

高等学校试用教材

建筑类 专业英语

建筑学与城市规划
(第二册)

English in Architecture and Construction

徐铁城 王庆昌 主编



中国建筑工业出版社

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本书是按国家教委颁发的《大学英语专业阅读阶段教学基本要求》编写的专业阅读教材。本册包括建筑理论、美学鉴赏、设计方案和过程、结构理论、室内设计方法、室内设计和谐原则、景园设计、大城市规划、基址规划、城市交通规划等内容。每单元都配有阅读理解和词汇等方面的练习，书末还配有练习答案、参考译文、总词汇表。本书既可作为大学建筑学与城市规划专业英语阅读教材，亦可作为有关工程技术人员自学该专业英语用书。

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前 言

经过几十年的探索，外语教学界许多人认为，工科院校外语教学的主要目的，应该是：“使学生能够利用外语这个工具，通过阅读去获取国外的与本专业有关的科技信息。”这既是我们建设有中国特色的社会主义的客观需要，也是在当前条件下工科院校外语教学可能完成的最高目标。事实上，教学大纲规定要使学生具有“较强”的阅读能力，而对其他方面的能力只有“一般”要求，就是这个意思。

大学本科的一、二年级，为外语教学的基础阶段。就英语来说，这个阶段要求掌握的词汇量为2400个（去掉遗忘，平均每个课时10个单词）。加上中学阶段已经学会的1600个单词，基础阶段结束时应掌握的词汇量为4000个。仅仅掌握4000个单词，能否看懂专业英文书刊呢？还不能。据统计，掌握4000个单词，阅读一般的英文科技文献，生词量仍有6%左右，即平均每百词有六个生词，还不能自由阅读。国外的外语教学专家认为，生词量在3%以下，才能不借助词典，自由阅读。此时可以通过上下文的联系，把不认识的生词猜出来。那么，怎么样才能把6%的生词量降低到3%以下呢？自然，需要让学生增加一部分词汇积累。问题是，要增加多少单词？要增加哪一些单词？统计资料表明，在每一个专业的科技文献中，本专业最常用的科技术语大约只有几百个，而且它们在文献中重复出现的频率很高。因此，在已经掌握4000单词的基础上，在专业阅读阶段中，有针对性地通过大量阅读，扩充大约1000个与本专业密切有关的科技词汇，便可以逐步达到自由阅读本专业科技文献的目的。

早在八十年代中期，建设部系统院校外语教学研究会就组织编写了一套《土木建筑系列英语》，分八个专业，共12册。每个专业可选读其中的三、四册。那套教材在有关院校相应的专业使用多年，学生和任课教师反映良好。但是，根据当时的情况，那套教材定的起点较低（1000词起点），已不适合今天学生的情况。为此，在得到建设部人事教育劳动司的大力支持，并征得五个相关专业指导委员会同意之后，由建设部系统十几所院校一百余名外语教师和专业课教师按照统一的编写规划和要求，编写了这一套《建筑类专业英语》教材。

《建筑类专业英语》是根据国家教委颁发的《大学英语专业阅读阶段教学基本要求》编写的专业阅读教材，按照建筑类院校共同设置的五个较大的专业类别对口编写。五个专业类别为：建筑学与城市规划；建筑工程（即工业与民用建筑）；给水排水与环境保护；暖通、空调与燃气；建筑管理与财务会计。每个专业类别分别编写三册专业英语阅读教材，供该专业类别的学生在修完基础阶段英语后，在第五至第七学期专业阅读阶段使用，每学期一册。

上述五种专业英语教材语言规范，题材广泛，覆盖相关专业各自的主要内容：包括专业基础课，专业主干课及主要专业选修课，语言材料的难易度切合学生的实际水平；词汇

以大学英语“通用词汇表”的4000个单词为起点，每个专业类别的三册书将增加1000~1200个阅读本专业必需掌握的词汇。本教材重视语言技能训练，突出对阅读、翻译和写作能力的培养，以求达到《大学英语专业阅读阶段教学基本要求》所提出的教学目标：“通过指导学生阅读有关专业的英语书刊和文献，使他们进一步提高阅读和翻译科技资料的能力，并能以英语为工具获取专业所需的信息。”

