

**Administrative Report**

**AR 2/2020**

**Engineering Geology  
Graduate Training  
Scheme Manual**

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## Foreword

Quality inputs by engineering geologists are indispensable in the core business of the Geotechnical Engineering Office. The GEO manages a structured Engineering Geology Graduate (EGG) training scheme for nurturing engineering geologists. This manual describes the training scheme, which aims to assist the graduates to acquire qualities of a professional engineering geologist. It is an update of the previous version presented in Administration Report No. AR 1/2017.

This updated manual adopts a competence-based approach promulgated by the Hong Kong Institution of Engineers and the Geological Society of London, UK. Competence requirements pertinent to innovation and technology applied in the latest engineering practice are also included.

GEO is committed to arrange EGGs' training conforming with the requirements established in this manual. All graduates engaged in the EGG training scheme should endeavor to take every training opportunity provided to them to achieve professional development and fulfill the training requirements.



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## **Abstract**

This manual presents the philosophy, objectives and rotational posting programme of the Engineering Geology Graduate (EGG) Training Scheme. The procedural and administrative aspects of the training scheme are also laid down.

The EGG Training Scheme was established by the Geotechnical Engineering Office (GEO) in 1985. The aim of the three-year EGG Training Scheme is to provide geology or earth science graduates with core experience and training in engineering geology at an early stage of their career and assist them to gain professional qualifications and become eligible to apply for Assistant Geotechnical Engineer posts within the Government of the Hong Kong Special Administrative Region (HKSAR Government).

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## 1 Introduction

### 1.1 General

The overall objective of the Engineering Geology Graduate (EGG) Training Scheme is to provide broadly-based training in engineering geology, such that, on successful completion of the scheme, and with appropriate post-training geotechnical experience, trainees with suitable first degrees are well placed to become Chartered Geologists under the Geological Society of London, U.K. (GSL), or corporate members of the Hong Kong Institution of Engineers (HKIE) in the Geotechnical discipline, or other relevant professional institutions.

This training manual provides suitable guidance to ensure that the training of Engineering Geology Graduates is well-organised, effective and closely monitored. The manual provides guidance on the implementation of the EGG Training Scheme in the Geotechnical Engineering Office (GEO) of the Civil Engineering and Development Department (CEDD) assisted by other Works Departments in of the Government of the Hong Kong Special Administrative Region (HKSAR Government). The earlier versions of this manual were published as GEO Administration Reports listed in Table 1.1.

**Table 1.1 List of Previous Versions of EGG Training Scheme Manual**

Administrative Report No.	Date	Authors
AR 2/88	May 1988	Burnett, A.D.
AR 7/97	August 1997	Choy, H.H. & Martin, R.P.
AR4/99	December 1999	Choy, H.H. & Martin, R.P.
AR 1/2012	January 2012	Sewell, R.J.
AR1/2017	July 2017	Sewell, R.J.

The purpose of the current update of this manual is to adopt the competence-based approach, following the latest requirements under the HKIE Graduate Training Scheme ‘A’, for assessing training outcomes, and to incorporate the essential components of relevant experience for validation as a Chartered Geologist under the GSL Chartership Scheme (GSL, 2013). The competence standards and requirements set by the HKIE and GSL for professional engineers and chartered geologists, respectively, are given in Appendix A.

### 1.2 Philosophy of the Training Scheme

The scheme should guide trainees so that they may assess their own development during the training period by:

- (a) observation of and practice in the activities being carried out within their immediate environment,
- (b) enquiring and learning about activities being carried out by other organisations or departments providing a supporting role,

- (c) reading and attending discussions on matters relating to the profession,
- (d) private research and study, and
- (e) forming the habit of pursuing continuing professional development.

The training scheme should also provide the employer with the means to:

- (a) plan, organise and manage the training,
- (b) identify the potential of the trainees,
- (c) identify the need for off-the-job training with respect to technical, administrative or other particular needs of the trainees,
- (d) monitor the training progress of the trainees, and
- (e) guide the trainees towards satisfying the key objective criteria relevant to membership of a professional institution.

While the GEO will provide opportunities for the EGGs to gain experience, it is basically the EGGs' responsibility to learn and develop their professional quotients. In particular, they are expected to:

- (a) be familiar with the rules for admission to professional status, and GSL, HKIE and IOM3 memberships;
- (b) undertake private study, this may include subjects that are essential to their employment, but in which they may have insufficient practical experience, such as mathematics, statistics, economics, contract administration, project management and site safety management, etc.;
- (c) devote a certain amount of their own time to reading technical literature, of both general and specific interest;
- (d) participate in the regular informal presentations organised by the GEO for the EGGs;
- (e) abide by the ethics and rules of professional conduct of the relevant professional institutions (e.g. HKIE, 2003; GSL, 2015); and
- (f) observe the department's safety and health policies as

given in CEDD General Circular No. 16/2004 (CEDD, 2004).

### **1.3 Professional Institutions**

EGGs should direct their work towards membership of the HKIE or other recognised professional institutions. These institutions are important in that they represent their respective professions and members and generally aim at advancing their profession and practice, maintaining proper professional interests, standards and ethics, disseminating information about their subjects, and promoting a better understanding of these subjects by the public at large.

EGGs under the training scheme are encouraged to apply for the relevant grade of membership of one or more recognised professional institutions. At present the most appropriate institutions for this purpose are the Geological Society of London, U.K. (GSL), the Institute of Materials, Minerals and Mining, U.K. (IOM3) and the Hong Kong Institution of Engineers (HKIE), although membership of HKIE requires a first degree in engineering in accordance with the Washington Accord. Suitable top up to earth science degrees can be used to achieve this but require approval on a case-by-case basis.

## **2 The Training Programme**

### **2.1 General**

The training programme adopts the competence-based approach, following the latest requirements of the HKIE Graduate Training Scheme 'A', and aligns closely with the current GSL Chartership System. In addition, the training programme has made reference to the Training Guide for Engineering Geologists produced by the Geological Society of London, U.K (GSL, 2016), and particularly the list of core skills that are considered as mandatory requirements for becoming a Chartered Geologist within the Engineering Geology discipline (see Appendix A).

The current EGG training programme aims to achieve the proper balance of training in geology, site investigation, geotechnical design, and construction site experience. In their first year, the EGGs receive practical training in geological mapping, aerial photograph interpretation and gain experience in planning, supervising and interpreting the results from various ground investigation and laboratory testing techniques. The second year is concentrated on developing technical competence in various aspects of engineering geology, rock mechanics and major landslide field studies leading on to the appreciation of geological and geotechnical problems in engineering design through practical experience. The last year of training consists of attachments to major construction projects such as site formation, tunnelling or other geotechnical works. This provides the EGGs with opportunities to learn about the construction of temporary and permanent geotechnical works, as well as an understanding of contracts, methods of measurement and the use of mechanical plant.

## 2.2 Length of Training

The EGG Training Scheme normally consists of training for a period of three years. If an exemption period is granted, the training period will be less. EGGs who wish to apply for exemption on account of previous relevant training or work experience should approach his/her Engineering Supervisor (ES)/Chief Training Geologist (CTG) for further advice. On satisfactory completion of training, a certificate will be issued to the EGGs by the GEO.

## 2.3 Principles of Training

In considering how best to help EGGs to attain professional status, the following principles should be adopted:

- (a) From the outset, new EGGs should be given the opportunity to become familiar with the functions and management structure of their employing organisations, the role of their department or section, and their own position and value within that structure.
- (b) The EGGs should be assisted in obtaining a working knowledge of relevant regulations, local bye-laws, legislation or codes of practice that affect the various tasks to be undertaken.
- (c) The EGGs should be given the opportunity to gain experience in all aspects of relevant work, including initial and detailed planning, field and laboratory work, data analysis and interpretation and report preparation. Such experience will be obtained in greater depth if unbroken periods of time are devoted to each of them.
- (d) The EGGs should not be expected to undertake tasks that require full professional competence without regular supervision and regular critical appraisal of their work by a suitably-qualified professional.
- (e) The EGGs should be given the opportunity and encouragement whenever possible to follow up both scientific and technical references and enquiries so that a fuller understanding of the various tasks is obtained.
- (f) When the opportunity arises, the EGGs should be encouraged to attend and participate in scientific meetings, conferences and courses, and to meet and exchange ideas with other engineering geologists or related professionals in geology and geotechnical engineering.

It is difficult to assign predetermined fixed periods of time to each of the various requirements listed. Much depends on the specific activities and the work in progress at the time the graduates commence their careers. As a broad guide only, the training should consist of:

- (a) a period of initiation into employment, in which the general structure of the organisation is introduced, sites are visited and plans of existing works, structures, etc. are reviewed,
- (b) spells of office and laboratory work in which to obtain a thorough understanding of the structure and the type of work undertaken by each unit,
- (c) a period of field work under close supervision, and
- (d) a balance of field and office work leading in due course (normally three years) to full responsibility for a particular job or project.

## **2.4 General Objectives and Training Outcomes**

During the training, the EGGs shall attain the following general objectives:

- (a) understand the organisation of the GEO and its relationship with other parties in order to carry out work correctly and efficiently,
- (b) develop a professional attitude towards relationships with clients, associated professions and the public, with a clear understanding of the Rules of Conduct,
- (c) develop technical competence in the field of engineering geology (see Section 2.5 for elaboration, and Appendix A for list of core skills),
- (d) understand the organisation of a construction site for the efficient and timely construction of a project,
- (e) understand the financial procedures and controls required during the design and construction stages of a project and how project costs are estimated,
- (f) have a working knowledge of contract documents and tendering procedures, and
- (g) have knowledge of relevant Safety and Health Legislation, including professional responsibilities, and competence in

Safety and Health practices related to geotechnical works.

To achieve these general objectives, a set of Training Outcomes (Appendix B) is adopted to ensure that the EGGs will gain desirable professional and technical experiences and develop the core skills that are considered essential for becoming a professional engineering geologist. The Training Outcomes are grouped under 13 sections, including:

- Introduction
- Engineering Geologist as a Profession
- Geological Mapping
- Engineering Geology
- Aerial Photograph Interpretation and Terrain Evaluation
- Desk Study
- Ground Investigation
- Laboratory Testing
- Geotechnical Design
- Construction Site Experience
- Project Management
- Hydrogeology
- Construction Material Resources

More specific items and descriptions of the Training Outcomes are given in the Training Outcome Record Sheets in Appendix B.

