



THE HONG KONG INSTITUTE OF SURVEYORS

LAND SURVEYING DIVISION

ASSESSMENT OF PROFESSIONAL COMPETENCE

RULES AND GUIDE

REVISION: 2008

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APPENDIX I: PROFESSIONAL COMPETENCE AREAS

RULES AND GUIDE TO THE ASSESSMENT OF PROFESSIONAL COMPETENCE LAND SURVEYING DIVISION

1 DEFINITIONS

The following expressions used in this Rules and Guide are defined with the respective meanings:

- 1.1 “Institute” means the Hong Kong Institute of Surveyors
- 1.2 “LSD” means the Land Surveying Division of the Institute
- 1.3 “LSDEC” means the Land Surveying Division Education Committee
- 1.4 “APC” means the Assessment of Professional Competence of LSD.
- 1.5 “Corporate Member” means any Fellow or Member of LSD.
- 1.6 “Candidate” means the candidate applying for or having been approved for entry to the APC.
- 1.7 “Employer” means the director of a firm or government department in which the Candidate is employed, or a person working in the same firm or government department who assumes the capacity to certify the Candidate’s employment status.
- 1.8 “Counsellor” means a Corporate Member of at least 5 years standing who is engaged by the Candidate to undertake the responsibilities of the Counsellor as specified in this Rules and Guide.
- 1.9 “Supervisor” means a Corporate Member of at least 3 years standing who is engaged by the Candidate to undertake the responsibilities of the Supervisor as specified in this Rules and Guide.
- 1.10 “Assessor” means the assessor(s) and/or co-assessor(s) appointed by LSDEC to conduct an assessment on a specific item of the APC.
- 1.11 “Land Surveying Practice” means the professional practice in any one of the eight specialized fields of the land surveying profession as specified in Section 7.1.

2 OBJECTIVES

The APC is a training and assessment scheme. Its purpose is to provide a path for those with recognised qualification to seek for themselves admission as a Member of the Institute. Through the professional training as required for the APC, Candidates are expected to develop a high standard of professional and ethical competences. The warrant of such competences is achieved by the requirements and assessments as set out in this Rules and Guide.

3 REQUIREMENTS OF APC

- 3.1 Unless otherwise specified by the Institute, the APC for a Candidate consists of:
- (a) a minimum period of 24 months of approved professional training experience;
 - (b) a minimum aggregate of 40 hours of Pre-Qualification Structured Learning (PQSL);
 - (c) a Written Submission; and
 - (d) a Professional Interview.
- 3.2 To satisfy the requirements of APC, Candidates must undergo the following processes:
- (a) Application for Entry to APC;
 - (b) Interim Submission of training records;
 - (c) Application for Approval of Practical Task; and
 - (d) Application for Final Assessment.
- 3.3 Candidates must complete their professional training and apply for Final Assessment within an APC effective period of 5 years from the APC commencement date. Candidates who wish to extend their APC effective period must apply to the Institute providing justification before the lapse of their APC effective period. Otherwise, they will have to apply for entry to APC afresh when they wish to pursue the APC again.

4 ARRANGEMENT OF PROFESSIONAL TRAINING

- 4.1 Candidates before applying to enter the APC must seek for themselves the following training arrangements:
- (a) Be employed in a practice where professional training can be suitably provided or be engaged in a full-time research on a project that may be approved by LSDEC;

- (b) To engage a Counsellor who undertakes to oversee the training progress of the Candidate and to ensure that the training meets the requirements of the APC.
 - (c) To engage a Supervisor who undertakes to provide immediate supervision and guidance to the Candidate in carrying out his/her day-to-day works;
- 4.2 The engagements of the Counsellor and Supervisor may be arranged by the Employer, or by the Candidates themselves subject to the agreement of the Employer.
- 4.3 The Supervisor should not have under his/her supervision more than 2 Candidates at any one time.
- 4.4 The Counsellor and Supervisor should ideally be two different persons. Only when it is unfeasible, the same person may undertake both roles.
- 4.5 The Counsellor and/or Supervisor can be the Employer of the Candidate.
- 4.6 Candidates who have difficulty to engage a Counsellor and/or Supervisor to undertake their professional training may apply to the Institute for a volunteer Counsellor and/or Supervisor. However, the Institute does not guarantee that such a volunteer Counsellor and/or Supervisor can always be arranged.

