



1 Introduction

This document provides the criteria to be used for assessing applicants under the general area of practice of Building Services Engineering.

The Guideline has been prepared by a competency panel comprising representatives of Engineers Australia's Society of Building Services Engineering and the Colleges of Electrical and Mechanical Engineers. The setting of standards and administration of the registration scheme is the responsibility of the competency panel, but assessment of applications is the responsibility of an assessment panel, established by Engineers Australia and comprising experienced practitioners from the Society and the Colleges.

The general area of practice of Building Services Engineering is to distinguish professional engineers competent in the practice of Building Services Engineering, and to facilitate the recognition of Corporate Members of Engineers Australia applying for dual membership under the Heads of Agreement with the Chartered Institution of Building Services Engineers

Administration of the registration scheme is the responsibility of the Associate Director Registration, Engineers Australia.

2 Background to Building Services Engineering

Building Services Engineering is multidisciplinary in nature. By definition, it is the practice of the art and science of engineering for the purpose of achieving optimal integrated building systems incorporating environmental control and safety provisions for the comfort and well-being of the occupants of the built environment.

Broadly speaking, the areas of practice embraced by Building Services Engineering, in the context of the built environment, involve:

- Air conditioning and mechanical ventilation
- Electrical light and power
- Fire services
- Fire safety engineering
- Water and waste services
- Data and communications
- Security and access control
- Vertical transportation
- Acoustics in buildings
- Energy management

The scope of activities by individuals or organisations practising in Building Services Engineering includes, but is not necessarily limited to:

- Teaching and training
- Research and development
- Design and documentation
- Manufacture and supply
- Quality assurance
- Installation, testing and commissioning
- Operation and maintenance

Accredited or recognised building services engineering degree courses are established overseas and in the State of Victoria, and are emerging in other jurisdictions. However, many applicants seeking recognition as building services engineers will have academic qualifications and professional experience in other fields. Such applicants will need to show that they have received adequate training and practised independently, or under general direction, as building services engineers

3 Areas of Practice

The main areas of practice include, but are not limited to the following:

- Air conditioning, including plant design, chiller and pump selection, ductwork sizing, fan selection and acoustics
- Heating and refrigeration, including plant design, pipework sizing, pump selection, insulation and alternative energy sources
- Mechanical ventilation including smoke exhaust systems fan selection, ductwork design and fire rating considerations
- Vertical transportation including, hydraulic and traction lifts, traffic analysis, escalators, moving walkways and hoists
- Hydraulic systems, including sewerage and drainage pipework design, and potable and hot water reticulation
- Electrical distribution, including reticulation electrical supply, switch board design, circuit protection and cable selection
- Standby power generation including, co-generation, uninterruptable power supplies, generation set selection, co-generation analysis and UPS criteria establishment

- Lighting, including internal general and task, emergency evacuation, external and specialist lighting
- Lightning protection, including earthing systems
- Building telecommunications, including telecommunication system design, cabling management, antennae, networks and MATV
- Building systems, including system monitoring and management and DDC integration
- Security systems, including access control, monitoring, CCTV surveillance and alarm notification
- Timing systems, including automatic scheduling and sports timing
- Energy management, including control [PLC] systems, selection of energy tariffs and lighting controls
- Maintenance and facilities, including management, planned preventive maintenance, and total asset and facility database management
- Fire services, including manual and automatic detection, alarm and suppression and integration of smoke control systems
- Fire safety, including risk management, assessment of risk to life safety, classification of risk and risk minimisation (see below)

Applicants should note that recognition in a Specific Area of Practice is available in Fire Safety Engineering to applicants who can satisfy the eligibility criteria contained in the *Guideline for Recognition in the Specific Area of Practice of Fire Safety Engineering* (www.nerb.org.au >Areas of Practice >NPER >Fire Safety Engineering). This area of practice complies with building legislation in the States or Territories recognising registration in the class of Fire Safety Engineering.

4 Eligibility Requirements for Registration

Applicants must possess an academic qualification (eg. a four year engineering degree), accredited or recognised by Engineers Australia, or equivalent overseas qualification. They must also be able to satisfy the Australian Engineering Competency Standards for Professional Engineers at Stage 2.

In addition to their qualifications and experience, applicants will need to demonstrate:

- That building services engineering is a significant part of their professional employment or practice.
- That they practise independently or under general direction as building services engineers in at least one of the areas of practice identified in Section 3 above.

5 The Application and Assessment Process

5.1 Making an Application

The following sections indicate what you must do to register on NPER in the general area of practice of Building Services Engineering.

You do not have to be a College Member to register as a building services engineer on NPER and you do not need to join Engineers Australia to register on NPER.

5.2 Required Documents

If you are not a CPEng, you must follow the application guidelines in the *Chartered Status Applicant's Handbook*, (www.engineersaustralia.org.au >education >chartered status) (even if you do not intend to join Engineers Australia) and use the application form in it to apply for NPER – Building Services. The same process will also allow you to obtain Chartered Membership (CPEng) and College Membership if you wish.

If you are a CPEng or CEng MCIBSE, you may apply simultaneously for both a college membership and/or registration on NPER – Building Services using the *Application for Registration on NPER* (www.nerb.org.au >applying) You must submit a Statement of Experience and evidence of how you have kept up to date in your practice, as explained on the form.

All applicants must provide clear evidence that they have worked competently in the areas covered by Building Services Engineering, and show that they meet the requirements described in this Guideline. Your documents must be reviewed and substantiated by an experienced professional engineer as being a true representation of your recent responsibilities.

5.3 Assessment

If you are not a Chartered Professional Engineer (CPEng) you will be assessed for registration under the Australian Engineering Competency Based Assessment System. Subject to the acceptability of your Engineering Practice Report, you will attend a professional interview lasting about one hour as explained in the *Chartered Status Applicant's Handbook* (www.engineersaustralia.org.au >education >chartered status).

If you are already a CPEng or CEng MCIBSE, your Statement of Experience and CPD will be analysed for evidence that you meet the requirements for Building Services Engineering (see Section 4 above). You may be invited to attend an interview with a member of the Building Services Engineering Assessment Panel, as explained on the application form.

Your application for recognition in the Building Services Engineering general area of practice, together with appropriate attachments and fees, must be forwarded to: Associate Director Registration, Engineers Australia, 11 National Circuit, Barton ACT 2600