道路与桥梁工程专业规划教材

道路与桥梁工程专业英语

骆 毅 熊文林 唐 智 黄克海 编

机械工业出版社
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本书是应用型本科、高职高专院校道路与桥梁工程技术专业英语阶段教学用书，也可供相关专业教学使用，或作为相关专业继续教育及培训教材。

全书由10个单元组成，每单元由3个部分构成。书后附有练习参考答案和课文参考译文。第一部分是“课文和阅读材料”，其中包含单词和词组，科技英语翻译的方法与技巧，练习和作业等。第二部分是“建筑施工场景会话”，其内容按照工程进行的顺序使会话场景一个接一个地展开。第三部分是“模拟套写”，包括招标通告、招标、开标和授予合同等，涉外电子邮件、传真和信函等，以及如何撰写科技论文等实用应用文。

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前　言

本书从培养高级应用型人才的总体目标出发，结合学生毕业后有可能去国外从事建筑工程工作或在国内从事外资工程工作以及接触涉外业务的工作实际，力求向学生提供未来工作岗位所需要的专业英语知识和技能，在总结多年专业英语教学经验的基础上编写了本教材。

本教材共分 10 个单元。每单元由 3 个部分构成。

第一部分是“课文和阅读材料”（Part I Text and Reading Material）。其中包含①“单词和词组”（New Words and Expressions）；②科技英语翻译的方法与技巧（通过讲解阅读文章中的重点句和难点句来体现）；③练习和作业（Exercise）。10 个单元分为“路”和“桥”两大部分。在反复征求“城市道路设计”和“桥梁工程”资深教师意见和建议的基础上，尽量从英文原版书刊中来选取简洁明了的内容，以便学生容易接受，并实现语言的标准化与规范化。

第二部分是“建筑施工场景会话”（Part II Situational Conversations on Construction）。其内容按照工程进行的顺序使会话场景一个接一个地展开，完全是建筑施工企业在生产经营活动中经常发生的事情，符合当今国际承包常规作法。学生可将所学内容用于今后具体业务中。

第三部分是“模拟套写”（Part III Simulated Writing）。其旨在培养学生参照范例用英语拟写和翻译的能力，内容包括建筑施工领域的招标通告、招标、开标和授予合同等；涉外电子邮件、传真和信函等；科技论文等实用应用文。

本书由骆毅担任主编，负责全书 Part II，Part III 的编写工作，并负责前期的构思，后续的统稿修订等工作。熊文林负责第 1~5 单元 Part I 的编写工作。唐智、黄克海负责第 6~10 单元 Part I 的编写工作。施斌教授审阅了书稿。

由于编者水平有限，书中难免有不妥和疏漏之处，恳请读者不吝指正。

编者

目　录

Unit 1

Part I Text

Highway Introduction

Highway is a structure of line shape, which is exposed to the nature to support car load. It basally consists of roadbed, pavement, bridge, culvert, tunnel, protective work, drainage system, intersection, traffic service facility and so on.

Roadbed

Roadbed is a kind of ground structure which is excavated or filled according to the surface line position and certain technical requirement. It mainly sustains the car load delivered by surfacing, and a base to support the pavement. Figure 1-1 depicts the cross section of the roadbed, which should possess sufficient strength and stability in designing, and prevent the roadbed from the damage imposed by water and other natural factors.

