



SCHEME 'A'

ENGINEERING

GRADUATE TRAINING

AIMS, PROCEDURES &

REQUIREMENT

香港工程師學會
THE HONG KONG INSTITUTION OF ENGINEERS

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Important Notes:-

The class of Graduate Member of the HKIE now includes persons who have obtained an accredited/recognised higher diploma, higher certificate, associate degree or an acceptable equivalent in a recognised engineering or technological discipline. However, applicants who are eligible to register as Engineering Graduate Training Scheme 'A' trainees include only "Graduate Members of the HKIE who also meet the academic requirements for Member in a Discipline."

In this booklet, any reference to the term "graduates", "graduate trainees", "Engineering Graduate Training Scheme 'A' trainees", or "Graduate Members" or the like are referring to those "Graduate Members of the HKIE who meet the academic requirements for Member in a Discipline."

PART 1

Aims & Philosophy

1. Professional Engineers

1.1 The definition of a Professional Engineer adopted by the HKIE is:-

Professional Engineers are competent by virtue of their fundamental education and training to apply the scientific method and outlook to the analysis and solution of engineering problems. They are able to assume personal responsibility for the development and application of engineering science and knowledge, notably in research, designing, construction, manufacturing, superintending, managing and in the education of engineers. Their work is predominantly intellectual and varied, and not of a routine mental or physical character. It requires the exercise of original thought and judgement and the ability to supervise the technical and administrative work of others.

Their education will have been such as to make them capable of closely and continuously progressing in their branch of engineering science by consulting newly published works on a world-wide basis, assimilating such information and applying it independently. They are thus placed in a position to make contributions to the development of engineering science or its application.

Their **education and training** will have been such that they will have acquired a broad and general appreciation of the engineering sciences as well as thorough insight into the special features of their own branch. In due time they will be able to give authoritative technical advice and to assume responsibility for the direction of important tasks in their 'branch'.

1.2 There are two HKIE routes (see also Fig.1) for a graduate to become a **Corporate Member**, that is a Professional Engineer:-

- (a) Via the HKIE **Engineering Graduate Training Scheme "A"**. This is the fast route for most graduates to Corporate Membership. The **minimum** time from graduation to Corporate Membership being

4 years total for the formal structured training and the consequent responsible work experience in the relevant engineering discipline.

- (b) Via the **General Experience** route. This is an alternative route provided by the HKIE Council for those candidates who may or may not be Graduate Members of the HKIE and who have not been registered on the Scheme "A".

This is a **slower route to Corporate Membership** with the minimum time period from graduation to Corporate Membership being **6 years of relevant work-experience and/or training**.

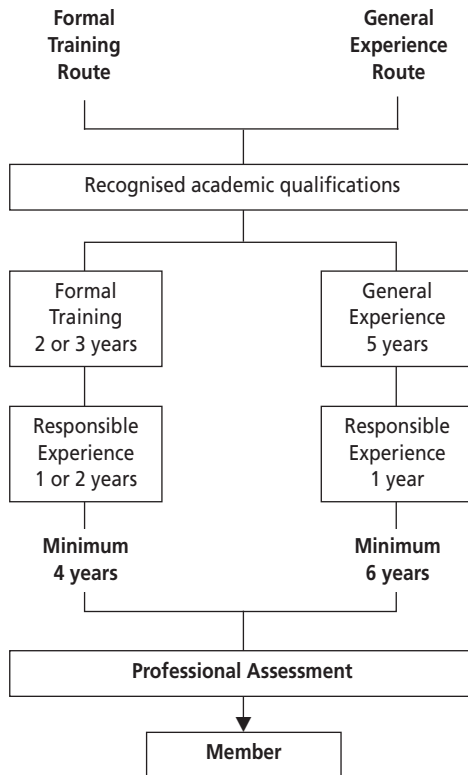


Fig. 1 Routes to Corporate Membership

2. Training Aims

- 2.1 The HKIE considers that the qualities required of a Professional Engineer can best be developed through integrating his theoretical knowledge with the practical skills. **The purpose of Scheme "A" Training is to provide registered graduate trainees with the opportunity to achieve this necessary integration of theory with practice.**
- 2.2 The overall aim of Scheme "A" Training is based on the need to foster the development in trainees of those **qualities required of a Professional Engineer** in the areas of:-
- (a) Technical Competence
 - (b) Managerial & Leadership Abilities
 - (c) Business Communication Skills
 - (d) Ethical & Professional Matters
 - (e) Social Awareness

The implicit concept in this aim is to ensure that in later life the young engineer can undertake engineering projects with the proper regard for the technical, economic, financial, environmental and social factors involved.

- 2.3 By the **end of their training** trainees should have **acquired a clear understanding** of:-
- (a) the importance of adhering to the HKIE's Rules of Conduct and their meaning in relation to the trainees' everyday work
 - (b) the need to make appropriate provision in every engineering project to ensure safety and reliability; and environmental factors
 - (c) their responsibilities to the employer, the colleagues, other engineers and the community at large
 - (d) the importance and relevance of their theoretical knowledge to the design, manufacture, construction, operation and maintenance of the particular products or services with which the employing organisation is concerned
 - (e) the general problems affecting an industrial organisation, such as the:-
 - financial, economic, commercial and statutory limitations
 - limitations imposed by the workforce, machines and the materials available
 - operation and maintenance requirements that may affect engineering decisions
 - (f) the vital importance of good industrial relations

- (g) the need to understand the point of view of others and to promote good personal relationships at all levels within an organisation
- (h) the importance of communication, and of being able to discuss inter-related activities and problems with members in other branches of engineering
- (i) the need to exercise sound judgement and to accept responsibility
- (j) the need to develop their abilities to the best advantage of the profession

2.4 Achieving the Training Aims is dependent on the level of input and dedication of **3 partners**:-

- (a) The **Company** providing the training opportunities and designating staff for Scheme "A" training duties. Clearly the company is a **Key Factor** in achieving the general objectives implicit in the training aims. In this aspect Scheme "A" depends on there being sufficient suitable practical training opportunities, of the relevant kind, being offered by local organisations to support the type of training required at the post-graduate professional level.
- (b) The **HKIE** involvement related to setting policy, co-ordination, and the overall monitoring of the training with respect to companies and trainees. It is of note that the success of the HKIE scheme owes much to the camaraderie that exists within the engineering disciplines and members' readiness to help with Scheme "A".
- (c) The **Trainees** themselves who are expected to make the most of the learning opportunities implicit in the training offered by their company to ensure that their knowledge and skill is up to the standards required.

3. Training Philosophy

3.1 The **HKIE Scheme "A" Training** is intended to be "**Learning-by-Experience**" and is based on the belief that this period is a natural progression in a trainee's education, with respect to putting theory into practice, and thus enhancing previous academic studies in terms of their 'real-life' application.

3.2 The underlying HKIE philosophy is that the training experiences should be relevant and of the right level. It is considered that there is no better way to **learn than by** the **trainees** being **practically and personally involved**, in a '**hands-on**' way, on their prescribed training activities. In this context it is expected that the **training experiences** will, wherever possible, be of an **everyday kind** normally arising within a company.

- 3.3 This emphasis on **'real'** (company) **work** helps ensure that the training experiences are relevant and that the **trainees** quickly become an **active part of the 'production' process**. However the concept of trainees being 'productive' requires that training staff **in their deployment of trainees** maintain a careful **balance** between commercial (natural company) interests and the training needs.
- 3.4 The learning gained through practical experiences needs to be reinforced by other methods of learning such as by information retrieval; use of the media; Video/Audio programmes; self-study training packages; attending seminars and lectures; and by reading. Much of this form of learning will be of a **Continuing Professional Development (CPD)** nature and should, in general, be of a **'trainee self-motivated'** kind.
- 3.5 To be successful the Scheme "A" training needs to be wholeheartedly and enthusiastically undertaken by the **Trainee and the Company** working, **in partnership**. For the Trainee this means accepting that the value gained from the training very much rests on his or her level of personal interest, involvement and a willingness to accept a measure of responsibility.

