

A stylized, high-contrast illustration of a modern architectural structure, possibly a bridge or a tower, rendered in white and yellow against a solid yellow background. The structure features a series of vertical supports and horizontal beams, creating a complex, geometric pattern.

建筑英语

ARCHITECTURE

ENGLISH

主编 常乐 孙元元

外语教学与研究出版社

FOREIGN LANGUAGE TEACHING AND RESEARCH PRESS

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编者 冯 洋 刘艳红

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前言

本书将建筑学科最基本的问题以专题英语文章的形式呈现出来,让读者在学建筑的同时强化英语,学语言的同时了解建筑,是编者积累多年建筑英语课程的教学经验,深入了解广大学生与读者的需求精心编写而成的。

全书共有10个单元,每单元由围绕同一个主题的三篇阅读文章组成,每篇文章后有相应的练习。练习内容贴近文章主题,旨在帮助学生熟悉该单元主题内容、掌握相关的建筑基础知识及建筑专业词汇,以及用英语进行专业知识的交流与写作。

本书有如下特点:(1)选材广泛。既包括建筑专业的基础知识,也介绍了著名的建筑家;既介绍了古罗马建筑的风格,也涉猎了现代中国建筑的特点;(2)专业性强。所选文章内容具有一定的专业学术水平,涉及到建筑专业的最新知识;(3)信息量大。全书共有30篇文章,可以使学生通过阅读获取较多的专业信息;(4)难度适中。文章难度适应在校大学生的实际英语水平,能够满足《大学英语课程教学要求》中较高要求的需要;(5)图文并茂。本书版式新颖,文中涉及的典型建筑也都有相应的图片,便于学生理解与记忆。书后附录的建筑英语专业词汇表以及推荐书目和网站更是为读者提供了复习和拓展学习的机会,对提高学生阅读兴趣,掌握专业词汇,查阅日常工作资料均有裨益。

本书既可作为高等院校建筑类专业的专业英语教材,也可用于其他各专业学生拓展阶段的选修课程;对建筑感兴趣的读者也能从阅读此书中得到乐趣,学到知识。

由于作者水平有限,疏漏与不足之处在所难免。敬请广大专家、同仁以及读者不吝指教。

编者

2008年8月

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1

Unit

Brief Introduction to Architecture



Warming Up

1. Work with a partner, make a list of the types of architecture you know.
2. Do you want to become an architect? If so, what kind of qualifications do you need to obtain and what kind of contribution can you make to the society?

TEXT A

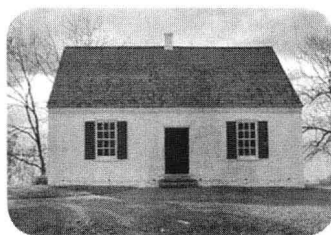
What Is Architecture?

Architecture is the art of building in which human requirements and construction materials are related so as to furnish practical use as well as an aesthetic solution, thus differing from the pure utility of engineering construction.

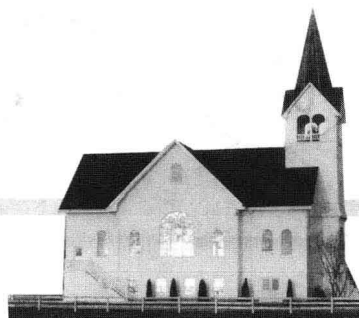
Architecture can be a structure, a residence, a bridge, a church and a group of buildings.



a structure



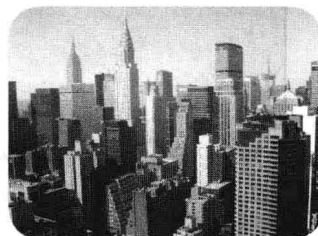
a residence



a church



a bridge



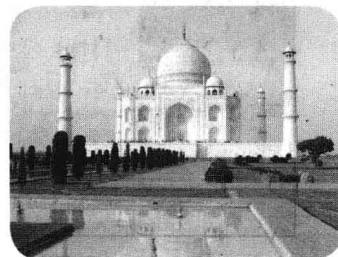
a group of buildings

Architecture as an Art

As an art, architecture is essentially abstract and nonrepresentational and involves the manipulation of the relationships of spaces, volumes, planes, masses, and voids.