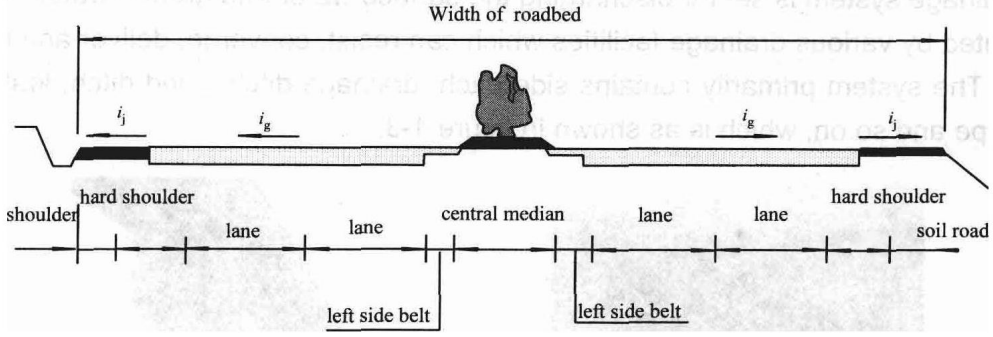

Figure 1-1 Cross Section of Roadbed

Pavement

Pavement is made up of various materials placed in layers and used to offer traveling for cars. It can be divided into two kinds according to materials, namely rigid pavement and flexible pavement. Rigid pavement stands for the cement road and flexible pavement stands for the asphalt pavement, which is as figure 1-2. In designing, the pavement should ensure enough strength, rigidity, smoothness and roughness to meet the need that vehicles can travel safely, fast and comfortably.

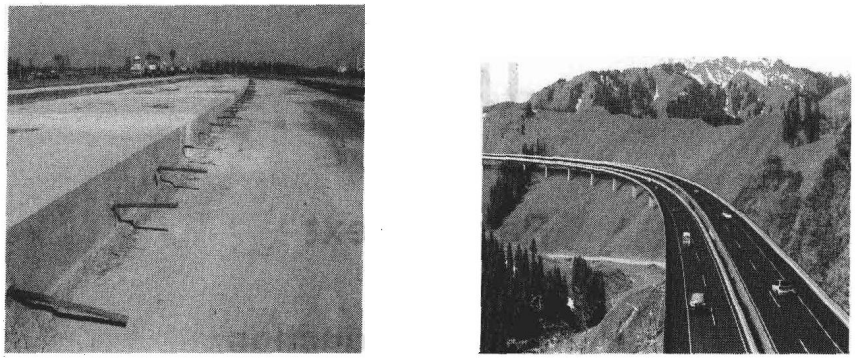

Figure 1-2 Rigid Pavement and Flexible Pavement

Bridge and culvert

Bridge is constructed for the road to traverse rivers, valleies, and artificial structures, and culvert passing across the roadbed is of small shape, and made to drain the surface water or irrigate the farmland.

Tunnel

Tunnel is built as the design requirement for the road to traverse mountains, underground or water bottom.

Drainage system

Drainage system is set for discharging the surface water and ground water, which is constituted by various drainage facilities which can resist, converge, deliver and release matter. The system primarily contains side ditch, drainage ditch, blind ditch, leak ditch, drain pipe and so on, which is as shown in figure 1-3.

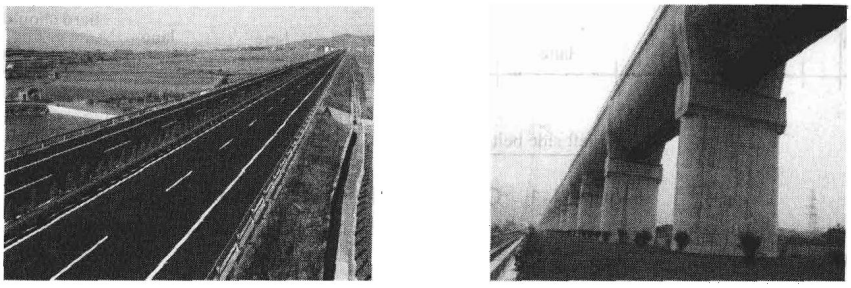

Figure 1-3 Side Ditch and Aqueduct

Protective work

Protective work is a structure erected for reinforcing the side slope and ensuring the stability of roadbed, generally including plant and engineering protection as shown in figure 1-4.