It is to be **expected (by the HKIE)** that **graduate trainees** will use their intellectual abilities to:-

- (a) identify how they can complement their formal training by self-help
 - (b) help develop their initiative and their innovative skills
 - (c) enhance their ability to retrieve and use relevant information
 - (d) use their diagnostic skills to identify problems and offer possible solution
 - (e) develop a natural inquisitive sense and 'question' 'why' and 'how' things are done, with the aim of improving procedures and thus productivity
- 3.6 To match the nature of the continuing technological industrial development and the consequent blurring of any clear distinction between the engineering disciplines it is **expected** that the **Scheme "A" training will include multi-disciplinary elements**. In this way to widen the experiences of the trainees so that they can better meet the technological challenges that lie ahead.

- 3.7 The Scheme "A" training is designed to help trainees develop self-confidence and have a measure of independence in the way they think and act and in this for them to be positive and independent.

In the **final analysis the success of the training**, with respect to the calibre of the 'product', **rests very largely** on the interest, enthusiasm, attitude, self-motivation and curiosity of the **trainees themselves**.

PART 2

Organisational Structure & Procedures

1. Introduction

This section covers general HKIE Scheme “A” Training organisational matters and operational procedures. The intention is to show the way company or trainee matters are instigated by companies and processed within the HKIE.

2. Training & Development Section

2.1 The Training & Development Section is to provide an efficient service to the HKIE Members and to industry as well as in the ‘promotion’ of training within Hong Kong.

2.2 The main duties of the Training & Development Section are related to implementing the HKIE training policy, particularly with all policy, organisational and administrative matters related to the Engineering Graduate Training Scheme “A”.

2.3 The Training & Development Section works closely with the Membership Section in matters related to qualifications and membership.

3. Training Committee Structure

3.1 All policy and procedural matters related to the HKIE Engineering Graduate Training Scheme “A” are the responsibility of the Qualification and Membership (Q&M) Board advised by the Training Committee (TC) and the three Training Review Sub-Committees (TRSC). The HKIE Organisational Structure (related to Scheme “A” training) is shown in Fig.1 below:-

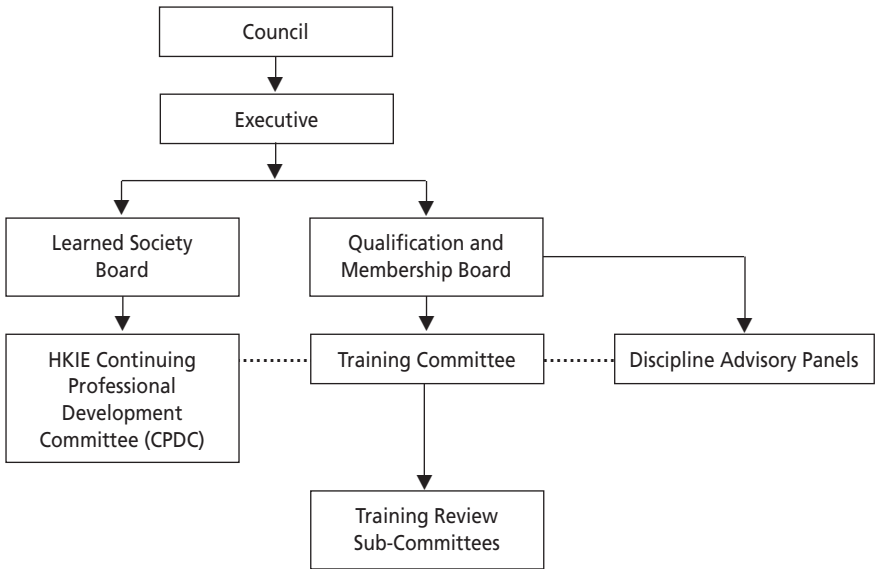


Fig. 1 The HKIE Organisational Structure

As can be seen the HKIE is divided into two main 'streams'. One headed by the Learned Society Board (LSB) whose concern is with learned society activities. The other 'stream' headed by the Qualification and Membership (Q&M) Board whose concern is with the professional matters.

Whilst the TC comes under the Q&M Board there is a formal linking between the HKIE Continuing Professional Development Committee (CPDC) (under the LSB) and the TC.

3.2 A more detailed description of the roles of the Training Committee and Training Review Sub-Committees are shown in Fig.2 below:-

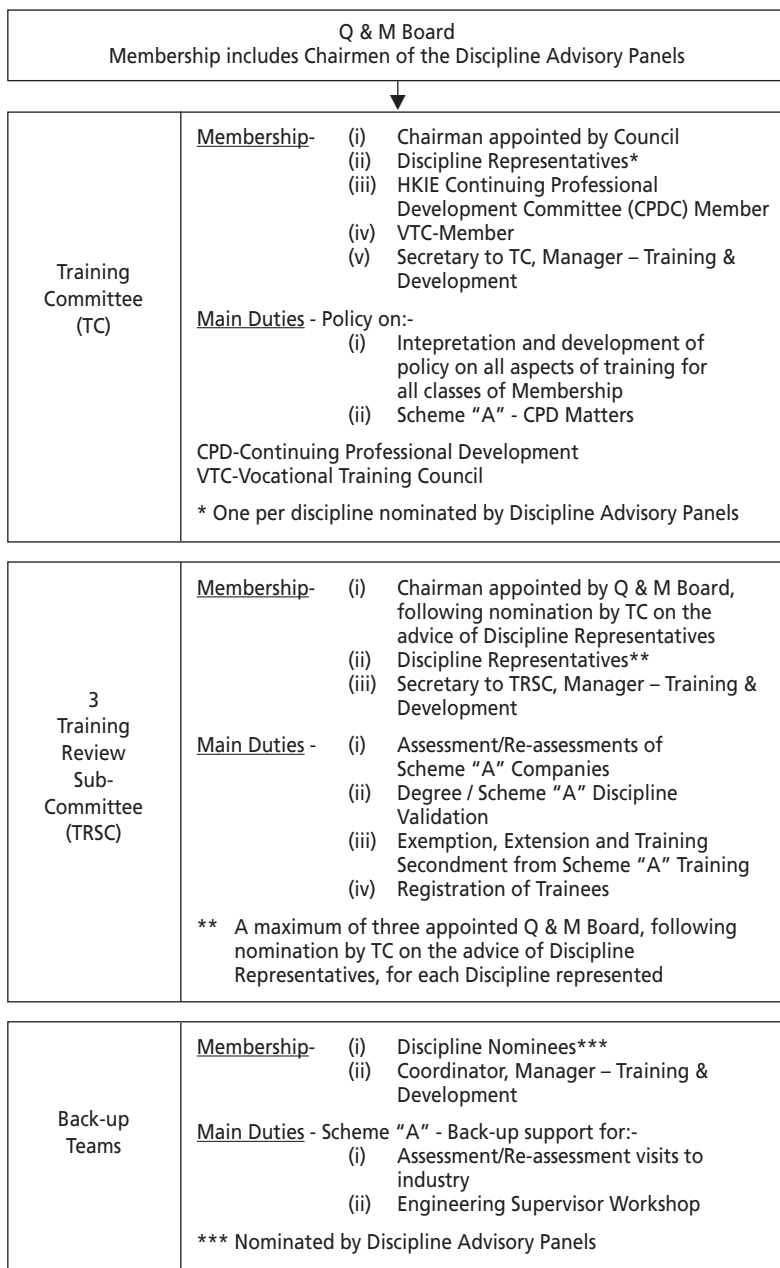


Fig. 2 Training Committee Structure

4. Scheme "A" - Company Assessment and Approval

4.1 Introduction

An important HKIE responsibility is to promote the need for good Engineering Graduate Training in Hong Kong and to encourage engineering based companies to be actively involved with such training.

Undoubtedly having the support of **companies who are willing and able to offer this high level of training** is vital in achieving the **success** of the **HKIE Engineering Graduate Training Scheme "A"**.

The HKIE aim is to ensure both '**quantity**' as well as '**quality**' of graduate training places. In this respect to ensure that there are enough training places in industry to meet the demand from graduates and that the training given by industry meets the professional standards required.

The **Scheme "A" Assessment and Re-assessment** procedure is primarily concerned with the **quality** of training being offered by a company. It is recognised that for many companies, and for their staff members, being involved with Scheme "A" is a new experience. In consequence the Scheme "A" **Assessments** have an **educational content** related to the HKIE working together with the company to identify any changes considered necessary to the training that could lead to its improvement.

Throughout this document the word 'company' is used to describe all forms of engineering organisation.

