dome is also among the highest in the world.

Important services held at St. Paul's include the funerals of Lord Nelson, the Duke of Wellington and Sir Winston Churchill; Jubilee celebrations for Queen Victoria; peace services marking the end of the First and Second World Wars; the launch of the Festival of Britain and the thanksgiving services for both the Golden Jubilee and 80th Birthday of Her Majesty the Queen. The Royal Family holds most of its important marriages, christenings and funerals at Westminster Abbey, but St Paul's was used for the marriage of Charles, Prince of Wales and Lady Diana Spencer. The religious service for Queen Victoria's Diamond Jubilee was also celebrated there. St Paul's Cathedral is still a busy working church, with hourly prayer and daily services.