5 ENTRY TO APC

- 5.1 On application for entry to and in the course of APC, a Candidate must be:
- (a) a Probationer of the Institute holding a cognate graduate degree recognized by the Institute; or
 - (b) a Probationer of the Institute holding a non-cognate graduate degree recognized by the Institute and, after obtaining such degree, having been engaged in the Land Surveying Practice for not less than 5 years; or
 - (c) a Technical Associate of the Institute and, after enrolling in the membership, having been engaged in the Land Surveying Practice for not less than 5 years.
- 5.2 Candidates are required to provide details of their proposed training arrangements as specified in Section 4.1 by completing Form APC1/LS, which must be duly signed by the Candidate, the Supervisor, the Counsellor and the Employer, and submitting the same together with documentary proof of their academic qualification to the Institute for approval.
- 5.3 Candidates may apply for exemption from part of the professional training experience required for APC by submitting the justification, normally relevant training or research experience in the Land Surveying Practice already

acquired, with supporting documents for consideration by LSDEC. Normally, the exemption, if granted, will not exceed 12 months.

- 5.4 Candidates when apply for entry to APC must pay an application fee. In case the application is rejected by the Institute, the Candidate will be refunded the application fee subject to deduction of an administration charge. The application fee is not subject to refund if the Candidate withdraws from APC after approval of entry. The APC application fee and administration charge are determined by the Institute from time to time.
- 5.5 LSDEC is responsible for the approval or disapproval of the applications for entry to APC. Approval is granted on the basis of the Candidate's eligibility as specified in Section 5.1 and the acceptance by LSDEC of the Candidate's proposed training arrangements. In determining an APC commencement date for the Candidate, LSDEC would refer to the training commencement date proposed by the Counsellor in the application form (APC1/LS) but, in any case, the APC commencement date is no earlier than 1 month before the date of application.
- 5.6 In case the Candidate concurrently applies for Probationer membership or his/her application for such membership is being processed by the Institute, the approval for entry to APC, if granted by LSDEC, is subject to his/her successful enrolment as a Probationer. The approved APC commencement date for the Candidate will not be affected even if the Candidate's enrolment to Probationer is effected on a later date.

6 CHANGE OF SUPERVISOR, COUNSELLOR OR EMPLOYER

- 6.1 Candidates must notify the Institute using Form APC1S/LS within 1 month from the date of change of their Supervisor, Counsellor or Employer taken place during the period of their professional training.
- 6.2 The Institute may suspend the Candidate's training if the Candidate fails to notify the Institute within 1 month from the effective date of such changes or such changes do not meet the requirements as specified in Section 4.
- 6.3 Applications for assessments may be rejected if the Institute finds that the Counsellor or Supervisor who signs any documents for such applications is not the same as the ones accepted by the Institute on record.

7 PROFESSIONAL TRAINING EXPERIENCE

- 7.1 Professional training experience must be gained in at least one of the following eight specialized fields of the Land Surveying Practice and should cover as broadly as practicable within each field the professional competence areas as listed in Appendix I:

- (a) Cadastral Surveying
 - (b) Engineering Surveying
 - (c) Topographical Surveying
 - (d) Geodetic Surveying
 - (e) Hydrographic Surveying
 - (f) Photogrammetry and Remote Sensing
 - (g) Mapping and Cartography
 - (h) Geographic Information System
- 7.2 Candidates are required to specify in the relevant training records the specialized field(s) that they have received training.
- 7.3 Candidates are also required to obtain relevant professional training experience to enrich their general professional competences such as:
- (a) Professional ethics and conduct
 - (b) Project management
 - (c) Contract administration
 - (d) Quality management
 - (e) Computing systems and applications
 - (f) Legislations and regulations
 - (g) Business skills
 - (h) Managerial skills
 - (i) Presentation skills
- 7.4 Professional training experience may be gained by way of full-time research in academic institutes. However, the Candidate must apply to LSDEC in writing in advance for approval of the research topic(s) which must be relevant to the Land Surveying Practice.
- 7.5 Professional training experience must be gained under proper guidance of the Supervisor and Counsellor.
- 7.6 Professional training experience must be gained in a practice or an establishment where Land Surveying Practice is principally or essentially involved.
- 7.7 Professional training experience must be gained mainly in Hong Kong, unless global practice is involved.
- 7.8 Professional training experience must be documented in the training records as described in Section 8 unless otherwise specified.