4.2 Benefits of Scheme "A" to an approved company:-

- (a) Graduates want **Scheme "A"** as it is the **fast route** to Corporate Membership of the HKIE. It is therefore a positive staff recruitment factor.
- (b) The **trainee** is in a sense '**contracted**' to the company for the period of the Scheme "A" training.
- (c) Companies (other than government organisations) are eligible to receive a financial **subsidy** intended to form a part of the trainee's salary. This subsidy is administered by the VTC as a part of its Engineering Graduate Training Scheme. The subsidy covers 18 months of the training period and the level of subsidy changes from year to year to match the local salary situation.

It should be noted that **all matters related** to the policy, approval and administration of the **HKIE Engineering Graduate Training Scheme "A"** are the **sole responsibility of the HKIE**.

- (d) The company gets a **graduate** who **if used properly** will help to upgrade the company and increase its '**productivity**'.

4.3 Scheme "A" - Company Application for Approval

To become **Scheme "A" Approved** a company should:-

- (a) **contact** the Training & Development Section of the HKIE requesting details of the Scheme "A" in the Engineering discipline(s) for which they are seeking approval.
- (b) **complete and return** to the HKIE:-
- (i) **Form TD1 "Scheme "A" - Application For Assessment or Re-assessment"**. This form includes 3 parts:
 - Part 1 – Company Information
 - Part 2 – Training Programme
 - Part 3 – Specific Objectives
 - (ii) **Form TD7 "Engineering Supervisor Application/Update (Internal/External)"** – In which details of the proposed **Engineering Supervisor** are required to be given.
 - (iii) an up-to-date **company organisational chart** with names and qualifications of staff.
 - (iv) an up-to-date **list of Projects / Products** in hand and as projected for the near future.
 - (v) **Training Manual** – This manual is designed to give Scheme "A" trainees details of all aspects of the training and should cover the following items:
 - **Aim for Graduates**
 - **Professional Behaviour**
 - Ethics
 - Codes of Conduct
 - Company Expectations
 - Trainee Responsibilities
 - **Safety, Health & Environmental Policy**
 - **CPD**
 - Policy
 - Support
 - Approval
 - Endorsement

- **Training Log Book**
Monthly Report
Quarterly Report
- **Training**
Policy
Programme (Agreed with the HKIE)
Objectives (Approved by the HKIE)
Engineering Supervisor (Role & Responsibilities)
Tutor (Role & Responsibilities)
- **The HKIE**
Training Certificate

4.4 Scheme "A" - Assessment / Re-assessment Procedure

The **general Assessment/Re-assessment procedure** is shown in Fig.3 below:-

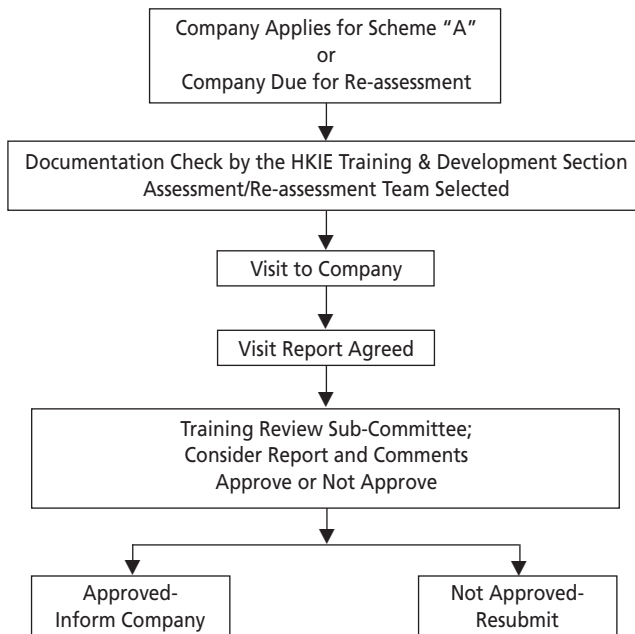


Fig.3 "Assessment/Re-assessment" Procedure

'Approval' for a Scheme "A" discipline is usually for a period of **3 years**. Re-assessments are thereafter normally carried out on a 3-year cycle.

Scheme "A" Assessments and Re-assessments are undertaken by the HKIE as a service to its members, to industry and thus to society. No charge is made for Assessments / Re-assessments apart from any expenses incurred if a visit to the PRC is required. As the Assessment of any company is crucial to the viability of Scheme "A" the relevant matters are covered in full in this section.

4.5 Scheme "A" Assessment / Re-assessment - Company Check

The HKIE Scheme "A" Assessments and Re-assessments are a form of **'training audit'** designed to evaluate the viability of the company proposal in meeting the HKIE graduate training aims. This evaluation covers the areas outlined below.

4.5.1 Training Programme Proposal

This is a check of the 3 essential elements:-

- (a) The **PLAN** - that is the proposed **Training Programme (TP)** based on the requirements set out in the relevant **'Model Training Guide'** and where relevant in the **'Record of Objectives'**.

The proposed training programme should **clearly show** the **places** where each part of the **training is 'planned' to be done**.

Where relevant it is important that the periods planned for each activity are shown in the programme and that they match with those indicated in the Model Training Guide. However this is for the planning convenience of the company as the HKIE approach is related to the trainee **meeting Objectives** and is **not** based on the **'time served'** in a particular place.

It is accepted practice that where necessary companies will be able to arrange parts of the training with other companies or within their own group in order to provide the range of experiences required.

It is **expected** that the **Training Programmes** are:-

- (i) **planned** to provide the experiences necessary for the trainee to meet the general objectives set out in the Model Training Guide as and where relevant the **Common Core Objectives** which are general for all disciplines; the **Core Objectives** covering aspects that every trainee in that discipline should know; as well as the **Specific Objectives** covering company expectations.
 - (ii) well **balanced** showing an integration of all relevant facilities and opportunities available within the company or group.
- (b) The **implementation** of the training programme should, whenever possible, be based on a practical '**hands-on**', '**learn-by-doing**' approach. It is expected that the way the training programme is to be implemented will also indicate how the training is to be monitored with respect to checking what the trainees are actually doing. The **training experiences** given can be of two major kinds or more usually a mixture of both:-
- (i) '**Time-Served**' where the trainee is programmed throughout the training for set periods in a department or on-site.
 - (ii) '**Project Orientated**' where the trainee is employed on relevant projects not necessarily tied to any one department.

In the final analysis for both '**time-served**' and '**project orientated**' training it is the **achieving** of the set '**objectives**' that is the **true measure** of what has been '**learned**' by the trainee.

- (c) The **Assessment** – stage which is the continuous measurement of a trainee's progress. This assessment is considered of critical importance, as it is essentially a check to see that **standards are achieved and maintained** and that the required **training objectives** are being met (see also '**Users Guide**' Part 3).

4.5.2 Management

This evaluation is to determine if:-

- (a) there is a **well conceived and relevant** (for technologists) **training policy** (and budget). In this it is expected that the **company will have** a published **Training Manual** designed to give Scheme "A" trainees details of all aspects of the training:- the aims, procedures, conditions of service, etc.
- (b) the **management** have the **interest** and the **will** to properly deploy and train this level of graduate.
- (c) the **company is soundly structured** and that it seems likely to continue in operation for the next three years.
- (d) the company has a clear policy on the **Continuing Professional Development** (CPD) of its trainees. In this respect that the trainees will be supported by the company for CPD in both time and money. Also that the company will encourage trainees to undertake CPD subjects other than those of a directly technical kind, i.e. encourage trainees to undertake courses of a professional personal development nature.

4.5.3 Training Staff/Trainees (see also Part 3 Para 21)

- (a) Head of Office (HoO)

The HKIE Assessment team will normally expect to **meet** the Head of Office who is preferably a **staff member** holding a **high line management post** (e.g. Senior Manager, Partner, or in some cases the Training Officer or Personnel Officer). The meeting is to confirm that the HoO has the **overall responsibility for the Scheme "A" training**, who can if necessary **directly influence** any problem arising during the training; and who has influence in matters related to the top management setting of training policies and budgets.