The EGGs will undertake their training by rotating mainly within various divisions and sections of the GEO. However, they may also be posted to other Government Departments, or on secondments to engineering consultants or contractors, in particular during their training for major construction site experience, in order to cover the Training Outcomes laid down in Appendix B. The rotation will be based on a rotational posting programme. A typical example is given in Appendix C. The programme may be adjusted by the ES/CTG as circumstances and training opportunities dictate.

## **2.5 Technical Experience**

During the training period, EGGs should gain broad experience in the following aspects of engineering geology:

- (a) understanding and interpretation of geological features in three dimensions, the processes and time scales leading to the development of these features and how these features may affect engineering works,
- (b) preparation and use of geological and engineering geological maps at different scales,
- (c) recognition, description and classification of (i) rock and soil materials in hand specimen and laboratory samples, and (ii) field conditions and soil and rock masses at field exposures,

combined with an appreciation of the geological processes by which rocks and soils have arrived at their present state,

- (d) evaluation and interpretation of various sources of geological data concerning a site or an area in the context of a desk study, including reports, memoirs or other materials such as aerial photographs,
- (e) planning, organization and supervision of a ground investigation including drilling, trial pitting, core logging and engineering geophysical techniques, and
- (f) interpretation of data from field mapping, in situ testing, laboratory testing, monitoring installations or other forms of site investigation and evaluation of spatial and temporal variations in geological conditions, leading to the appreciation of potential geological problems in relation to an engineering project and engineering properties of rocks and soils.

To be eligible for applying the professional qualification of Chartered Geologist, the GSL requires that the applicants must hold a recognised degree or equivalent qualification in geosciences at Master's level, or have post-graduation experience to demonstrate Master's level. To ensure the EGG would attain the required experience, specific training components are included in the EGG Training Scheme, making reference to the guidelines provided in GSL webpage. All EGG, including those obtained a relevant Master Degree, shall conduct at least one of the following projects during the 3-year training period.

- (a) a geological mapping project of an area of ~4 km<sup>2</sup>, with production of a geological map and accompanying a technical report;
- (b) an engineering geological assessment of a site, including design and analysis of a survey, for a proposed infrastructure project (such as site formation, tunnelling, cavern development, landfill site etc.);
- (c) a modelling-based investigation of a geological, geophysical or geochemical phenomenon;
- (d) a geophysical survey, including interpretation; and
- (e) a piece of academic research published in a peer-reviewed journal (co-authored publication is considered acceptable).

As part of the project, the EGG shall prepare a technical report which should include the following parts:

- (a) a clear description of the aims of the project;

- (b) a description of how the project was carried out;
- (c) an outline of the results achieved and their interpretation; and
- (d) an evaluation of the project in terms of skills and knowledge developed in order to complete the project.

The technical report should demonstrate the EGG's knowledge and understanding of the topics by presenting an appraisal of relevant geological data, issues and knowledge, and provision of rational interpretations of ground data / geological assessment / geological model. The technical report is deemed to satisfy the experiential learning requirement set out by GSL.

## **2.6 Entry to a Professional Institution**

New graduates should look upon the first four or more years of their career as an apprenticeship leading to recognition of professional competency. They should endeavour to undertake all tasks with interest and willingness.

Possession of the prerequisite number of years of professional experience is not sufficient for membership of a professional institution. Applicants will need to demonstrate that they have made full use of the knowledge and experience obtained, that they have conscientiously and diligently undertaken their duties, and displayed an appropriate professional outlook. Log books and reports should also be completed with care as these will be studied closely to assess the experience of the applicants, their duties, responsibilities and general aptitude.

Applicants should bear in mind that it is not just their academic qualifications and professional experience which will be assessed. Other factors considered in professional assessments are the thoroughness with which they understand their projects, the manner in which they express themselves in their professional reports, and the bearing with which they conduct themselves at professional interviews. Assessors will consider all of these factors in deciding whether the applicants are suitable persons to be granted professional status.

## **2.7 Continuing Professional Development (CPD)**

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 engineering geologist's career. CPD is aimed at enhancing individual worth and thus corporate performance.

EGGs are required to undertake CPD in parallel with their training programme and then throughout their career. They should keep a record on the CPD activities which they have undertaken. The Training Logbook (Appendix D) includes a section for recording the CPD undertaken. Alternatively, CPD may be recorded in a separate HKIE CPD Log Book or other relevant professional institution CPD Log Book.

Guidance on CPD, and the CPD requirements under HKIE Professional Development Log Book and GSL Chartership Scheme are given in Appendix E.

### **3 Administration of the Programme**

#### **3.1 Standing Committee for the Training of EGGs**

##### **3.1.1 Terms of Reference**

The EGG Training Scheme is under the overall direction of the Standing Committee for the Training of EGGs. The Terms of Reference of the Standing Committee for the Training of EGGs are:

- (a) to oversee, guide and assist the EGG Training Scheme,
- (b) to advise on standards and technical policy matters related to EGGs, and
- (c) to liaise with professional institutions on matters relating to the training of EGGs.

##### **3.1.2 Membership**

The membership of the Standing Committee for the Training of EGGs is as follows:

- Chairman - Head of the GEO (H(GEO))
- Members - Deputy Head (Planning & Standards) (DH(P&S)), GEO
  - Chief Geotechnical Engineer/Housing Department (CGE/HD)
  - Chief Geotechnical Engineer/Planning (CGE/P), GEO, or any other Chief Geotechnical Engineer/Senior Geotechnical Engineer appointed by H(GEO) as Engineering Supervisors (ES) in the EGG Training Scheme
  - Chief Assistant Secretary/Works (6) (CAS(W) 6), Development Bureau
  - Technical Secretary/Headquarter (TS/HQ)
  - Senior Geotechnical Engineer/Geological Survey (SGE/GS), GEO
  - Technical Secretary/GEO (Secretary)

The Standing Committee conducts its business at minuted meetings which are called on an as-needs basis, but not less than once per year.

#### **3.2 Working Group for the Training of EGGs**

Monitoring of EGGs' progress under training, and any day-to-day administrative issues concerning EGG postings and duties, are reviewed regularly by the Working Group for the Training of EGGs. The Working Group is chaired by ES/CTG. The Secretary of the Standing

Committee is also the secretary of the Working Group. Members of the Working Group are the Training Tutors at the time when meetings are convened. The Working Group conducts its business at minuted meetings which are convened on an as-needs basis.

### **3.3 Persons Involved in Supervision of the Training**

While the Standing Committee provides overall guidance on the EGG Training Scheme, the routine daily administration and running of the scheme also involves other persons of various levels. Their respective roles and responsibilities are as follows:

(a) Head of EGG Training Scheme

The Head of GEO (H(GEO)), who is the Head of the EGG Training Scheme, assumes the overall responsibility for the Training Scheme.

(b) Engineering Supervisor (ES)/Chief Training Geologist (CTG)

The ES/CTG is the professional in the GEO appointed to supervise, coordinate and manage the EGG Training Scheme. This is normally CGE/P. The ES/CTG may, however, delegate day-to-day supervision of the EGGs to qualified staff under his or her control or other qualified staff trained through the EGG Training Scheme.

(c) Training Tutor (TT)

The TT is the qualified professional Engineer/Geotechnical Engineer responsible for the day-to-day supervision of the EGGs while assigned for training.

(d) Training Coach (TC)

The TC is the person (normally a Senior Geotechnical Engineer or Geotechnical Engineer) appointed to assist the ES, mainly to monitor the development of the EGGs and to identify opportunities for the EGGs to obtain relevant experience.

### **3.4 Responsibilities of Persons Involved**

#### **3.4.1 General**

The CEDD has a responsibility to ensure that the EGGs under the Training Scheme obtain sufficient experience, guidance and leadership to enable them to become competent professionals, and so equip them to become corporate members of a relevant professional institution. The practical training of EGGs imposes a special responsibility on GEO staff to

direct the EGGs' work and to pass on their knowledge and experience.

### **3.4.2 Head of the GEO (H(GEO))**

The H(GEO), who is the Head of the EGG Training Scheme, is responsible for setting training policies in liaison with members of the Standing Committee and for overseeing their implementation.

### **3.4.3 Engineering Supervisor (ES)/Chief Training Geologist (CTG)**

The ES/CTG is responsible for implementing the approved EGG Training Scheme and making adjustments to the rotational posting programme as and when required to ensure that the basic training objectives are met. The ES/CTG must ensure that the TTs understand what is required of them and implement the training effectively. The ES/CTG should also liaise with relevant professional institutions and ensure that the training programme meets their requirements.

### **3.4.4 Training Tutor (TT)**

The TT will assume training responsibilities when the EGGs are formally assigned and will remain responsible until the EGGs are formally reassigned to a new posting. The TT should be fully familiar with this manual. The TT will be informed by the ES/CTG of the programmed length of assignment and those items of the Training Outcomes which should be achieved by the EGGs. The TT must give the EGGs opportunity to gain relevant professional and technical experience to demonstrate the Training Outcomes, and devise a training programme with the ES/CTG to ensure that the required Training Outcomes are achieved.

The TT must review progress monthly in order to:

- (a) assess the achievement of the Training Outcomes by the EGGs under supervision (Section 4.5 refers), and
- (b) warn the ES/CTG as early as possible if any of the EGGs is having or is likely to have problems meeting the objectives in the time available.

The TT must fill in a Quarterly Performance Report (Appendix F) on each EGG under supervision in accordance with the routing sheet (Appendix G). The TT is also required to read and comment on the Quarterly Training Report which must be the EGG's own work.

The TT should encourage the EGGs under his/her supervision to undertake regular studies with the aim of achieving the Training Outcomes. Some of these studies will have to be carried out outside normal working hours. The TT should also regularly discuss the job-related studies with his/her EGGs with a view to monitor the EGG's training progress. The schedule attached in Appendix H aims to assist the TT and ES/CTG in the monitoring of the EGG's

progress towards the achievement of the various items of the Training Outcomes.

