МІНІСТЕРСТВО ОСВІТИ І НАУКИ УКРАЇНИ
Український державний морський технічний університет
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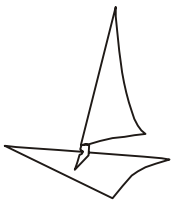
FOCUS ON DESIGN

Part One
ARCHITECTURE

Рекомендовано Методичною радою УДМТУ
як навчальний посібник



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Рекомендовано Методичною радою УДМТУ як навчальний посібник

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Посібник призначено для студентів 2-го курсу спеціальності 6.020200 – Дизайн і має головною метою формування системи знань (лексика і граматика) для читання спеціальної літератури та розвинення навичок усного та письмового мовлення на англійській мові.

Робота з посібником допоможе майбутнім фахівцям познайомитися з добутками світової культури і дасть можливість розвинути навички критичного мислення.

Посібник містить англо-україно-російський словник та додаток (Supplement) з ілюстраціями.

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ARCHITECTURE

Architecture in general is frozen music.
F. von Schelling

1. Warm-up discussion

1. What do you think about the buildings (functions, beauty)?
2. What is architecture: art or profession?
3. What differs architecture from painting and sculpture?
4. What do you know about the history of architecture?
5. What famous architects do you know?
6. What architectural styles do you know?
7. What is more important: functionality and durability or beauty?
8. What architectural masterpieces do you know?
9. Why do you think they are masterpieces?
10. Describe them.

2. Study the following words and word combinations and distribute them into the following groups: the names of professions; the types of structure; the components of structures; the elements of attractive and effective structures:

air conditioning	arch	archway
appearance	architect	artist

brickwork	functional	shape
building	harmony	space
cathedral	hospital	sphere
craftworker	hotel	square
design	house	stadium
doorway	house of worship	strong
drawing	office	structure
durability	opening	temple
factory	plane	theater
floor	proportion	tower
foundation	rectangle	wall
function	school	window

3. Read the texts and find the words that denote different professions in architecture, actions these people do, what they do, how other people see what they do, what a building is, what materials are used.

Architecture. The art and the profession

An empty house is like a stray dog
or a body from which life has departed.
S. Butler

Architecture is the art and profession of designing buildings.

Architects design many kinds of structures. For instance, they design houses, schools, hotels, hospitals, stadiums, factories, office buildings, theaters, and houses of worship. Architects also design monuments dedicated to the memory of important events and people. The beauty of a city or town is the quality of its architecture.

Although architecture has artistic qualities, it also has a number of important practical uses. For example, an architect may design an office building that looks beautiful. But if people cannot work comfortably and efficiently in it, the building fails architecturally.

Unlike some other artists, architects must work with other people to produce their designs. Almost all architects design a building for a client and must consider the client's wishes and needs in creating the design.

Architects work closely with the client throughout the development of a building design. They decide how best to fulfill the client's requirements and give advice on probable costs. They make drawings and models that

show the building will look after it is completed. The also work with many different types of contractors who actually build the structure. Architects supervise the construction of the building and, in many cases, receive a parcentage of the construction budget.

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Architecture is one of the oldest art forms. It dates from prehistoric times and is found in almost all societies. A society's architecture reflects the values and ideals of its people. For example, the ancient Greeks stressed discipline and harmony in life, and so they created an archectual style that was balanced and orderly. The beautifully proportioned Greek temple reflects this emphasis on harmonious design. The Middle Ages was a period of deep religious faith in Europe. Architects designed majestic cathedrals with arches and towers that seemed to soar toward heaven. Like the Greek temple, the medieval cathedral was intended to inspire a mood of reverence among worshipers.

Architects rank among the greatest figures in the history of art. But many architectural masterpieces were designed by skilled craftworkers who were not professional architects. These people did not consider themselves artists and had no idea that they had created buildings which critics later would praise as important works of architecture. During the 1600's, for example, colonists in the USA built houses that were not primarily designed to be beautiful. Some of these houses have been preserved and are admired today for their skilled carpentry and handsome outlines.

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In designing a building, architects think of space, planes, and openings. They consider a building as space enclosed by planes – that is, by the surface of walls, floors, and ceilings. Openings include doorways, windows, and archways. An architect's basic task is to "shape" space into practical forms through the arrangement of openings and planes. At various times in history, architects have considered certain shapes more beautiful than others and have emphasized them in their designs. The most popular shapes have included the square, rectangle, and sphere. Architects often combine two or more shapes in one design.

A building should be pleasing to look at, but it should also enable people to live or work in it comfortably and efficiently. In addition, the structure should be well built so that it can stand a long time without

expensive maintenance. To create an attractive and efficient building, an architect must balance three major elements: function, appearance, and durability.

Every building is designed for certain purposes. A functional building – whether a small house or a gigantic office building – fulfills those purposes by serving the needs of its users in a pleasant and convenient way. The building is also designed to provide adequate heating, lighting, sources of power, and, in some cases, air conditioning.

Today, energy conservation has become an important consideration in architectural planning. For example, architects may use large windows or even entire walls made of glass to help heat abuilding with solar energy.

Many activities may take place within a building. In a house, such activities include eating, sleeping, bathing, and entertaining. Each activity has different requirements in regard to the location, size, lighting, and accessibility of the rooms in which the activity occurs. For example, a bedroom is a private room and should be set off from the rest of the living spaces. But everyone in a house uses the dining room, and so it should be more centrally located.

An office building has a much more complex arrangement of space than a house. The architect must make sure that hundreds or perhaps thousands of workers can move quickly through the various parts of the building. In addition, visitors should be able to enter and leave the building easily. Parts of the structure may have to house special equipment, and a large amount of storage space may be required. The architect must also consider the activities that take place outside the building. For example, the building may require parking facilities. In addition, the architect may have to plan traffic patterns so that automobiles and other vehicles can approach and leave the building without crossing many lanes of traffic. Driveways must be wide enough for fire trucks to enter, and loading docks must be the proper height for delivery trucks.

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Appearance. An architect determines the exterior appearance of the building not only by its shape but also by the choice of materials. The natural colors of stone, brick, and wood have always been popular, alone or in combinations. During the 1900's, tinted glass has played an important role in exterior building design. Many architects give special attention to

texture in their designs. Some architects choose rough-textured wood or stone. Others prefer the sleek, elegant quality of highly polished glass and metal.

A number of architects have created dramatic or pleasing patterns through the skillful arrangement of materials. For example, architects have used glass and concrete, various combinations of brickwork, or contrasting kinds of stone.

Proportion is vital to a building's appearance. All the parts of a building should be in proper relation to one another, neither too large nor too small. In addition, the size and shape of the building should also blend with its site and surroundings. A tall glass and metal building would be appropriate in the downtown area of a large city, but it would be out of place in a neighborhood of single-family houses.

Durability. Most architecture is intended to stand a long time. To last many years without costly maintenance, a building must have a strong foundation. In addition, the exterior must be able to resist wear from the weather, and high-quality materials must be used in the interior.

4. Write:

– 5 sentences showing what architecture is;
– 5 sentences showing what the duties of an architect are;
– 5 sentences showing the appearance of a building;
– 5 sentences showing the attitude of people to the work of an architect;
– 5 sentences showing the functions of architecture;
– 5 sentences showing the importance of durability.

5. Discuss the following questions:

1. What is architecture: art or profession? Why?
2. What does an architect think when he designs a building: about beauty, glory or functionality, durability and comfort? Why?

6. Tell what you know about the history of architecture.

7. Translate the following derivatives:

comfortable – comfortably
efficient – efficiently

Islam – Islamic
Japan – Japanese
China – Chinese

practice – practical
monument – monumental
architecture – architectural
structure – structural
function – functional
profession – professional

build – builder – building
create – creator – creating
produce – producer – producing
worship – worshiper – worshiping

art – artist – artistic

religion – religious
harmony – harmonious

able – ability
durable – durability
probable – probability

Mesopotamia – Mesopotamian
Persia – Persian
Egypt – Egyptian
Asia – Asian
America – American
India – Indian

create – creation
inspire – inspiration
construct – construction
supervise – supervision
reflect – reflection
inspire – inspiration

8. Read the lists and explain why the words are distributed in the following way:

design
build
produce
work
create
develop
decide
advise
make drawings
make models
construct
fulfill smb.'s requirements
supervise

decorate
reconstruct
influence
support
connect
protect
serve
carve
paint
coat with
curve
provide
surround

artistic qualities
practical uses
efficient work
probable costs
prehistoric times
ancient Greeks
architectural style
harmonious design
religious faith
majestic cathedral
architectural masterpiece
professional architect
skilled carpentry

wall	fortified buildings	coloured brick
ceiling	temple	timber beam
floor	tower	glazed tiles
pylon	public buildings	sliding doors
room	pyramid	lightweight walls
beam	monument	coloured stucco
spire	stone tomb	brick building
colonnade	courtyard	stone wall
arch	chamber	attractive building
door	hall	architectural planning
gate	pagoda	handsome outline
corner	mosque	medieval cathedral
roof	burial	functional building

How could you re-distribute them?

9. Read the texts and find the words that denote the names of the regions where architecture appeared, the names of buildings, the names of materials, the parts of buildings.

Glorious History

Houses are built to live in, and not to look on.
F. Bacon

Early architecture

The first significant architecture appeared in two regions of the Middle East more than 5,000 years ago. One region was Mesopotamia, which lay between and around the Tigris and Euphrates rivers in what is now eastern Iraq, northeastern Syria, and southeastern Turkey. The other region was Egypt. Mesopotamian architecture. Four major culture groups dominated Mesopotamian history. They were the Sumerians, Assyrians, Babylonians and Persians. The history of the region was marked by numerous wars and invasions. Thus, the various cultures constructed many fortified buildings.

Most Mesopotamian buildings were made of brick and clay, which are not highly durable materials. As a result, no complete example of Mesopotamian architecture has survived. However, archaeologists have been able to reconstruct the plans of some buildings. A Sumerian civilization developed in Mesopotamia sometime during the 3000's B.C.

The first important Sumerian structures were temples. An early example was the White Temple (late 3000's B.C.) in the city of Uruk. The temple was made of whitewashed brick. Architects built the temple on a platform at the top of a pyramidlike tower. Such towers are called ziggurafs. During the mid-700's B.C., the Assyrians conquered the region. They built palaces and temples influenced by Sumerian architecture but on a larger and more magnifincent scale.The citadel of King Sargon II, which was built in the city of Khorsabad during the late 700's B.C., was one of the greatest achievements of Assyrian architecture. The citadel stood in the northwest corner of the city and included palaces, temples, public buildings, and a ziggurat. A fortified wall enclosed the city. After the Assyrians fell in the 600's B.C., the Babylonians rose to power. They built a famous tower named in the Bible as the Tower of Babel (early 500's B.C.). Their capital city of Babylon also included the famous Hanging Gardens and the Ishtar Gate, which was decorated with colored glazed brick.