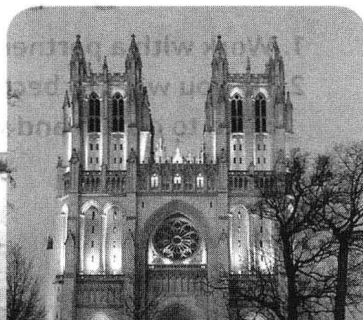
Some buildings are so beautiful or interesting that they become famous artworks.

▼ Egyptian Pyramids



▲ Taj Mahal

▼ St. Patrick's Cathedral

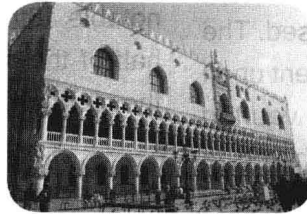


Architects use shape, form, color and other art elements and principles to design buildings. Architects design buildings with different styles. You can tell a lot by looking at the building's style!



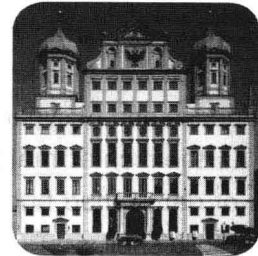
Ovals, circles and other shapes decorate the ceiling of this dome.

The materials used to make this house create interesting textures.



Lines make patterns on the roof of an Italian cathedral.

▼ This castle in Hungary has many forms.



Time in Architecture

Time is also an important factor in architecture, since a building is usually comprehended in a succession of experiences rather than all at once. In most architecture there is no one vantage point from which the whole structure can be understood. The use of light and shadow, as well as surface decoration, can greatly enhance a structure.

The analysis of building types provides an insight into past cultures and eras. Behind each of the greater styles lies not a casual trend nor a vogue, but a period of serious and urgent experimentation directed toward answering the needs of a specific way of life. Climate, methods of labor, available materials, and economy all impose their

dictates. Each of the greater styles has been aided by the discovery of new construction methods. Once developed, a method survives tenaciously, giving way only when social changes or new building techniques have reduced it. That evolutionary process is exemplified by the history of modern architecture, which developed from the first uses of structural iron and steel in the mid-19th century.

Until the 20th century there were three great developments in architectural construction—the post-and-lintel, or trabeated system; the arch system, either the cohesive type, employing plastic materials hardening into a homogeneous mass, or the thrust type, in which the loads are received and

counterbalanced at definite points; and the modern steel-skeleton system.

Architecture of the Ancient World

In Egyptian architecture, to which some of the earliest extant structures to be called architecture (erected by the Egyptians before 3000) belong, the post-and-lintel system was employed exclusively and produced the earliest stone columnar buildings in history. The architecture of Western Asia from the same era employed the same system; however, arched construction was also known and used. The Chaldeans and Assyrians, dependent upon clay as their chief material, built vaulted roofs of damp mud bricks that adhered to form a solid shell.

The Evolution of Styles in the Christian Era

The Romans and the early Christians also used the wooden truss for roofing the wide spans of their basilica halls. Byzantine architects experimented with new principles and developed the pendentive, used brilliantly in the 6th century for the Church of Hagia Sophia in Constantinople.

The Romanesque architecture of the early Middle Ages was notable for strong, simple, massive forms and vaults executed in cut stone. In Lombard Romanesque (11th century) the Byzantine concentration of vault thrusts was improved by the device of ribs and of piers to support them. In the 13th century Gothic architecture emerged

in perfected form, as in the Amiens and Chartres Cathedrals.

The birth of Renaissance architecture (15th century) inaugurated a period of several hundred years in Western architecture during which the multiple and complex buildings of the modern world began to emerge, while at the same time no new and compelling structural conceptions appeared. The complex, highly decorated Baroque style was the chief manifestation of the 17th-century architectural aesthetic. The Georgian style was among architecture's notable 18th-century expressions. The first half of the 19th century was given over to the classic revival and the Gothic revival.

New World, New Architecture

The architects of the later 19th century found themselves in a world being reshaped by science, industry, and speed. A new eclecticism arose, such as the architecture based on the École des Beaux-Arts, and what is commonly called Victorian architecture in Britain and the United States. The needs of a new society pressed them, while steel, reinforced concrete, and electricity were among the many new technical means at their disposal.

After more than a half-century of assimilation and experimentation, modern architecture, often called the International style, produced an astonishing variety of daring and original buildings, often steel substructures sheathed in glass. The Bauhaus was a strong influence on

modern architecture. As the line between architecture and engineering became a shadow, 20th-century architecture often approached engineering. More recently, postmodern architecture, which exploits

and expands the technical innovations of modernism while often incorporating stylistic elements from other architectural styles or periods, has become an international movement.