### **3.4.5 Training Coaches (TCs)**

Under the EGG Training Scheme, the TT changes with the posting of the EGGs. In order to supplement the tutoring system, TCs are assigned to assist the ES in the following:

- (a) monitor closely the development of the EGGs assigned, visit them at the training sites where needed, identify potential improvement areas and liaise with the TTs or ES when necessary to ensure achievement of training objectives by the EGGs.
- (b) read and comment on the diaries prepared by the EGGs and discuss with them key aspects, in particular, the application of scientific methods towards analysis and solution of engineering geological problems and development of professional outlook.
- (c) assist the ES to identify opportunities for giving the EGGs relevant experience.
- (d) discuss with the ES regularly to review the training progress of the EGGs.

If necessary, the TC may contact the TT during the training attachment period to review the EGG's achievement of Training Outcomes.

### **3.4.6 Engineering Geology Graduate (EGG)**

It is the responsibility of the EGGs to take every advantage of opportunities given and to achieve the standards required. EGGs must also advise the ES/CTG of any perceived deficiencies regarding their progress or the programme.

The EGGs must complete the following Training Records in the Training Log Book (Appendix D):

- (a) Monthly Training Reports
- (b) Quarterly Detailed Training Records
- (c) Quarterly Training Reports

The EGGs should prepare and submit the Monthly Training Reports to the TT for signature. The EGGs should request the TT to complete a specimen initial/signature sheet for traceability purpose (see Appendix I). The EGG should submit the Quarterly Training Reports

to the ES/CTG using the routing sheet given in Appendix G and in accordance with the timing specified. In addition, the EGGs is required to keep a daily diary, which should be signed by the TC or other professional staff delegated by ES/CTG. Guidance for keeping the daily diary and preparation of the Quarterly Training Reports is given in Appendix J. It is emphasised that the Training Reports and Training Records must be the EGG's own work and should be handwritten.

## **4 Procedural Guidance Notes**

### **4.1 General**

The ES/CTG, TT and TCs must maintain close professional contact with the EGGs. A high level of enthusiasm, interest and dedication is essential for their successful training. The EGGs are expected to cover a set format of basic geological and geotechnical engineering training. During this period they are also expected to undertake useful and productive work.

### **4.2 Briefing the EGGs**

The EGGs should be briefed on government procedures, office organisation and office and site practices upon first appointment. The TT will have to spend some time in close contact with the EGGs in the early stages so as to familiarise them with their new environment. The TT must discuss the work done under training with the EGGs on a regular basis. A brief note of the discussions should be included in the Quarterly Training Report.

In any briefing, the EGGs must be aware of the overall concept and design philosophy of the whole project, even though their own part in the project may be minor.

The TT responsible for site work must brief the EGGs on their responsibilities in relation to the duties of other site staff to ensure that they are fully aware of the limitations of their position. The authority given to the EGGs by the TT should increase as the trainees gain experience.

### **4.3 Assessing and Recording Progress of Training**

Each EGG will receive a copy of this manual containing the set of Training Outcome Record Sheets (Appendix B), which should be kept by the EGGs as part of their Training Records. These should be passed to the TTs and ES/CTG at regular intervals for assessing the progress and recording the Training Outcomes achieved. The ES/CTG will provide guidance as to which topics should be covered during each stage of the EGG's training.

The progress of the EGGs in achieving Training Outcomes will be assessed at least every three months by the TTs and ES/CTG, and will be recorded by dates and initials signed in appropriate columns on the Training Outcome Record Sheets (Appendix B). Each TT should provide a specimen initials/signatures for traceability purpose (Appendix I). The ES should interview and test the EGGs quarterly to confirm the assessment by the TT. If there is

abnormally slow progress in any topic, the TT must draw this to the attention of ES/CTG.

#### 4.4 Quarterly Training Report and Performance Report

In order to ensure that the ES/CTG and H(GEO) have accurate up-to-date knowledge of the progress of each EGG, it is essential that the current Quarterly Training Report and the current Quarterly Performance Report from the TT are submitted to the ES/CTG promptly in accordance with the target dates on the routing sheet attached to the Quarterly Performance Report (see Appendices F and G). In order to avoid unnecessary delays, the Quarterly Training Report and the Quarterly Performance Report need not be sent together.

#### 4.5 List of Training Documents

The EGG Training Scheme documentation comprises the following items:

- (a) GEO Administrative Report entitled “Engineering Geology Graduate Training Scheme Manual”, i.e. this document,
- (b) Training Outcome Record Sheets (Appendix B),
- (c) Graduate Training Logbook, including academic and employment records, Monthly Training Reports, Quarterly Training Reports, and Detailed Training Records (Appendix D), and
- (d) CPD Records

A Training Log Book containing the necessary forms and covering the full training period will be given to each EGG. This should be kept updated by the EGGs for future reference.

Any other lecture notes, reports, projects, assignments, etc. completed during the course of training should also be kept by the EGGs for future use and reference in matters such as submission to a professional institution.

## 5 References

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## Appendix A

### Competence Standards and Requirements Set by HKIE and GSL

- (i) HKIE Competence Standard for Professional Engineers (Corporate Members)
- (ii) Competencies Required for Chartered Geologists under GSL
- (iii) Core Skills for Becoming a Chartered Geologist within the Engineering Geology Discipline under GSL

**HKIE Competence Standard for Professional Engineers (Corporate Members)**

1. Comprehend and apply knowledge of, accepted principles underpinning widely applied good practice for professional engineering.
2. Comprehend and apply knowledge of, accepted principles underpinning good practice for professional engineering that is specific to Hong Kong.
3. Define, investigate and analyse complex engineering problems in accordance with good practice for professional engineering.
4. Design or develop solutions to complex engineering problems in accordance with good practice for professional engineering.
5. Be responsible for making decisions on part or all of one or more complex engineering activities.
6. Manage part or all of one or more complex engineering activities in accordance with good engineering management practice.
7. Identify, assess and manage engineering risk.
8. Conduct engineering activities to an ethical standard prescribed by the HKIE.
9. Recognise the reasonably foreseeable social, cultural, health, safety, sustainability and environmental effects of professional engineering activities generally.
10. Communicate clearly with other engineers and others that he or she is likely to deal with in the course of his or her professional engineering activities.
11. Maintain the currency of his or her professional engineering knowledge and skills.
12. Exercise sound professional engineering judgement.

**Competencies Required For Chartered Geologist under GSL**

- (i) Understanding of the complexities of geology and of geological processes in space and time in relation to the applicant's speciality
- (ii) Critical evaluation of geoscience information to generate predictive models.
- (iii) Effective communication in writing and orally.
- (iv) Competency in the management of health and safety (H&S) and environmental issues and other statutory obligations applicable to the discipline or area of work.
- (v) Clear understanding of the meaning and needs of professionalism, including a clear understanding of the Code of Conduct and commitment to its implementation.
- (vi) Commitment to Continuing Professional Development.
- (vii) Competence in his/her area of expertise.

Note: Detailed descriptions of the above competencies required are given in GSL Regulations on Criteria and Procedure for Validation as a Chartered Geology (R/FP/2).

**Core Skills for a Chartered Geologist within the  
Engineering Geology Discipline under the GSL**

1. Explain the complexities of geology and geological processes in space and time within a stratigraphic framework.
2. Classify sedimentary, igneous and metamorphic rocks, assemblages and terrains; their mode of formation, field occurrence and engineering significance.
3. Describe geological structures; their mode of formation, field occurrence and engineering significance.
4. Interpret the stratigraphic framework of the region in which the work is to be undertaken.
5. Categorise the Quaternary setting of a given project area and predict the associated sediments, landforms and geohazards present within the terrain.
6. Recognise and categorise geohazards, such as landslides and potential unstable slopes, mineworkings, dissolution features and compressible soils.
7. Accurately record geoscience data in the field. For example via preparation of exposure logs, scan lines, borehole and trial pit logs.
8. Utilise geoscience information to develop conceptual, observational and analytical ground models which include aspects of stratigraphy, lithology, structural geology, hydrogeology, geo-environment, geotechnical properties and uncertainty.
9. Undertake systematic geological, engineering geological, geomorphological and other appropriate thematic mapping. Mapping undertaken must include aspects of geology/stratigraphy and geological structures, geomorphology and terrain evaluation, rock mass properties, hydrogeological and hydrological features and geological hazards.
10. With consideration of the geohazards, and their potential impact, prepare and update project geotechnical risk registers throughout the project lifecycle.

Appendix B  
Training Outcome Record Sheets

Training Outcomes	Previous Ref.	HKIE/GSL Competence Ref.	ES/TT Initials, Date of Assessment, and Remarks if any
<b>1. INTRODUCTION</b>			
<p>1.1 Own Organisation</p> <p>(a) Know the structure of the CEDD and GEO with respect to:</p> <ul style="list-style-type: none"> <li>- visions, missions and values</li> <li>- size and history</li> <li>- relationships with Government departments and other organisation</li> <li>- management structures and functions</li> <li>- office manuals, procedures and practices</li> <li>- communication systems</li> <li>- training programmes and career development paths</li> </ul>	CCO 1.8	GSL (v) & (vii)	
<p>(b) Know the Slope Safety System in Hong Kong, in particular the roles and functions of GEO with respect to:</p> <ul style="list-style-type: none"> <li>- auditing of geotechnical works</li> <li>- the Landslip Preventive and Mitigation Programme (LPMitP)</li> <li>- landslip investigation</li> <li>- GEO's landslip emergency system</li> </ul>	New	HKIE 11 / GSL (v) & (vii)	
<p>(c) Know the CEDD's Integrated Management System (IMS), including:</p> <ul style="list-style-type: none"> <li>- CEDD's IMS Policy</li> <li>- policies on construction safety and occupational health</li> <li>- policies on environmental protection</li> </ul>	New	GSL (v) & (vii)	
<p>1.2 Information about professional institutions</p> <p>(a) Know the history, role and organisation of:</p> <ul style="list-style-type: none"> <li>- Hong Kong Institution of Engineers</li> <li>- Geological Society of London</li> <li>- Institute of Materials, Minerals and Mining, U.K.</li> </ul>	CCO 1.1(a)	HKIE 11 / GSL (v)	
<p>(b) Develop and maintain a general interest in professional institution affairs.</p>	CCO 1.1(b)	HKIE 11 / GSL (v) & (vi)	