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In 539 B.C., the Persians conquered Mesopotamia. The Persian religion, Zoroastrianism, did not require temples. But the Persians built many palaces, most notably a palace complex in the religious capital of Persepolis. This group of adjoining buildings, which was completed in the mid-400's B.C., consisted of several palace, halls, chambers, and courtyards. The Persian king received visitors in a huge room known as the Hall of One Hundred Columns. This room was 250 feet (76 meters) square with a vast beamed ceiling supported by columns perhaps 60 feet (18 meters) high.

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Egyptian architecture was centered on the king, who was the religious as well as the political ruler of ancient Egypt. The Egyptians considered their kings to be gods, and they built stone tombs, temples, and palaces as monuments to them.

The best-known Egyptian tombs are gigantic pyramids in which the kings were buried. The ruins of 35 major pyramids still stand along the Nile River. Each pyramid was part of a group of structures that commonly included a large temple on the eastern side of the pyramid and a smaller temple near the Nile. A long passage-way connected the two temples. The Egyptians probably considered the king's burial chamber the most sacred part of a pyramid. They blocked off and concealed the entrances to both the pyramid and the chamber after the burial.

The first known Egyptian pyramid was built for King Zoser about 2650 B.C. at Saqqarah. It rises in a series of six giant steps. Three large and well-preserved pyramids were built from about 2600 to 2500 B.C. at Giza for Kings Khufu, Khafre, and Menkaure. These massive works have smooth sides.

A great period of Egyptian architecture began in the 1500's B.C. and lasted for about 500 years. Architects during this time mainly designed temples rather than pyramids. The temples were huge structures supported by columns. Ramps and halls connected the various rooms. People entered most temples through gateways formed by two huge towers called pylons. One masterpiece of the period is the temple built for Queen Hatshepsut at Deir el-Bahri about 1480 B.C. Her subjects erected it along the foot of a huge cliff, vividly uniting architecture with nature.
artist

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Chinese architecture. Chinese architecture began to develop in ancient times. The Chinese constructed a variety of buildings, but the chief structures were Buddhist temples and many-storied towers called pagodas. Chinese temples consisted of rectangular wooden halls that featured an elaborate and beautiful arrangement of timber beams in the ceiling. Walls did not support the roof but served simply as screens for privacy and for protection against the weather. The roof support came from posts connected to the ceiling beams by wooden brackets that were often carved, painted red, and coated with gold. The Chinese covered many of the roofs with blue, green, or yellow glazed tiles. The edges of the roofs curved gracefully upward.

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Japanese architecture has been strongly influenced by Chinese architecture. Thus, traditional Japanese architecture is based mainly on the use of wooden beams and posts. Shinto shrines, which are found throughout Japan, provide an excellent example. Shinto is the native religion of Japan. Shinto shrines are wooden frame structures built on posts that raise the shrine above the ground. Ceiling beams project beyond the walls and give the roofs a deep overhang.

Traditional Japanese houses, whether large or small, have the same design. Upright posts support the roof. Sliding doors are built into the lightweight walls. The interior walls are used to provide privacy rather than support. Many of the houses are set within walled gardens.

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Indian architecture had developed by the 200's B.C. The first great influence on Indian architecture was Buddhism, a major religion in India. Buddhism inspired the building of temples called chaityas, monasteries, and stupas. A stupa is a dome-shaped monument that houses relics of Buddha, who founded the religion in the 500's B.C. Many of the temples were carved from solid rock.

Hinduism and Islam also influenced Indian architecture. Hindu temples have rows of sculptured columns and richly carved exteriors, open porches, and spires. The Muslims conquered India during the 1500's and introduced their style of architecture. The outstanding Islamic building in India is the beautiful Taj Mahal (about 1630-1650) in Agra. Angkor Wat(1100's),agroup of temples in Cambodia, shows the Hindu influence on architecture outside India.

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Islamic architecture. The most important Islamic building is the house of worship called a mosque. The styles of mosques vary among Islamic countries, but most mosques have a large courtyard surrounded by colonnades or arcades. A colonnade is a row of columns, and an arcade is a row of arches built on columns. The mosque walls consist of colored brick, tiles, and stucco. Domes top many mosques. Mosques also have one or more towers known as minarets.

In addition to mosques, Muslim architects have designed palaces, tombs, and religious schools called madrasahs. The typical madrasah is a four-sided building surrounding a courtyard. In most cases, a large arched hall called an iwan is set in the middle of each side of the building. Students hear lectures presented the iwans.

10. Write:

– 5 sentences describing any ancient building;
– 5 words describe what a pyramid is;
– 5 words describe what a Mesopotamian temple is;
– 5 words describe what a pagoda is;
– 5 words describe what a traditional Japanese house is;
– 5 words describe what a Hindu temple is;
– 5 words describe what a mosque is;
– 5 words describe what materials were used by the early architects.

11. Discuss:

1. The greatest architectural achievements were inspired by wars and invasions.
2. They are well-preserved and survived because they were made from durable materials.
3. They were designed for certain purposes.
4. Their appearance was determined by shape, proportion, materials.
5. They appeared to be durable because of their strong foundations.

12. Read the texts and find derivatives to the following words:

	– historical – spiritual – intellectual – regional – architectural	ornament – carve – measure – style – decorate –	

13 . Read the texts and answer the questions:

1. *What are the roots of classical architecture?*
2. *What is typical for Minoan?*
3. *What is typical for Mycenaean?*
4. *What is typical for classical Greek?*
5. *What is typical for Roman architecture?*

Architectural Styles

Architecture is the art of how to waste space.
Ph. Johnson

Classical architecture

The term classical architecture refers to the building styles developed by the ancient Greeks and Romans. However, the roots of classical architecture can be traced to buildings created by two early Greek peoples – the Minoans. Classical Creek architecture greatly influenced Roman architecture.

Minoan architecture. The Minoans developed the first important European civilization. The Minoans lived on the island of Crete in the

Mediterranean Sea. The great age of Minoan architecture lasted from about 2000 to 1450 B.C.

The finest Minoan architectural achievement was the Palace of Minos (about 1500 B.C.) in the town of Knossos. This complex had hundreds of rooms built around a courtyard. Wooden columns supported the beams of the ceiling. Architects divided these beams into three horizontal sections. They were the architrave on the bottom, the frieze in the middle, and the cornice on top. The three sections together are called the entablature. The entablature became a vital part of later Creek architecture. All Minoan palaces served as administrative and commercial centers as well as royal residences.

Mycenaean architecture. The Mycenaeans lived in the city of Mycenae in southern Greece. After about 1600 B.C., they built beautifully cut stone tombs that resemble the shape of beehives. The finest example of a beehive tomb is called the Treasury of Atreus (about 1300-1250 B.C.).

The Mycenaeans constructed fortresslike palaces of huge stone blocks. The heart of the palace was a rectangular royal audience hall known as the megaron. A porch, which was supported by two columns, and a vestibule led to the megaron. The megaron had a hearth in the middle for an open fire. A hole in the ceiling allowed the smoke to escape. Four columns around the hearth supported the roof.

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Classical Greek architecture has been imitated and adapted to the present day. The best-known Greek contribution to architecture was a set of styles, called orders, for columns and their accompanying entablature. The Greeks used three basic orders – Doric, Ionic, and Corinthian. Each of the three orders had its own distinctive decorations.

The principal type of classical Greek building was the temple. Its design followed the plan of the Mycenaean megaron. A Greek temple consisted of arrangements of columns that surrounded a long chamber. The Greeks built many temples on a hill that overlooked a city. Such a hill was known as an acropolis.

The Greeks developed formulas for the various styles of temples. The formulas set forth the order; the number, height, width, and spacing of the columns; and even the details of the smallest carvings. A typical formula was Doric peripteralhexastyle. Doric meant that the building would be erected in the Doric order with standard Doric ornamentation. Peripteral indicated that the building would be surrounded by a single

row of columns. Hexastyle meant that the front entrance, or portico, would be six columns wide. Greek architects used the diameter of the column at its base as the unit of measurement for determining the proportions of the building. This unit is called the module.

In spite of the use of formulas, Greek temple designs had great flexibility and variety. A temple could be low and long or high and short. It might be simple or highly decorative. The number of columns could vary from 2 to more than 100.

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Roman architecture. The Romans ruled the largest empire of ancient times. At its peak, the Roman Empire included all the lands bordering the Mediterranean Sea. It also extended as far north as the British lsles and as far east as the Persian Gulf. Numerous architectural styles were used throughout the empire because many regions had developed their own building traditions. Nevertheless, Roman architecture had a great deal of stylistic unity. The Romans built more kinds of structures than did the people of any earlier civilization. In addition to houses, temples, and palaces, the Romans constructed such projects as aqueducts, public baths, shops, theaters, and gigantic outdoor arenas. Most of these structures were built during a period from about 100 B.C. to the A.D. 300's.

The Romans were the first to fully use two forms of roof design, the arch and the vault. A vault is an arched roof or ceiling. The dome was a common form of vault in Roman architecture. The use of the arch and vault eliminated the need for columns to support the roof. Instead, the roof could rest solely on the outer walls. The Romans used columns simply as sculptural decoration attached to walls.

A splendid example of Roman roof design is the Baths of Caracalla (A.D. 211-217) in the city of Rome. The ruins of the building still stand. The baths had a roofing system of vaults that provided vast areas of interior space. This space was so high and so deep that the Romans admired it as an extraordinary new form of architectural beauty.

Now read the text again and explain:

1. *What is a megaron?*
2. *What is an acropolis?*
3. *What is an arch?*
4. *What is an entablature?*

5. What is a cornice?
6. What is an architrave?
7. What is a portico?

14. Find the odd man – out:

1. Erect, carve, surround, include, overlook, border, decorate, extend, imitate, adapt, skillful, accompany, indicate, determine, measure, consist of, attach, divide.

2. Frieze, cornice, entablature, megaron, basilica, vault, atrium, front entrance, portico, beautiful.

3. Carving, arch, standard, ornamentation, single row of columns, great flexibility and variety, basic orders, distinctive decorations.

4. Aqueducts, public baths, shops, theatres, arenas, doors.

15. Add more words to describe a building of classical style:

to give a feeling of mathematical proportion and harmony, to disapprove, to object to, to admire, to approve, magnificent notable, elaborate, outstanding, brilliant, splendid,wonderful, beautiful, graceful, proportional, extraordinary, decorative, creative, productive, spectacular.