- (b) Engineering Supervisor (ES)

This is the HKIE check to **confirm** that:-

- (i) the **ES** fully understands the responsibilities inherent in this role with respect to the **company**, to the HKIE (as its **defacto representative**) and of most importance, to the **trainees**.
 - (ii) the **ES** intends to meet trainees individually and formally on a regular basis to assess progress, to motivate and to encourage as necessary. The frequency for such meetings for an **Internal Engineering Supervisor** being at least once per quarter. The frequency of meetings with trainees for an **External Engineering Supervisor** to be at least once per month **at the company premises**.
 - (iii) The **ES** understands the use and advantages of the objective approach in the assessment of a trainee's technical and professional progress. In the assessment of trainees, what other factors the **ES** intends to take into consideration in forming a judgement of a trainee's progress (see also the publication '**Staff Guide**').
- (c) Training Tutor (TT)

This is to:-

- (i) determine what kind of tutoring system the company has adopted. That is whether it is to be a Tutor designated for the whole period of training (a **Personal Tutor** which is the 'favoured' approach), or Tutors who change with each activity, or both.
 - (ii) ensure that the designated Tutors are suitable for this role and **understand** their '**day-to-day**' **role and responsibilities** with respect to the Engineering Supervisor and to the trainees, as outlined by the HKIE.
- (d) Trainees

For a **Re-assessment**, to meet the trainees in a private session, to determine:-

- (i) the trainees' general impression as to the value of the training being received.

- (ii) whether the training given is in accordance with the agreed Training Programme/Record of Objectives.
- (iii) what type and level of work the trainees have been doing.
- (iv) any proposals the trainees may have to improve the training.
- (v) the standard of trainees' Training Log Books.
- (vi) the level of Supervision and Tutoring given to trainees.
- (vii) the level and kind of trainee CPD involvement and that the Record of CPD is being properly maintained.
- (viii) any proposals the trainees have related to an improved service from the HKIE.

Note: - **(a), (b) and (c) above** are covered more fully in the HKIE Publication '**Staff Guide**'.

5. Scheme "A" Registration of Trainees

5.1 Initial Registration of a Trainee onto a Scheme "A" depends on:-

- (a) the Trainee's Engineering "Hons Degree" (or equivalent) being recognised by the HKIE.
- (b) trainee must be a Graduate Member with qualifications which meet the academic requirements for Member of the HKIE in a Discipline and in the case of Sandwich training, a Student Member with qualifications which meet the academic requirements for Member of the HKIE in a Discipline.
- (c) trainee being proposed by their company for registration onto Scheme "A" in an engineering 'discipline' which is the same as their original qualifying academic award or if different, is acceptable to the HKIE.

5.2 Registration Procedure

The registration procedure is as follows:-

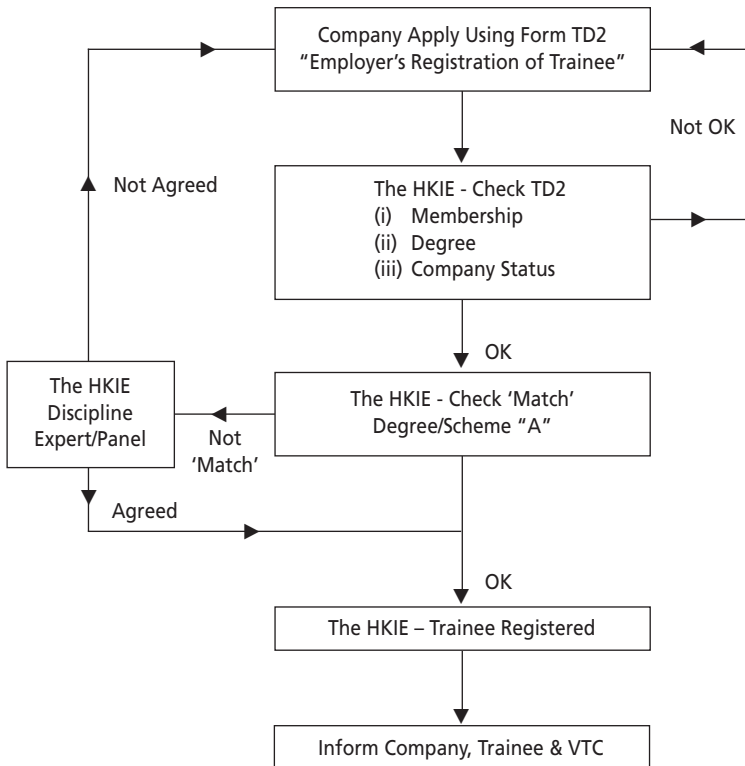


Fig.4 Registration Procedure

- (a) **Company** - Completes and submits Form TD2 '**Employer's Registration of Trainees**'.
- (b) **The HKIE** checks:-
 - (i) graduate is at the correct level of the HKIE membership.
 - (ii) graduate's degree is recognised by the HKIE as an accepted academic award.

- (iii) degree subject and Scheme “A” discipline applied for, match. Expert opinion will be sought if there is a mis-match not previously considered and decided open.
- (c) **The HKIE** – The trainee is then registered and the Company, Trainee and VTC informed.

5.3 Registration Fee – the HKIE

There is an **HKIE registration fee** for each trainee registered:-

- (a) The full fee is paid by the company on first registration.
- (b) If for exceptional reasons a change of company is approved, the second company is required to pay the full registration fee.
- (c) In the case of the re-registration of a Sandwich course graduate to a different company, the second company is required to pay the full fee.

6. Exemption (See also Part 3 Para 7)

- 6.1 Requests for Exemption are only accepted from approved Scheme “A” companies (not from individual trainees).
- 6.2 A company wishing to claim exemption for a trainee should base their proposal on discussions between the **trainee** and the designated **Engineering Supervisor**. In this matter the Engineering Supervisor is considered the final arbiter of what should be claimed.
- 6.3 It is expected that the exemption claimed will be based on the **company needs/ activities** and the **Training Objectives** that the trainee can show have already been **met**.
- 6.4 The proposal for exemption **should preferably be requested** by the company at the time of or soon after registration. Exemption application outside **6 months** from the date of registration will **NOT** be processed.
- 6.5 For **each** (trainee) exemption request the **Engineering Supervisor** should forward to the Training & Development Section of the HKIE for **consideration** by the relevant **Training Review Sub-Committee** a proposal as follows:-

- (a) A completed Form TD3 (**'Scheme "A" - Request for Exemption'**).
- (b) Any relevant **supporting documentation**.
- (c) An amended **Training Programme** with the activities claimed for exemption deleted or **'Record of Objectives'** showing Objectives achieved by the trainee endorsed by Engineering Supervisor with dates.

6.6 The HKIE will **notify the Engineering Supervisor** in writing, as to the result of the application and give details of the consequent amended **Training Completion Date**.

7. Remission (see also Part 3 Para 14)

7.1 The possibility of a **Remission** period from the formal Scheme "A" Training period would arise if a **trainee has met** all of the **required 'Objectives'** to the complete satisfaction of the Engineering Supervisor (ES) earlier than the nominal training completion date.

In such cases the HKIE will consider granting remission on an **exceptional basis** as it is excepted that normally meeting the Objectives will take the nominal period set for the Scheme "A".

Such requests for Remission should be made on Form **TD4 ('Scheme "A" - Request for Remission')** and they will only be entertained when made by the ES or the company Head of Office.

7.2 **The request for a remission would therefore consist of:-**

- (a) the completed Form **TD4 ('Scheme "A" - Request for Remission')**.
- (b) a photo copy of the completed **'Record of Objectives'**.
- (c) any supporting documentation.

8. Transfer (see also Part 3 Para 25)

Resignations during Scheme "A" training are discouraged by the HKIE and change of company is not normally approved unless good reasons exist and with approval from the HKIE.

However transfers from other (overseas) approved graduate training schemes will be considered in accordance with the HKIE mutual recognition agreements.

All requests for a Transfer should be made in manner similar to Para 6.5 with the exception that Form **TD6 ('Scheme "A" - Request for Transfer')** is used.

9. Extension (see also Part 3 Para 8)

Requests for the nominal Scheme "A" training period to be lengthened arise where the Engineering Supervisor considers the training period needs to be extended for some reasons such as all of the Objectives not having been met, or a delay due to sickness, or a training schedule alteration. Such requests should be made to the HKIE on Form **TD5 ('Scheme "A" - Request for Extension')**.

PART 3

Requirements

The following requirements apply to Scheme “A” approved companies and to graduates registered on the Scheme “A”.