VOCABULARY

New Words

aesthetic *a.* 美学的, 艺术的
nonrepresentational *a.* (美术) 抽象的
texture *n.* 手感, 质感
comprehend *v.* 理解, 领会
vantage point (观察某物的) 有利位置
vogue *n.* 流行, 时尚
tenaciously *adv.* 难以改变地

adhere *v.* 粘附, 附着
inaugurate *v.* 开始, 创始
manifestation *n.* 显示, 表明
revival *n.* 复兴, 重新流行
eclecticism *n.* 折中主义
assimilation *n.* 吸收, 同化

Architectural Terms

void *n.* 孔隙
dome *n.* 圆屋顶, 穹顶
post and lintel 柱子与横梁
trabeated system 横梁式结构
arch system 拱券体系
cohesive type 粘合性
homogeneous mass 均质体
thrust type 嵌入式
steel-skeleton system 钢骨体系
columnar building 带圆柱的建筑

vaulted roof 拱形屋顶
wooden truss 木质构架
basilica *n.* 长方形廊柱大厅式建筑
Byzantine *a.* 拜占庭式的
pendentive *n.* 方墙四角圆穹顶支承拱
rib *n.* 拱肋
pier *n.* 支墩
substructure *n.* 基础, 下层结构
sheathe *v.* 覆盖, 套装

Proper Names

Taj Mahal 泰姬陵 (位于印度阿格拉市, 国王沙·贾汗在1629年为其妃所建的陵墓)
 St. Patrick's Cathedral 圣巴特里克大教堂
 Hungary 匈牙利 (欧洲中部国家)
 Chaldaean 迦勒底人 (与巴比伦人血缘相近的闪米特人)
 Assyrian 亚述人 (古代生活在两河流域上游的民族, 建立了亚述帝国)
 Church of Hagia Sophia 圣索菲娅大教堂 (在土耳其伊斯坦布尔市, 原为拜占庭帝国东正教的宫廷教堂, 拜占庭建筑风格的代表作)
 Constantinople 君士坦丁堡 (拜占庭帝国首都, 现为土耳其西北部港市伊斯坦布尔)
 Romanesque architecture 罗马风建筑 (包含古罗马和拜占庭特色的欧洲建筑风格, 该风格盛行于11世纪和12世纪, 特点为包括厚实的墙、筒拱穹顶及相对不精细的装饰品)

Lombard Romanesque 伦巴第罗马式
 Gothic architecture 哥特式建筑 (12世纪到15世纪流行于西欧的一种建筑风格, 特征是有尖角的拱门, 肋形拱顶和飞拱)
 Amiens 亚眠 (法国北部城市)
 Chartres Cathedrals 夏特尔多大教堂 (法国)
 Renaissance architecture 文艺复兴时期风格的建筑
 Baroque style 巴洛克式风格 (约1550到1700年间盛行于欧洲的一种建筑风格, 强调拉紧的效果, 其特征是有粗的曲线结构、复杂的装饰和无联系部分间的整体平衡)
 Georgian style 乔治王朝时期建筑风格
 École des Beaux-Arts (兴起于法国的) 装饰艺术风格派
 Victorian architecture 维多利亚式建筑
 International style 国际风格
 Bauhaus (school) 包豪斯建筑学派 (德国建筑研究学派, 或指其风格)

EXERCISES

I. Match the English expressions with their Chinese equivalents.

1. basilica
2. pendentive
3. substructure
4. vaulted roof
5. wooden truss
6. trabeated system
7. Gothic architecture
8. Byzantine style
9. Bauhaus
10. thrust type

- A. 木质构架
- B. 拜占庭风格
- C. 方墙四角圆穹顶支承拱
- D. 拱形屋顶
- E. 长方形廊柱大厅式建筑
- F. 哥特式建筑
- G. 基础; 下层结构
- H. 嵌入式
- I. 包豪斯建筑学派
- J. 横梁式结构

II. Decide whether the following statements are True or False.

1. The use of light and shadow, as well as surface decoration, can enhance a structure.
2. The novel architectural style has nothing to do with the social changes and the discovery and development of new building methods.
3. The Chaldeans and Assyrians initiated the use of vaulted roofs of damp mud bricks.
4. Romanesque and Gothic architecture dominate the Medieval Age.
5. From Renaissance period and on architecture tended not to be of aesthetic value.
6. In the 20th century, the distinction between architecture and engineering is getting clearer.