16.Read the following texts and find the words that denote the features of medieval architectural styles (for example, religious buildings: church, monastery, facade, castle, fortress...):

Medieval architecture

Medieval architecture refers to structures built in Europe during the Middle Ages. This historical period lasted from the A.D. 400's to the 1500's. The intellectual and spiritual life of medieval Europe centered on the Christian church, and so nearly all architects designed churches, monasteries, and other religious buildings. Castles, fortresses, and other nonreligious structures were also built.

Medieval architects developed a number of styles. The Byzantine style became dominant in eastern Europe. In western Europe, the leading styles were the Carolingian, the Romanesque, and the Gothic. All four styles were preceded by early Christian architecture from the 300's to the 500's.

Early Christian architecture. During the early centuries of Christianity, a number of regional cultures – and regional architectural styles –

developed in Europe and the Middle East. But almost all early Christian architects borrowed heavily from the Romans and used the arch and vault. They based their chief type of church design, the basilica, on large Roman halls that were used for public meetings.

Old St.Peter's Church (begun about 330) was probably the first important early Christian basilica. It stood on the site of the present St. Peter's Basilica in Rome. Worshipers entered Old St. Peters from the eastern end. To reach the entrance, they passed through a large open countryard called the atrium and a vestibule called the narthex. The atrium and narthex separated the noisy city from the church. The plan of the interior resembled the shape of a T. The vertical part of the T was the nave. Two aisles ran along each side of the nave. The transept formed the arms of the T. A semicircular space called the apse opened from the center of the transept at the western end of the church. The apse, which was covered by a half dome, contained the main altar. In many basilicas, colonnades and arcades separated the interior into a nave and side aisles. The exteriors of most basilicas were plain brick or stone, but the interiors glowed with brilliant mosaics and frescoes. Mosaics consist of small pieces of glass, marble, or stone fitted together to form a picture or design. Frescoes are wall-paintings created on damp plaster.

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Byzantine architecture. In 330, the Roman emperor Constantine the Great moved the capital of the empire from Rome to the city of Byzantium in what is now Turkey. Byzantium was renamed Constantinople. In 395, the Roman Empire split into two parts–the East Roman Empire and the West Roman Empire. The West Roman Empire fell to Germanic tribes in the 400's. The East Roman Empire was called the Byzantine Empire.

By the 500's, a distinct Byzantine style of art had developed. The finest achievement of Byzantine architecture was the great domed cathedral Hagia Sophia (532-537) in Constantinople. It was designed by Anthemius of Tralles and lsidorus of Miletus. The Turks captured Constantinople in 1453 and later renamed the city Istanbul. They converted Hagia Sophia into a mosque. But the only change they made to the exterior of the building was to add four minarets.

Hagia Sophia has a huge central dome that tops a square space. This arrangement became a common feature of Byzantine architecture. Four curved triangles made of brick support the dome. These supports are called pendentives. By using pendentives, the architects could build a higher

and wider dome than had been possible when walls supported the dome. Inside Hagia Sophia, two-story arcades border the nave. Beautiful mosaics decorate the interior. Mosaics were an important decoration in most Byzantine churches.

Other examples of Byzantine architecture include the Basilica of St. Mark (begun in the mid-1000's) in Venice, Italy, and St. Basil's Cathedral (1555-1560) in Moscow.

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Carolingian architecture takes its name from Charlemagne, who was the king of the Franks from 768 to 814. From his capital at what is now Aachen, in western Germany, Charlemagne ruled a vast territory that included most of western Europe.

Charlemagne and his family wanted to revive the culture of early Christian Rome. Carolingian architects claimed that they copied early Christian architecture, but they changed the models to suit their needs. In particular, they made outstanding contributions to church and monastery design. The architects followed the plan of the basilica but added chapels, elaborate tombs, and high towers. They also invented an entrance known as a westwork, which included a porch, chapels, and small towers called turrets. Carolingian monks developed a monastery plan in which cloisters (covered walks) joined the church, library, kitchen, and other facilities.

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Romanesque architecture began in the late 800's and achieved its greatest importance during the 1000's and 1100's. The most significant Romanesque buildings were churches first designed in Italy and then in France, Germany, Spain, and finally England.

Scholars of the 1800's originated the term Romanesque, which means like the Roman. These scholars believed that Romanesque architecture chiefly reflected Roman designs. However, Romanesque architecture actually combined Roman with Byzantine and other styles.

Romanesque churches differed somewhat from country to country, but most of the churches had common features. The typical Romanesque church had thick walls, columns built close together, and heavy curved arches. A tower rose from the roof over the point where the transept crossed the nave. Four large pillars called piers supported the tower. An arcade separated the nave from the side aisles. A gallery called a triforium

was built on the arcade. The clerestory, made up of a row of windows set in arches, topped the triforium.

During the Romanesque period, many people made pilgrimages – that is, journeys to sacred places. Groups of pilgrims traveled throughout Europe and Palestine to visit pilgrimage churches, which housed the bones or possessions of certain saints. Important pilgrimage churches were extremely large to accommodate the many visitors. An example is the huge Church of St. Sernin (about 1080-1120) in Toulouse, France. The church has two aisles on each side of the nave. Small chapels open into the ambulatory, a semicircular aisle enclosing the apse. This plan permitted pilgrims to move through the building along the aisles without disturbing services at the main altar.

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The word Renaissance means rebirth. In European history, it refers to the great rebirth of interest in classical culture, especially that of ancient Rome. Classical culture had been largely ignored during the Middle Ages.

Renaissance architecture started in Italy in the early 1400's, spread throughout Europe during the 1500's, and eventually reached the New World. A group of Italian scholars, many of whom were amateur architects, created Renaissance architecture. These scholars knew classical culture well and considered it superior to the culture of their time. Architects studied Roman ruins and tried to model their designs on classical buildings. They adopted the classical orders as well as Roman and Byzantine vaults, especially domes.

Early Renaissance architecture began during the early 1400's. One of the most famous architects of the new Renaissance style was Filippo Brunelleschi of Florence. Brunelleschi's first great project was the dome (1420-1436) for the Cathedral of Florence. The cathedral was begun in 1296 in the Gothic style of the late Middle Ages. Brunelleschi followed this style in designing the octagonal dome, but he also used a vault techniqu inspired by the Romans. Italians considered the Brunelleschi dome to be the greatest engineering accomplishment of their time.

Brunelleschi also designed other notable structures in Florence. They include the Church of San Lorenzo (begun in 1421), the Pazzi Chapel (begun in 1429), and the Church of Santo Spirito (begun in 1436). The three buildings were not completed until the second half of the 1400's, after Brunelleschi's death. In all of these buildings, the architect revived the classical forms that became basic elements of the Italian Renaissance

style. For example, he used Corinthian columns in the Pazzi Chapel. The chapel has a geometric balance and harmony typical of Renaissance architecture. Leon Battista Alberti was another leading Italian Renaissance architect.

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Later Renaissance architecture. The greatest building project of the later Renaissance was the construction of St. Peter's Basilica in Rome. The project began in 1506, when Pope Julius II decided to destroy Old St. Peter's Church and build a new church on the site. The rebuilding was completed in the late 1600's. Altogether, 10 Italian architects worked on the church during that time. The project's leading architects included Donate Bramante and Michelangelo.

Bramante was the original architect of St. Peters. He designed the structure as a combination of square, circular, and Greek cross forms. A Greek cross has four arms of equal length. Michelangelo designed the great ribbed dome (1588-1591) as a Renaissance version of Brunelleschi's Gothic-style dome on the Cathedral of Florence.

Another great Italian Renaissance architect was Andrea Palladio. During the middle and late 1500's, Palladio designed Roman-inspired villas and palaces that made him one of the most famous architects in history. His Villa Rotonda (begun about 1567) near Vicenza particularly influenced English and American architects of the 1700's.

From Italy, Renaissance architecture spread to France in the early 1500's and then to other European countries. At first, architects in these countries followed Italian models. However, they rapidly developed distinct na-tional styles.

The finest French Renaissance buildings are magnificent chateaux (castles), such as those built at Fontainebleau, Chambord, and Azay-le-Rideau during the early 1500's. In Spain, Juan de Herrera designed much of the Escorial (1563-1584) near Madrid. This enormous building consists of a church, a monastery, a palace, and a college. Inigo Jones produced the most notable early examples of Renaissance architecture in England during the early 1600's. He based his superb Banqueting House (1619-1622) in London on Palladio's designs.

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Gothic architecture flourished in western Europe from the mid-1100's to the 1400's. At first, the word Gothic was a term of disapproval. It was

used by artists and writers of the 1400's and 1500's who wanted to revive the classical architecture of ancient Greece and Rome in Europe. They associated the Gothic style with the Goths, a Germanic people who had destroyed much classical art during the 400's. The artists and writers objected to the complicated and irregular Gothic designs, which differed so greatly from the harmonious classical style. A new system of construction enabled Gothic architects to design churches with thinner walls and lighter piers than was possible in Romanesque churches. Many piers consisted of clusters of columns several stories high. Gothic architects extended the piers into the roof area and then curved out the individual columns like the ribs of an open umbrella. The space between the ribs was filled in with masonry. These ribbed vaults were among the most distinctive characteristics of Gothic architecture. Other common features of the style included pointed arches and the substitution of stained-glass windows for large portions of the walls. Many churches also had flying buttresses, which were' brick or stone arched supports built against the outside walls.

Sculptors carved the figures of saints and heroes of Christianity on church doorways. Medieval Christians believed that in a symbolic sense, these saints and heroes inhabited and strengthened the church building.

Read the text again and answer the following questions:

1. *What styles were developed during the Middle Ages?*
2. *What example of early Christian architecture do you know?*
3. *What are the exteriors of most basilicas?*
4. *What are the interiors of most basilicas?*
5. *What is a mosaic?*
6. *What is a fresco?*
7. *What are the common features of Bysantine architecture?*
8. *What are the common features of Gothic architecture?*

17. Explain the functions of a turret, a nave, a transept, an apse, a chapel, an atrium, a pier, flying buttresses

18. Add more words to describe a building of Medieval style:

1. become, dominant, separate, resemble, contain, add;
2. entrance, west work, porch, chapel, turret, tower;
3. church, courtyard, vestibule, nave, aisle, transept, apse, chapel;
4. atrium cross, altar, collonade, arcade, pier, flying buttresses.