8 TRAINING RECORDS

8.1 Work Diary

- (a) Candidates are required to keep a Work Diary to record their professional training experience gained throughout the training period, normally 24 months, as specified by LSDEC.
- (b) Apart from providing evidence about the training experience gained by the Candidate, the Work Diary is also the data source for preparation of the Log Book and Progress Summary.
- (c) Work Diary should not be confined to describing the tasks done by the Candidate. Instead, it should cover a multitude of aspects relevant to the tasks that have been explored or studied by the Candidate to broaden his/her professional knowledge and experience.
- (d) Candidates may seek the views of their Supervisor on the preferred style and format of the Work Diary, bearing in mind the guidelines as given in (b) and (c) above.
- (e) Candidates should submit the Work Diary together with the Log Book to their Supervisor for scrutiny at least once a fortnight. The same should be submitted to the Counsellor once a month for reviewing the progress (particularly the breadth and depth) of the training.
- (f) Each piece of Work Diary must be recorded on Form APC2/LS in a clear and concise manner.
- (g) Unless requested by the Institute, Candidates are not required to submit the Work Diary to the Institute for inspection/assessment.
- (h) The keeping of Work Diary is not required for professional training experience gained by way of full-time research as described in Section 7.4.

8.2 Log Book

- (a) Candidates are required to keep along with their Work Diary a Log Book listing out all the training tasks that the Candidate has carried out to acquire the respective professional training experiences in chronological order.
- (b) The Log Book is to enable the Assessor to determine whether the training experience gained by the Candidate is adequate and properly balanced.
- (c) The Log Book should be accompanied by the Work Diary when submitted to the Supervisor for signing and to the Counsellor for inspection.
- (d) The Log Book must be compiled using Form APC3/LS.
- (e) The keeping of Log Book is not required for the professional training experience gained by way of full-time research as described in Section 7.4.

8.3 Progress Summary

- (a) Candidates are required to prepare Progress Summaries of their training received. Each Progress Summary in not more than 1000 words should cover a period of not more than 6 months.
- (b) In case the training received is segregated into different segments due to training arrangement or whatever reasons, it is advisable to prepare a separate Progress Summary for each segment of training if the relevant period is less than 6 months.
- (c) A Progress Summary is to give the Assessor a comprehensive picture of the professional training experience gained by the Candidate during the training period. It should not be a detailed job report. Rather, the Progress Summary apart from giving an introduction of each task and a brief description of the Candidate's works done should focus on the key learning acquired in each specialized field and general professional experience gained by the Candidate.

9 INTERIM SUBMISSION

- 9.1 Candidates must tender Interim Submission of their training records to the Institute to record their training experience earned and to qualify themselves for subsequent applications.
- 9.2 Each Interim Submission must cover a training period of not less than 6 months or the remaining period of professional training experience required.
- 9.3 Training records for Interim Submission include Progress Summaries and a copy of the Log Book. The Institute may, at its discretion, require a Candidate to submit his/her Work Diary for inspection.
- 9.4 Form APC5/LS must be used for Interim Submission and must contain the Counsellor's endorsement of the submission and his/her certification of the Candidate's fulfilment of the professional training requirements.

10 PRE-QUALIFICATION STRUCTURED LEARNING (PQSL)

- 10.1 PQSL is complementary to the professional training. It would exhibit a Candidate's endeavour to broaden his/her knowledge and skills, keep abreast of changing environments and trends and develop personal qualities throughout the training.
- 10.2 The following list provides a quick reference to the variety of activities that qualify for PQSL. The list serves as examples and is not exhaustive. The choice of activity should be carefully matched to the skill level the Candidate expects or would like to exhibit, and it must provide certain added knowledge.
 - (a) Formal events:

Attending CPD events, courses, seminars, conferences, workshops, briefing sessions, lectures, career talks and technical visits.

(b) Structured learning and programmes:

Full/part-time study, distance learning, research for publication, developing IT/business/management skills.

(c) Community, institutional and social services:

Attending or helping in institutional functions and participating in voluntary works for the community.

(d) Private study:

Using audio, video or multi-media resources and HKIS library services.

10.3 PQSL hours should be calculated as follows:

(a) To qualify for PQSL, an event must last for a minimum of half an hour.

(b) Hours counted should be net of travelling time to the event, and should exclude breaks of longer than half an hour unless another PQSL activity takes place during the break (e.g. lunch time speaker during a conference).

