

Admission Requirements for the Building Services Discipline
(Candidates must read this leaflet in conjunction with M3 Routes to Membership)

Candidates applying the class of Member in the Building Services Discipline of the HKIE are required to satisfy the following:

1. Academic Requirements

The academic requirement for the class of Member in the Building Services Discipline is to satisfy one of the following:

- (a) a Bachelor's degree with honours in engineering or technology accredited by the HKIE relevant to the Building Services Discipline (such as BEng(Hons) in Building Services Engineering); or
- (b) a Bachelor's degree with honours in engineering or technology accredited by one of the accreditation bodies as listed in the Washington Accord relevant to the Building Services Discipline; or
- (c) a Bachelor's degree with honours in engineering or technology accredited by the HKIE for other related disciplines, plus "top up" by extra academic study or working experience as approved by the Building Services Discipline Advisory Panel; or
- (d) a Bachelor's degree with honours in engineering or technology accredited by one of the accreditation bodies as listed in the Washington Accord for other related disciplines, plus "top up" by extra academic study or working experience as approved by the Building Services Discipline Advisory Panel; or
- (e) other recognised honours degree level qualifications in engineering with "top up" by extra academic study during the training period or working experiences as approved by the Building Services Discipline Advisory Panel.

Other academic qualifications may be considered based on an individual assessment; candidates are required to submit to the HKIE an application for assessment of academic qualifications (Form 1/AQ).

1.1 Top Up Requirements for Qualifications of (c) and (d)

The qualifications of (c) and (d) in above are for candidates who are working in the building services field and are interested in the Building Services Discipline of the HKIE, but not academically eligible for admission for the class of Member (for example, graduates from Mechanical Engineering or Electrical Engineering). The top up requirements are determined by assessing how much core knowledge of building services engineering that the candidate is missing.

There are six minimum core subject areas as described below. Each subject is recommended to have not less than 30 contact hours and should be designed at undergraduate or postgraduate level.

- (i) Heating, Ventilation and Air-Conditioning (HVAC): selected topics such as psychrometry; thermal comfort; thermal load calculations; ventilation design; HVAC systems and equipment; air duct design and space air diffusion; refrigeration systems.
- (ii) Electrical Services: selected topics such as power supply and distribution; load estimation; electrical safety and protective devices; earthing and bonding systems; emergency and standby power; testing and code requirements.

- (iii) *Fire Services*: selected topics such as fire characteristics and hazards; fire safety and code requirements; water-based systems; gas-based systems; fire detection and alarm systems; smoke control and fire engineering approach.
- (iv) *Utility Services*: selected topics such as plumbing engineering; water supply systems; sanitation and drainage systems; steam systems; fuel gas supply; telecommunication services; extra low voltage systems; vertical transportation.
- (v) *Lighting Engineering*: selected topics such as light and colour; principles of vision; human eye; light sources and luminaires; lighting design and calculations; daylighting design; lighting energy management.
- (vi) *Project and Engineering Management*: selected topics such as building contract administration; project planning and control; tendering processes; site organisation and safety management; dispute resolution; decision making; engineering management.

1.2 Top Up By Extra Academic Study

If the candidate has not formally studied all the core knowledge, top up by extra academic study is needed to complete the missing subject(s) in appropriate course(s) at undergraduate or postgraduate level. Each subject should have not less than 30 contact hours. Such subject(s) can be studied at the relevant local universities or other recognised educational institutions. The Discipline Advisory Panel will assess the appropriateness of the academic qualification with the top-up study upon receipt of the application.

As an alternative to extra academic study, candidates can opt for two extra years of relevant and responsible experience in building services engineering for fulfilling the top up requirements.

For candidates through Formal Training route (Scheme “A”) or General Experience Route, responsible experience toward Corporate Membership would only be counted after top-up requirements being fulfilled.

2. Training and Experience Requirements

Scope of Experience:

Building service engineering is multidisciplinary in nature. The scope of experience encompasses a variety of knowledge and practical skills which includes, inter alia,

- (a) Planning and master programming
- (b) Site appraisal and feasibility study
- (c) Building services system design and analysis
- (d) Tendering and contract administration
- (e) Sub-contracting and installation
- (f) Testing and commissioning
- (g) Manufacture and technical sales
- (h) Operation and maintenance
- (i) Safety and quality assurance
- (j) Education and training
- (k) Research and development
- (l) Project management

It is not reasonable to expect an applicant to be fully conversant in the entire scope of experience; one must however have broad based experience and responsibility in one or more fields, as well as a good understanding of other related aspects.

Routes of Gaining Experience:

(i) Formal Training Route

2 years' training in Building Services field

Applicants having completed the formal training (Scheme “A” Training) and acquired adequate responsible experience to manage engineering activities and can demonstrate their experience compliance with the HKIE Competence Standards, should be allowed to sit for Professional Assessment. In general, it would take no less than three years after graduation to satisfy these.

(ii) General Experience Route

Candidates who have not undertaken pre-approved formal training will be required to have had a minimum of six years combined training/responsible experience in building services, post academic qualification. Details of the training and experience requirements are included in Section 3 of M3 Routes to Membership.

Candidates who satisfy the above requirements will be accepted for Professional Assessment.

3. Professional Assessment (Please refer to Section 5 of M3 Routes to Membership)

All candidates are expected to deliver the following documentation together with their applications:

Training and Experience Report

Drawings and Documents

Logbooks (if Scheme “A”)

Continuing Professional Development (CPD) Record

All documents should be the candidate's own work and documents must be verified by a Corporate Member of the Institution or the employer.

All documents submitted will be treated as confidential and will be returned to the candidate after assessment. Candidates should however retain copies of all documents submitted as the Institution does not accept responsibility for any documents lost or damaged.

All candidates are required to take professional assessment (including an interview and essay/technical write-up¹).

¹ Please refer to Form 1/MD Instructions to Applicants Section 4 Scheme of Adopting Results of Language Tests in lieu of essay/technical write-up for HKIE Membership Admission