《建筑类专业英语》每册16个单元，每个单元一篇正课文(TEXT)，两篇副课文(Reading Material A&B)，每个单元平均2000个词，三册48个单元，总共约有十万个词，相当于原版书三百多页。要培养较强的阅读能力，读十万个词的文献，是起码的要求。如果专业课教师在第六和第七学期，在学生通过学习本教材已经掌握了数百个专业科技词汇的基础上，配合专业课程的学习，再指定学生看一部分相应的专业英语科技文献，那将会既促进专业课的学习，又提高英语阅读能力，实为两得之举。

本教材不仅适用于在校学生，对于有志提高专业英语阅读能力的建筑行业广大在职工程技术人员，也是一套适用的自学教材。

建设部人事教育劳动司高教处和中国建设教育协会对这套教材的编写自始至终给予关注和支持；中国建筑工业出版社第五编辑室密切配合，参与从制定编写方案到审稿各个阶段的重要会议，给了我们很多帮助；在编写过程中，各参编学校相关专业的许多专家、教授对材料的选取、译文的审定都提出了许多宝贵意见，谨此致谢。

《建筑类专业英语》是我们编写对口专业阅读教材的又一次尝试，由于编写者水平及经验有限，教材中不妥之处在所难免，敬请广大读者批评指正。

《建筑类专业英语》
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UNIT ONE

Text **Insights into Architecture (Part One)**

I . Forces

[1] In his study of place, Genius Loci, Towards a Phenomenology of Architecture, Christian Norberg Schulz explains the basic act of architecture as being “to understand the vocation of the place.” He describes the need “to concretise the genius loci...by means of buildings which gather the properties of the place and bring them close to man.” Throughout the book Norberg Schulz draws out those features of topography and landscape which give a special character to places and shows how architecture can respond by creating a meaningful environment.

[2] In his discussion Norberg Schulz constantly refers to man-made and natural forces as——when he describes the siting of Prague as comprising—— “all the main natural forces, undulating plain, rocky hills and water”, explaining how the architecture in the city manages to embody this.

[3] In the study, Norberg Schulz first identifies the characteristics of the region, showing how the city became a nodal point where a road from Ucrania and Poland which crossed the Vitava into Germany met the road from Austria in the south to Saxony and Prussia. ① He describes how Prague is situated on an extended hill which rises at the curve of the river, the hill and the river being “opposed but complementary forces” . ②

II . Nature

[4] In an essay discussing the relationship between art and nature, art and the world. John Berger argues that “Nature is energy and struggle. It is what exists without any promise...as an arena, a setting, it has to be hought of as one which lends itself as much to evil as to good. Its energy is fearsomely indifferent” . He goes on to argue that we sense beauty because it is such a contrast to our struggle against nature.

[5] It is within this bleak natural context that beauty is encountered, and the encounter is by its nature sudden and unpredictable. The gale blows itself out...Under the fallen boulder of an avalanche a flower grows...beauty is always an exception, always despite of. This is why it moves us.

[6] Berger asserts that the kind of aesthefic emotion we feel before a man-made object derives from the emotion we feel before nature.

[7] All the languages of art have been developed as an attempt to transform the instan-

taneous into the permanent. Art supposes that beauty is not an exception——is not despite of but is the basis for an order.

Art is an organized response to what nature allows us to glimpse occasionally. Art sets out to transform the potential recognition an increasing one.

III. Art

[8] In his discussion Berger relates his argument to a white wooden bird, hung by peasants in their kitchens in certain regions of Czechoslovakia, Russia and the Baltic countries. These birds somehow manage to act as “mediators” between man and nature.