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1. Approved Training Centres

- 1.1 **Training Centres** considered suitable to provide relevant graduate level 'Industrial' training can be **approved** to provide elements of the requirements/Objectives set out for the HKIE Schemes "A".

Training Centres are approved for specific training activities and they are normally **re-assessed on a 5-year cycle**. The location of a training centre or its 'parent' are not factors considered in the approval process.

Requests for exemption for Training in an Approved Centre should be accompanied by a Training Certificate and could be approved for normally not more than 8 weeks (except for Civil, Structural and Geotechnical Engineering trainees where no exemption is given).

- 1.2 **Approval** for a Training Centre is granted by the HKIE on condition that the Centre meets the following requirements:-

- (a) that the **Training Philosophy** in use is designed for engineering degree students or graduates and is published setting out the aims and objectives of the Training as well as general details of the planning, implementation and assessment methodology adopted.
- (b) that the **Training Staff** are led by **Professional Engineers**, and that they are well qualified and competent to train at the **professional** (i.e. graduate engineer) level.
- (c) that the **training** is in '**block**' periods. With the minimum for a block to normally be one full week.
- (d) that the **training** is professionally **supervised and assessed**.
- (e) that the training is of the right type and level and is **industrial in nature** in terms of the environment, work/projects, procedures, discipline, challenges and pressures.

2. Assessment/Re-assessment visits to the PRC

Scheme "A" Training in the PRC is **fully accepted** as long as it is **agreed beforehand** by the HKIE.

However **in addition to the normal requirements** for an assessment or re-assessment of a company it is required of a PRC based Scheme "A" approved company that:-

- (a) the company offering the Scheme "A" Training should be a company within the group of a registered Scheme "A" company in Hong Kong.
- (b) the Tutor or Supervisor be an **HKIE approved person** who is based in the PRC facility.
- (c) **all expenses** from the PRC side of the immigration point to the facility and back to the border be borne by the company.

Scheme "A" Training under this category is not recommended for VTC Engineering Graduate Training Scheme (EGTS) subsidies.

3. Change of Discipline

It is the HKIE policy that once registered on a Scheme "A" the route to Corporate Membership is in the discipline for which the trainee is registered. **The change of the Scheme "A" engineering discipline** is not normally approved unless good reasons exist and with approval by the HKIE.

4. Backdating of Training Start Date

4.1 Normally the **Training Start Date** for trainee registration will be that **proposed by the company** as shown on the Form TD2 '**Employer's Registration of Trainee**'. It is expected that this proposed Start Date is the date when the **formal Scheme "A" training was commenced**.

However the Training Start Date cannot be backdated for more than 6 months from the date of registration.

4.2 It is **accepted** that in some cases the Scheme "A" **registration** of a trainee may be **held up** due to:-

- (a) the trainee's **HKIE Membership application awaiting approval** by the Qualification and Membership Board.
- (b) the trainee's **membership application being incorrect** in some way.
- (c) the information given on the registration form requires further company action and/or clarification.
- (d) the company application for the trainees registration shows a **mis-match** between the degree subject and the Scheme "A"

discipline and this mis-match requires the Training Committee decision as to its acceptability.

(e) **administration delays** in the company.

(f) Company/Trainee - agreeing to a **Probationary period** before formal registration.

In **such cases as (a) to (f) the back-dating** of the Training Start Date will normally be retrospectively approved (for a maximum of 6 months), as long as the full Scheme "A" training programme has been followed in the interim period in accordance with the HKIE requirements.

5. Continuing Professional Development

5.1 The HKIE CPD Definition

Continuing Professional Development (CPD) is the systematic maintenance, improvement and broadening of relevant knowledge and skills, and the development of these qualities necessary for the successful carrying out of professional duties throughout an engineer's career. In this, CPD is aimed at enhancing individual worth and thus corporate performance.

5.2 CPD and Trainees

It is recognised by the HKIE that **Continuing Professional Development** is an **ongoing necessity** throughout a Practising Professional Engineer's career from the immediate post graduate stage until final retirement. The CPD requirement in the Scheme "A" is therefore the first important step in this lifelong commitment.

The importance of CPD is such that the HKIE specifies a **minimum of 7.5 days (45 hours)** per year that **Scheme "A" trainees must undertake** during their training period. In this context a **CPD day is a period of 6 hours** or separate periods which add up to 6 hours.

5.3 CPD Activities

It is expected that **trainees will take every CPD opportunity** to update their depth and breadth of knowledge as well as to develop their personal qualities required to fulfill their future role, as Professional Engineers, in industry and in society.

CPD therefore **covers** matters of **direct technical relevance** as well as **broader studies** such as occupational safety & health, environmental matters, marketing, legal aspects, financial management and leadership skills. It is expected that the **balance** between '**direct technical interest**' and '**broad**' subjects will be maintained by companies.

5.4 CPD Activities and the 'Record of CPD'

CPD activities are required to be entered in the CPD Log Book, '**Record of CPD**' and endorsed by the Engineering Supervisor. The 'Record of CPD' will be checked by the HKIE to see that the CPD requirements have been met before a Scheme "A" Training Certificate is issued.

5.5 CPD Endorsement / Approval

It is not practical for the HKIE to pre-approve CPD activities, and it is considered that the **company** is in the **best** position to **judge** whether their trainees have learned anything from a particular CPD activity. Therefore it is expected that the **Engineering Supervisor** will **decide** whether to endorse the activity in the 'Record of CPD' as fitting the CPD criteria.

5.6 CPD Requirements

- (a) The format of **CPD** activities can include but not limited to participating and organising of courses, lectures, seminars/symposia, conferences, presentations, workshops, industrial attachment and visits, e-learning and professional activities. They may be provided by the HKIE Divisions, the engineering industry itself, and a variety of other organisations.
- (b) **Mandatory CPD subjects** for the training period to be as follows:-
 - (i) **Occupational Safety & Health**, minimum of **3 days (18 hours)**.
 - (ii) **Other Technical Matters not directly related to the trainee's own discipline**, minimum of **3 days (18 hours)**.
 - (iii) **General and Professional Matters**, minimum of **3 days (18 hours)**.
- (c) 'In-house' CPD activities are encouraged. However it is expected that 'in-house' CPD activities should not be greater than 50% of CPD days.

6. Engineering Graduate Training Log Book

- 6.1 It is a **mandatory requirement** that Scheme "A" registered trainees maintain throughout their training an ongoing record of their Scheme "A" experiences, in their '**Engineering Graduate Training Log Book**'. These regular and formal submissions play an important part in the training as they are a permanent record of what the **trainee considers important and has learned** during the training related to events occurring, observations made and problems identified (and solved).
- 6.2 Implicitly this personal record is a **continuous measure of the progress made** by the trainee in achieving the training aims **as assessed by the Engineering Supervisor** and Tutors. As such the trainee's log entries and Staff comments will be a factor considered by the Interviewers at the Professional Assessment at any later application for Corporate Membership.
- 6.3 It is the trainee's responsibility to follow the instructions given in the '**Engineering Graduate Training Log Book**' related to the style and frequency of submissions required; that the entries are to be in long hand; and that staff comments are to be included directly on the entries at the appropriate time (Tutors monthly and Engineering Supervisors quarterly).

7. Exemption

- 7.1 Exemption from the nominal Scheme "A" Training Period is designed to cover any previous **training** and/or **work experience successfully completed** by a trainee prior to joining Scheme "A". Where relevant this assessment is best carried out using the 'Record of Objectives' as a guide.

The requirement for exemption is the same for all the HKIE engineering disciplines unless otherwise stated.

Work Experience is expected to be relevant to the discipline and of a level considered suitable to replace elements of the prescribed graduate Scheme "A" training.

The maximum exemption that can be granted for a Scheme "A" for any reason is **18 months**.

7.2 Qualifying Work Experience and / or Training

The types of Work Experience or Training eligible for consideration for exemption are indicated by the examples below:-

(a) Pre-Degree Course (or qualifying academic award)

- (i) Technician Apprenticeship
- (ii) Technician Posts in Industry

(b) In-Course

- (i) Training in an **Approved Centre** (see also Para 1). **The maximum exemption** for this type of training is normally not more than 8 weeks.
- (ii) **Sandwich Training** Registered on Scheme "A". **The maximum exemption** for this type of training is ***12 months**.
- (iii) **Sandwich Training** not registered on Scheme "A". **The maximum exemption** for this type of training is ***12 months** providing the following conditions are met:-
 - (1) It is under-taken in a company known (to the HKIE) to provide the required level and kind of training.
 - (2) The trainee is following a HKIE Scheme "A" type Training Programme.
 - (3) It is supervised by a Professional Engineer as well as by an Academic Supervisor.
 - (4) The trainee is maintaining the HKIE (style) Training and Record of CPD and Record of Objectives.***6 months maximum** for Civil, Structural and Geotechnical Engineering Students.

