

**THE HONG KONG INSTITUTION OF ENGINEERS
ENGINEERING GRADUATE TRAINING SCHEME “A”**

MODEL TRAINING GUIDE

STRUCTURAL ENGINEERING

Model Training Guide (MTG)

The Model Training Guide is a guide to Companies on the practical experiences considered relevant in the formal training of potential Professional Engineers.

Training Programme (TP)

The Training Programme is the plan prepared by a Company which is designed to meet the experiences listed in the MTG and to meet the objectives set out in the Record of Objectives. This ‘plan’ is presented for approval on Form TD1 Part 2 as a part of the Assessment/Reassessment procedures.

Training Period - Nominally 3 years

The length of the training is based on meeting the objectives and not determined by time. The times shown below are indicators only of the time that a trainee would normally take to meet the relevant objectives.

Training Aim

It is important to note that the Scheme “A” Graduate Training is designed to be a fast track by which a graduate can obtain full professional status. The training therefore covers both Technical and Professional matters.

Continuing Professional Development (CPD)

An implicit part of the Scheme “A” training is related to CPD which should be an integral and relevant part of the development of the graduate trainee.

Training Programme Content

1. Introduction (suggest 1 month in total)
 - 1.1 Size, history, subsidiaries if any
 - 1.2 Products, markets and competitors
 - 1.3 Management structure and functions
 - 1.4 Communication systems
 - 1.5 Location and layout of the facilities
 - 1.6 Safety, health and welfare
 - 1.7 Joint consultation arrangements if any
 - 1.8 Specialist skills
 - 1.9 Work of related disciplines
 - 1.10 Management techniques
 - 1.11 Sources of guidance

2. Basic and Supplementary Training
 - 2.1 Introduction to structural drawings
 - 2.2 Familiarization with Code of Practice and Building Regulations
 - 2.3 Familiarization with structural materials and their manufacture
 - 2.4 Familiarization with common computer analysis and design programs
 - 2.5 Further study and training

3. Engineering Design and Practice
 - 3.1 Research for available data or information
 - 3.2 Supervise and interpret soil investigation
 - 3.3 Assess construction methods and forms of construction
 - 3.4 Develop design in collaboration with other disciplines
 - 3.5 Prepare and check structural calculations in:
 - (a) Foundations
 - (b) Structural steel
 - (c) Reinforced concrete
 - (d) Temporary work
 - (e) Other structural materials
 - 3.6 Prepare and check general arrangement and working drawings
 - 3.7 Prepare specifications and contract document
 - 3.8 Prepare cost estimate
 - 3.9 Other works

4. Site Experience
 - 4.1 Planning and programming of construction works
 - 4.2 Method of construction including the design of temporary works
 - 4.3 Knowledge of materials, their characteristic and quality control
 - 4.4 Supervision of construction including checking of setting out, materials and workmanship aspects
 - 4.5 Liaison with clients, contractors, suppliers and relevant authorities
 - 4.6 Measurement of works, preparation of site records and reports
 - 4.7 Monitoring of construction safety

5. Engineering Management
 - 5.1 Tendering procedure
 - 5.2 Contract administration
 - 5.3 Professional ethics and responsibility

N.B.

1. The minimum training period must not be less than 36 months.
2. The programme set out is for guidance only but substantial departure should not be made. Employers should endeavour to provide training to their trainees in as many areas as possible as is appropriate to the sector of employment.
3. This guide should be read in conjunction with Section 3 of the Membership Admission Requirements booklet.
4. During their training, each trainee is required to maintain a Graduate Training Log Book, CPD Logbook and Record of Objectives.