(c) PQSL hours should be rounded up to the nearest half hour.

(d) Individual events will only count for a maximum of ten hours unless specifically endorsed by the Institute.

(e) In the event of a dispute over accountability, the number of hours to be counted, or attendance at a PQSL event, the decision of the Institute shall be final.

10.4 Candidates should keep all receipts for attendance, tickets, and other evidence of attendance in case they are required for verification purposes.

10.5 Attendances of PQSL must be recorded in their chronological order using the PQSL Log Sheet (Form PQSL/LS) and submitted for Final Assessment.

11 PRACTICAL TASK FOR WRITTEN SUBMISSION

11.1 Candidates are required to demonstrate their attained level of professional competence by carrying out one or more practical task(s) and completing a Written Submission in English for Final Assessment.

11.2 The practical task(s) for Written Submission must:

(a) be principally carried out by the Candidate under proper guidance of the Supervisor and Counsellor;

(b) have engaged the Candidate for at least 2 months.

- 11.3 Candidates are required to apply for approval of the practical task(s) using Form APC4/LS and provide therein:
- (a) the title of the Written Submission;
 - (b) a synopsis in about 400 words;
 - (c) the Supervisor's confirmation that the practical task is to be completed by the Candidate under his/her supervision; and
 - (d) the Counsellor's endorsement of the application.
- 11.4 The application for approval of practical task will not be accepted unless the Candidate has already rendered Interim Submission of his/her training records for not less than 12 months.
- 11.5 A Written Submission is to be assessed on the following aspects:
- (a) Application of knowledge such as:
 - relevance and correctness;
 - breadth of knowledge;
 - depth of understanding;
 - effectiveness of applying the knowledge.
 - (b) Demonstration of professional skills such as:
 - identification of project requirement;
 - implementation of technical, legal and professional standards;
 - devising and comparing methods;
 - performing practical skills.
 - (c) Demonstration of professional aptitude such as:
 - ability to analyze problems;
 - ability to formulate approach to solution;
 - ability to evaluate results;
 - ability to conclude findings and make recommendation.
 - (d) Layout and presentation such as:
 - content layout;
 - clarity in expression;
 - use of English;
 - use of illustrations.
- 11.6 Depending on the nature of the practical task(s), the Written Submission should contain 4000 to 8000 words, exclusive of data and computations.
- 11.7 Source materials including online resources quoted in the Written Submission must be properly acknowledged. Restricted or sensitive

information should be blinded or faked if unavoidably used in the Written Submission.

12 FINAL ASSESSMENT

12.1 Candidates are eligible to apply for Final Assessment provided that they:

- (a) have accumulated professional training experience of not less than 21 months;
- (b) have obtained approval from the Institute of the practical task(s) of their Written Submission; and
- (c) have acquired a minimum aggregate of 40 hours PQSL.

12.2 Submissions for Final Assessment include:

- (a) The original copy of the Log Book covering the entire training period so far completed.
- (b) Progress Summaries covering the training period so far completed but not yet submitted. In other words, this item is not required if the Candidate has already submitted a total of 24 months of Progress Summaries through the Interim Submission.
- (c) Record of PQSL.
- (d) Two copies of the Written Submission and its softcopy saved in an appropriate storage media such as a CD-R.

12.3 Applications for Final Assessment must be made using Form APC6/LS and provide therein:

- (a) The Candidate's declaration that the Written Submission is his/her own work and he/she has obtained the necessary consent from the owner of the data used in the Written Submission.
- (b) The Candidate's agreement that the Institute may retain, dispose of, duplicate or release for reading by others of the Written Submission.
- (c) The Counsellor's endorsement of the application and certification of the submissions under application.

13 PROFESSIONAL INTERVIEW

13.1 Candidates only after passing the Written Submission are invited to sit for a Professional Interview to testify his/her professional competence in front of an interview panel.

13.2 The interview panel normally consists of the assessors of the Candidate's Written Submission and two other members from LSDEC.