III. Choose the best answer to each of the following questions.

1. Which of the following is not mentioned in the text as a form of architecture?
A. A church. B. An avenue. C. A residence. D. A group of buildings.
2. The following are all manipulated by architecture except _____.
A. spaces B. voids C. flows D. masses
3. Which of the following civilizations produced the earliest stone columnar buildings in history?
A. The Chinese civilization. B. The Indian civilization.
C. The Egyptian civilization. D. The Greek civilization.
4. Who experimented and created a new building structure pendentive?
A. Christians. B. Romans. C. Germans. D. Byzantines.
5. Which of the following is a substyle of Baroque style?
A. Georgian style. B. Gothic style.
C. Romanesque style. D. Byzantine style.

IV. Oral task

In next class, you'll be asked to give an oral report based on one of the following questions. Work in teams and search the library or Internet for relevant pictures, facts or stories to support your points.



- ① Why is architecture called "an art"?
- ② What can be achieved by analyzing the building types?
- ③ What are the main features of modern architecture?

TEXT B

What Do Architects Do?

Architects are at the forefront of designing the built environment that will surround us in the 21st century. As professional experts in the field of building design and construction, architects use their unique creative skills to advise individuals, property owners and developers, community groups, local authorities and commercial organisations on the design and construction of new buildings, the reuse of existing buildings and the spaces which surround them in our towns and cities.

The work of architects influences every aspect of our built environment, from the design of energy efficient buildings to the integration of new buildings in sensitive contexts. Because of their ability to design and their extensive knowledge of construction, architects' skills are in demand in all areas of property, construction and design. Architects' expertise is invaluable when we need to conserve old buildings, redevelop parts of our towns and cities, understand the impact of a development on a local community, manage a construction programme or need advice on the use and maintenance of an existing building.

Architects work closely with other

members of the construction industry including engineers, builders, surveyors, local authority planners and building control officers. Much of their time will be spent visiting sites, assessing the feasibility of a project, inspecting building work or managing the construction process. They will also spend time researching old records and drawings, and testing new ideas and construction techniques.

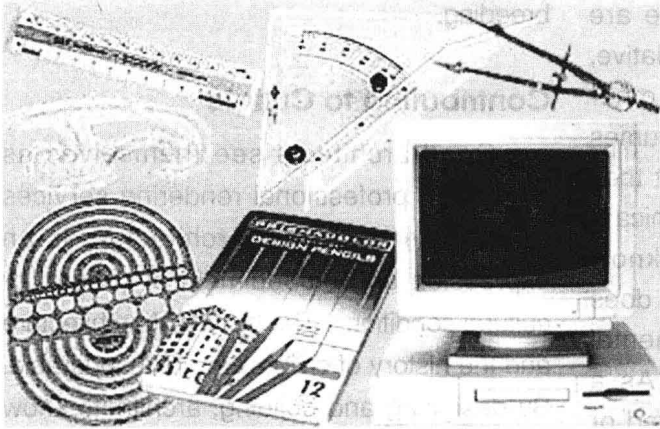
Society looks to architects to define new ways of living and working, to develop innovative ways of using existing buildings and creating new ones. We need architects' understanding of the complex process of design and construction to build socially and ecologically sustainable cities and communities. Architects can be extremely influential as well as being admired for their imagination and creative skills.

An architect draws plans and pictures.

Architects also build 3-D models to show how the building will look and work.

An architect's plans (or blueprints), drawings and models show construction workers how to build it!

Architects use tools like these:



Architects scale, for measuring distances.
Adjustable triangle, for drawing lines and angles.
Compass, for drawing circles and arches.
French curve, for drawing curves.
Circle template, for drawing circles.
Turquoise pencils, for drawing plans.
Computer, for creating plans with design software.

Qualifications

Almost all subjects learnt at school are relevant to architecture, so architectural students should choose the subjects they are strongest in. Although it is not necessary to study art, students should enjoy drawing freehand and making models.

In addition to a good degree, employers are looking for transferable skills—numeracy, interpersonal skills, team working, initiative, decision making and computer literacy. People see these skills as an integral part of architectural education, placing the graduates in a strong position to obtain employment outside the architectural profession in the

wider fields of design and business.