[9] As Berger explains, their figurative form, that of a dove, makes a direct reference to the world of nature. Being located indoors (where birds are not usually found) renders the object symbolic. Then there is respect for the way the material, wood, has been fashioned. There is also unity and economy in the object, a richness resulting from its design. Finally there is wonder as to how the object is made. This sense of mystery, the fine craftsmanship, provoke an aesthetic emotion. Thus does man “transform” nature into a work of art.

[10] In a discussion of the cave paintings in Spain and southern France, Dr Jacob Bronowski suggests that these works by early man “act as a kind of telescope tube of the imagination; they direct the mind from what has been seen to what can be inferred or conjectured.”

[11] He explains how art and science are both human actions deriving from the ability to visualise the future, playing a vital part in cultural evolution, which he describes as “a constant growing and widening of the human imagination” .

IV. Art as Symbol

[12] The link between art and man’s emotions has been pursued by Susanne • K • Langer, who has given her own definition of art; “Art is the creation of forms symbolic of human feeling” . She explains the importance of the term “creation” because it is the creative act that produces the work of art. Merely to produce something is not enough; to erect a house is a mechanical act which is not the same as creating a work of architecture.

[13] Discussing the content of forms Langer argues that what matters is their import so that they become “logically expressive or significant forms. They are symbols for the articulation of feeling and convey the elusive and yet familiar pattern of sentience.” The symbolic element is of the greatest importance because Langer asserts that art is always a symbol. “In an articulate symbol, the symbolic import permeates the whole structure, because every articulation of that structure is an articulation of the idea it conveys.”

[14] Langer insists that in order to create significant form with an appropriate symbolic

content an intellectual dimension is necessary. "Works of art are made of sensuous elements, but not all sensuous elements will do." They must be capable of assemblage in the right kind of combinations; as symbols, works of art must communicate directly and immediately. "An articulate form must be clearly given and understood before it can convey any import," and "the congruence of the symbolic form and the form of some vital experience must be directly perceived by the force of the Gestalt[®] alone. Hence the paramount importance of abstracting the form banning all irrelevancies that might obscure its logic, and especially divesting it of its usual meanings so it may be open to new ones."^④

New Words and Expressions

genius loci ['dʒi:njəs'ləʊsai]	<i>n.</i> 守护神, (某地) 风气, 精神
phenomenology [fi:nəmi'nɒlədʒi]	<i>n.</i> 现象学
vocation [vəʊ'keɪʃən]	<i>n.</i> 天职, 使命
concretise ['kɒŋkri:təɪz]	<i>v.</i> 具体化
undulating ['ʌndʒuleɪtɪŋ]	<i>a.</i> 波动起伏的
embody * [im'bɒdi]	<i>vt.</i> 使形象化, 体现
nodal * ['nəʊdəl]	<i>a.</i> 节的, 结的
complementary ['kɒmplɪməntəri]	<i>a.</i> 补充的, 互补的
arena [ə'ri:nə]	<i>n.</i> 竞技场, 活动场所
unpredictable [ʌnpri'dɪktəbl]	<i>a.</i> 无法预言的
bleak [bli:k]	<i>a.</i> 荒凉的
boulder ['bəʊldə]	<i>n.</i> 圆石, 卵石
avalanche [ʌvələ:nʃ]	<i>n.</i> 雪崩, 崩落
assert [ə'sɜ:t]	<i>v.</i> 主张, 断言
instantaneous [ɪnstən'teɪnjəs]	<i>a.</i> 即刻的, 瞬间的
mediator ['mi:dieɪtə]	<i>n.</i> 解停者
dove [dʌv]	<i>n.</i> 鸽子
figurative ['fɪgjurətɪv]	<i>a.</i> 比喻的, 形容的
symbolic [sɪm'bɒlɪk]	<i>a.</i> 象征的, 符号的
craftsmanship ['krɑ:ftsmənʃɪp]	<i>n.</i> (工匠的) 技艺
conjecture [kən'dʒektʃə]	<i>v.</i> 推测, 猜想
logically [lɒdʒɪkəli]	<i>ad.</i> 有逻辑地
articulation [ɑ:tɪkjə'leɪʃən]	<i>n.</i> 清晰的表现
elusive [ɪ'lju:sɪv]	<i>a.</i> 闪避的, 无从捉摸的
sentience [ˈsenʃəns]	<i>n.</i> 感觉力, 直觉
articulate [ɑ:'tɪkjulɪt]	<i>a.</i> 明了的, 发音清晰的
permeate ['pɜ:mieɪt]	<i>v.</i> 渗入, 弥漫
intellectual [ɪntɪ'lektʃuəl]	<i>a.</i> 智力的, 理性的