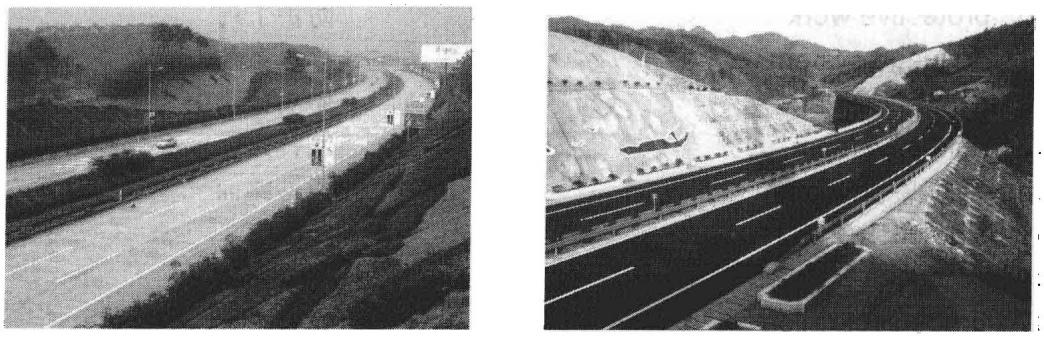

Figure 1-4 Plant and Engineering Protection

Intersection

Intersection is defined as the cross-region between roads or between roads and other pipelines. When roads intersection at grade, it is called grade intersection; if not, it is called grade separation as shown in figure 1-5.

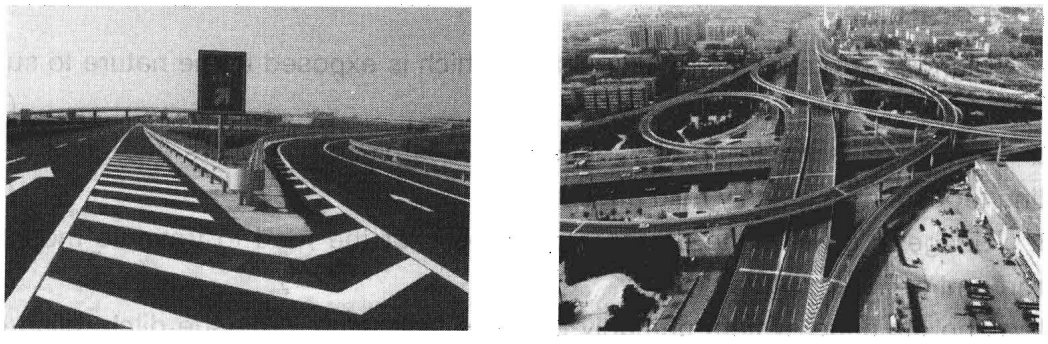

Figure 1-5 Grade Intersection and Grade Separation

Traffic service facility

Traffic service facility means the facility such as traffic sign, marking, barrier, central median, noise barrier, lighting facility and landscaping facility, which are arranged along the line.

New Words and Expressions

1.	highway	['haiwei]	*n.*	公路
2.	roadbed	['rəudbed]	*n.*	路基
3.	pavement	['peivmənt]	*n.*	路面
4.	bridge and culvert		*n.*	桥涵
5.	tunnel	['tʌnl]	*n.*	隧道
6.	intersection	[ˌintə'sekʃən]	*n.*	交叉点，十字路口，交集
7.	shoulder	['ʃəuldə]	*n.*	路肩
8.	lane	['lein]	*n.*	行车道
9.	aqueduct	['ækwiˌdʌkt]	*n.*	渡槽

10. protective work	防护工程
11. drainage system	排水系统
12. central median	中央分隔带
13. rigid pavement	刚性路面
14. flexible pavement	柔性路面
15. side ditch	边沟
16. grade intersection	平面交叉
17. grade separation	立体交叉
18. traffic sign	交通标志
19. noise barrier	声屏障

Exercises

I. True or False.

1. Highway is a structure of line shape, which is exposed to the nature to support car load. ( )

2. Pavement is made up of various materials placed in layers and used to offer traveling for cars. It is namely rigid pavement. ( )

3. Bridge is built as the design requirement for the road to traverse mountains, underground or water bottom. ( )

4. The drainage system primarily contains side ditch, drainage ditch, blind ditch, leak ditch, drain pipe and so on. ( )

5. Intersection is defined as the cross-region between roads or between roads and other pipelines. ( )

II. Translate the following sentences into Chinese.

Roadbed is a kind of ground structure which is excavated or filled according to the surface line position and certain technical requirement. It mainly sustains the car load delivered by surfacing, and a base to support the pavement. Figure 1-1 depicts the cross section of the roadbed, which should possess sufficient strength and stability in designing, and prevent the roadbed from the damage imposed by water and other natural factors.