8. Extension (see also 'Users Guide' Part 3 Para 6)

Requests for the nominal Scheme "A" training period to be extended will be considered by the HKIE where the Engineering Supervisor considers it necessary. Reasons for such a request could be that all of the Objectives have not been met or because of a delay due to sickness or a training schedule alteration.

9. Local Training Secondment

- 9.1 Local training secondment** of a Scheme "A" trainee by the 'parent' organisation to another organisation (preferably approved for Scheme "A"), such as an associate company or a sub-contractor, is fully supported by the HKIE. Such secondment may be necessary to meet the training requirements. They are further encouraged in situations where the secondment will provide added breadth to the Scheme "A" training.
- 9.2** Such secondment **requires the HKIE prior approval** which will be based on the secondment being:-
- (a) the Form **TD11 ('Scheme "A" Training Secondment')** completed by Engineering Supervisor and submitted to the HKIE for approval before completion.
 - (b) in accordance with a **written agreement** between the two parties with a copy being sent to the HKIE together with the completed Form **TD11**.
 - (c) the **Training experiences** expected (and accepted) are clearly **spelt out** in the agreement.
 - (d) the **Supervision and Tutoring arrangements** (Engineering Supervisor and Training Tutor arrangements during secondment period) are formally agreed and included in the agreement.

10. Overseas Training Secondment (not PRC)

Formal training secondment Out-of-HK of a short duration can be considered as a part of Scheme "A" as long as the general requirements are met such that they are:-

- (a) the Form **TD11 ('Scheme "A" Training Secondment')** completed by Engineering Supervisor and submitted to the HKIE for approval before completion.
- (b) that the training is with a reputable, well known company. Preferable one already recognised for training by a Professional Engineering Institution.
- (c) that the training proposal is practical in nature and based on 'hands-on' experiences and that the content is agreed beforehand by the two organisations concerned.

- (d) that the Supervision and Tutoring arrangements are agreed beforehand by the two organisations concerned.
- (e) that the trainees are assessed as to their performance/attitude/progress on their return to HK.
- (f) that the trainees keep up their Log Book entries as normal.

11. Mis-match Degree Subject / Scheme "A" Discipline

In cases where the degree subject and the requested Scheme "A" engineering discipline do not match:-

- (a) there may already be the HKIE approval for the mis-match in which case the application will be approved without further action.
- (b) When no precedent exists the request will be considered, on a 'case-by-case' basis, by the appropriate Training Review Sub-Committee experts.

Note - If in doubt before making an application, please contact the HKIE Training & Development Section.

12. Outward Bound Training

This type of leadership Training is **acceptable** in principle as a part of a Scheme "A" Training Programme provided that it can be shown to fit into the General Organisation Policy related to promoting leadership/management capabilities.

In general, the equivalent of three weeks of outward bound training in a two year Scheme "A" would be the maximum allowable.

13. Publications & Forms

13.1 Publications

The following are series of **Scheme "A" Training** related publications:-

- (a) '**Student Guide**' - this is designed for potential graduate trainees.
- (b) '**Staff Guide**' - this is designed to provide guidance to the staff designated for Scheme "A" training duties.

- (c) **'Aims, Procedures & Requirements'** - this covers the aims of Scheme "A", the types of procedures in use and the current regulations and requirements in force.
- (d) **'Assessment Guide'** - this is designed to provide guidance for the HKIE experts who form the assessment teams.
- (e) **'Record of Objectives'** - this publication contains the Objectives the trainee in their training must meet and it provides a record of the trainee's progress in meeting them.
- (f) **'Users Guide'** - this is designed to give guidance to Engineering Supervisors on such matters as Registration, Exemption, the preparation and implementation of the Training Objectives and Continuing Professional Development, etc.
- (g) **'Engineering Graduate Training Log Book'** - this includes a detailed introduction intended to give trainees an understanding of the aims of Scheme "A" and their responsibilities in the Scheme with particular emphasis on their Training Log Book submissions.
- (h) **'Record of Continuing Professional Development'** - this includes an introduction to CPD for trainees who are expected to give details of any CPD activities they have undertaken and get an endorsement as to the validity of the activity from their Engineering Supervisor.

13.2 Forms

The following forms are in use:-

- (a) **TD1** - Scheme "A" Application for Assessment or Re-assessment
- (b) **TD2** - Scheme "A" Employer's Registration of Trainee
- (c) **TD3** - Scheme "A" Request for Exemption
- (d) **TD4** - Scheme "A" Request for Remission
- (e) **TD5** - Scheme "A" Request for Extension
- (f) **TD6** - Scheme "A" Request for Transfer
- (g) **TD7** - Scheme "A" Engineering Supervisor Application/Update (Internal/External)
- (h) **TD8** - Scheme "A" Termination of Trainee Registration
- (i) **TD11** - Scheme "A" Training Secondment

14. Remission

The procedure for assessing the level of a trainees progress in Scheme "A" is one where the **trainee is required to meet designed Objectives.**

This approach is **not based** on a **'time-served'** consideration although it is expected that the normal time to meet all of the objectives will be the nominal period stated by the HKIE (e.g. 2 or 3 years).

In **exceptional cases** the Engineering Supervisor may consider that a trainee has satisfactorily met all of the objectives before the end of the nominal period. In such cases an **application** can be made **by the Engineering Supervisor** to the HKIE for the **trainee to be granted a remission** from the nominal training period.

15. Reports

The following reports are required to be completed:-

(a) Quarterly Report (see appendix 1)

The report is in the form of a **computer print-out** prepared by the HKIE showing the 'up-to-date' **data** related to the **company, training staff and trainees.**

The **Engineering Supervisor** (or the designated company contact staff) is requested to **check** the data, make any alterations required and return the report to the HKIE.

(b) Final Training Report (see appendix 2)

This report relates to an **individual trainee** and is sent to the company on **completion of the trainee's Scheme "A" training period.**

The report requires the **Engineering Supervisor** to **assess the training** under various headings as **successfully completed or not.** It is then returned to the HKIE and if the trainee is verified as successful, a Training Certificate will be issued.

16. Sandwich Course Trainees

Sandwich Course trainees for all disciplines, other than Civil Engineering, can

be registered on Scheme "A" for their 'in-course' Industrial Training period. On graduation they are expected to return to the same company to complete their Scheme "A" training, **unless good reasons** exist for not returning.

Note - Civil Engineering Sandwich Course Trainees, whilst not eligible for Scheme "A" registration, are eligible for 50% of their Sandwich Training time to be considered for a period of 'Exemption' from Scheme "A" (see Para 7).

17. Split Scheme "A"

17.1 Resignations during Scheme "A" training are discouraged by the HKIE and change of company is not normally approved unless good reasons exist and with approval from the HKIE.

This 'change of company' during a Scheme "A" is not encouraged although it may be necessary for company/commercial reasons. It should be noted in this context that the Split Scheme "A" procedure only applies when a trainee severs all connection with a company and not when a trainee is attached to another company in order to gain certain training experiences.

17.2 For such a change of company the following actions are required:-

- (a) The matter should be settled and agreed with the first company and the HKIE **before** the trainee resigns. If agreed then **(b)** to **(d)** follows.
- (b) The **Engineering Supervisor** of the 'first' company **completes a report** of what **training** elements of the agreed training programme have been **successfully undertaken** and what **Objectives** have **been met** in Record of Objectives; as well as ensuring that the **CPD** and **Training Log Books** entries are **up-to-date**.
- (c) The **Engineering Supervisor** for the 'new' proposed Scheme "A" company prepares and proposes to the HKIE a new training programme which **complements** the original **training** programme so that the **Training Objectives, and the overall training period requirements are met**.
- (d) The relevant **HKIE Training Review Sub-Committee** will then **decide** whether to approve or not the proposed change and allow re-registration.

