

高等学校专业英语教材

工程管理 专业英语教程

► 熊英 主编



电子工业出版社
PUBLISHING HOUSE OF ELECTRONICS INDUSTRY

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内 容 简 介

本书旨在使读者掌握工程管理相关专业英语术语及用法,培养和提高读者阅读和翻译专业英语文献资料的能力,以及口头表达能力。本书由12个主题单元组成,主要内容包括建筑的主要类型、项目管理、项目的生命周期、项目计划、成本估算的方法、成本控制,建设工程项目融资、合同条款、进度计划、工程的质量控制和保证、招投标、索赔等内容。每个主题单元由2篇课文、2篇阅读材料、课文词汇、课文注释和练习组成,在书后还附有课文参考译文。为了方便教学和锻炼学生英语听力,本书另配有电子教案,并提供部分视听素材,向采纳本书作为教材的教师免费提供。

本书可作为工程管理专业的专业英语教材,也可供从事相关专业的人员学习参考。

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前 言

目前,随着我国国际交流和全球化市场经济的快速发展,对大学生专业英语水平的要求也越来越高。大学生除了要能顺利地阅读相关的专业英文文献之外,其专业英语的听力和口语水平也需要进一步提高,以便更好地适应日益激烈的国际化竞争。

工程管理作为一门新兴学科,目前问世的相关专业英语书籍并不太多。本书的作者在阅读了大量工程管理专业英语的文献之后,精心选材,编写成册。其目的在于帮助工程管理专业的本科生掌握本专业的英文术语,进而提高他们专业英语的听力和口语水平。此外,经过大量的口语和阅读训练,学生应用专业术语的能力会进一步增强,这必为将来的工作打下坚实的基础。

本书包括 12 个单元,内容涉及建筑的主要类型、项目管理、项目的生命周期、项目计划、成本估算的方法、成本控制,建设工程项目融资、合同条款、进度计划、工程的质量控制和保证、招投标、索赔等问题。课后配有对重点词汇的发音和讲解以及针对文章的问题设计,学生通过回答问题不仅能更进一步了解工程管理专业的知识,而且能进一步提高自己专业英语的听说能力。

为了方便教学和锻炼学生英语听力,本书另配有电子教案,并提供部分视听素材,向采纳本书作为教材的教师免费提供(获取方式:登录电子工业出版社华信教育资源网 www.hxedu.com.cn 或电话联系 010-88254537 获得)。

由于时间有限,若有疏漏失当之处,望读者指正。

编 者

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Unit One

The Importance of Management in Civil Engineering



Lesson 1 Emerging Role of Management
in Civil Engineering



Lesson 2 The Construction Industry



Passage 1 Construction Management



Passage 2 Project Management and the Computer

Lesson 1 Emerging Role of Management in Civil Engineering

During the past two decades, many civil engineering firms have grown substantially in staff size, disciplines, and geographic areas served. These conditions have created a demand for civil engineers with special skills in project management.

Managerial skills have become important because many of these civil engineering firms have grown substantially in recent years. Several have more than 5000 employees with over 500 projects and over 100 offices. Every large project requires a manager. Every standalone office requires a senior manager. A logic question is how these managers, who require business skills, are developed from a pool of civil engineers who are trained as technical experts^[1] Obviously, most managers have had many years of on-the-job training. However, there is now a greatly increased demand and few firms have either the facilities or the staff to produce this training in-house. Therefore, firms are increasingly looking to the outside for management training of staff.

A few of universities in America have recognized the need and have developed curricula to promote development of the required skills. For example, at Northwestern University, one of the hottest new graduate programs in civil engineering is the Master's in Project Management (MPM) and it includes such subjects as:

1. Financial issues for engineers;
2. Bargaining and negotiations;
3. Human resources management;
4. Project scheduling;
5. Accounting issues for engineers;
6. Engineering law.

The selection of these courses is based on an appraisal of the skills actually needed in civil engineering management. This is confirmed by the fact that the American Society of Civil Engineers (ASCE) journal is advertising for papers on various areas of management such as project, program, operations, personnel, financial, marketing, and legal issues, since all are now considered important facets of civil engineering management^[2].