III. Translate the following sentences into English.

1. 排水系统是为了排除地表水和地下水而设置的。它由各种拦截、汇集、输送及排放构造物组成。

2. 防护工程是为了加固路基边坡，确保路基稳定而修建的构造物，一般有植物防护和工程防护两种。

Reading Material

Highway Design Philosophy

Designers must place the following project-related qualities in the forefront of the decision-making process:

- The project satisfies the purpose and need as agreed to by a full range of stakeholders. This agreement is forged in the earliest phase of the project and amended as warranted as the project develops.
- The project is a safe facility for both the user and the community.
- The project is in harmony with the community, and it preserves environmental, scenic, aesthetic, historic, and natural resource values of the area.
- *The project exceeds the expectations of both designers and stakeholders.*
- The project involves efficient and effective use of the resources (time, budget, community values) of all involved parties.
- The project is designed and built with minimal disruption to the community.
- The project is seen as having added lasting value to the community.
- Communication with all stakeholders is open, honest, early, and continuous.
- A multidisciplinary team is established early, with disciplines based on the needs of the specific project and with the inclusion of the public.
- A full range of stakeholders is involved with transportation officials. The purposes of the project are clearly defined, and consensus on the scope is forged before proceeding.
- The project development process is tailored to meet the circumstances. This process should examine multiple alternatives that will result in a consensus.
- The public involvement process, which includes informal meetings, is tailored to the project.
- The landscape, the community, and valued resources are understood before engineering design is started.
- A full range of tools for communication about project alternatives is used (for example, visualization). As a result of CSD principles, designers should be flexible in decision making concerning the design decisions made about each project. The PDT has the responsibility of weighing all the particulars of a given project and making design decisions accordingly. Design decisions should consider equally safety, mobility, and preserving scenic, aesthetic, historic, environmental, and community values. Design criteria shown in AASHTO's (A Policy on

Geometric Design of Highways and Streets) are intended as a guide allowing flexibility to encourage independent designs. Ranges of values are key in Green Book criteria, with the utilization of higher values in the ranges where social, economic, and environmental impacts are not deemed critical. Sound engineering judgment is to be used in situations where these impacts are more pronounced.

During the early project development or conceptual design process, there are key decision points where the PDT must come together and make decisions that will help determine the outcome of a project. These key decision points are in line with the NEPA decision-making process. The PDT must realize that the product of the conceptual phase is a transportation decision with an approved environmental document based on an alternate and not just the preliminary line and grade plans. There is only one product: the transportation decision documented in the environmental document and reflected in the engineering plans.

Part II Situational Conversations on Construction

Pre-qualification

Dialogue 1

Engineer (E): Good morning! First let me introduce myself. My name is David Lee, a Consultant Engineer of Da Long Highway Engineering. I am glad to meet you!

Contractor (C): Good morning! Nice to meet you too! I am Wang Hai. I work for CSCEC Corporation as the representative of the contractor for the civil works.

E: Thank you for your attendance at the presentation meeting. In this way we hope we can have the chance to learn more about your company's capacity for Highway construction.

C: Thank you for offering this opportunity to our company. We are very interested in this project and hope to be qualified for tendering for this project.

Dialogue 2

E: You need to fill out all forms we required. For example, employees situation list, you should write the numbers of senior technical persons, technicians, management staff and skilled workers. Regarding the construction equipment you should list all main machines and equipment owned by your company with their quantities, capacities, depreciation years and producer's names.

C: Ok. We will do the required things first, and then more materials will be added to the document for more detailed introduction.