19. Read the following texts and write out the words describing the baroque, rococo and neoclassical styles:

Baroque architecture began in Rome during the late 1500's. By 1600, it had spread throughout Italy and to other parts of Europe. Baroque architects sought to produce highly dramatic effects in their works. The typical baroque building featured curved forms, an extravagant and intricate use of columns, and ornate sculptures and paintings for decoration.

The leading supporters of baroque architecture were the Roman Catholic Church and powerful European monarchs. Church support resulted from the Counter Reformation of the 1500's and 1600's. This movement of renewal within the church stimulated a great outpouring of religious enthusiasm in Catholic countries. Architects designed baroque churches and monasteries that reflected the drama and emotion of this religious spirit. At the same time, strong monarchs wanted architecture that would glorify their reigns. Magnificent baroque palaces expressed the authority of these rulers.

The most spectacular examples of the baroque style appeared in Italy, Austria, Spain, and southern Germany. Gian Lorenzo Bernini, Francesco Borromini, and Guarino Guarini rank as the outstanding baroque architects in Italy. The baroque fascination with columns is reflected in the keyhole-shaped colonnade (begun 1657) that Bernini designed to enclose the courtyard of St. Peters Basilica. Borromini's curves and twisted shapes characterize the famous Church of Sant' Agnese in Piazza Navona (1666) in Rome. One of Guarini's finest designs is the Church of San Lorenzo (1668–1687) in Turin. Johann Bernhard Fischervon Eriach of Austria and Balthasar Neumann of Germany designed many fine baroquechurchesand palaces in their countries. The extremely elaborate Spanish baroque style is often called Churrigueresque. The name comes from three brothers – Alberto, Joaquin, and Jose Churriguera – who were early leaders of the style.

In France and England, the baroque style was far less extreme than it was in other European countries. French and English architects retained the Renaissance square, rectangle, and circle as basic forms of decoration. They designed enormous buildings with simple lines and row after row of columns or windows.

Perhaps the greatest French baroque building is the magnificent

Palace of Versailles (begun about 1661). Its major architects were Louis Le Vau and Jules Hardouin-Mansart. The palace is more than 1/4 mile (0.4 kilometer) long and has about 1,300 rooms.

Sir John Vanbrugh designed the most extravagant English baroque palace, Blenheim Palace (1705-1724) in Oxfordshire. However, the leading English architect of the baroque style was *Sir Christopher Wren*. His design for St. *Paul's Cathedral* (1675-1710) in London is a masterpiece of the style.

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Rococo architecture was the final phase of the baroque style. It developed in France about 1720 and spread to other countries during the next 60 years. Compared with the monumental baroque style, rococo architecture was light and delicate. However, rococo buildings had even more elaborate decorations than did baroque structures. In France, the outstanding rococo buildings were elegant houses built in Paris for the nobility. But the most impressive rococo structures were palaces, churches, and monasteries erected in southern Germany and Austria. Dominikus Zimmermann created a rococo masterpiece in his design for Die Wies pilgrimage church (1745-1754) in southern Germany.

The Palladian **Revival** mainly reflected the classical designs of the Renaissance architect Andrea Palladio. The style began in the early 1700's and was most important in England, though it also appeared in northern Italy and North America. Most Palladian Revival buildings were country houses.

Colen Campbell, a Scottish architect, introduced the Palladian Revival style. However, the leader of the movement was Lord Burlington, an English amateur architect. Burlington and his friend William Kent designed the first great Palladian Revival building, Chiswick House (1725-1726) in London. Burlington and Kent modeled their design on Palladio's Villa Rotonda. The architects set the house in a large garden based on what they believed a Roman garden looked like. Such gardens became a common feature of Palladian Revival architecture.

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Neoclassical architecture reflected a renewed interest in the architecture of ancient Greece and Rome.

The prefix "neo" means new. Neoclassical architecture was largely inspired by buildings discovered in the ancient Roman cities of Pompeii

and Herculaneum. The cities had been buried by an eruption of Mount Vesuvius in A.D. 79. Archaeologists began excavating the cities in the mid-1700's.

Using designs from Pompeii and Herculaneum, neoclassical architects could follow Greek and Roman styles more closely than Renaissance architects could. Like baroque architects, the neoclassicists designed colonnades and large structures, especially public buildings. But in their designs, they used simpler geometric forms, such as the square and sphere, rather than the baroque swirls and curves.

The most important neoclassical architects in England were *Sir William Chambers* and *Robert Adam*.

Chambers designed many public buildings, for example, Somerset House (1776-1780) in London. Adam became an interior designer and furniture designer as well as a leading architect. He made Roman designs fashionable in such country houses as Osterley Park House (1763-1780) in London.

Pietro Bianchi, an Italian architect, designed one of the major neoclassical buildings of the early 1800's, the Church of San Francesco di Paola (begun about 1816) in Naples. The design of the church is based on that of the Pantheon, an ancient Roman temple. However, the curved exterior colonnade shows the influence of Bernini's colonnade for St. Peters Basilica.

French architects designed many neoclassical buildings. One of the most famous is the *Pantheon* (about 1757-1790) in Paris. *Jacques Soufflot* designed the structure. The Pantheon was originally a church named after Sainte Genevieve, but the building is now a monument.

In the United States, neoclassical architecture became known as the Federal style. The leading Federal style architects were Benjamin Latrobe and Charles Bulfinch. Latrobe is best known for his designs for the U.S. Capitol in Washington, D.C. Bulfinch's major projects included the statehouses of Maine and Massachusetts.

20. Read the texts and find out, at least, five distinctive feature of architectural styles of the 1800's.

By the early 1800's the development of architecture was greatly affected by the rapid growth of industrialization in western Europe and eastern North America. This Industrial Revolution created a demand for

architects to plan new types of buildings and to devise new construction techniques. At the same time, many architects revived various styles of the past. The most important revivals were the Greek Revival and the Gothic Revival. A number of architects combined two or more earlier styles into one design.

The Industrial Revolution began in Great Britain during the 1700's and spread to other European countries and to North America by the early 1800's. For centuries, architects had concentrated on designing religious buildings, castles and palaces, and country houses. The Industrial Revolution required such structures as factories, railroad stations, warehouses, and office buildings. Arhitects used new materials and new methods to design the new structures.

The Industrial Revolution led to the first commercial and industrial world's fair, the Great Exhibition of 1851 in London. The fair was housed in the *Crystal Palace* (1850-1851), a revolutionary glass and iron structure designed by Sir Joseph Paxton. The building covered almost 19 acres (8 hectares) and looked much like a giant green-house. Paxtons Crystal Palace was also the first important prefabricafed structure. The parts were manufac-turned in a factory and then assembled at the site of the exhibition.

The success of the Great Exhibition brought about similar fairs in other cities in Europe and in the United States. These exhibitions required special facilities and gave architects an opportunity to test new ideas. The Crystal Palace and later glass and iron exhibition halls in-fluenced the development of the glass and metal sky-scrapers of the 1900's.

The Crystal Palace did not resemble any earlier style of architecture. However, many structures built with the new technology preserved associations with historical styles. For example, the English architects *John Dobson* and *Philip Hardwick* designed a number of railroad stations with neoclassical facades. Hardwick also used castiron Doric columns to support his St. Katherine's Dock warehouses (1827-1828) in London. The French architect *Henri Labrouste* combined new building techniques with the Renaissance style in the library of *Sainte Genevieve* (1845-1850) in Paris. The library has walls of traditional masonry, but the vaults and columns are made of iron. Labrouste allowed the iron to show, making the library the first major public building to use iron as part of the architectural style.

The Greek Revival began in the late 1700's. It ended as a distinct

movement in the mid-1800's, though buildings in the Greek style are still being built. The Greek Revival style was considered especially appropriate for such buildings as museums, stock exchanges, banks, and government offices. Advances in classical scholarship enabled architects to recreate Greek designs with great authenticity,

A leading Greek Revival architect in England was *Sir Robert Smirke*. He designed the *British Museum* (1823-1847) in London to resemble a huge Greek temple of the Ionic order. William Strickiand designed the first important Greek Revival building in the United States, the Second Bank of the United States (1819-1824) in Philadelphia. The front of the structure resembles a Greek tempie of the Doric order.

The Gothic Revival. The Gothic style never went completely out of fashion. In the centuries after the Middie Ages, various architects used elements of the Gothic style. But the revival of Gothic as a deliberate architectural movement began in the 1700's, reached its peak during the mid-1800's, and declined by the 1880's.

During the early and mid-1800's, the English architect A. W. N. *Pugin* wrote several influential books supporting the Gothic style. Pugin urged architects especially to design churches in the Gothic style because it best expressed the Christian faith. The most ambitious project of the Gothic Revival was the Houses of Parliament (1840-1860) in London, designed by Pugin and Sir Charles *Barry*. William *Butterfield*, another English architect, created a number of highly individual designs in the Gothic style. One of his best-known Gothic buildings is All Saints' Church, Margaret Street (1849-1859) in London. Among Butterfield's most important projects was his design for Keble College (1860's) at Oxford University in Oxford, England. Butterfield designed the entire college, including the library, chapel, and residence halls, in the Gothic Revival style.

Combined styles. Some architects of the 1800's combined what they considered to be the best features of two or more historical styles. The former home of the *Paris Opera*, the Palais Gamier (1861-1875), is a masterpiece of this approach. The building's designer, *Charles Gamier*, planned the huge structure chiefly in the elaborate baroque style. For example, the spectacular Grand Staircase features a lavish use of colored marble. However, Gamier also included classical orders and elements from the designs of French and Italian Renaissance palaces.

21. Read the following text and add more words to descibe a building of the text:

block of flats, straight roads lined with trees, rows of square brick houses, housing estates, aerials stretched over a roof (X-shaped, H-shaped, garden rake – like), to provide plenty of open spaces prefabricated buildings, to be taken to the site and put together there, to be well planned, to live and work in comfort, standards of efficiency and economy, structural clarity, depressing monotony, spaces between.

Modern architecture

The period from the late 1800's to the present has been one of the most creative and productive times in the history of architecture. Architects have used new materials and new building methods to develop the first completely new styles in centuries. During the modern era, American architects made an international impact on architecture for the first time. For example, the skyscraper, perhaps one of the symbols of modern architecture, was first developed in the United States.

The remarkable changes in architecture since the late 1800's have emerged from the theories and works of a few individuals and small groups. Many masterpieces of modern architecture were designed or influenced by four men-Frank Lloyd Wright of the United States; Walter *Gropius* and Ludwig *Mies* van der Rohe of Germany; and Charles *Jeanneret-Gris*, generally known as *Le Corbusier*, of France.