If one examines the staffing requirements of the larger firms, it can be noted that they employ large staffs in the legal, accounting, marketing, financial, personnel and

business management areas. When projects are primarily located in the United States, the necessary logistic support can be provided by temporarily transferring support staff from the home-office pool. When the projects are based in remote locations, particularly overseas, and when the client requires the design to be carried out locally, it becomes necessary to provide a project manager possessing not only well-honed engineering skills and good judgment, but other skills in contract management, such as those needed to negotiate changes in project scope and duration^[3].

While E-mail and fax machines have made it easier to get guidance from the home office, many decisions must still be made in the field. The local manager is frequently required by the client to have power of attorney, to ensure that all agreements made in the field are legally binding. If minor problems arise, the cost of overseas travel to remote areas such as Asia, Africa, and Latin America makes it impractical to send out a home office specialist every time a legal, accounting, personnel, scheduling, or negotiating problem arises. Consequently, one must depend on the local manager to successfully address a wide range of issues and call for help when major emergency arises.

While professional advancement in major companies can come either to those taking technical or managerial training, in our experience, those following the managerial track generally end up with higher recognition and compensation, because good management is so important in getting projects finished on time, on budget, and to the client's satisfaction^[4]. Besides that, good technical engineers are more abundant than civil engineering managers and compensation follows the laws of supply and demand.

In summary, it is intended to show why a modern civil engineer interested in professional growth requires an understanding of and skills in management, law, accounting, and personnel over and above the normal civil engineering training. The growth of mega firms as well as large public enterprise, has accelerated the need for such managers. Fortunately, civil engineers with managerial skills command an appreciably greater salary than those with only engineering skills. Hopefully, this economic incentive will attract some of the best and brightest civil engineers into the field of management.

Words and expressions

1. on-the-job training 在职培训
2. in-house 机构内部的

3. curricula [kə'rikjulə] *n.* 课程
4. human resource management ['hju:mən ri'sɔ:s 'mænidʒmənt] 人力资源管理
5. accounting [ə'kauntɪŋ] *n.* 会计学, 会计
6. appraisal [ə'preɪzəl] *n.* 评价, 鉴定
7. legal [li:gəl] *adj.* 法律的
8. facet [fæsit] *n.* 面, 方面
9. logistic [ləu'dʒɪstɪk] *adj.* 后勤的, 后勤学的
10. hone [həun] *v.* 把……放在磨石上磨
11. attorney [ə'tɜ:nɪ] *n.* 律师, 代理人
12. compensation [kəmpen'seɪʃən] *n.* 补偿, 补偿费
13. mega ['megə] *n.* 百万, 大
14. accelerate [æk'seləreɪt] *vt.* 加速

Notes

[1] A logic question is how these managers, who require business skills, are developed from a pool of civil engineers who are trained as technical experts.

“a pool of civil engineers” 指“众多的土木工程师”。

此句译为: 一个逻辑性的问题是, 那些被培训为技术专家的土木工程师将如何脱颖而出, 发展成为具备商务技巧的管理者。

[2] This is confirmed by the fact that the American Society of Civil Engineers (ASCE) journal is advertising for papers on various areas of management such as project, program, operations, personnel, financial, marketing, and legal issues, since all are now considered important facets of civil engineering management.

ASCE: 美国土木工程师协会。

此句译为: 这一点已有事实为证, 美国土木工程师协会会刊登广告征集各种类型的管理学术论文, 内容包括工程、项目、操作、人事、财经、市场营销及法律等各种问题, 因为所有的这些现在都已经被列为是土木工程管理的重要方面。

[3] When the projects are based in remote locations, particularly overseas, and when the client requires the design to be carried out locally, it becomes necessary to provide a project manager possessing not only well-honed engineering skills and good judgment, but other skills in contract management, such as those needed to negotiate changes in project scope and duration.

“well-honed” 指“精湛的”。

此句译为: 当工程项目在异地, 尤其是在国外的時候, 并且客户要求在当地完成设计,

公司就很有必要请一名项目经理,既要精通工程技术,有很好的判断力,同时也要谙熟合同管理,以便在必要的时候就工程范围和工期变动问题随时跟客户进行磋商。

[4] While professional advancement in major companies can come either to those taking technical or managerial training, in our experience, those following the managerial track generally end up with higher recognition and compensation, because good management is so important in getting projects finished on time, on budget, and to the client's satisfaction.

