

## How to use the careers map

The map shows typical routes from entry (section 1), through training and experience (section 2), to professional qualifications (section 3) and career functions (section 4). Use the arrows to follow through possible qualification routes into the wide range of careers offered by the building services engineering sector.

In addition to the main progression routes shown, it is possible to progress between different specialisms and/or levels through further training.

Some of the many job functions within the building services engineering sector are summarised in section 6 Job Function

When you reach the far right of the map, these symbols indicate where you should look in the list of job functions (section 6). Here you can see the various types of careers you can follow. The symbols are used to indicate job function level – a diamond for Chartered or Incorporated Engineer, square for Engineering Technician, circle for Advanced, Technical or Skilled Operative and cross for Craft or Skilled Operative.

▲ Denotes further learning and/or experience.

Professional qualification refers to registered grades with ECUK. Most professional bodies provide membership grades linked to ECUK registration and also independent registration.

## Building Services Engineering Careers

Building services engineering plays an important part in all our lives – almost every building contains some form of electrical power, heating, air conditioning, ventilation, refrigeration and plumbing. It is the job of a building services craft, technician, incorporated or chartered engineer to design, install and maintain these facilities.

Building services engineering offers interesting and rewarding career opportunities. Depending on your existing qualifications, there are different stages on the career ladder of building services engineering.

## Training

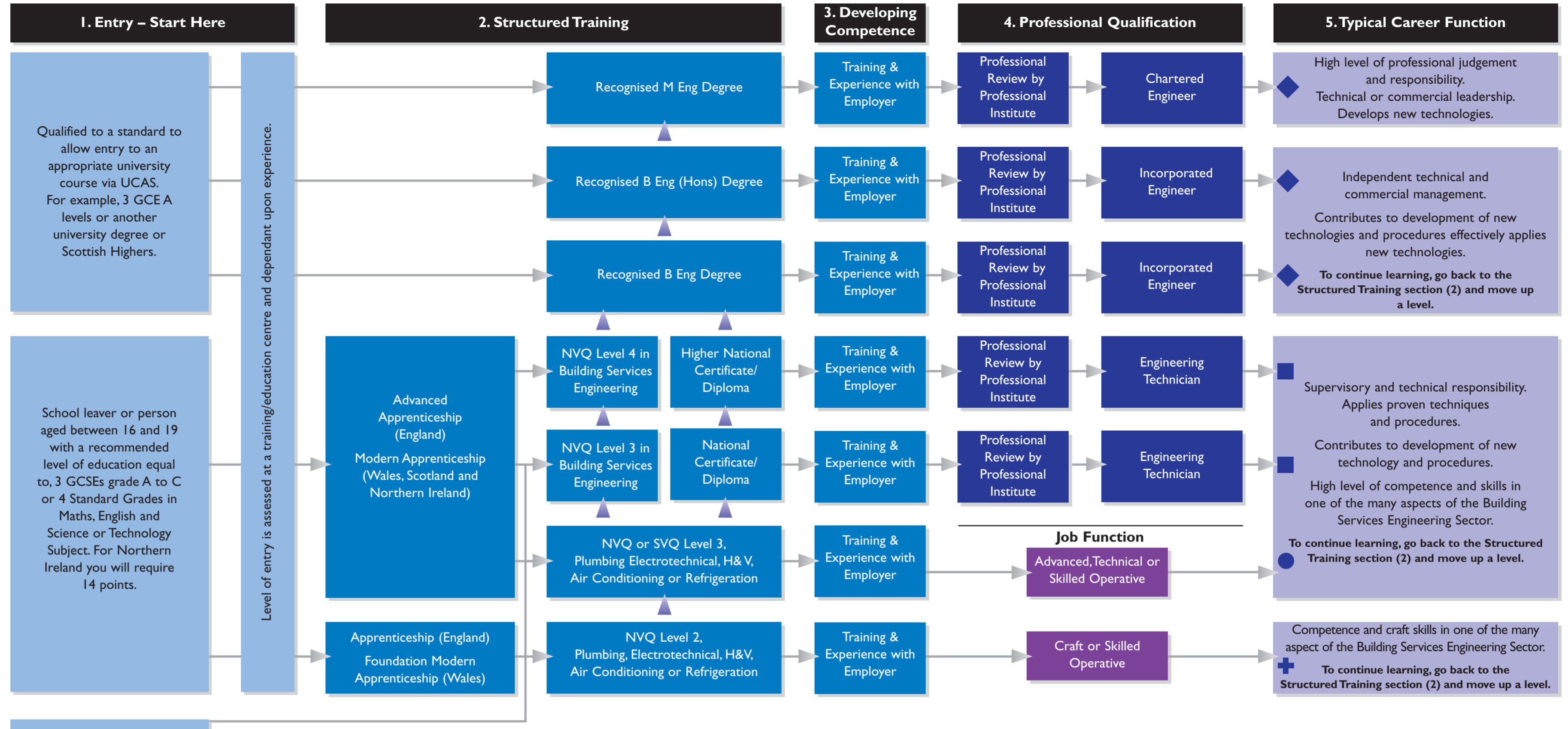
Where your career starts within building services engineering will depend upon a number of things, for example what type of work you want to do and what qualification you achieve.