Early modern architecture in Europe. Modern architecture in Europe originated as a reaction against the historical revivals and combined styles of the 1800's. Young architects tried to find fresh approaches that would reflect their time.

One of the first important influences on modern architecture was the Arts and Crafts Movement, founded in the mid-1800's by William Morris in England. Morris had studied to be an architect, but he gave up the profession to concentrate on interior design. Morris criticized the poor artistic quality that he saw in the machine-made products of the Industrial Revolution. With other artists in the Arts and Crafts Movement, Morris created original and high-quality designs for furniture, stained glass, textiles, and wallpaper. Although Morris did not design buildings, his influence encouraged a new freedom and spirit of experimentation that played an important part in architecture.

Most of the first modern architects worked in the Netherlands,

Austria, and Germany. In the Netherlands, Hendrik Petrus *Berlage* used an unusual red brick design for his masterpiece, the Amsterdam Stock Exchange (1898-1903). The building's simple design and lack of ornamentation marked a departure from the highly decorative revival structures and pointed toward more modern styles.

Otto Wagner founded modern architecture in Austria during the 1890's. Wagner was a teacher and theorist as well as an architect. His most important designs were houses with horizontal lines and little ornamentation.

The structures had flat, slablike roofs that projected beyond the walls. These features characterized much architecture of the 1900's.

Josef Olbrich and *Josef Hoffmann*, two of Wagner's students, joined with other Austrian artists and architects to found a group known as the Vienna Secession. The group was united by its rebellion against the revival styles. Olbrich designed the Secession Building (1898), an exhibition gallery in Vienna for the group. He took the Renaissance and neoclassical style of the domed villa and redesigned it in modern terms. Wagner's influence appears in the building's projecting slab roofand undecorated walls. Hoffmann designed a house called the Falais Stoclet (1905-1911) in Brussels, Belgium. The plain white walls and cubelike geometric outlines of the house made it one of the most advanced architectural works of the early 1900's. *Adolf Loos*, another Austrian, fiercely opposed decoration in architecture. He believed that the decorative qualities of a building would depend on the structure's materials and form. Loos designed Steiner House (1910) in Vienna and other buildings with cubelike shapes and no ornamentation. In Germany, Peter Behrens designed some of the first factories to reflect modern architectural ideas. His most significant design was the AEG Turbine Factory (1909), a glass, steel, and concrete building in Berlin. Behrens also influenced the theories of Mies van der Rohe, *Gropius*, and *Le Corbusier*, all of whom worked in his office during the early 1900's.

Walter Gropius influenced modern architecture both as an architect and as a teacher. In 1919, he founded the *Bauhaus*, a school of design in Weimar, Germany. The school was dedicated to uniting the arts and architecture with modern industrial technology. In 1925, the Bauhaus moved to Dessau. Gropius designed the buildings for the *Dessau* campus. The geometric concrete and glass structures rank among the finest designs of the period.

Gropius came to the United States in 1937. The next year, he became chairman of the Department of Architecture at Harvard University. Gropius' architectural theories spread throughout the United States as a result of his work as an architect and teacher. In 1946, Gropius and some of his former students along with other young architects formed the Architects Collaborative. The group designed many projects in the United States and other countries, beginning with the Graduate Center (1950) at Harvard.

The International Style dominated architecture until about 1950. The name came from the title of a book, "The International Style" (1932). The book was written by two Americans – Philip *Johnson*, an architect, and Henry-Russell Hitchcock, an architectural historian. In the book, the authors reviewed architecture of the previous 10 years and stated that a new and distinct "international" style had developed in many countries.

The International Style actually summarized many of the ideas of such pioneer modern architects as *Hoft Mies* began to design the buildings for a new Armour Institute campus, stressing rectangular, cubelike structures of brick, exposed steel columns, and huge windows.

Mies designed several apartment and office building skyscrapers in the United States. His Lake Shore Drive apartment complex (1949-1951) in Chicago resembles two gigantic glass rectangles. Perhaps his most praised project is the *Seagram Building* (1956-1958), an office skyscraper in New York City. Mies designed it with Philip Johnson. The building has walls of bronze and bronze tinted glass.

Architecture today. The International Style remained the most popular style for major architectural projects throughout the world until about 1950. By that time, younger architects were reacting against it. These architects believed that the style lacked variety in design because of the emphasis on simple geometric shapes and the lack of decoration.

The attack against the International Style was first led by a group of architects often called the brutalists. The brutalists based their designs on the later work of *Le Corbusier*. They created plain, massive buildings with rough reinforced concrete exteriors. Leading members of this movement included *Kenzo Tange* of Japan, the partnership of James Stirling and James Gowan of fing-land and Paul *Rudolph* of the United States. Like the brutalists, the American architect *Louis Kahn* made imaginative use of concrete. Kahn's major designs include the Salk Institute for Biological

Studies (1963-1965) in La Jolla, Calif., and the British Art Center (1972-1977) at Yale University. Perhaps the best-known and most controversial architectural movement today is post-modernism. It began during the 1960's in the United States. The post-modernists have no style or theories in common. They are united only in their rejection of the International Style. One of the leading American post-modern theorists and designers is Robert Venturi. Other American architects generally grouped as post-modernists include Peter *Eisenman*, Michael *Graves*, Charles *Moore*, Robert *Stern*, and Stanley *Tigerman*. Many post-modernists have revived historical styles that had been ignored by earlier modern architects. For example, *Venturi* has often used traditional styles, borrowing from Italian Renaissance and other revival styles. Venturi became one of the first post-modern architects in add ornamentation to building exteriors. A number of post-modernists have incorporated arches, columns, domes, and pediments into their designs. A pediment is a triangular section between the horizontal entablature and the sloping roof at the front of a classical Greek or Roman building.

This interest in historical styles has been accompanied by preserving old buildings and adapting them to new uses. Many government agencies have been created to preserve buildings with architectural value. These agencies have the power to grant landmark status to such buildings. Buildings with landmark status may not be destroyed or significantly altered.

Most post-modernist works are small buildings, such as houses and stores. In 1978, Philip Johnson, the coau-thor of The International Style, unveiled the design he created with John Burgee for the first post-modern sky-scraper, the American Telephone and Telegraph Company headquarters building in New York City. The base of this controversial structure resembles the Pazzi Chapel of the Renaissance. Johnson and Burgee topped the design with a pediment that has a round opening at the peak to allow clouds of steam to escape from the building's heating system.

Read the text again and discuss the following questions:

1. What problems are modern architects faced with?
2. Is "beauty" a concept which does not change through centuries?
3. How do engineering and technological progress change the idea of architectural beauty?
4. What is architectural ugliness to you?

22. Fill in the following tables:

Architect	When he lived	Where he lived	His master pieces	Peculiarities of design	Style	Period (years)	Distinctive features

Building / Architect	When it was built	Where it was built	Distinctive features

23. Translate from English into Russian and discuss the following:

1. So long as artists do not conquer the opinion of the popular majorities, they will never be able ... to produce an art as powerful as that of the best epochs of the past. Their art will be one-sided and incomplete. (D.A.Siqueiros)

2. A great architect must be a great sculptor or painter. This is a universal law. No person who is not a sculptor or painter can be an architect. If he is not a sculptor or painter he can only be a builder, ... and the proper definition of architecture, as distinguished from sculpture, is mere the art of designing sculpture for a particular place, and placing it there on the best principles of building. (J.Ruskin)

3. We who are working in art cannot accept any theory of beauty, ... we try to materialize it in a form that gives joy to the soul through the senses. (O.Wilde)

4. Nothing, indeed, is more dangerous to the young artist than any conception of ideal beauty, as he will be always led by it either into weak prettiness or lifeless abstraction. You must find beauty in life and recreate it in art. (O.Wilde)

5. Art is the science of beauty, as mathematics the science of truth. Art should have no sentiment about it but its beauty, no technique except what you cannot observe. One should be able to say of a picture not that it is "WELL PAINTED", but that it is "NOT PAINTED". (O.Wilde)

24. Describe your impressions of the building you like. Tell what makes them beautiful, majectic, impressive.

Describe a building which you do not like. Tell what makes them ugly, non-impressive.

25. Check yourself.

A. Put down 5 words to denote:

1. materials;
2. architectural styles;
3. parts of a building;
4. names of religious places;
5. smth. you like (adjectives, verbs)

B. Put down words describing what they can be (adjectives):

6. ... architect
7. ... style
8. ... design
9. ... building
10. ... church
11. ... proportions
12. ... materials
13. ... shape
14. ... building
15. ... apartment

C. Match the architectural terms and their explanations:

1.	entablature	a)	the upper part of a classical building supported by columns (architrave, frieze and cornice)
2.	architrave	b)	a main beam resting across the tops of columns
3.	frieze	c)	the part of an entablature between the architrave and the cornice; aband of decoration along the wall
4.	cornice	d)	a covered walk with a wall on the one side and a colonnade on the other
5.	cloister	e)	an ornamental moulding round the wall below the ceiling
6.	atrium	f)	a skylit central court
7.	spire	g)	a tapering conical structure built on a church tower
8.	nave	h)	the central part of a church
9.	transept	i)	either part of a cross-shaped church at right angles to the nave
10.	apse	j)	a large semicircular recess, arched or with a domed roof, esp. at the eastern end of a church

D. Translate the following text. Time: 40 min.

Architecture in Education.

The first college established in North America-Harvard, in 1636 – was, in many respects, similar to British universities. But unlike Oxford and Cambridge, which held their students in enclosed quadrangles, the Harvard campus consisted of a variety of separate buildings arranged on an open green.

The openness of Harvard's design reflected the college's attitude to Puritanism which stressed the importance of human community. It showed their education as a service to the larger world, just as enclosed quadrangles showed British students their exclusivity.

Harvard's first building was a three-story structure with class and dining areas on the first floor and living quarters for students and tutors to keep watch over students' lifestyle. Living areas were connected with building by corridors.

After the colonies gained independence from England the Revolution ideas conflicted with Puritan ideals. It was undemocratic to have student residences under the control of university administrators.

The most important of educator-architects was Thomas Jefferson who designed the University of Virginia in 1817. It was built in the countryside and consisted of two rows of connected but architecturally distict houses which ran along both' sides of rectangular open lawn. Each house accommodated a faculty member, his family, several students and classroom space. Jefferson adopted this family model in order to prevent the dangers "to health, study, manners, morals and order" he associated with larger buildings. He called his arrangement "an academical village".

A the turn of the 20th century the Gothic quadrangle again became the symbol of life in American universities. Architects like Ralph Adams Cram who supervised the Gothic revival at Princeton thought the university should be "half college, half monastery".