Training Outcomes	Previous Ref.	HKIE/GSL Competence Ref.	ES/TT Initials, Date of Assessment, and Remarks if any
(i) participate in meetings of HKIE (Geotechnical Division), GSL, IOM3 or other professional institutions within the construction industry (ii) participate in professional institution affairs, e.g. committee membership (iii) attend annual general meetings of HKIE, GSL and IOM3.			
<b>2. ENGINEERING GEOLOGIST AS A PROFESSION</b>			
2.1 Professionalism (a) Demonstrate a clear understanding of the responsibilities of engineers / engineering geologists in society.	CCO 1.2(a)	HKIE 8 / GSL (v)	
(b) Demonstrate a clear understanding of the Rules of Conduct related to: <ul style="list-style-type: none"> <li>- Hong Kong Institution of Engineers</li> <li>- Geological Society of London</li> <li>- Institute of Materials, Minerals and Mining, U.K.</li> </ul> and a commitment to their implementation.	CCO 1.2(b)	HKIE 8 / GSL (v)	
(c) Demonstrate a clear understanding of the inherent responsibilities for a professional engineer/geologist in relation to: <ul style="list-style-type: none"> <li>- ethics</li> <li>- codes of behaviour</li> <li>- professionalism</li> </ul>	CCO 1.2(c)	HKIE 8 / GSL (v)	
2.2 General Personal Development (a) Keep abreast of local, regional and international current affairs in: <ul style="list-style-type: none"> <li>- geotechnical engineering and engineering geology by reading relevant local, regional and international publications</li> <li>- current affairs both locally, regionally and internationally by reading, at least a quality local and national newspaper</li> </ul>	CCO 1.3(a)	HKIE 11/ GSL (v), (vi) & (vii)	

Training Outcomes	Previous Ref.	HKIE / GSL Competence Ref.	ES/TT Initials, Date of Assessment, and Remarks if any
(b) Participate in other local learned societies, such as the Geological Society of Hong Kong.	CCO 1.3(b)	HKIE 11 / GSL (vi)	
2.3 Continuous Professional Development (a) Demonstrate a commitment to continuous development throughout the professional career.	New	HKIE 11 / GSL (vi) & (vii)	
(b) Keep a record of continuous professional development (CPD) attendance in a CPD log book and satisfying the ES/CTG as to the value of each activities attended.	CCO 1.3(c)	HKIE 11 / GSL (vi) & (vii)	
2.4 Occupation Safety and Health (a) Understand the relevant statutory health and safety regulations and requirements.	CCO 1.5(a)	HKIE 9 / GSL (iv)	
(b) Understand the health and safety responsibilities of professional engineers/engineering geologists to employers, employees and the general public when engaging in engineering activities.	CCO 1.5(b)	HKIE 9 / GSL (iv)	
(c) Apply the safety management system in accordance with industry standards and regulatory requirements.	CCO 1.5(c)	HKIE 9 / GSL (iv)	
(d) Demonstrate competence in the management of Health and Safety and environmental issues and other statutory obligations applicable to geotechnical works.	New	HKIE 9 / GSL (iv)	
2.5 Environment and Sustainability (a) Demonstrate a clear understanding of the provisions of the Environmental Impact Assessment Ordinance and other relevant statutory environmental requirements related to the construction industry.	CCO 1.6(a)	HKIE 9 / GSL (iv)	
(b) Demonstrate competence in evaluating the inter-relationship of technology with the environment in the work place.	CCO 1.6(b) (i)	HKIE 9 / GSL (iv)	

Training Outcomes	Previous Ref.	HKIE/GSL Competence Ref.	ES/TT Initials, Date of Assessment, and Remarks if any
(c) Appreciate and be aware of the impact of technology on the environment in society.	CCO 1.6(b) (ii)	HKIE 9 / GSL (iv)	
<p>2.6 Communication</p> <p>Demonstrate competence in communication in the professional manner required:</p> <p>(i) orally at meetings, formal presentations and information discussions</p> <p>(ii) in writing of reports, memos, instructions to junior staff, letters, and bibliography</p>	CCO 1.7	HKIE 10 / GSL (iii)	
<p>2.7 Development of Personal Qualities</p> <p>Demonstrate personal development with respect to:</p> <ul style="list-style-type: none"> <li>- technical competence</li> <li>- creativity</li> <li>- innovative abilities</li> <li>- professional and social confidence</li> </ul>	CCO 1.4	HKIE 11 / GSL (vi) & (vii)	
<b>3. GEOLOGICAL MAPPING</b>			
3.1 Demonstrate competence in conducting geological field mapping at a regional scale.	SO 3.2(a)	GSL (i), (ii) & (vii)	
3.2 Have experience in using and interpreting other methods of geological surveying (e.g. geophysical, geochemical methods).	SO 3.2(b)	GSL (i), (ii) & (vii)	
3.3 Demonstrate a competency in using aerial photograph interpretation for geological mapping.	SO 3.2(c)	GSL (i), (ii) & (vii)	
3.4 Demonstrate competence in identification and classification of soils and rocks, and explaining their mode of formation, field occurrence and engineering significance.	SO 3.2(d) & GSL CS A2	GSL (i), (ii) & (vii)	
3.5 Demonstrate competence in petrology, petrography and sedimentology (including use of palaeontology for dating).	SO 3.2(e)	GSL (i), (ii) & (vii)	

Training Outcomes	Previous Ref.	HKIE / GSL Competence Ref.	ES/TT Initials, Date of Assessment, and Remarks if any
3.6 Demonstrate competence in accurately recording, interpreting and describing field data (including exposure logs, scale lines, borehole and trial pit logs), and producing cross-sections, reports, and geological maps.	SO 3.2(f) & GSL CS A7	GSL (i), (ii) & (vii)	
3.7 Have a working knowledge of the GEO's Geoscience Database and its GIS products.	SO 3.2(g)	GSL (ii) & (vii)	
3.8 Demonstrate competence in explaining the complexities of geology and of geological processes in space and time within a stratigraphic framework.	New (GSL CS A1)	GSL (i), (ii) & (vii)	
3.9 Demonstrate competence in describing geological structures, their mode of formation, field occurrence and engineering significance.	New (GSL CS A3)	GSL (i), (ii) & (vii)	
3.10 Demonstrate competence in interpreting the stratigraphic framework of the region in which the work is to be undertaken.	New (GSL CS A4)	GSL (i), (ii) & (vii)	
<b>4. ENGINEERING GEOLOGY</b>			
4.1 Understand the principles and know how to interpret engineering geological maps at regional, district and local/site scale.	SO 3.3(a)	HKIE 1 / GSL (i), (ii) & (vii)	
4.2 Demonstrate competence in describing and classifying soils and rock materials and masses for engineering use.	SO 3.3(b)	HKIE 3 / GSL (i), (ii) & (vii)	
4.3 Understand the material and mass behaviour and the engineering properties of common rock and soil types in Hong Kong.	SO 3.3(c)	HKIE 2 / GSL (i), (ii) & (vii)	
4.4 Have experience in assessing and improving the stability of a rock slope, including:  (i) collecting rock discontinuity data, (ii) conducting kinematic analysis	SO 3.3(d)	HKIE 3 / GSL (i), (ii) & (vii)	

Training Outcomes	Previous Ref.	HKIE/GSL Competence Ref.	ES/TT Initials, Date of Assessment, and Remarks if any
(iii) design of improvement or remedial works			
4.5 Have experience in applying and interpreting shallow engineering geophysical methods, such as: <ul style="list-style-type: none"> <li>- seismic refraction and reflection</li> <li>- ground penetrating radar</li> <li>- resistivity imaging</li> <li>- spectral analysis of surface waves</li> <li>- electromagnetic</li> </ul>	SO 3.3(e)	HKIE 3 / GSL (i), (ii) & (vii)	
4.6 Have experience in evaluating stability of and support requirements for rock tunnels and caverns by rock mass classification systems, including: <ul style="list-style-type: none"> <li>- Q-index</li> <li>- RMR method</li> </ul>	SO 3.3(f)	HKIE 3 / GSL (i), (ii) & (vii)	
4.7 Have experience in conducting engineering geological field studies of major landslides.	SO 3.3(g)	HKIE 3 / GSL (i), (ii) & (vii)	
4.8 Demonstrate competence in recognising and categorising geohazards, such as landslides and potentially unstable slopes, mineworkings, dissolution features, etc.	New (GSL CS A6)	HKIE 3 / GSL (i), (ii) & (vii)	
<b>5. TERRAIN EVALUATION AND AERIAL PHOTOGRAPH INTERPRETATION</b>			
5.1 Understand the basic principles and limitations of terrain evaluation methods.	SO 3.1(a)	HKIE 1 / GSL (i), (ii) & (vii)	
5.2 Have a thorough knowledge and work experience in terrain classification mapping, and in particular for the purpose of landslide hazard assessment.	SO 3.1(b)	HKIE 3 / GSL (i), (ii) & (vii)	
5.3 Have experience in applying aerial photograph interpretation (API) to engineering problems, including: <ul style="list-style-type: none"> <li>(i) routine API in evaluating site development history</li> <li>(ii) API in major landslide studies</li> </ul>	SO 3.1(c)	HKIE 3 / GSL (i), (ii) & (vii)	

Training Outcomes	Previous Ref.	HKIE / GSL Competence Ref.	ES/TT Initials, Date of Assessment, and Remarks if any
5.4 Understand the use of API and terrain evaluation concepts in the GEO's Geotechnical Area Studies Programme (GASP) and natural terrain hazard study (NTHS).	SO 3.1(d)	HKIE 2 / GSL (ii) & (vii)	
5.5 Have experience in the use of digital technology in geotechnical studies, including:  <ul style="list-style-type: none"> <li>- Geographic Information System (GIS)</li> <li>- remote sensing techniques, such as satellite imagery, light detection and ranging (LiDAR), and mobile laser scanning</li> <li>- digital stereo visualisation platform</li> </ul> and understand the advantages, disadvantages and limitations of various remote sensing systems.	SO 3.1(e) & GSL TO C7	HKIE 1 / GSL (ii) & (vii)	
5.6 Have a working knowledge of GEO's slope identification and registration system, and the technical content of the Slope Information System (SIS) and its GIS products.	SO 3.1(f)	HKIE 2 / GSL (ii) & (vii)	
5.7 Demonstrate competence in categorising the Quaternary setting of a given project area and predict the associated sediments, landforms and geohazards present within the terrain.	New (GSL CS A5)	HKIE 3 / GSL (i), (ii) & (vii)	
<b>6. DESK STUDY</b>			
6.1 Have experience in preparing a site specific engineering geological desk study, with the use of existing data sets, including:  <ul style="list-style-type: none"> <li>- published and unpublished topographic and geological maps and other plans at relevant scale</li> <li>- geological memoirs, reports, journal papers and other relevant literature</li> <li>- aerial photographs and other remote sensing imageries</li> </ul>	SO 3.7(a) & GSL TO B1	HKIE 3 / GSL (i), (ii) & (vii)	