Craft and technician engineers generally start on an apprenticeship scheme. These schemes lead to an N/SVQ Level 3 or 4. Incorporated and chartered engineers usually study a full time or part time foundation, bachelors or masters degree at a university.

## Where do i go next?

All these industries have a need now and in the future for highly skilled and committed individuals and all look to recruit men and women with the right aptitude, abilities and motivation to work in these sectors.

For further information about a career in building services engineering please contact our careers helpline on 08000 688 336



- Highway Electrical Systems Installer** ◆◆●●  
Highway electrical systems play an important part of our everyday lives; highly trained public street engineers ensure that our street lighting, including traffic management systems are maintained to a high standard.
- Installation Electrician (Buildings & Structures)** ●  
An installation engineer is responsible for installing and commissioning modern electrotechnical systems within buildings. This can include power, lighting, fire protection, security and structured cabling.
- Instrumentation Installer/Engineer** ●  
The job of an instrumentation engineer involves commissioning, testing, fault finding and repairing of building environmental control systems, such as large air conditioning units, heating and refrigeration.
- Maintenance Electrician** ●  
Maintenance electricians ensure that modern electrical systems and the equipment they serve run effectively and efficiently.
- Electrotechnical Panel Builder** ●  
An electrotechnical panel builder uses programmable logic controllers and information technology to build and manage the electrical control panels that ultimately control building services systems and equipment.
- Domestic Plumber** ◆●  
Modern buildings require sanitation, heating, hot and cold water systems in addition to sheet metal weathering. A qualified plumber is responsible for the installation and maintenance of these systems.

- Electrical Repair and Rewinder** ●  
Skilled electrical repair and rewind specialists are required to repair and maintain equipment and machinery such as transformers compressors, pumps and fans within buildings.
- Security/Emergency/Comms System Installation Installer/Engineer** ◆●  
This can include the installation, testing, commissioning, fault finding of fire protection and intruder alarms.
- Industrial and Commercial Plumber** ●  
Industrial and commercial plumbers concentrate on designing, installing and maintaining complex sanitation systems and providing hot and cold water services to large buildings such as offices, schools, hospitals and factories.
- Sheet Metal Weathering Specialist** ◆●  
Sheet metal weathering specialists develop and install intricate weathering systems to protect buildings from rainwater. Generally this type of work is carried out on listed, historical and commercial buildings.
- Gas Fitter** ◆●  
Specialist plumbers use their knowledge to ensure that gas systems and appliances are installed, tested and maintained to a high standard.
- Heating and Ventilating Engineer** ◆●  
H&V engineers install and commission complex heating and ventilating systems to ensure that large buildings provide a comfortable living environment.
- Air Conditioning Engineer** ◆●  
An air conditioning engineer is responsible for installing, controlling and maintaining the quality, temperature and humidity of air within modern buildings.

- Computer Aided Designer** ◆  
Modern building services engineering systems need to be accurately drawn on architectural drawings to show how they should be installed according to the design specification. The CAD designer will ensure that drawings are accurately produced, and kept up to date should any changes be made on site.
- Design Engineer** ◆◆  
A building services engineering design engineer will design a system to ensure it meets the requirements of the building's inhabitants, this could be designing an air conditioning system in a modern office complex, heating for a hospital, ductwork ventilation system in a factory or lighting in a school.
- Contract or Project Manager** ◆◆  
The installation of systems must be managed to ensure that its installation proceeds with the buildings construction. Planning and managing the project will mean labour, materials and equipment is available as needed and work is carried out to the design requirements accurately and efficiently.
- Commissioning Engineer** ●◆  
Commissioning engineers ensure that the engineering service systems within a building meet the original design specification and all the heating, ventilation, air conditioning and refrigeration systems fulfil the desired operation criteria.
- Consulting Engineer** ◆◆  
Each industry will have a range of specialist engineers. These consulting engineers provide commercial services and advice to other members of the building team.
- Estimator** ●◆◆  
Before installing a building services engineering project the amount of materials that will be used (pipe, cable, equipment, machinery etc) needs to be accurately calculated and costed to ensure that the installation is carried out in a cost effective manner.

- Business Manager or Proprietor** ●◆◆  
The building services engineering sector has many opportunities for individuals to develop their skills, career and opportunities further; after gaining valuable experience it may be possible to start your own business. The building services engineering sector is predominately made up of small businesses.
- Educator and Trainer** ●◆◆  
Education and training is vital within the sector; whether it's someone starting out in their career or a qualified person updating their skills and knowledge, keeping up to date with many advances in technology. Educators and trainers and industry specialists professionally deliver the training required.
- Service and Maintenance Engineer** ●◆  
Skilled service and maintenance engineers are required to programme and carry out regular maintenance and repairs on all equipment within the heating, ventilation, air conditioning and refrigeration industry.
- Ductwork Installer** ◆●  
A ductwork installer installs the systems that provide clean air and/or remove used air as part of a building's ventilation system.
- Fitter/Welder** ◆●  
Many building services projects require large steel pipe work. This pipe work carries the fluids and gases required by the building and must be installed accurately, by a highly skilled fitter/welder.
- Domestic Heating Engineer** ◆●  
Domestic heating engineers ensure domestic central heating systems are installed, maintained correctly and function effectively.
- Refrigeration Engineer** ◆●  
Refrigeration engineers install and maintain refrigeration systems used widely throughout the UK in places such as supermarkets, hospitals, food processing and research establishments.