sensuous [ˈsensjuəs]	<i>n.</i> 知识分子
assemblage [əˈsembliɪdʒ]	<i>a.</i> 感觉的, 官能享受
congruence [ˈkɒŋgruəns]	<i>n.</i> 集合, (机器的) 装配
paramount [ˈpærəmaʊnt]	<i>n.</i> 适合, 一致
ban [bæn]	<i>a.</i> 最高的, 首要的
irrelevancy [iˈrelivənsi]	<i>v.</i> 禁止, 取缔
obscure [əbˈskjuə]	<i>n.</i> 不恰当, 不相干
	<i>vt.</i> 遮蔽, 使难理解
	<i>a.</i> 朦胧的, 不清楚的, 不出名的
divest [daiˈvest]	<i>vt.</i> 剥夺, 摆脱

Notes

- ①该句中“where a road...to Saxony and Prussia”为定语从句, 对“a nodal point”做限定说明; 该定语从句的谓语动词是“met”。
- ②...the hill and the river being “opposed but complementary forces”此为分词独立结构, 作状语, 说明“how Prague is situated”的特点。
- ③Gestalt 经验的整体, 整体的体验。
根据格式塔心理学 (Gestalt psychology), 人对视觉形体的感受是整体的、完整的, 而非各种分析过程所得结果的综合。
- ④该句没有谓语动词, 只有一个名词短语 (the paramount importance of abstracting the form), 后面带两现在分词短语 (banning...和 divesting...) 作定语; 该句相当于 Hence comes the paramount importance...。

Exercises

Reading Comprehension

1. Global Tasks

1. Each of the following sentences is a statement that sums up the major idea for one or two paragraphs. Skim the text and identify the paragraph (s) for each idea by filling in the bracket with the corresponding paragraph number (s) .

- 1) Architecture should embody the properties of the place so as to create a meaningful environment. ()
- 2) Prague fits in with its place nicely. ()
- 3) Nature is neither good nor bad and only beauty is what makes nature different. ()
- 4) Art is man's systematic effort to find beauty. ()

- 5) A work of art arouses an aesthetic emotion in man with its sense of mystery, fine craftsmanship and a symbolic meaning. ()
- 6) Art is always a symbol. ()
2. The text is divided into four parts (I , II , III and IV) in which three authors express their ideas about art and architecture. Complete the following table by identifying the authors and their ideas expressed. Part I in the table has already been done for you.

I . Detailed Tasks

Directions: Choose the ONE answer to each of the following multiple-choice questions.

1. When Norberg Schulz mentions “the vocation of the place”, he is probably referring to _____ .

Part	Authors	Ideas Expressed	Major Details
I	C • Norberg Schulz	The basic act of architecture is to understand _____ .	An example: the siting of _____ .
II	John Berger	Beauty is always _____ .	The encounter of _____ is sudden and unpredictable.
III	_____	Man can transform nature into a work of art.	A white _____
IV	_____	Art is symbolic.	1) symbols for human feelings 2) the symbolic import of art 3) the need to _____ the form