Training Outcomes	Previous Ref.	HKIE/GSL Competence Ref.	ES/TT Initials, Date of Assessment, and Remarks if any
<ul style="list-style-type: none"> <li>- technical reports, ground investigation reports and previous mining records</li> <li>- HKGS archival materials</li> </ul>			
<p>6.2 Have experience in assessing the reliability and relevance of existing data sets and using the existing information to develop conceptual observational and analytical ground models of the site, including aspects of:</p> <ul style="list-style-type: none"> <li>- stratigraphy</li> <li>- lithology</li> <li>- structural geology</li> <li>- geomorphology</li> <li>- hydrogeology</li> <li>- geo-environmental</li> <li>- geotechnical properties</li> <li>- uncertainty</li> </ul>	New (GSL CS A8)	HKIE 3 / GSL (i), (ii) & (vii)	
<p>6.3 Have experience in using the ground models to identify potential ground and groundwater hazards, geohazards and contamination sources etc.</p>	New (GSL TO B7)	HKIE 3 / GSL (i), (ii) & (vii)	
<b>7. GROUND INVESTIGATION</b>			
<p>7.1 Have a thorough understanding of the capability of different ground investigation techniques and equipment, including sampling techniques, in-situ field tests and instrumentations.</p>	SO 3.6(a)	HKIE 1 / GSL (vii)	
<p>7.2 Have experience in designing a ground investigation for various types of geotechnical works (e.g. slope stability, foundations, borrow areas) with a view to evaluate predicted ground conditions and to test and develop the conceptual models.</p> <ul style="list-style-type: none"> <li>(i) define the methods of investigation, considering the suitability of equipment, time required and site limitations</li> <li>(ii) design investigation using appropriate and cost effective methods</li> </ul>	SO 3.7(b) & GSL TO D1-D4	HKIE 3 / GSL (vii)	

Training Outcomes	Previous Ref.	HKIE / GSL Competence Ref.	ES/TT Initials, Date of Assessment, and Remarks if any
(i) prepare cost estimates of investigations (ii) recognise optimal phasing of investigations			
7.3 Have experience in conducting technical supervision of ground investigations, including: <ul style="list-style-type: none"> <li>- land and marine-based drillings</li> <li>- land and marine-based geophysics</li> <li>- trial pits and trenches</li> <li>- slope stripping</li> <li>- sampling</li> <li>- in-situ field tests</li> <li>- installation of instrumentations</li> </ul>	SO 3.6(b)	HKIE 3 / GSL (vii)	
7.4 Demonstrate competence in describing and log soil and rock materials and producing pit, face and borehole logs to appropriate standards in Geoguide 2.	New (GSL TO E4)	HKIE 2,3 / GSL (vii)	
<b>8. LABOURATORY TESTING</b>			
8.1 Have experience in specifying and schedule laboratory tests for soil and rocks, and assessing test data to derive design parameters.	SO 3.6(c)	HKIE 3 / GSL (ii) & (vii)	
8.2 Have a thorough knowledge of soil and rock laboratory testing standard and practice, including sample description, sample preparation, testing techniques and reporting.	SO 3.6(d)	HKIE 1 / GSL (vii)	
<b>9. GEOTECHNICAL DESIGN</b>			
9.1 Have a working knowledge of Government design manuals, codes of practice, standards in regular use in the GEO, especially: <ul style="list-style-type: none"> <li>- GEO publications, Geoguides and Geospecs</li> <li>- geological maps and memoirs</li> <li>- GEO technical circulars and technical guidance notes</li> </ul>	CO 2.1(a) & CO 2.4	HKIE 2 / GSL (vii)	

Training Outcomes	Previous Ref.	HKIE / GSL Competence Ref.	ES/TT Initials, Date of Assessment, and Remarks if any
and understand the application and limitations of these standards, codes of practices etc.			
9.2 Have a working knowledge of computer programs in regular use in the GEO, including BIM and automation software for design.	CO 2.1(b)	HKIE 2 / GSL (vii)	
9.3 Have a working knowledge of source of information in the Government (see Geoguide 2, Appendix B).	CO 2.1(c)	HKIE 2 / GSL (vii)	
9.4 Have experience in identifying and defining a problem accurately, probably in a supporting role in researching, assembling and assessing basic data.	CO 2.2	HKIE 3,12 / GSL (ii) & (vii)	
9.5 Have experience in evaluating the stability of fill slopes, cut slopes, retaining walls, and be familiar with computer software based on common limit equilibrium analytical techniques.	SO 3.7(c)	HKIE 3 / GSL (vii)	
9.6 Have a working knowledge of the range of measures used to improve stability of existing slopes and retaining walls, including the use of geosynthetic products (e.g. for reinforcement, or in filters)	SO 3.7(d)	HKIE 1 / GSL (vii)	
9.7 Have a working knowledge of design of common slope stabilisation, improvement or remedial measures.	SO 3.7(e)	HKIE 1 / GSL (vii)	
9.8 Have experience in identifying and evaluating alternative solutions to a problem, from technical, safety, environmental and financial perspectives.	CO 2.3	HKIE 4,12 / GSL (iv), (v) & (vii)	
9.9 Have experience in producing a geotechnical design, based on all relevant data and analytical works, and preparing documentation on the design with diagrams, sketches, charts etc. and/or detailed drawings using scales appropriate to the information to be conveyed.	CO 2.6	HKIE 4 / GSL (ii), (iii) and (vii)	

Training Outcomes	Previous Ref.	HKIE / GSL Competence Ref.	ES/TT Initials, Date of Assessment, and Remarks if any
9.10 Have an appreciation that technical specifications are an essential part of a design.	CO 2.8	HKIE 4 / GSL (vii)	
9.11 Have experience in the costing a geotechnical design by taking off quantities and building up cost estimates.	CO 2.9	HKIE 4 / GSL (vii)	
9.12 Know the safety requirements in engineering design and be familiar with the regulations applicable to the geotechnical work.	CO 2.10	HKIE 2,4 / GSL (iv)	
<b>10. CONSTRUCTION SITE EXPERIENCE</b>			
10.1 Contract and its operation	CO 2.11(a)	HKIE 5 / GSL (vii)	
(a) Understand the duties and responsibilities of all parties to a contract and the practical application of the various documents forming a particular contract.			
(b) Understand the procedures for the issue and/or receipt, registration and filing of work instructions, drawings and amendments.	CO 2.11(b)	HKIE 5 / GSL (vii)	
(c) Demonstrate competence in keeping an accurate daily record of events and instructions.	CO 2.11(c)	HKIE 10 / GSL (vii)	
(d) Demonstrate competence in reading and coordinating drawings and/or implementing work instructions and be involved in this process on a day-to-day basis.	CO 2.11(d)	HKIE GSL (vii)	
10.2 Have experience in the use of surveying and setting out techniques in construction works.	CO 2.12	HKIE 1 / GSL (vii)	
10.3 Know the use, performance and cost of equipment and plants used, in particular those for geotechnical works.	CO 2.13 SO 3.8(b)	HKIE 3 / GSL (vii)	
10.4 Have experience in participating in planning, programming, and monitoring of work progress and reporting.	CO 2.14	HKIE 6 / GSL (vii)	

Training Outcomes	Previous Ref.	HKIE / GSL Competence Ref.	ES/TT Initials, Date of Assessment, and Remarks if any
10.5 Have experience in measuring and recording, or independently checking of work done for payment purposes.	CO 2.15	HKIE 6 / GSL (vii)	
10.6 Have experience in implementing health and safety measures in the construction site.  Know your responsibilities relating to health and safety issues and be familiar with regulations relating to the construction works.	CO 2.16	HKIE 6,9 / GSL (iv) & (vii)	
10.7 Know the principles of quality control to meet a specification.	CO 2.17	HKIE 1 / GSL (vii)	
10.8 Have experience in supervising the construction of temporary and permanent geotechnical works, such as:  - site formation, including slopes (cut and fill) and retaining walls - natural terrain mitigation measures - foundation and deep excavations - tunnels and rock caverns - site drainage	SO 3.8(a)	HKIE 6 / GSL (vii)	
10.9 Know the principles of concrete production and quality control of the end products and constituent materials.	SO 3.8(c)	HKIE 1 / GSL (vii)	
<b>11. PROJECT MANAGEMENT</b>			
11.1 Procedural	CO 2.18(a)	HKIE 2 / GSL (vii)	
(a) Comprehend the procedures to be followed for including projects in the Public Works Programme. Have a working knowledge of Project Administration Handbook (PAH) for Civil Engineering Works.			
(b) Know the procedures involved in calling for tenders and tender assessment.	CO 2.18(b)	HKIE 2 / GSL (vii)	
(c) Know the procedures for land acquisition.	CO 2.18(c)	HKIE 2 / GSL (vii)	