Democratic opposition to Gothic revivalism took the form of the "international style" which refused imitation. They thought buildings must be the expression of modern technology, mass production and the worker. Its founder, Walter Gropins, told about the relationship between university design and student character. Therefore college residences offer the possibility of new forms again and again.

VOCABULARY

A

absorb	усмоктувати, вбирати	впитывать
activity	діяльність	деятельность
adapt	пристосовувати, приганяти	приспособлять
admire	захоплюватися, милуватися	восхищаться, любоваться
advantage	перевага	преимущество
affect	впливати	влиять
aisle	боковий неф храму, прохід між рядами	боковой неф храма, проход между рядами
ancient	древній	древний
apartment	квартира	квартира
appear	показуватися, здаватися	появляться, казаться
appearance	зовнішність	внешность
application	використання, застосування	использование, применение
appropriate	відповідний	соответствующий
apse	апсида	апсида
arcade	аркада, склепінчаста галерея	аркада, галерея
arch	арка, склепінчастий прохід	арка
architect	архітектор	архитектор
architrave	архітрав, головна балка	архитрав, главная балка
arcuda	аркада	аркада
arrange	доводити до ладу, розташовувати	приводить в порядок, размещать
artificial	штучний	искусственный
artist	художник, митець	художник

artistic	артистичний, художній, мистецький	артистический, художественный
atrium	атріум	атриум
attractive	привабливий, заманливий	привлекательный, заманчивый
available	наявний, що є в наявності	наличный, то, что есть в наличии

B

beam	балка	балка
bedspread	легке покривало для ліжка	покрывало
bent	нахил, нахилений	наклон, наклоненный
birchwood	береза	береза
blend	змішувати	смешивать
bold	чіткий, виразний	четкий, выразительный
bottom	дно, днище, нижня частина	дно, днище, нижняя часть
brass	латунь, жовта мідь	латунь
brick	цеглина, класти цеглу, обличковувати кирпич,	класть кирпич, облицовывать
bright	яскравий	яркий
build	будувати, споруджувати	строить
built-in	вбудований	встроенный
burial	поховання, кладовище	погребение, кладбище
burlap	мішковина	мешковина
businesslike	діловий	деловой
buttress	контрфорс, стояк, бик, підпора	контрфорс, стояк, опора

C

cabinet	комод, ящик	комод, ящик
carpentry	теслярські роботи	плотницкие работы

carve	різьбити, вирізувати	вырезать
carving	різьблення, випилювання	резьба, выпиливание
castle	замок, палац	замок, дворец
casual	випадковий	случайный
cathedral	кафедральний собор	кафедральный собор
ceiling	стеля	потолок
certain	певний	определенный
chamber	зал, палата, покої	зал, палата, покои
chapel	каплиця, невелика церква	часовня, небольшая церковь
choose	вибирати	выбирать
church	церква	церковь
circular	круглий	круглый
clay	глина	глина
cloister	крита аркада, галерея	крытая аркада, галерея
closet	стінна шафа	стенной шкаф
coat	покривати (шаром), покрив, шар	покрывать (слоем) покрытие, слой
colonnade	колонада	колоннада
column	колона	колонна
combine	змішувати	смешивать
comfortable	зручний, комфортабельний	удобный, комфортабельный
common	загальний, спільний, поширений	общий, распространенный
concrete	бетон	бетон
connect	з'єднувати	соединять
construct	будувати	строить
contain	містити в собі, вміщувати	вмещать в себе
contemporary	сучасний	современный
contribute	вносити, сприяти	вносить, способствовать

cooling	охолоджувальний	охлаждающий
cork	пробка, кора пробкового дуба	пробка, кора пробкового дуба
corner	кут	угол
cornice	карниз	карниз
cost	вартість, коштувати	стоимость, стоить
costs	витрати	затраты
cosy	затишний	уютный
cotton	бавовна	хлопок
courtyard	внутрішній двір (замку)	внутренний двор (замка)
cover	кришка, покривати	крышка, покрывать
covering	чохол, обшивка	чехол, обшивка
craft	ремесло, майстерність	ремесло, мастерство
create	створювати	создавать
cross	хрест, хрестовина	крест, крестовина
cupboard	сервант	сервант
curtain	завіса	занавес
curve	крива (лінія)	кривая (линия)
curved	кривий, зігнутий	кривой, изогнутый

D

dainty	граціозний, вишуканий	грациозный, изысканный
decay	ослаблення	ослабление
decorate	прикрашати	украшать
definite	визначений, ясний	определенный
delicate	елегантний, вишуканий	элегантный
design	дизайн, композиція, проектувати, конструювати	дизайн, композиция, проектировать, конструировать
determine	визначати, вимірювати	определять
develop	розвивати, розробляти	развивать, разрабатывать
dim	неясний, тьмяний	неясный

distort	викривляти	искажать
distribution	розподіл, розміщення	распределение
dome	купол, надавати куполоподібної форми	купол, придавать куполообразную форму
door	двері	дверь
drapery	завіса, тканина	штора, ткань
durability	довговічність	долголетие
durable	довгочасний, тривалого користування	длительного использования, долгосрочный

E

emphasize	підкреслювати, виділяти	выделять, подчеркивать
entablature	фриз, карниз, архітрав	фриз, карниз, архитрав
entrance	вхід	вход
erect	споруджувати	сооружать

F

fabric	тканина, матерія	ткань, материал
faith	віра	вера
fascinate	зачаровувати, заворожувати	очаровывать, завораживать
feature	особливість, характерна риса	особенность, характерная черта
fiber	волокно, нитка	волокно, нить
fiberglass	скловолокно	стекловолокно
fill	наповнювати	наполнять
flagstone	кам'яна плитка	каменная плитка
flame-resistant	вогнетривкий	огнеупорный
flexible	гнучкий	гибкий
floor	підлога, поверх	пол, этаж
floral	квітковий	цветочный
fortifyz	укріпляти	укреплять
fortress	фортеця	крепость

foundation	фундамент	фундамент
frieze	фриз	фриз
function	функціонувати	функционировать
furnish	меблювати, обставляти меблями	меблировать
furnishing	умеблювання	меблировка
furniture	меблі, обстановка	мебель

G

gate	ворота, хвіртка	ворота, калитка
gem	коштовний камінь	драгоценный камень
gild	покривати позолотою	покрывать позолотой
glazed	засклений	застекленный
glossy	блискучий, глянцевий	блестящий, глянцевый
glue	клей, склеювати	клей, склеивать
graceful	граціозний, витончений, елегантний	грациозный, утонченный, элегантный
grained	з грубою структурою, розфарбований під деревину або мармур	имеющий грубую структуру, раскрашенный под древесину или мрамор
grease	жир; забруднювати	жир; загрязнять

H

hall	зал, велике приміщення	зал, большое помещение
harmonize	гармонувати	гармонировать
heating	опалення	отопление
hold	тримати, вміщувати	держать, вмещать

I

imitate	копіювати, імітувати	копировать, имитировать
influence	впливати	влиять, воздействовать
inlaid	інкрустований, мозаїчний	инкрустированный, мозаичный

inlay	інкрустація, мозаїка, настилання паркету	инкрустация, мозаика, настил паркета
inspire	надихати, стимулювати, збуджувати	вдохновлять, стимулировать, возбуждать
install	встановлювати, розташовувати	устанавливать, размещать
involve	залучати, містити у собі	вовлекать, содержать в себе
iron	залізо	железо
itchy	сверблячий	зудящий
item	частина, окремий предмет	кусок, отдельный предмет
ivory	слонова кістка	слоновая кость

L

lacquer	лак, глазур	лак, глазурь
layer	пласт, настилати пластами	пласт, настилать пластами
leather	шкіра	кожа
lighting	освітлення	освещение
limit	обмежувати, межа	ограничивать, предел
linen	лляне полотно	льняное полотно
location	місцезнаходження, розташування	место расположения
loop	петля	петля

M

maintain	підтримувати, обслуговувати	поддерживать, обслуживать
majestic	величний, величавий	величественный, величавый
make up	компенсувати, складати	компенсировать, составлять
marble	мармур	мрамор
match	відповідати	соответствовать
measure	міряти, вимірювати	мерить, вымерять

medieval	середньовічний	средневековый
melange	суміш	смесь
mold	відливати у форму	выливать в форму
monochromatic	однобарвний, одноколірний	одноцветный
monument	пам'ятник	памятник
mood	настрій	настроение
mosque	мечеть	мечеть
move	рухати, переміщувати	двигать, перемещать

N

nave	неф	неф
necessary	необхідний	необходимый

O

oak	деревина дуба	древесина дуба
off-white	не зовсім білий	не совсем белый
opening	отвір	отверстие
ornamentation	прикрашення, оздоблення	украшение, оснащение
outlet	вихід, торговельна точка	выход, торговая точка
outline	контур, обвід	контур, обвод
overall	повний	полный

P

pagoda	нагода, випадок	случай
paint	фарба, фарбувати, малювати	краска, красить, рисовать
palace	пасаж, галерея, палац, особняк	пассаж, галерея, дворец, особняк
pale	блідий, бліднути	бледный, бледнеть

parquet	паркет	паркет
passage	прохід, перехід, коридор	проход, переход, коридор
pattern	малюнок, візерунок	рисунок, узор
pediment	фронтон, шпиль	фронтон, шпиль
pier	дамба, пірс, стояк, простінок	дамба, пирс, стояк, простенок
pile	купа	стопка, груда
pillar	стовп, колона, опора	столб, колонна, опора
plane	площина, плоский	плоскость, плоский
plastic	пластик, пластмаса	пластик, пластмасса
plush	плюш	плюш
plywood	фанера	фанера
pointed	гострий, загострений, гострокінцевий	острый, заостренный, остроконечный
porch	під'їзд, ґанок, портик, крита галерея, веранда	подъезд, крыльцо, портик, крытая галерея, веранда
pose	ставити	ставить
praise	хвалити	хвалить, восхвалять
prefabricated	збірний, виготовлений заздалегідь	сборный, изготовленный заранее
preference	перевага, вибір	выбор, предпочтение
prehistoric	доісторичний	доисторический
preserve	зберігати, охороняти	беречь, охранять
prevent	відвертати, попереджати	предупреждать
print	друкувати	печатать
produce	виготовляти	изготовлять
protect	захищати	защищать
provide	постачати, забезпечувати	обеспечивать
purpose	мета, ціль	цель
pylon	пілон, опора	пилон, опора
pyramid	піраміда	пирамида