- A. the call of the god of the place
- B. a special character of the place
- C. a meaningful environment
- D. the buildings of the place
2. By man-made and natural forces Norberg Schulz means the siting of Prague, the undulating plain, rocky hills and water. So we should understand the word “force” in the sense of _____ .
- A. situation and environment
- B. association and connection
- C. relationship and influence
- D. characteristics and properties
3. In paragraph 5, John Berger says that beauty is always “despite of.” This means _____ .
- A. beauty always occurs unexpectedly
- B. beauty can be recognized without meeting with difficulties
- C. beauty can be found where no flower grows
- D. beauty moves us because of the bleak environment

4. All the following statements, though in different words, express the same meaning of "our struggle against nature" except _____ .
 - A. art supposes that beauty is not an exception
 - B. art sets out to increase our appreciation of beauty
 - C. art tries to make a systematic effort to discover beauty in nature
 - D. art is based on the promise of nature
5. According to John Berger (paragraphs 8-9), the aesthetic emotion we feel before a man-made object is related to all the following elements except _____ .
 - A. a symbolic form
 - B. the particular material
 - C. a sense of mystery
 - D. the fine craftsmanship
6. Single out the topic statement for paragraph 14 from among the following choices.
 - A. An intellectual dimension is needed in creating a work of art.
 - B. It is of vital importance to abstract the form.
 - C. A work of art should communicate directly and immediately.
 - D. The Gestalt force enables us to look at a work of art as a whole.

Vocabulary

- I. Match the words in Column A with their corresponding definitions or descriptions in Column B.

A

1. concretise
2. a nodal point
3. articulate
4. topography
5. craftsmanship

B

- a. the quality and skill as shown in something made
- b. to make something into material form
- c. able to express clearly and meaningfully
- d. a point at which lines (such as roads) meet or cross
- e. the detailed description of natural and man-made features of a place

- II. Complete the following sentences with the words given below, changing their forms where necessary.

visualize undulating complementary sensuous provoke

1. Analysis of information is a meaningful prerequisite (先决条件) for design and may _____ the designer's creativity.
2. The siting of Prague comprises all the main natural forces: _____ plain, rocky hills and water.
3. Study models are invaluable aids in helping the architect _____ and maximize three-dimensional potentials during the design process.
4. Baroque (巴洛克) was an emotional, _____ architecture, a reaction against the strict aesthetic rules imposed by the Renaissance.
5. Working with architects expands my perspective because their sensibility tends to be _____

_____ to that of the landscape architects.

Translation

词义选择 (Selection of Meanings)

现代英语中，一词多义的现象很普遍，但是，在一定的上下文中，英语词汇的意义一般是明确的。因此，在翻译时，要正确选择词义，就要注意：在一定的上下文中，该词属于何种词类（名词、动词……），是否有专业术语意义；是否因在句中的语法功能而产生了新的词义等等。

例 1. This phase involves laying out material in order to inventory all problems.

在此阶段，须展示所有的资料以便开列所有问题的清单。

[在该句中，inventory 作动词]

例 2. Passing by the entirely south elevation, one may view the house from below the waterfall.

完全绕过南立面后，人们可以从瀑布下方观看这幢房子（流水别墅）。

[elevation 此处为建筑设计的“立视图”或“立面”]

例 3. Beauty is always an exception, always “despite of”.

美总是例外，总是“但是”。

[despite of 为复合介词，但此处作表语用]

Directions: Translate the following sentences into Chinese, paying special attention to the correct selection of meanings of the underlined words or phrases.

1. When one first approaches Falling Water, the impression is that of a series of pale yellow-colored horizontal planes hovering above ground at varying heights within a forest.
2. Four square garden courts front the mausoleum at one end of Taj Mahal (泰姬陵).
3. In his discussion of form, Le Corbusier is at pains to point out that the geometric laws of any particular form should be the basis for subsequent action.
4. Forms assume a greater authority when their construction remains simple.
5. Chinese architecture focused on man, on the square of man and the circle of nature. While the circle represented heaven, the square expressed man's territory, his intellect, his order, his house or his city.
6. Subjects whose age is under ten seem most sensitive to an optical complexity situated somewhere between simplicity to maximal complexity.