18. Training-by-Objectives (T-by-O)

18.1 Introduction

To make the **assessment of trainee progress** consistent in matching the high standards expected by the HKIE, the **Training Programme is complemented by Training Objectives**. It is considered that this approach is both systematic and logical with the added advantage that it provides trainees and training staff with an instant and clear picture of what has been done and what needs to be done.

The '**Training-by-Objective**' approach is based on experienced Professional Engineers identifying, in the form of objectives, what qualities, technical expertise, knowledge and skills are required by a trainee to reach the required standard in a discipline.

18.2 Training Objectives and the Training Programme

It is expected that a **Training Programme** for each trainee will include at the **Planning Stage** the types of activity that offers the trainee the opportunity to satisfy all of the objectives set. These are, for the trainee, **Learning Objectives**.

During the **implementation of the Training Programme** it is essential that trainees get the opportunities and experiences **planned** related to the set Objectives. Whilst it is the responsibility of the Engineering Supervisor to see that this happens, it is also the responsibility of trainees to see that they get what is planned.

18.3 Types of Objectives

There are **three types of Objectives** in Scheme "A" training:-

- (a) Common Core Objectives – these are the same for all HKIE Scheme "A" trainees
- (b) Core Objectives – these are the same for all HKIE Scheme "A" trainees in a particular discipline
- (c) Specific Objectives – these are the objectives proposed by the companies for each of their approved Scheme "A" disciplines

Both the Common Core and Core Objectives are designed to cover the points made in (a) to (c) below and in addition **Specific Objectives** cover (d):-

- (a) they **can be achieved by all trainees** in a particular discipline.
- (b) they are **capable of being measured objectively**.
- (c) **success** in meeting the requirement in an objective is **independent of any time (served) factor**.
- (d) they **can be achieved by all trainees** of a certain discipline working in a **particular industry**.

18.4 'Record of Objectives' Assessment

At the assessment stage it is the **responsibility of the trainee to demonstrate** to the Engineering Supervisor that the **Learning Objective** have been **met** in the way prescribed in the '**Record of Objectives**'.

The way in which a **trainee must demonstrate the type of learning or skill expected for each Objective** is designated by a **code letter** defined in the '**Record of Objectives**'.

The **checking of a trainee's level of success in meeting an Objective** is the role of the **Engineering Supervisor** who is expected to personally monitor trainee progress in this way on behalf of the HKIE. It is expected that this assessment will involve regular 'face-to-face' individual interviews between trainees and their designated Engineering Supervisor. To help ensure that this form of trainee assessment is not unduly disruptive or arduous the maximum ratio of trainees to an Internal Engineering Supervisor, is set at 12 to 1 and a **total** of 4 to 1 for an External Engineering Supervisor (whose approval will be limited to two companies maximum).

19. Training Certificate

At the scheduled end of a trainee's training period the company will be sent the HKIE Final Training Report (See Appendix 2). This report requires the Engineering Supervisor to state whether the trainee has met all of the Objectives and reached the required standard.

If this final assessment is stated by the Engineering Supervisor as satisfactory then:-

- (a) the state of the trainee's HKIE Membership will be checked to ensure it is 'up-to-date'.
- (b) checks will be made on the following to ensure that they are finally completed:-
 - (i) **'Engineering Graduate Training Log Book'**
 - (ii) **'Record of Continuing Professional Development'**
 - (iii) **'Record of Objectives'**

If these checks are satisfactory the **Training Certificate** will be **issued** to the trainee. This Certificate completes the formal Scheme "A" Training requirement and no further training documentation is needed when applying for the HKIE Corporate Membership.

20. Training Period

The HKIE Scheme "A" training is based on trainees meeting objectives and not on a 'time-served' approach. However the training period is nominally set as the time it will **normally take** for a trainee **to meet all of the training objectives**. The nominal training period is:-

- (a) Civil, Structural, Geotechnical and Environmental Engineering Trainees - **3 years**
- (b) All other disciplines - **2 years**

The nominal period could be shortened at the start of the training if an **Exemption** is approved for previous Training / Work Experience (see Para 7).

If, as in some cases is likely, a trainee meets all of the Objectives before the end of the nominal training period then the company could request for a **Remission** from the training period. Such requests will be judged on an individual discipline 'case-by-case' basis (see Para 14).

21. Training Staff

21.1 The titles and duties shown below are those in general use. However it is accepted by the HKIE that with the wide variation in size of companies involved, from very large to small. The 'duties' given provide guidance only and will, in some cases, need to be adapted whilst remaining in the spirit of what is intended, to meet the existing company situation.

In some companies with long established training schemes, the HKIE approval could be given for the company Training Staff titles in use, if different from the HKIE titles, to be retained.

21.2 Head of Office (HoO) - is a person **high in the line management** whose position can **influence top management decisions** related to training (and budgets). The HoO has the overall responsibility for the HKIE Scheme "A" training within the company.

21.3 Engineering Supervisor (ES) - General

The ES is required to be a **Corporate Member of the HKIE** and in the same discipline as the trainees. The ES is the '**defacto**' representative of the HKIE in the company and as such assumes the **personal responsibility** to ensure trainees receive the agreed training, for maintaining the standards expected and in achieving the aims of Scheme "A" training.

In this it is expected that the **ES will hold regular meetings** with each trainee on a 'one-to-one' basis to monitor trainee progress. An aim for such meetings being to assess the trainee's strengths and weaknesses and to help motivate and encourage the trainee to develop the technical and personal qualities required.

It is expected that the ES understands the use and advantages of the **Training-by-Objective** approach to the professional and technical assessment of a trainee and the relevant roles of the '**Engineering Graduate Training Log Book**'; '**Record of CPD**' and '**Record of Objectives**'.

The **appointment of all Engineering Supervisors requires the HKIE approval**. Applicants will be invited to attend an ES Workshop which are usually held every 3 months at the HKIE Headquarters in a Saturday morning. Successful applicants will receive a Certificate after the approval of the Training Committee.

There are **two kinds of ES** as shown in **(a) & (b)** below.

(a) Internal ES (IES) - is an employee of the company who assumes the responsibilities as above and who is expected to see each trainee individually at least once a quarter to objectively assess progress related to training and personal development. The ratio of trainees to IES is a maximum of **12 to 1**.

In companies where the number of trainees in a discipline exceeds

the permitted ratio (of 12 to 1) then additional Internal Engineering Supervisors are required to meet this requirement. In such cases:-

- (i) staff members should be proposed (to the HKIE) as IESs in the normal way.
 - (ii) trainees should be designated to an IES by name, copies of which should be sent to the HKIE.
 - (iii) the company should appoint one of the IESs as the **Co-ordinator** whose role will be to help ensure a standard implementation of the HKIE training policy within the company.
- (b) **External ES (EES)** - in **exceptional cases** where a Professional Engineer is not available within the company the appointment of an EES is **permitted** by the HKIE for a maximum of two companies. In such cases it is expected that the **EES will assume the responsibilities as above and will visit trainees on site** (that is at the company offices, or in the factory or at a site) **at least once per month**. (If the trainee is based in the PRC then at least once per quarter the monthly meeting should be in the company's PRC facilities.) The ratio of trainees to an EES is a maximum of **4 to 1**. An EES can be approved on an **exceptional basis** for a maximum of 2 companies but the **combined total of trainees** for the 2 companies **remains at 4**.

If a company has all the other resources necessary to cope with more than 4 trainees in a discipline, then on the normal 'case-by-case' basis the HKIE will consider applications for more than one External Engineering Supervisor, where each EES is to be assigned to not more than 4 designated 'named' trainees. In such cases:-

- (i) suitably qualified persons should be proposed (to the HKIE) as EESs in the normal way.
- (ii) trainees should be designated to an EES by name, copies of which should be sent to the HKIE.
- (iii) the company will act as the Co-ordinator for the EESs and as the contact point for the HKIE.

The arrangement, **preferably contractual**, between the company and the External Engineering Supervisor should be such as to place the External Supervisor in no less an advantageous position, with

regard to management control of the training scheme, than would apply to an Internal Engineering Supervisor on the company staff full-time.

21.4 Tutor

The Tutor is preferably, but not exclusively, a Professional Engineer to whom the ES delegates the **responsibility for 'day-to-day' contact with trainees**. In most cases this role is as a **Personal Tutor** who remains with named trainees for the whole of their training period, irrespective of the department or section to which they are attached, to ensure good continuity and to allow a personal relationship to build up. The ratio trainees to Tutor is a maximum of **4 to 1**.