- 13.3 The Professional Interview is conducted in English. Candidates are required to present their practical task in about 30 minutes then answer questions of the panel members who will be looking for the following competences and attributes of the Candidate:
- (a) Adequacy of professional training experience;
 - (b) Appreciation of the Written Submission content (or the additional writing for re-assessment);
 - (c) Professional knowledge of the Land Surveying Practice;
 - (d) Professional ethics and conduct;
 - (e) Cognition of institutional matters.
 - (f) Presentation skill and personal appearance;

14 FINAL ASSESSMENT RESULT

- 14.1 Candidates having satisfied the Institute with their professional training experience, PQSL and Written Submission and also passed the Professional Interview as recommended by the interview panel are considered having successfully passed the APC. The APC passing result is meant to qualify the Candidate to apply for admission as a Member of the Institute. The admission is subject to final approval by the Institute's Board of Membership.
- 14.2 Failing in the Written Submission, Candidates will be requested to either rewrite their original work or prepare a fresh Written Submission on a different practical task for re-assessment. For the former case, re-attempt must be made within 6 months from the date of notification of result. For the latter case, re-attempt must be made within 2 years and application for prior approval of the practical task afresh is required.
- 14.3 Failing in the Professional Interview, Candidates will be requested to extend their professional training for a period of not less than 6 months. If recommended by the interview panel, the Institute may request the Candidate to supplement additional writing for re-assessment of his/her deficiency observed. During the extension period, the Candidate must keep preparing the training records and continue with the PQSL for a minimum of 20 hours per year. Normally, the Candidate will be requested to re-sit for the Professional Interview after completing the extended training.
- 14.4 Form APC6/LS must be used for application of re-assessment of the failed item subject to payment of a re-assessment fee.
- 14.5 The maximum number of attempts on Final Assessment for every Candidate is limited to four.
- 14.6 The Institute's decision on APC results is final and not subject to appeal.

15 APPLICATIONS AND ENQUIRY

- 15.1 The APC applications and the normal processing time for their results are listed in the table below:

| <i>Application</i> | <i>Form</i> | <i>Normal time for result</i> |
|----------------------------|-------------|-------------------------------|
| Entry to APC | APC1/LS | 2 months |
| Approval of Practical Task | APC4/LS | 2 months |
| Final Assessment | APC6/LS | 3 months |

- 15.2 Application and training record forms as specified in this Rules and Guide can be downloaded in the Institute's website at www.hkis.org.hk.

- 15.3 Applications should be made to the Institute at the following address:

The Education Department
The Hong Kong Institute of Surveyors
Suite 801, Jardine House
1 Connaught Place
Central, Hong Kong

- 15.4 Enquiry about the APC could be made to the above address or the following contacts:

Telephone: (852) 2526 3679
Facsimile: (852) 2868 4612
E-mail: edudept@hkis.org.hk

- END -

PROFESSIONAL COMPETENCE AREAS

Cadastral Surveying

- Land boundary records
- Land registration systems
- Boundary evidences and re-establishment
- Land boundary surveys
- Land related legislations
- Land dispute and resolution
- Land administration and management

Engineering Surveying

- Detail and as-built surveys
- Setting out and positioning methodologies
- Deformation and monitoring surveys
- Survey instrumentation
- Alignment design
- 3D modelling
- Project management and engineering practice
- Site safety and management

Topographical Surveying

- Mapping standards and specifications
- Map updating and change detection
- Map projection and datum
- Data collection methods
- Spatial data management
- Data integration and alignment
- Map drawing and presentation

Geodetic Surveying

- Principles of geodesy
- Geodetic datums and coordinate systems
- Global Navigation Satellite Systems
- Global geodetic reference systems
- High order measurements and corrections
- Network adjustment and transformation
- Geodetic control design and establishment

Hydrographic Surveying

- Marine geodesy
- Sounding surveys
- Satellite positioning and navigation
- Hydrographic instrumentation and calibration
- Marine charting
- Maritime boundaries
- Local and international laws of the sea.

Photogrammetry and Remote Sensing

- P&RS principles and technologies
- Sensor types and platforms
- Image orientations and aerial triangulation
- Data extraction and manipulation
- Photogrammetric mapping and measurements
- Geo-referencing and ortho-rectification
- Photo-interpretation
- Close range photogrammetry

Mapping and Cartography

- Map datum and projection
- Map design and production
- Mapping specification
- Mapping data collection and compilation
- Map data management
- Cartographic presentation
- Cartographic materials and reproduction methods

Geographic Information System

- Principles of geographic information science and systems
- Geo-spatial data standards
- System design and data modelling
- Data quality and assessment
- Data manipulation and analysis
- Industrial software packages
- GIS applications

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