此句译为:虽然大公司所取得的专业方面的进步可能来源于技术或管理知识的培训,但根据我们的经验,那些注重发展管理的公司最终会赢得更高的赞誉和认可,因为好的管理能确保工程在财政预算内按期完成,并达到客户满意。

Questions

1. Why are managerial skills highly demanded in civil engineering?
2. What are the main subjects one should learn in order to get MPM (Master's in Project Management)?
3. Why is it necessary to provide a local manager? What kind of qualities should he possess?

Lesson 2 The Construction Industry

Construction is essentially a service industry, whose responsibility is to convert the plans and specifications prepared by an engineer or an architect into a finished project.

The construction of projects involves thousands of details and complex interrelationships among owners, architects, engineers, general contractors, speciality contractors, manufacturers, material dealers, equipment distributors, governmental bodies and agencies, labor, and others^[1].

The contractor assumes the responsibility for the delivery of the completed facility at a specified time and cost. In so doing, he accepts legal, financial, and managerial obligations.

Construction accounts for 15 out of every 100 jobs and consumes more basic and finished materials than any other industry.

Under the stimulus of increasing demand for its services, the construction industry has expanded and is expanding in geographical scope and technological dimension^[2].

Construction is the translation of a design to reality. It is as important and complicated as the design in order that the structure should perform as it was intended to and the work is finished within the required time at the lowest cost^[3].

The designer must be in close contact with everything that is done during the construction work so that any changes in the site conditions, materials and work being done can be evaluated and, if necessary, corrected or improved^[4].

The constructors should have the same knowledge of the working-plan as the designer. They must also know the details of the design and must understand any unusual aspect of the design. In fact, the constructors should go to the engineer for information and advice during the design stage so that the plans do not call for something that cannot be built economically^[5]. Both the designers and constructors must always work in harmony.

More workers are employed during the peak period. The employees should be given training for working skills and knowledge about quality and safety as early as possible. It will improve the working efficiency a lot.

The construction work can be divided into a number of stages:

1. Evaluation of plans, specifications, basic demands and features of the site.
2. Plan and speed of the job.

3. Making the site ready.
4. Building the structure.
5. Cleaning up.

The first stage of evaluation consists of a careful study of demand of design and of the site itself. Too often this is not done until the third and fourth stages are under way, which is far too late. The second stage is most important if the job is to be done economically. The equipment, labor and materials for each stage in the construction must be provided at the correct time.

The third includes constructing access roads, making the warehouse, concrete mixers, offices and housing for the workmen ready^[6]. Of course, this work is often just the beginning; the arrangements are changed several times during the progress of the work. The major part of the time and money is spent on the building stage.

With the development of science and technology, construction methods will change in all areas. Many daily functions will become automated and computer-controlled, especially in residential constructions. Thus there will be a demand for more skilled workmen, primarily those having technical background.

Words and expressions

1. architect [ˈɑ:kitekt] *n.* 建筑师
2. general contractor [ˈdʒenərəl kənˈtræktə] *n.* 总承包商
3. material dealer [məˈtɪəriəl ˈdi:lə] *n.* 材料经销商
4. equipment distributor [iˈkwɪpmənt disˈtrɪbjutə] *n.* 设备批发商
5. geographical scope [dʒiəˈgræfɪkəl skəup] *n.* 地理范围
6. technological dimension [ˌteknəˈlɒdʒɪkəl diˈmenʃən] *n.* 技术尺度, 技术因素
7. site conditions [saɪt kənˈdɪʃənz] *n.* (建筑)工地条件
8. in harmony [ɪn ˈhɑ:məni] 和谐
9. peak period [pi:k ˈpiəriəd] *n.* 顶峰阶段
10. evaluation [iˌvæljʊˈeɪʃən] *n.* 估价, 评价
11. residential construction [ˌreziˈdenʃəl kənˈstrʌkʃən] *n.* 住宅建设

Notes

[1] The construction of projects involves thousands of details and complex interrelationships among owners, architects, engineers, general contractors, speciality