The role of the Personal Tutor is **particularly important when an EES** is appointed as the Tutor must take on some of the duties of an ES and provide the link between the company and the EES.

For the appointment of a Tutor, relevant educational and professional details of the proposed Tutor are required to be sent to the HKIE for approval.

Note - The Engineering Supervisor and the Tutor cannot be the same person as ES and Tutor have different roles to play.

22. Trainee Responsibilities

22.1 It is expected that trainees will make a personal commitment to get the most out of the training opportunities made available to them by their company. In this context the Training is **aimed** at trainees **learning** about **(his or her) chosen profession**, where **learning** is the **acquisition of knowledge or a skill** (in a subject) by:-

- (a) study
- (b) observation
- (c) retrieval of information
- (d) instruction
- (e) experience

22.2 Whilst undergoing training **trainees are expected to:-**

- (a) **behave** in a manner befitting a potential **Professional Engineer**.
- (b) have a positive and **good attitude** towards the company providing the training; to all levels of its staff; to their colleagues; and to their 'work'.
- (c) be **part of the productive process** within the framework of being trained.
- (d) **use their intellectual and analytical abilities** to further their professional development.
- (e) **demonstrate initiative** and drive in a quest to learn from their training. In this, accept that in the industrial environment (so different from the academic life) the **effort required** to acquire knowledge or a skill will be largely **self-motivated**.
- (f) **develop their powers of communication, decision making and leadership** and thereby gain self-confidence related to their technical and social behaviour and opinions.
- (g) **identify** how they can complement their formal training by self-help.
- (h) help develop their **initiative** and their **innovative skills**.
- (i) be able to **retrieve** and use relevant **information**.
- (j) use their **diagnostic skills** to identify problems and offer possible solution.
- (k) develop a natural inquisitive sense and 'question' 'why' and 'how' things are done, with the aim of **improving procedures and thus productivity**.

22.3 In the **final analysis the success of the training**, with respect to the calibre of the 'product', is considered to **rest very largely** on the interest, enthusiasm, attitude, self-motivation and curiosity of the **trainees themselves**.

23. Trainee Assessment

The regular 'professional' assessment of a trainee's progress is of critical importance in achieving the aims of Scheme "A". The approach adopted by the HKIE is that progress should be measured in **behavioural objective** terms.

This approach to assessment is based on the **matching** of the **planned training objectives** and the **'results' as demonstrated by a trainee's** behaviour / knowledge and skill.

The **assessment** is expected to be carried out personally by the **Trainee's Engineering Supervisor**. The objectives to be met (the 'learning' objectives) are contained in the trainee's **'Record of Objectives'**.

When an **objective is 'met'**, in accordance with the requirements, the **Engineering Supervisor 'signs off' that objective** with date. In this there will in most cases be progressive stages before the final objective requirement is met.

In forming a general assessment of a trainee's progress it is expected that the Engineering Supervisor will take into account:-

- (a) A personal opinion based on formal, regular (at least every 3 months for an IES and every month for an EES) individual, 'in-depth' interviews with a trainee.
- (b) The standard and content of the Training Log Book presentation.
- (c) 'On-the-job' achievements.
- (d) Personal Tutor/Heads of Department reports.
- (e) CPD involvement.

24. Trainee Resignation

Resignations during Scheme "A" training are discouraged by the HKIE and change of company is not normally approved unless good reasons exist and with approval from the HKIE.

Related to this policy the HKIE Scheme "A" is designed to help promote the professional development of the graduate engineering trainees. As a part of

that 'professional' development it is to be expected that trainees will learn to act professionally and they should think very carefully before agreeing to undertake the Scheme "A" training offered by a company.

In a sense once they have 'signed on' trainees are undertaking a form of contract and consequent commitment in the same way that the company (and the HKIE) are making a commitment to the trainee.

It is in a company's interest to make this **HKIE policy clear** to potential graduate **trainees** at the time of making an offer of employing them on a Scheme "A".

25. Transfer

25.1 Transfer from an approved overseas training scheme to the HKIE Scheme "A" is considered as shown below. In this context 'approved' would normally mean a formal scheme under the sponsorship of a Professional Engineering Institution although in exceptional cases it could be an overseas company with a well recognised training scheme of its own.

25.2 For Training Schemes where there is a full reciprocal graduate training agreement with the HKIE, the application for the registration onto Scheme "A" of a trainee by virtue of a transfer of scheme would:-

- (a) only be considered by request from approved Scheme "A" companies.
- (b) need to be accompanied by supporting documentary evidence as to:-
 - (i) the previous registration.
 - (ii) what training had been covered and successfully completed (i.e. Objectives met).
 - (iii) details of the training to be given by the Scheme "A" company.

Note – (ii) and (iii) should where possible be presented in the '**Record of Objectives**' (see Para 18).

25.3 For Training where no formal reciprocal agreement exists with the HKIE the application would need to follow the same procedures as above and it would be considered on a 'case-by-case' basis.

26. Withdrawal of Scheme "A"

In the event of a **re-assessment being considered unsatisfactory** and the company not agreeing to make any recommended changes or an organisation **not registering** a trainee for **3 consecutive years** the company will be informed of the likelihood of their having Scheme "A" approval being withdrawn.

In such cases the company will be given a chance to make the training changes in the way recommended or make a commitment to register trainees before the HKIE action is taken to consider whether the Scheme "A" should be withdrawn or not.

THE HKIE ENGINEERING GRADUATE TRAINING SCHEME “A” QUARTERLY REPORT

18 January 2005

To be completed and returned to the HKIE by the Engineering Supervisor

Please check and confirm/comment on the accuracy of the following data: (use a “✓” where appropriate)

Company Name :

Company Address :

Head of Office :

Phone :

Contact Person :

Fax :

Email :

<u>Discipline</u>	<u>Approved Places</u>	<u>Start Date</u>	<u>Date of Last Visit</u>
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<u>Engineering Supervisor</u>	<u>Discipline</u>	<u>Start Date</u>	<u>Remark</u>
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Trainees – Currently with you. If resigned, give date and reasons.

- Engineering Supervisors to grade (S/US) each trainee according to his/her performance during the past three months.

<u>Name of trainees</u>	<u>Discipline</u>	<u>Start Date</u>	<u>Completion Date</u>	<u>S/US</u>	<u>Remarks/ Grading other than S/US</u>
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Signature:

Engineering Supervisor:

Date:

- * = Sandwich student / graduate (with qualifications which meet the academic requirements for Member of the HKIE in a Discipline)
- S = Satisfactory for program / attendance
- US = Unsatisfactory for program / attendance

THE HONG KONG INSTITUTION OF ENGINEERS
 9/F Island Beverley, No 1 Great George Street, Causeway Bay, Hong Kong
THE HKIE ENGINEERING GRADUATE TRAINING SCHEME “A”
FINAL TRAINING REPORT

18 January 2005

Trainee Name :
 Discipline :
 Company Name :
 Company Address :

Head of Office :

Engineering Supervisor :

1st Start Date : 1st Completion Date :

2nd Start Date : 2nd Completion Date :

The **ENGINEERING SUPERVISOR** to complete either “A” OR “B” below:-
 (please mark a “✓” where appropriate)

- A.** This is to certify that the above trainee has, in our opinion, satisfactorily completed his/her training and achieved the required standard implicit in the HKIE’s aims and objectives related to:
- General attitude and performance
 - Technical Competence
 - Business Communication Skills
 - Managerial & Leadership Abilities
 - Safety and Social Awareness
 - Ethical & Professional Matters

It is our opinion that he/she is now capable of accepting the level of professional responsibility appropriate to his/her career at the present stage.

OR

- B.** Not satisfactorily completed the training, as indicated below:-
- (a) Non-professional attitude
 - (b) Inability to meet the objectives and/or reach the technical standard expected
 - (c) Inability to reach the Overall Professional Standard expected

Recommendations:

- (a) Extend Scheme “A” Training by _____ month(s)
- (b) No extension recommended, Training Certificate not to be issued

Comments:

ENGINEERING SUPERVISOR

DATE

HEAD OF OFFICE

DATE

THE HONG KONG INSTITUTION OF ENGINEERS
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