Training Outcomes	Previous Ref.	HKIE / GSL Competence Ref.	ES/TT Initials, Date of Assessment, and Remarks if any
(d) Know relevant ordinances containing geotechnical provisions (e.g. Buildings Ordinance).	CO 2.18(d)	HKIE 2 / GSL (vii)	
11.2 Technical (a) Demonstrate competence in producing working drawings and have knowledge of correlating drawings with technical specifications.	CO 2.19(a)	HKIE 4 / GSL (vii)	
(b) Have experience in applying the Conditions of Contract.	CO 2.19(b)	HKIE 6 / GSL (vii)	
11.3 Financial (a) Appreciate how departmental budgets are computed and controlled.	CO 2.20(a)	HKIE 2 / GSL (vii)	
(b) Appreciate the operation of cost indices.	CO 2.20(b)	HKIE 2 / GSL (vii)	
(c) Understand the financial authorities and financial limits of officers in Government departments.	CO 2.20(c)	HKIE 2 / GSL (vii)	
11.4 Contractual Know the relative merits of implementing construction works by use of:  - lump sum contracts - remeasurement contracts - schedule of rate contracts - various forms of New Engineering Contract (NEC)	CO 2.21	HKIE 6 / GSL (vii)	
11.5 Risk Management (a) Comprehend the requirements and policy on the application of Systematic Risk Management in Public Works Projects.	New	HKIE 7	
(b) Have experience in preparing and updating project geotechnical risk registers throughout the project lifecycle, with consideration of relevant geohazards.	New	HKIE 7	

Training Outcomes	Previous Ref.	HKIE / GSL Competence Ref.	ES/TT Initials, Date of Assessment, and Remarks if any
<b>12. HYRDOGEOLOGY</b>			
12.1 Understand and be familiar with the occurrence of groundwater, hydraulic boundary conditions, flow systems and hydrogeological parameters.	SO 3.4(a)	HKIE 1 / GSL (i), (ii) & (vii)	
12.2 Understand the theory and principles of groundwater hydraulics and have experience in assessing the effect of groundwater on slope stability, including its representation in computer software based on limit equilibrium analytical techniques.	SO 3.4(b)	HKIE 1 / GSL (i), (ii) & (vii)	
12.3 Understand the effect of engineering work on a groundwater regime and the physical and environmental changes that can produce.	SO 3.4(c)	HKIE 1 / GSL (i), (ii) & (vii)	
12.4 Have experience in analysing groundwater flow systems by use of flow nets and mathematical modelling.	SO 3.4(d)	HKIE 3 / GSL (i), (ii) & (vii)	
<b>13. CONSTRUCTION MATERIAL RESOURCES</b>			
13.1 Know how to evaluate natural construction material reserves and layout working areas.	SO 3.5(a)	HKIE 1 / GSL (vii)	
13.2 Know the methods of exploration, method of working (blasting, loading, transport, etc.) and processing (crushing, screening, refining) of geological materials for construction use.	SO 3.5(b)	HKIE 1 / GSL (vii)	
13.3 Know how to evaluate the suitability of geological materials for construction by laboratory testing.	SO 3.5(c)	HKIE 1 / GSL (vii)	
13.4 Have experience in evaluating the stability of working faces and waste disposal areas.	SO 3.5(d)	HKIE 12 / GSL (vii)	



Appendix C  
Typical Rotational Posting Programme

TYPICAL ROTATIONAL POSTING PROGRAMME

<u>Stage of Training/ Duration</u>	<u>Training Location</u>	<u>Main Elements of Training</u>
<u>STAGE 1 – INTRODUCTION AND BASIC ENGINEERING GEOLOGY TRAINING</u>		
2 months	GEO Planning Division	<ul style="list-style-type: none"><li>• Introduction (1 week)</li><li>• Hong Kong Geology</li><li>• Principles of Engineering Geology</li><li>• Aerial Photograph Interpretation</li></ul>
1 month	GEO S&T Division/ Public Works Central Laboratory	<ul style="list-style-type: none"><li>• Soil Testing Methods</li><li>• Rock Testing Methods</li></ul>
3 months	GEO Geotechnical Projects Division/ Ground Investigation Sections, or Housing Department	<ul style="list-style-type: none"><li>• GI Contract Specification &amp; Management</li><li>• Ground Investigation on Land and Marine</li><li>• Field Testing and Instrumentation</li><li>• Geophysical Surveys</li></ul>
<u>STAGE 2 – GEOLOGICAL MAPPING AND ENGINEERING GEOLOGY PRACTICE</u>		
6 months	GEO Planning Division/ Geological Survey Section	<ul style="list-style-type: none"><li>• Geological Mapping</li><li>• Soil &amp; Rock Identification</li><li>• Petrography &amp; Petrology</li><li>• Geochemistry</li><li>• Geoscience Database</li></ul>
5 months	GEO Planning Division/ Engineering Geology Section and Planning and Terrain Evaluation Section	<ul style="list-style-type: none"><li>• Engineering Geology &amp; Hydrogeology</li><li>• Rock Slope Engineering</li><li>• Engineering Geophysics</li><li>• Geological Materials for Construction Use</li><li>• Tunnelling &amp; Cavern Engineering</li><li>• Major Landslide Studies</li></ul>
<u>STAGE 3 – GEOTECHNICAL DESIGN</u>		
9 months	GEO LPM2 or Geotechnical Projects Division, or Housing Department, or Geotechnical Engineering Consultants	<ul style="list-style-type: none"><li>• Desk Study</li><li>• Ground Investigation Design</li><li>• Laboratory Testing</li><li>• Engineering Geological Assessment</li><li>• Geotechnical Design and Analytical Method</li><li>• Cost Estimate Preparation</li></ul>
<u>STAGE 4 – CONSTRUCTION SITE TRAINING</u>		
10 months	GEO LPM2 Division, or Housing Department, or A Development Bureau Department, or Engineering Consultants	<ul style="list-style-type: none"><li>• Construction Site Experience</li><li>• Site Safety and Environmental Control</li><li>• Hazard Assessment</li><li>• Financial Procedures and Controls</li><li>• Contractual Experience in one or more of the following :<ul style="list-style-type: none"><li>- site formation and slopes</li><li>- natural terrain hazard mitigation works</li><li>- foundations and deep excavations</li><li>- tunnels and rock caverns</li><li>- site drainage</li></ul></li></ul>

Appendix D  
Graduate Training Log Book

GRADUATE TRAINING LOG BOOK

Name of Trainee (English) \_\_\_\_\_ (Chinese) \_\_\_\_\_

Date of Birth \_\_\_\_\_ Nationality \_\_\_\_\_ I.D. No. \_\_\_\_\_

Schooling Record			Academic Record		
School	Dates	Certificates	University/College	Dates	Certificates
Professional Institution Record			Learned Society Record		
Grade of Membership		Date attained	Grade of Membership		Date attained
Employment Record					
Employer		Nature of Business	From	To	Training Geologist/ Engineer
Pre-Training					
During Training					

MONTHLY TRAINING REPORT FOR THE MONTH ENDING      20

EGG Name : \_\_\_\_\_

Synopsis of work undertaken during the month (aim at about 300 words)	Dates

Endorsed and confirmed by:

\_\_\_\_\_  
Training Tutor

QUARTERLY TRAINING REPORT FOR THE QUARTER ENDING      20

EGG Name : \_\_\_\_\_

Record a detailed description of the work performed during the quarter or alternatively a detailed analysis or presentation of a particular aspect of the training undertaken during the period. (Aim at about 1,000 words)

(use continuation pages as necessary)

Endorsed and confirmed by:

\_\_\_\_\_  
Training Tutor

Engineering Supervisor/Chief Training Geologist

DETAILED TRAINING RECORD FOR THE QUARTERLY PERIODCOMMENCING \_\_\_\_\_ IN THE YEAR OF 20 \_\_\_\_\_

EGG Name : \_\_\_\_\_

Training Outcome Ref. No.	Give brief description of each principal type of work you were engaged in during the period	Period for each activity	Details of Where done:- Site/Office/ Dept/Section
	For the month of _____ 20 _____		
	For the month of _____ 20 _____		
	For the month of _____ 20 _____		

Endorsed and confirmed by:

\_\_\_\_\_  
Training Tutor\_\_\_\_\_  
Date

**EGG CONTINUING PROFESSIONAL DEVELOPMENT (CPD) RECORD**

EGG Name: \_\_\_\_\_

Dates	Activity	Activity Organizer	CPD Claimed **d/h	Initials of TT*/ES/CTG*

\*TT = Training Tutor, ES/CTG = Engineering Supervisor/Chief Training Geologist  
 \*\*d/h = day(s) or hours

## Appendix E

### Guidance Notes on Continuing Professional Development

## 1 Aspects of CPD

There are four main aspects of CPD which help to improve performance and competitiveness viz:

- (a) Updating - bringing knowledge and skills up to date
- (b) Upgrading - enhancing existing skills and understanding
- (c) Awareness - revealing new subjects and considerations
- (d) Re-skilling - acquiring new knowledge and skills

The CPD requirements for the EGG Training Scheme are based on the HKIE – CPD requirements for Scheme ‘A’ Trainees, detailed in Section 2.1 below. The EGGs are also encouraged to observe the CPD requirements for Chartered Geologists under the GSL (see Section 2.2 below) and to adhere to the GSL requirements on top of the HKIE Scheme ‘A’ requirements.

## 2 CPD Requirements

### 2.1 HKIE CPD requirements

The following are the CPD requirements of the HKIE (TN-G ver 1.1):

- (a) CPD is a mandatory element of the EGG Training Scheme.
- (b) A minimum average of 45 hours (7.5 CPD days) per year should be devoted to CPD activities during the EGG Training Scheme.
- (c) A ‘CPD Day’ is six hours, either continuously or in multiples of 6 hours, such as (6 x 1 hr) (4 x 1.5 hr) (3 x 2 hrs) (2 x 3 hrs).
- (d) CPD is to be balanced between matters of direct technical interest and those of a general professional and technical kind.
- (e) The format of CPD activities can include participating in and organising courses, lectures, seminars/symposiums, conferences, presentations, workshops, visits, e-learning and professional activities.
- (f) A minimum of 18 hours (3 CPD days), over the training period, should be devoted to each of the following CPD categories:
  - Occupational Safety and Health (OSH)
  - Other Technical Matters (OTM)

- General Professional Matters (GPM)

- (g) At least 50% of CPD days should be external to the GEO.
- (h) All CPD activities should be recorded in the CPD Log Book and endorsed by the TT or ES/CTG.

## 2.2 GSL CPD requirements

The CPD requirements for Chartered Geologists under the GSL Chartership Scheme is described in GSL Regulations No. R/FP/13, and are summarised below.