Q

quality	якість	качество

R

range	ряд	ряд
rectangle	прямокутник	прямоугольник
refer	направляти, пояснювати	направлять, пояснять
reflect	відбивати	отражать
related	пов'язаний, споріднений	связанный, родственный
religion	релігія	религия
religious	релігійний	религиозный
remove	переміщати, знімати	перемещать, снимать
resemble	бути схожим на ...	быть похожим на ...
resilient	еластичний	эластичный
roof	дах	крыша
room	кімната	комната
rough	грубий, необроблений, нерівний, шершавий	грубый, необработанный, шершавый, неровный
row	ряд	ряд
rug	килим	ковер
rust	іржа	ржавчина

S

scale	масштаб	масштаб
scheme	план, система	план, система
scroll	завиток	завиток, свиток
select	вибирати	выбирать
semicircular	напівкруглий	полукруглый
separate	відокремлювати, відділяти, роз'єднувати	отделять, выделять, разъединять
separate	окремий	отдельный
serve	сприяти, обслуговувати	способствовать, обслуживать

shade	відтінок	оттенок
shape	форма	форма
sheet	аркуш, простирало	лист, простыня
show	показувати	показывать
shutter	віконниця, жалюзі	ставня, жалюзи
significant	важливий	важный
simple	простий	простой
skill	майстерність, умілість	мастерство, умение
skilled	вправний, умілий	умелый
skillful	умілий, майстровий	умелый, мастеровой
slate	шифер	шифер
smooth	гладкий, рівний	гладкий, ровный
sphere	сфера, куля	сфера, шар
spire	гострий верх, шпиль	острый верх, шпиль
square	квадрат	квадрат
steam	пара	пар
steel	сталь	сталь
stone	камінь	камень
stretch	розтягувати	растягивать
striped	у смужку	в полоску
stucco	штукатурка, ліпна робота	штукатурка, лепная работа
sturdy	сильний, міцний	сильный
suit	відповідати вимогам	отвечать требованиям
supervise	наглядати, стежити	присматривать, следить
support	підтримувати, підпирати	поддерживать, подпирать
surface	поверхня	поверхность
surround	оточувати	оттачивать
survive	переживати, уцілити	переживать

T

tablecloth	скатерка	скатерть

tan	дубільна кора, жовтувато-коричневий	дубильная кора, желтовато-коричневый
temple	храм	храм
texture	текстура, фактура	текстура, фактура
tile	черепиця	черепица
timber	лісоматеріал, будівельний ліс	лесоматериал, строительный лес
tint	тон	тон
top	верхівка, вершина	вершина, макушка
tower	вежа, башта	башня
transept	трансепт, поперечний неф готичного собору	трансепт, поперечный неф готического собора
triangular	трикутний	треугольный
tubular	трубчастий	трубчатый
turret	башточка	башенка

U

unit	одиниця	единица
upholstery	оббивка	обивка
use	уживати, користуватися	использовать

V

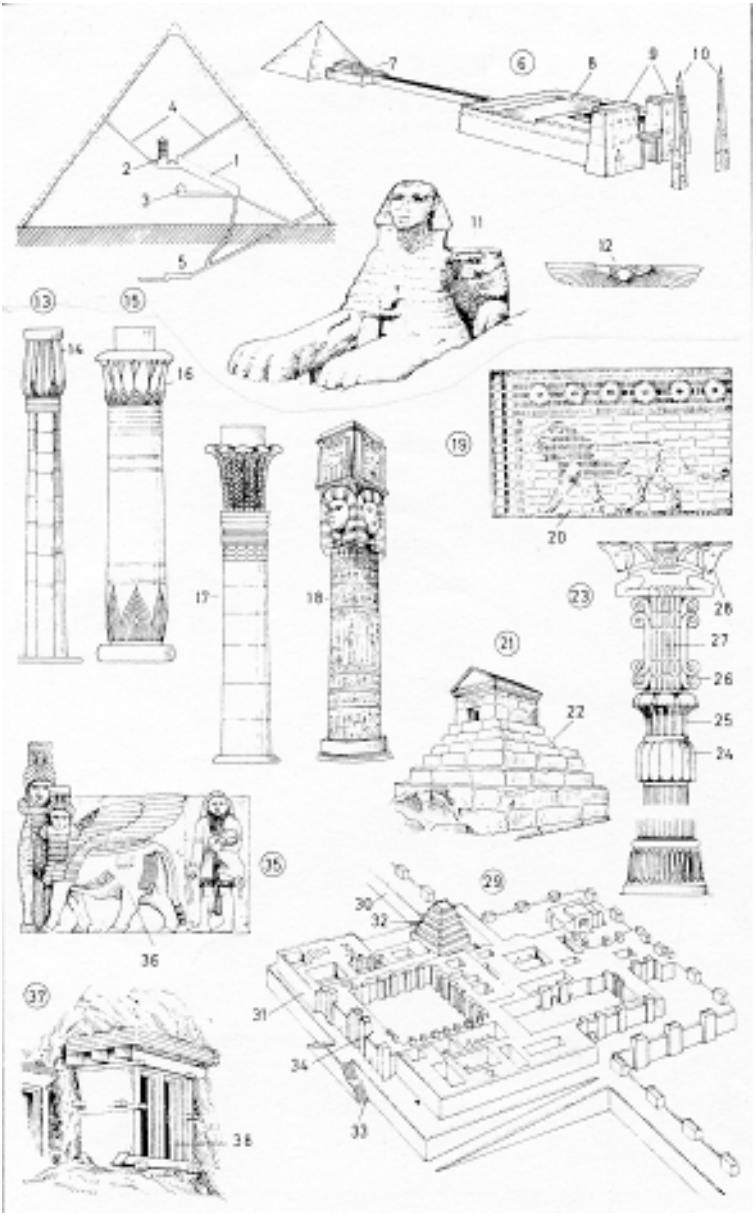
value	цінність	ценность
variety	різноманітність	разнообразие
vault	склепіння	свод
veneer	шпон, одинарна фанера	шпон, односторонняя фанера

W

wall	стіна	стена
wallpaper	шпалери	обои
walnut	деревина горіхового дерева	древесина орехового дерева

washable	що миється	моющийся
waterproof	непромокальний	непромокаемый
wear	зношувати	изнашивать
weight	вага	вес
withstand	вистояти	выдерживать
wood	деревина	древесина
wool	вовна	шерсть
worship	поклонятися, схилятися	поклоняться

SUPPLEMENT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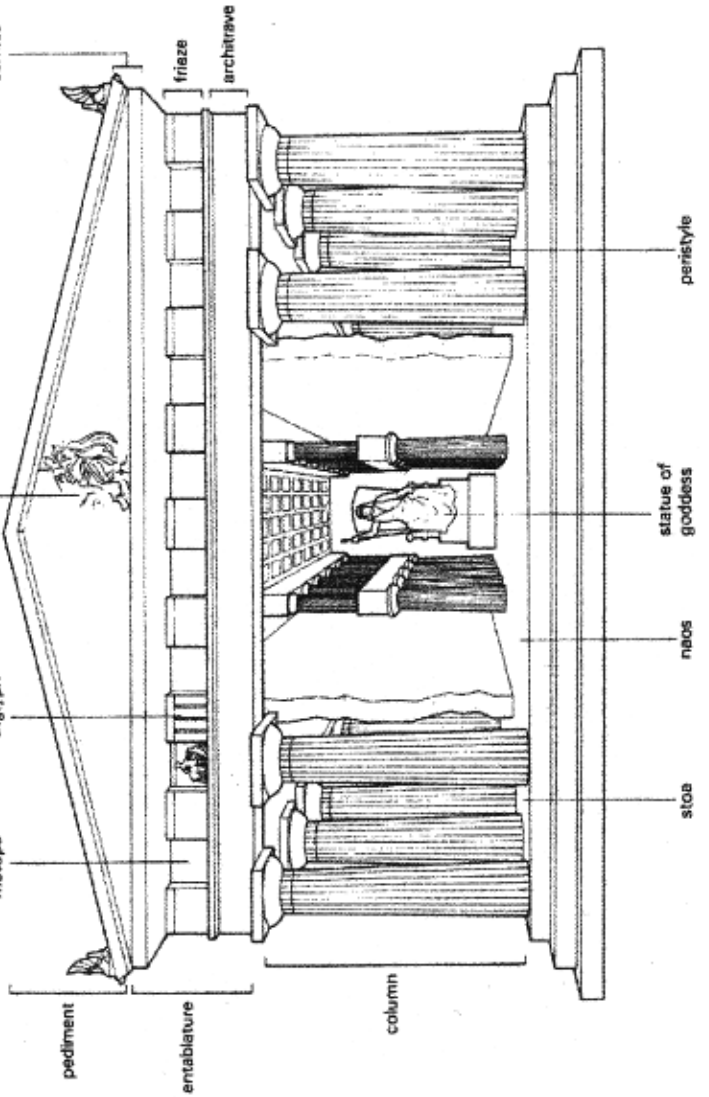
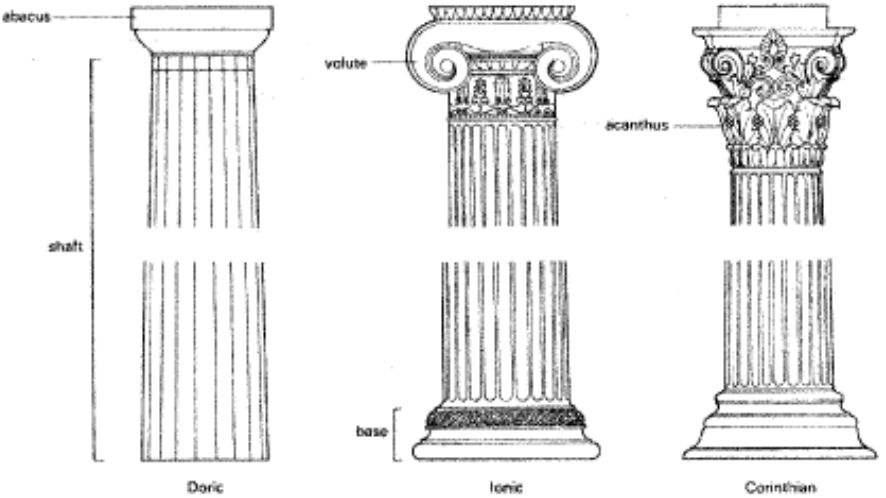
Classical