Reading Material A & B

Insights into Architecture (Part Two)

I . Architecture and Culture

A culture is made up, factually, of the activities of human being; it is a system of interlocking and intersecting actions, a continuous functional pattern. As such it is, of course, intangible and invisible. It has physical ingredients—— artefacts; also physical symptoms—— the ethnic effects that are stamped on the human face, known as its “expression”, and the influence of social conditions on the development, posture and movement of the human body. But all such items are fragments that “mean” the total pattern of life only to those who are acquainted with it and may be reminded of it. They are ingredients in a culture, not its image.

The architect creates its image; a physically present human environment that expresses the characteristic rhythmic functional patterns which constitute a culture. Such patterns are the alternation of sleep and waking, venture and safety, emotion and calm, austerity and abandon; the tempo, and the smoothness or abruptness of life; the simple forms of childhood and the complexities of full moral stature, the sacramental and the capricious moods that mark a social order, and that are repeated, though with characteristic selection, by every personal life springing from that order. ①

II . Tension and Harmony

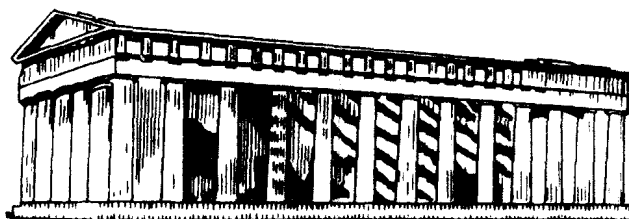
The emotions we experience throughout our “life of feeling” are translated by the artist to harness the energy of the life situation. As such, the dynamic aspects of life, its drama and excitement combine with those other experiences of peace, sadness, suffering or exhilaration to become part of the artist’s expressive palette. ②

The fact that life does indeed consist largely of Langer’s “tensions and resolutions” means that this is central to existence. The pattern of life has much to do with striving to attain goals or accomplish tasks resulting in a feeling of satisfaction and fulfilment. The desire and conditions which are created in order to reach such goals produce a certain tension. Once achieved there is a feeling of contentment.

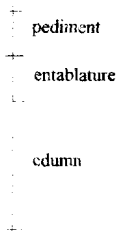
These energies receive artistic expression in the major themes of tension and harmony. If tension and harmony are major forces in life and art they are supported by secondary forces also everpresent in each, the rhythms of night and day, the rhythmic flow of blood as it is pumped around the body, the rhythm of the seasons. ③Such rhythms are also inter-

preted by the artist or composer in ways appropriate to whatever medium is employed.

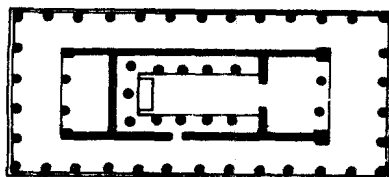
If the overall statement of the Greek temple is one of harmony and unity, this is achieved primarily in the balance in the bi-laterally symmetrical plan (Fig. 1-1) .



VIEW FROM THE SOUTH WEST



EAST ELEVATION



PLAN

Fig. 1-1 The Theseion Athens 449-444 B. C.

This unity has within it the opposing tension between the vertical column and horizontal entablature. ④The composition relies on a powerful rhythmic component with the major columnar rhythm supported by the secondary rhythms of triglyphs, and metopes.

The inclined planes of the roof conclude at each end with the pediments, whose oblique planes and triangular formation suggest another kind of energy. As Maurice de Sausmarez has explained, "diagonals introduce powerful directional impulses, a dynamism which is the outcome of unresolved tendencies towards vertical and horizontal which are held in balanced suspension." Although somewhat muted in the shallow angle of the temple pediment, this form is as necessary to terminate the composition at its upper extremity as is the