There are six main categories of CPD activities, as below:

- Formal learning
- Informal Learning
- Professional practice
- Self-directed study
- On-the-job learning
- Other

The range of possible CPD activities under these six categories is illustrated in the form of a Mind Map prepared by GSL and is reproduced in Figure 1 below. The minimum CPD requirements are:

- (a) A minimum of 90 hours per years for those in full time employment. Activities in excess of the minimum, up to but not exceeding 20 hours may be carried forward to the next year.
- (b) At least 30 hours of the CPD should be in the ‘On-the-job learning’ category.
- (c) The remaining ~60 hours of the CPD should be spread across at least two of the five other CPD categories and should be focused on general career development and skills enhancement associated with work.
- (d) The CPD is recommended to be carried out as an annual cycle with the plans, activities and reflections all being recorded.

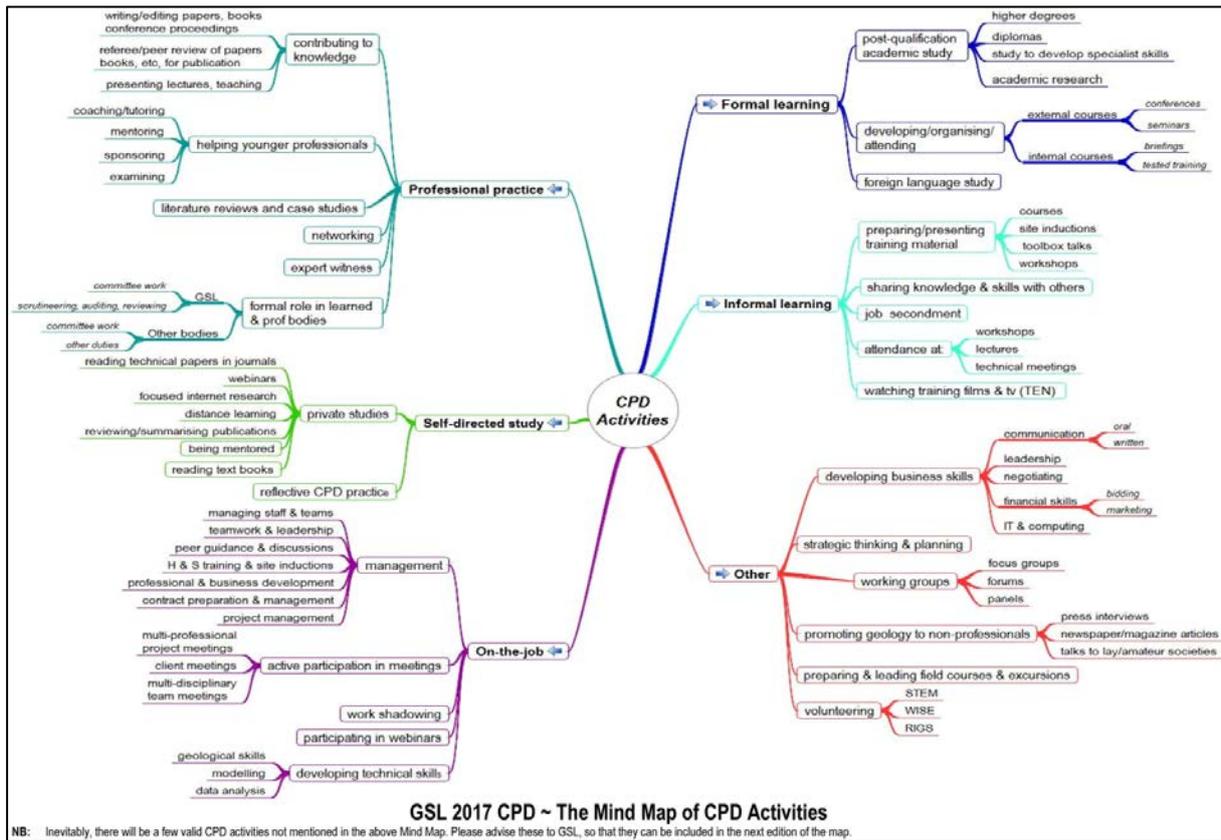


Figure 1. The Mind Map of CPD Activities, Reproduced from GSL (2017).

### 3 Endorsement of CPD Activities

Both the TT and ES are authorised to endorse CPD activities but should only do so in the CPD Log Book if the activity fits the CPD definition and the EGGs can demonstrate that they have gained the desired benefits from participating in the activity. This should be achieved by either submitting a report of around 500 words for one CPD day or less and less than 800 words for more than one CPD day to the TT or ES within one month from the date of the CPD activity, or by passing a related test conducted at the end of the activity, as deemed appropriate.

Appendix F  
Quarterly Performance Report

CONFIDENTIALENGINEERING GEOLOGY GRADUATE QUARTERLY PERFORMANCE REPORT

NAME : \_\_\_\_\_ FOR PERIOD \_\_\_\_\_ TO \_\_\_\_\_  
(IN BLOCK LETTERS) COMMENCING

20 \_\_\_\_\_ Intake Department \_\_\_\_\_

This report prepared in : Division \_\_\_\_\_

Office \_\_\_\_\_

Department \_\_\_\_\_

(A) PERFORMANCE REPORT (Tick one box for each item as appropriate)  
(To be completed by the Training Tutor under whom the graduate has worked)

1. Responsibility

- (a) Seeks and accepts responsibility at all times
- (b) Very willing to accept responsibility
- (c) Accepts responsibility as it comes
- (d) Inclined to refer up matters which could be decided personally
- (e) Generally avoids taking responsibility

2. Relations with Colleagues

- (a) Wins and retains the highest regard of all
- (b) Is generally liked and respected
- (c) Gets on well with them
- (d) Not very easy in relationships
- (e) A very difficult colleague

3. Insight

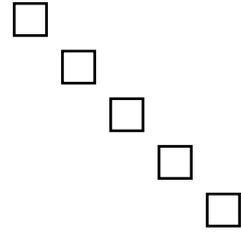
- (a) Gets at once to the root of a problem
- (b) Shows a ready appreciation of a problem
- (c) Usually grasps a point correctly
- (d) Not very quick on the uptake
- (e) Often misses the point

4. Initiative/Constructive Power

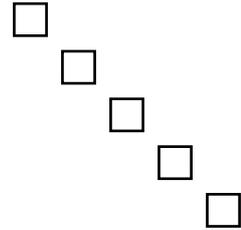
- (a) Outstandingly fertile in useful ideas
- (b) Always makes a valuable contribution
- (c) Solutions are normally adequate
- (d) Seldom produces constructive ideas
- (e) Fails to respond to a new situation

5. Judgement

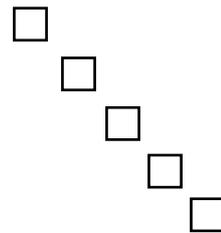
- (a) Judgements always sound and well thought out
- (b) View of a matter is always a sensible one
- (c) Takes a reasonable view of most matters
- (d) Judgement tends to be erratic
- (e) Judgement cannot be relied on

6. Output

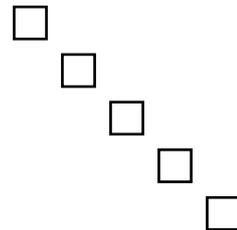
- (a) Outstanding in the amount of work done
- (b) Gets through a great deal of work
- (c) Output average
- (d) Does rather less than expected
- (e) Output regularly insufficient

7. Quality

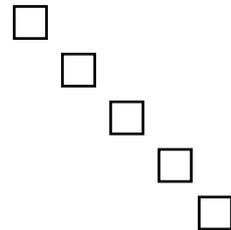
- (a) Distinguished for accurate and thorough work
- (b) Maintains a high standard
- (c) Work is generally of good quality
- (d) Quality of work is uneven
- (e) Inaccurate and slovenly

8. Expression on Paper

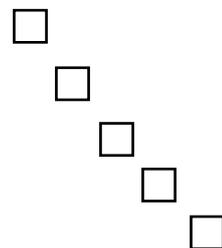
- (a) Exceptional
- (b) Very good
- (c) Generally good expression
- (d) Just good enough to get by
- (e) Cannot express points clearly

9. Oral Expression

- (a) Extremely effective
- (b) Puts points across well
- (c) Expresses points adequately
- (d) Does not put points across well
- (e) Ineffective

10. Organisation of Work

- (a) Exceptional
- (b) Shows considerable skill at organising work
- (c) Plans work satisfactorily
- (d) Unplanned approach
- (e) Completely lacking in organising ability



(B) OVERALL GRADING FOR QUALITIES AND PERFORMANCE OF DUTIES DURING PERIOD COVERED BY THIS REPORT (Tick appropriate box)

OUTSTANDING	An exceptional trainee, outstanding in most respects. Has displayed well-above-average capability of becoming a full professional.	<input type="checkbox"/>
VERY GOOD	A very able and effective trainee. Has displayed above-average capability of becoming a full professional.	<input type="checkbox"/>
GOOD	A competent trainee. Has displayed average capability of becoming a full professional.	<input type="checkbox"/>
FAIR	Performs duties only moderately well. Has below-average capability of becoming a full professional.	<input type="checkbox"/>
UNSATISFACTORY	Definitely not up to the required standard of the grade, is not full professional material.	<input type="checkbox"/>

(C) PROGRESS IN TRAINING

1. Is the trainee gaining maximum benefit from the training  
 Yes  No

If no, please give details under "Training Tutor's Remarks" at Section D.

2. Is the trainee progressing along the Training by Objectives Programme satisfactorily?  
 Yes  No

If no, please give details under "Training Tutor's Remarks" at Section D.

(D) TRAINING TUTOR'S REMARKS

1. Comment on EGG's Training Report

(a) Report first received on time/..... weeks late compared to date on Routing Sheet.

(b) General quality

(c) Recurrent errors, if any (e.g. grammar, format, content, etc.)

(d) Proposed remedial actions, if any

Note TT must discuss 1(a) to 1(d) with EGG

2. General comments on training and performance

3. Specify any particular training needs

4. Deficiencies discussed with EGG on .....

Name .....

Date .....

Designation .....Training Tutor

Signature .....

(E) ENGINEERING SUPERVISOR/CHIEF TRAINING GEOLOGIST'S REMARKS

(ES/CTG should comment on the remarks at (D) above together with a brief statement on the EGG's progress).

The EGG was interviewed by me on .....

Date ..... Signature .....

Designation ..... Name in Block Capitals .....