E: The added document should include as follows: a copy of your company's business license, the certificate from the notary public office for your business license and the financial report, the safety guideline method of your company. Finally I would like to remind you that the document has to be submitted to us before 6:00 p.m. on 31 December 2006. Any later submission will be rejected.

C: We will fulfill all the requests in the document and submit it on time.

E: Thank you for your co-operation! Goodbye!

C: See you next time. Bye by!

New Words and Expressions

1. civil works	土建工程
2. senior technical person	高级技术员
3. management staff	管理人员
4. skilled worker	熟练工人
5. construction equipment	建筑设备
6. depreciation year	折旧年限
7. business license	营业执照
8. notary public office	公证处
9. safety guideline	安全规则

Exercises

I. Match the Chinese in Column A with their English equivalents in Column B.

Column A	Column B
顾问	highway construction
承包商	on time
公路施工	consultant
胜任，有资格	co-operation
技术员	technician
厂家名称	submit
财务报告	financial report
及时	contractor
递交	producer's name
合作	be qualified for

II. Translate the following sentences into English.

1. 此项工程对我们来说真是一个挑战。
2. 首先，你们应该通过资格预审。
3. 我们必须遵照规定的程序来挑选合格的承包商。
4. 我们将在资格预审书后附上我公司的一些小册子。
5. 非常感谢您帮我澄清了资格预审书中的疑问。

Part III Simulated Writing

E-mail

Specimen 1

From: John Hill <jh@.gshro>
To: Mr. Li Ming <lm@.shcec>
Date: 15 March 2006 08:15:30
Subject: Substructure Contract

Dear Mr. Li,

With regard to the confirmation of the intent to award bid of the subject project, 2 sets of the latest drawings were issued to you on 12 March 2006 and in addition, we enclose herewith a set of specification.

In this connection, you are requested to review these drawings and specifications, and send your confirmation within 17 March 2006.

Your prompt action on this matter would be much appreciated.

Best regards,
John Hill

Specimen 2

From: Jiang Feng <jiang@371.net>
To: Bill White <Bill @ cmmail.com>
Date: 21 March 2007 10:30:35
Subject: Queries of Specification

Dear Mr. White,

Thank you for your response to and confirmation of the Specifications and Contract Drawings (letter dated 17 March 2007). And we would like to answer your queries of the same letter.

1. The ground floor slab should be included in the scope of the Substructure Contract. Please refer to clause 2 of the Letter of Acceptance.

2. The Substructure Contractor shall be responsible for the provision of various utility connections as shown on the Drawings and Specifications. The Substructure Contractor shall also provide attendance upon utility departments as stipulated in Clause 1.61 of the Preliminaries.

Regards,
Jiang Feng

Specimen 3

From: Scott Holt< sh@.bap>
To: Bale Smith<bs@.secg>
Date: 10 May 2008 09:10:10
Subject: Confirmation of Site Power/ Water

Dear Mr. Smith,

With reference to your Letter of Acceptance, Clause II— Contract Correspondence, we wish to confirm that the Employer will provide 383kVA power supply and a 100mm water main to the site.

Should you have any question or need further assistance, please contact us at your earliest convenience.

Regards,
Scott Holt

New Words and Expressions

1.	substructure	[sʌb' strʌktʃə]	*n.*	地下建筑，地下结构
2.	confirmation	[ˌkɔnfə'meiʃn]	*n.*	确认，认可
3.	award	[ə'wɔ:d]	*n.*	颁发，授予，奖励
4.	enclose	[in'kləuz]	*v.*	装入，附上，附入
5.	herewith	[ˌhiə'wið]	*ad.*	同此，以此
6.	specification	[ˌspesifi'keiʃn]	*n.*	说明书
7.	prompt	[prɔmpt]	*a.*	迅速的，及时的
8.	appreciated	[ə'pri:ʃieitid]	*a.*	感激的
9.	query	['kwiəri]	*n.*	疑问
10.	utility	[ju:'tiliti]	*n.*	公用设施，实用
11.	stipulate	['stipjuleit]	*v.*	规定，约定
12.	preliminary	[pri'liminəri]	*n.*	序言，目录