Money and Lifestyle

Although it is possible to achieve substantial wealth as architect—and no doubt some architects pursue this as a primary personal goal—it is very improbable. Instead, most architects earn comfortable or modest livings, enjoying reasonable but limited economic stability and prosperity.

Architects begin their careers as wage earners drawing hourly, monthly, or annual salaries which reflect prevailing marketplace conditions. After several years of apprenticeship and further practice, they may become associates or principal owners of firms, either in partnership with others or as sole proprietors. Generally, larger firms provide larger incomes at all levels when contrasted with smaller firms. Thus partners in bigger, well-established offices tend to earn more than partners in firms whose practices are small. Likewise a newly employed draftsman will probably be paid more by a large firm than by a small one.



Social Status

Social status is an important reason one might choose architecture as a career. An elusive notion at best, it implies the achievement of a certain elevated place

in society's hierarchy of who people are and what they do. Social status is relative, meaningful only in comparison with other professions or vocations. Society assumes that architects are educated and that they are both artistically sensitive and technically knowledgeable. Society does not know exactly how architects operate, but it does know that they often create monumental designs for monumental clients. As a result architects may be well respected or admired by members of a social system who, unfortunately, think less of people they consider lacking in education, less talented, and less acceptable in the company of people of wealth, influence, or so-called

breeding.

Contributing to Culture

Good architects see themselves as more than professional rendering services to fee-paying clients. Architecture is an expression and embodiment of culture, or cultural conditions. The history of architecture and the history of civilization are inseparable. By designing and building, architects know that they may be contributing directly to culture's inventory of ideas and artifacts, no matter how insignificantly. Thus the search for appropriate cultural achievement is an important motivation for architects.

VOCABULARY

New Words

innovative *a.* 革新的, 新颖的

freehand *adv.* 不用绘图仪器地, 徒手地

numeracy *n.* 计算能力

initiative *n.* 主动性, 创造性

apprenticeship *n.* 学徒身份, 学徒年限

proprietor *n.* 所有人, 业主

elusive *a.* 难以表述的

elevated *a.* 高贵的, 抬高的

hierarchy *n.* 等级制度

embodiment *n.* 具体表现, 体现

artifact *n.* 人工制品, 艺术品

Architectural Terms

energy efficient building 节能建筑

surveyor *n.* 测量员, 检查员

local authority planner 地方权威规划部门

building control officer 建筑管理官员

ecologically sustainable cities and communities 生态可持续型城市和社区

circle template 圆形模板

turquoise pencil 绿松石铅笔

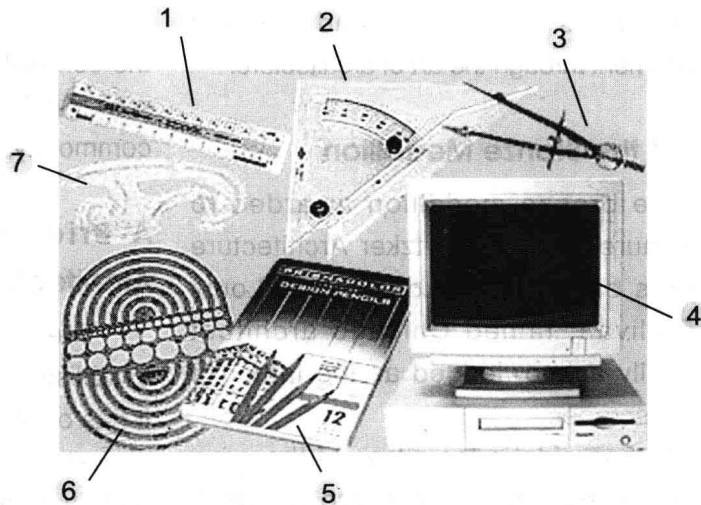
EXERCISES

I. Translate the following English into Chinese and Chinese into English.

1. energy efficient building _____
2. surveyor _____
3. ecologically sustainable cities _____
4. building control officer _____
5. local authority planner _____
6. 圆形模板 _____
7. 等级制度 _____
8. 学徒身份 _____
9. 所有人, 业主 _____
10. 人工制品, 艺术品 _____

II. Tell the names of the tools used by architects.

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____



III. Writing task

Suppose you want to choose architecture as a career. Write an application letter to an architecture company for a position of assistant architect. The letter should include:



- ① your personal information;
- ② the subjects you have learnt in university;
- ③ your potentials for an assistant architect.