(F) REMARKS OF HEAD OF TRAINING SCHEME

Date ..... Signature .....

( )  
Head (Geotechnical Engineering Office)  
Civil Engineering and Development Department

Appendix G

Quarterly Performance Report and Routing Sheet

**RESTRICTED (STAFF)****Routing Sheet for Engineering Geology Graduate (EGG)  
Quarterly Performance Report and Quarterly Training Report***for the period \_\_\_\_\_ to \_\_\_\_\_*

Name of EGG ..... ( \_\_\_\_\_ intake)

Name of Training Tutor (TT) .....

Name of Engineering Supervisor (ES) .....

Office providing Training (Department/Division) .....

**Routing of Reports and Time-table for Action**

Action	Date of Action to be Completed	Initial and Date on which Action is Completed
1. EGG to write the Quarterly Training Report and submit the Quarterly Training Report to TT.	As soon as possible	
2. TT to (i) read and comment on the Quarterly Training Report in the Training Log Book; (ii) complete Sections A to D of the Quarterly Performance Report; and (iii) pass both the Training Log Book and the Quarterly Performance Report to the EGG's ES.	_____ (D+14 days)	
3. ES to (i) read, comment and sign the Quarterly Training Report in the Training Log Book; (ii) carry out Progress Interview with the EGG; (iii) complete Section E of the Quarterly Performance Report; and (iv) pass both the Training Log Book and the Quarterly Performance Report to the Head of EGG Training Scheme, H(GEO).	_____ (D+21 days)	
4. Head of EGG Training Scheme to: (i) complete Section F of the Quarterly Performance Report; and (ii) return the documents to ES.	_____	H(GEO)

- Notes :* 1. D is the date of the last day of the quarter covered by this report.  
2. If any of the D+\_\_ days falls on a public holiday, enter the date of the first working day after the holiday.

## Appendix H

### Training Outcome Monitoring Schedule

Training Outcome Monitoring Schedule

Training Outcome Item No.	Posting Stage of First Involvement	Posting Stage to Achieve Training Outcomes				To be Assessed and Signed by
		1	2	3	4	
1.1(a)	1	✓				ES
1.1(b)	1	✓				ES
1.1(c)	1	✓				ES
1.2(a)	1	✓				ES
1.2(b)	1	✓	✓	✓	✓	ES
2.1(a)	1	✓	✓	✓	✓	ES
2.1(b)	1	✓	✓	✓	✓	ES
2.1(c)	1	✓	✓	✓	✓	ES
2.2(a)	1	✓	✓	✓	✓	ES
2.2(b)	1	✓	✓	✓	✓	ES
2.3(a)	1	✓	✓	✓	✓	ES
2.3(b)	1	✓	✓	✓	✓	ES
2.4(a)	1	✓	✓	✓	✓	ES
2.4(b)	1	✓	✓	✓	✓	ES
2.4(c)	1	✓	✓	✓	✓	ES
2.4(d)	1	✓	✓	✓	✓	ES
2.5(a)	1	✓	✓	✓	✓	ES
2.5(b)	1	✓	✓	✓	✓	ES
2.5(c)	1	✓	✓	✓	✓	ES
2.6	1	✓	✓	✓	✓	ES/TT
2.7	1	✓	✓	✓	✓	ES/TT
3.1	1	✓	✓			TT
3.2	1	✓	✓			TT
3.3	1	✓	✓			TT
3.4	1	✓	✓			TT
3.5	1	✓	✓			TT
3.6	1	✓	✓			TT
3.7	1	✓	✓			TT
3.8	1	✓	✓			TT
3.9	1	✓	✓			TT
3.10	1	✓	✓			TT
4.1	1	✓	✓			TT
4.2	1	✓	✓	✓		TT
4.3	1	✓	✓			TT
4.4	1	✓	✓	✓		TT
4.5	1	✓	✓	✓		TT
4.6	1	✓	✓	✓		TT
4.7	1	✓	✓			TT
4.8	1	✓	✓	✓		TT

Training Outcome Item No.	Posting Stage of First Involvement	Posting Stage to Achieve Training Outcomes				To be Assessed and Signed by
		1	2	3	4	
5.1	1	✓	✓			TT
5.2	1	✓	✓			TT
5.3	1	✓	✓			TT
5.4	1	✓	✓			TT
5.5	1	✓	✓			TT
5.6	1	✓	✓			TT
5.7	1	✓	✓			TT
6.1	2		✓	✓		TT
6.2	2		✓	✓		TT
6.3	2		✓	✓		TT
7.1	1	✓				TT
7.2	1	✓		✓		TT
7.3	1	✓		✓		TT
7.4	1	✓	✓	✓		TT
8.1	1	✓		✓		TT
8.2	1	✓		✓		TT
9.1	1	✓	✓	✓		TT
9.2	1	✓	✓	✓		TT
9.3	1	✓	✓	✓		TT
9.4	1			✓		TT
9.5	3			✓		TT
9.6	3			✓		TT
9.7	3			✓		TT
9.8	3			✓		TT
9.9	3			✓		TT
9.10	3			✓		TT
9.11	3			✓		TT
9.12	3			✓		TT
10.1(a)	4				✓	TT
10.1(b)	4				✓	TT
10.1(c)	4				✓	TT
10.1(d)	4				✓	TT
10.2	4				✓	TT
10.3	4				✓	TT
10.4	4				✓	TT
10.5	4				✓	TT
10.6	4				✓	TT
10.7	4				✓	TT
10.8	4				✓	TT
10.9	4				✓	TT

Training Outcome Item No.	Posting Stage of First Involvement	Posting Stage to Achieve Training Outcomes				To be Assessed and Signed by
		1	2	3	4	
11.1(a)	3			✓	✓	TT
11.1(b)	3			✓	✓	TT
11.1(c)	3			✓	✓	TT
11.1(d)	3			✓	✓	TT
11.2(a)	3			✓	✓	TT
11.2(b)	3			✓	✓	TT
11.3(a)	3			✓	✓	TT
11.3(b)	3			✓	✓	TT
11.3(c)	3			✓	✓	TT
11.4	3			✓	✓	TT
11.5(a)	3			✓	✓	TT
11.5(b)	3			✓	✓	TT
12.1	2		✓	✓		TT
12.2	2		✓	✓		TT
12.3	2		✓	✓		TT
12.4	2		✓	✓		TT
13.1	2			✓	✓	TT
13.2	2			✓	✓	TT
13.3	2			✓	✓	TT
13.4	2			✓	✓	TT

Note: The posting stages referred above are as follows:

Stage	Description	Approximate Period
1	Introduction and Basic Engineering Geology Training	6 months
2	Geological Mapping and Engineering Geology Practice	11 months
3	Geotechnical Design	9 months
4	Construction Site Experience	10 months

Appendix I

Training Tutors' Specimen Initials/Signatures Sheet

## Training Tutors' Specimen Initials/Signatures Sheet

Name : \_\_\_\_\_ Signature : \_\_\_\_\_ Initials : \_\_\_\_\_  
(Block Letters)

Post/Organisation : \_\_\_\_\_

Name : \_\_\_\_\_ Signature : \_\_\_\_\_ Initials : \_\_\_\_\_  
(Block Letters)

Post/Organisation : \_\_\_\_\_

Name : \_\_\_\_\_ Signature : \_\_\_\_\_ Initials : \_\_\_\_\_  
(Block Letters)

Post/Organisation : \_\_\_\_\_

Name : \_\_\_\_\_ Signature : \_\_\_\_\_ Initials : \_\_\_\_\_  
(Block Letters)

Post/Organisation : \_\_\_\_\_

Name : \_\_\_\_\_ Signature : \_\_\_\_\_ Initials : \_\_\_\_\_  
(Block Letters)

Post/Organisation : \_\_\_\_\_

Name : \_\_\_\_\_ Signature : \_\_\_\_\_ Initials : \_\_\_\_\_  
(Block Letters)

Post/Organisation : \_\_\_\_\_

Name : \_\_\_\_\_ Signature : \_\_\_\_\_ Initials : \_\_\_\_\_  
(Block Letters)

Post/Organisation : \_\_\_\_\_

Appendix J

Guidance Notes on Writing Diary and Quarterly Training Reports

### **Guidance Notes on Writing Diary**

1. The main purpose of keeping a diary is for the EGGs to develop a habit of daily reflection. The writing should help the EGGs to focus and organise his/her thoughts.
2. The EGGs should allocate time (say 15-20 minutes) to prepare the diary everyday.
3. The diary does not need to be written in a formal style, nor should the contents be repetitive. Sketches and notes could be used where appropriate.
4. The diary could be on anything that has stimulated the EGG's thought or learning: a piece of observation, a problem, some speculation or personal opinion.
5. The EGGs may extract information from his diary in writing his/her monthly and quarterly training reports.
6. The diary could also form the basis of communication/discussion between the EGGs and his/her Training Tutors and Coaches.

### **Guidance Notes on Writing Quarterly Training Reports**

1. Before writing a Quarterly Training Report, the EGGs should read again the relevant training documents, in particular the Summary on “Scheme ‘A’ Training and Training Log Book” on the HKIE Training Log Book.
2. Each Quarterly Training Report should contain not less than 500 words. The lettering should be appropriately sized such that the report can be contained within the 3 pages designated in the HKIE Training Log Book for the quarter.
3. A margin of 3 cm on both sides of the text should be left for training staff to mark comments or annotations.
4. The report must not be a mere inventory of work carried out by the EGGs in the quarter. It should describe the tasks in which the EGGs has been involved, the degree of responsibility assigned to him, problems encountered in his work and the processes of resolving them, in particular, any lessons learnt. The report should avoid quoting job specifications or textbook knowledge.
5. The EGGs should highlight his involvement in the decision making process, even if it is only minor on some occasions. On the other hand, the EGGs should not attempt to exaggerate his involvement.
6. The report should make reference to the training outcomes which are relevant to the tasks undertaken.
7. The report should be written in the EGG’s own words but it may incorporate the verbal comments made by his Training Tutor on the draft.
8. In the submission of the Quarterly Training Report to the Engineering Supervisor(ES), the EGGs should also provide to the ES a summary of all CPD activities attended since the commencement of his training (e.g. entries in the HKIE CPD Log Book)



**AR 2/2020**