13.	correspondence [ˌkɔrisˈpɔndəns]	*n.*	通信，一致
14.	substructure contract		地下建筑合同
15.	with regard to		关于
16.	subject project		主题工程
17.	enclose herewith		随函附上
18.	ground floor		一楼地面
19.	in the scope of		在……范围内
20.	with reference to		关于
21.	letter of acceptance		中标函
22.	power supply		电力供应
23.	water main		主水管

Exercise

Complete the following E-mails with the information given below.

E-mail 1

a. in receipt of　b. from which　c. confirm accepting

d. the specification enclosed　e. the latest drawings

Dear Sirs,

We are pleased to inform you that we are(　　)（收到）your letter dated 12 May 2006, (　　)（从中）we find(　　)（最新图纸）and (　　)（所附详细说明）. After reviewing them carefully, we think they are workable. Now, we(　　)（确切接受）your designs and awarding the project to you.

Regards,

E-mail 2

a. with reference to　b. the site power supply　c. as follows

d. clear up　e. the arrangement of the circuit

Dear Sirs,

(　　)（关于）your letter of 10 May 2007, we find there are some queries, which are (　　)（如下）:

1. (　　)（施工现场电力供应）and water supply should be provided by the employer.

2. (　　)（线路的布置）and the hardening of the road should be included in the scope of the contract.

Please(　　)（澄清）the queries above, and contact us as soon as possible.

Regards,

Unit 2

Part I Text

Highway Subgrade

Highway Subgrade (or basement soil) may be defined as the supporting structure on which pavement and its special undercourses rest[①]. In cut section, the subgrade is the original soil lying below the layers designated as base and subbase material. In fill sections, the subgrade is constructed over the nation ground and consists of imported material from nearby roadway cuts or from borrow pits.

The cross-sectional shape of the subgrade depends on the type of surfacing. Figure2-1 shows the types of highway subgrade.

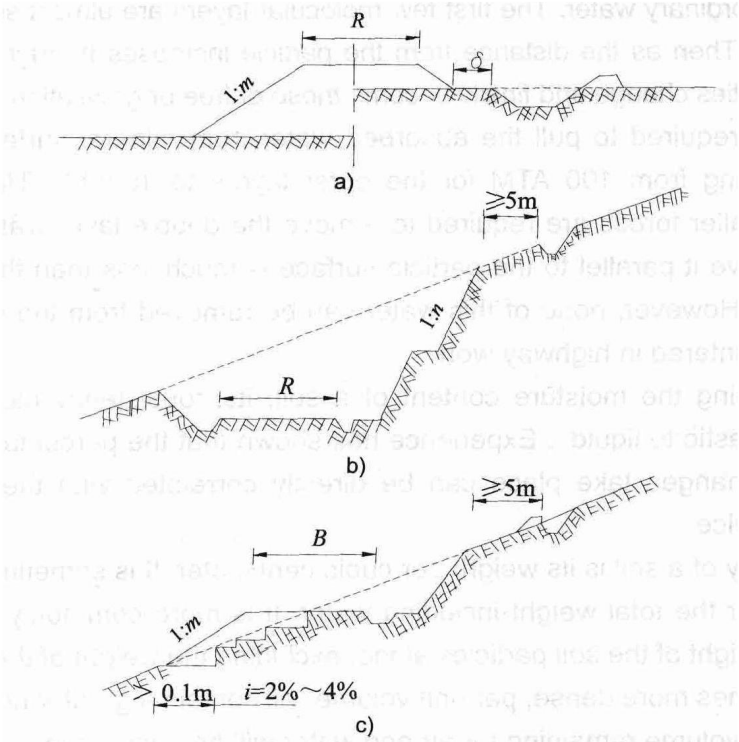

Figure2-1 Types of Highway Subgrade

a) highway embankment b) highway trench c) cut and fill subgrade