A Greek Doric temple



Orders of architecture: Greek origin



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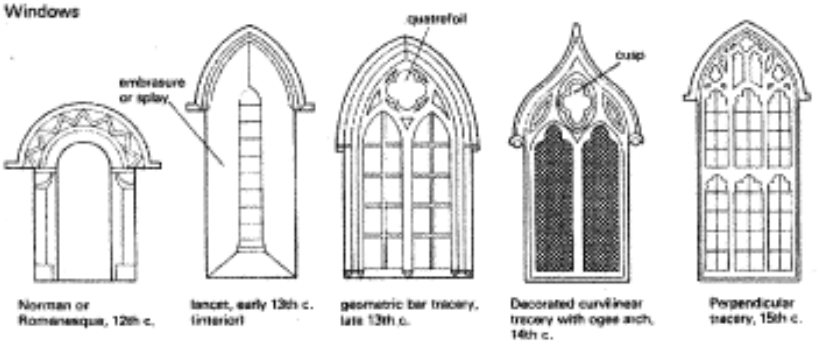
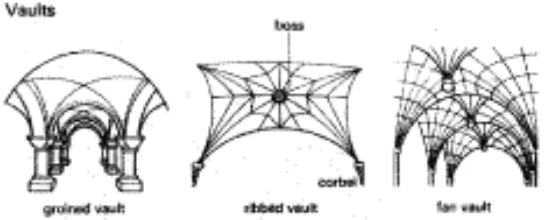
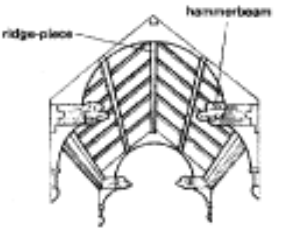
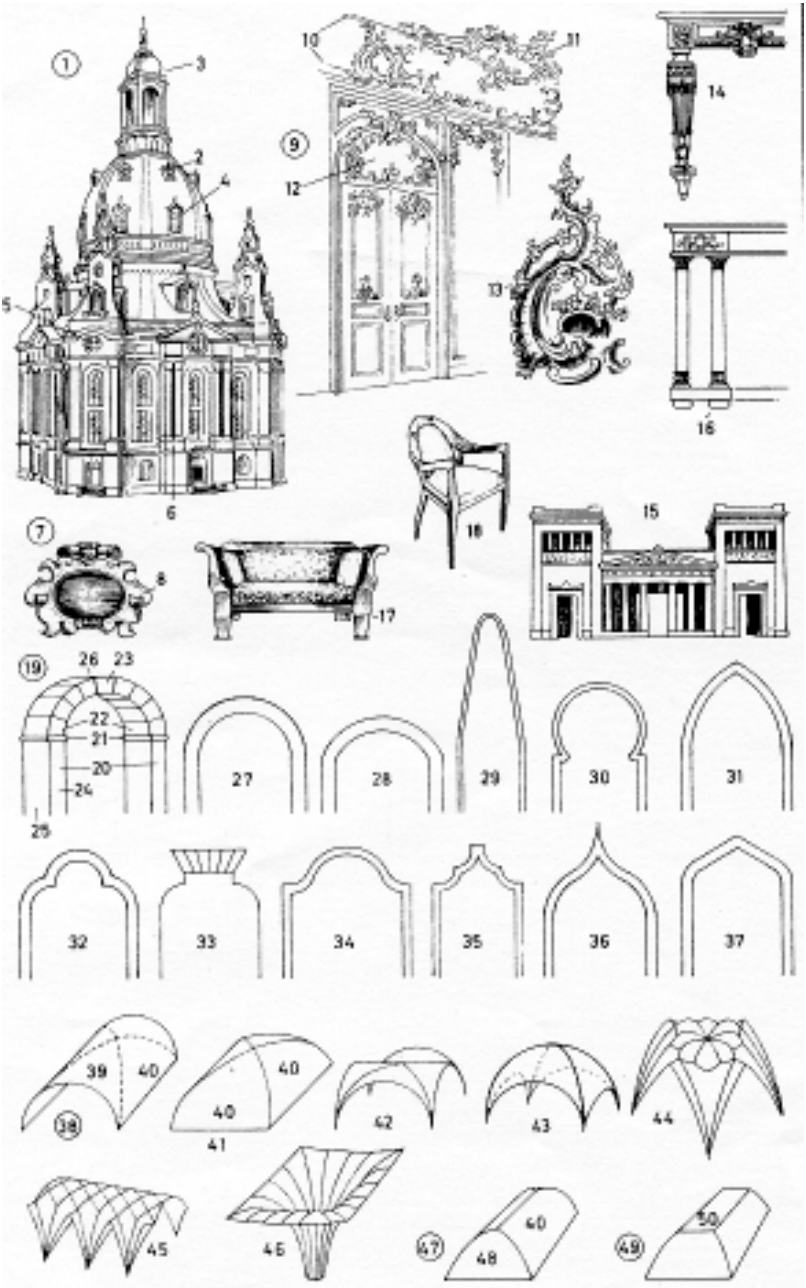


Vaults



Hammerbeam roof

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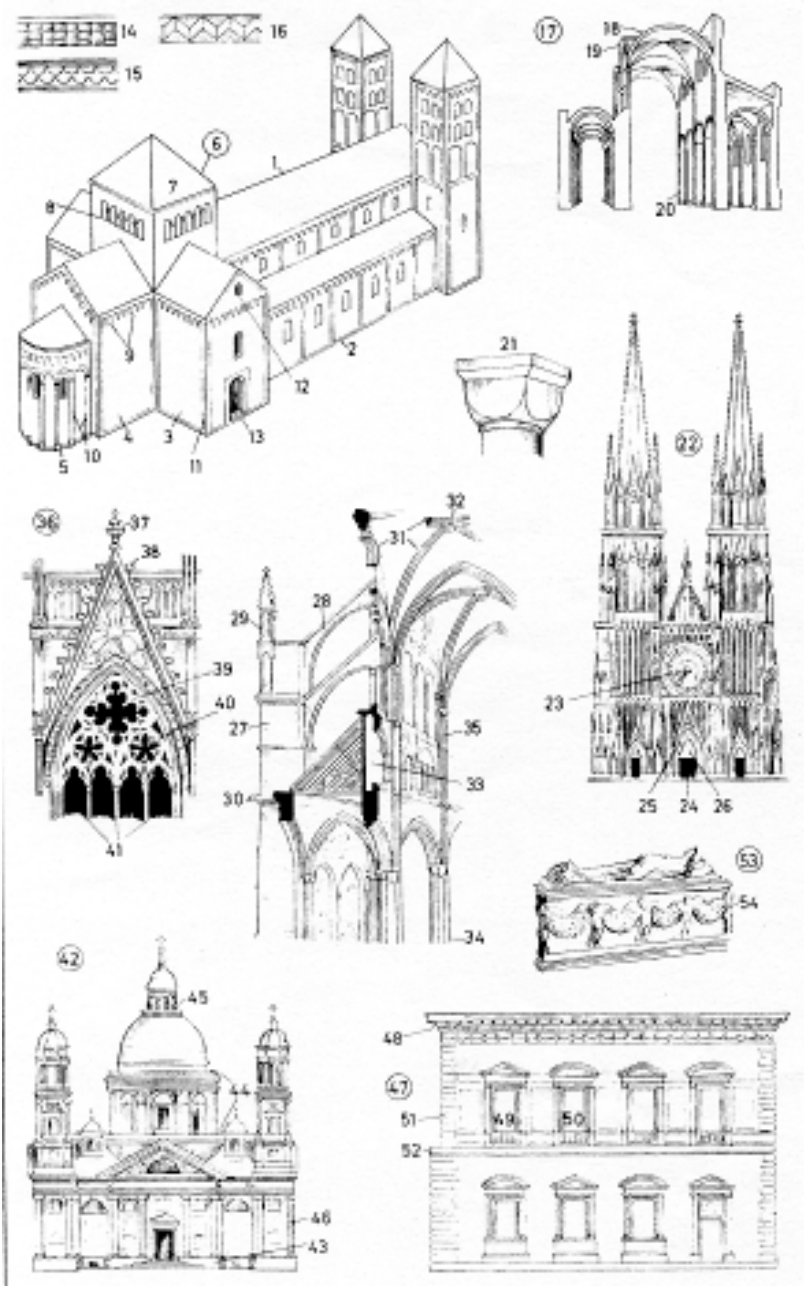
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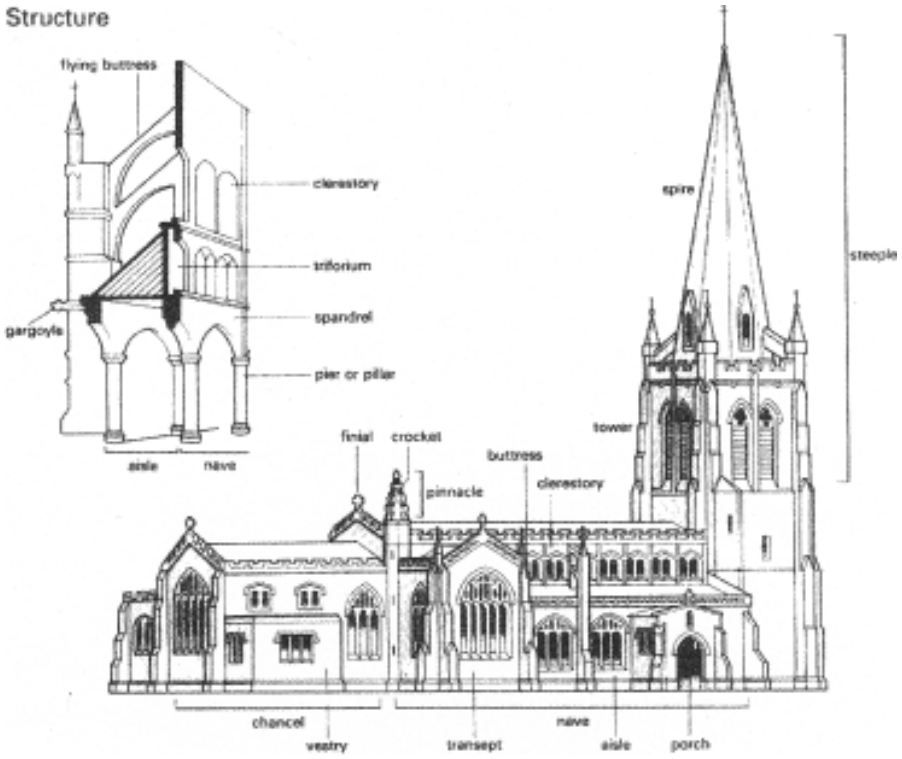
Structure


flying buttress
clerestory
triforium
spandrel
gargoyle
pier or pillar
aisle
nave
finial
crocket
pinnacle
buttress
clerestory
tower
spire
steeple
chancel
vestry
transept
nave
aisle
porch