MAKE A CAREER IN BUILDING SERVICES ENGINEERING
How buildings come to life

A guide for GCSE students (or equivalent)
There’s a lot more to a building than four walls and a roof. Buildings may be equipped with lighting, heating, lifts, escalators and a host of other technologies to make them comfortable and safe for the people living and working in them.

Building services engineers help buildings – from homes to hospitals – function efficiently for the people who live and work in them. They design systems to help manage infection risk in operating theatres, crowds in football stadiums and security in airport terminals. It’s their job to ensure these systems operate effectively and sustainably and fit the overall design of the building.
Around half of the energy used in the UK goes into buildings to keep their services running. Our buildings have a massive impact on the environment, accounting for almost half of damaging carbon emissions.

Building services engineers therefore have a very important role to play in helping us, and our buildings, use natural resources wisely. They design systems to help reduce demand for energy and water in buildings, and they integrate environmental systems and technologies, like solar panels.

This diverse sector can offer you a range of career opportunities, in the UK and overseas. One month, you could be creating the right office environment for workers in a brand new office tower in Dubai. The following month you could be fitting innovative heating technology into one of the UK’s historic houses, while preserving the building’s precious existing structure.

The good news is that there is no single route to becoming a building services engineer. You have plenty of options as you set out on your career.

CHECK YOUR SKILLS

Building services engineering could be right for you if you:

- Like to analyse technical information and data
- Enjoy solving challenges
- Can think creatively
- Are organised
CHOOSING YOUR STUDY ROUTE

To get started, you need: GCSE (or equivalent) in:
- Mathematics
- Science
- Design and Technology is also useful

Your key study options are:

1. GO TO COLLEGE
   What to look out for: Look for a college course leading to at least a BTEC Level 3 award (or equivalent) in building services engineering, mechanical engineering, electrical engineering, energy or a related construction or engineering subject.

2. EARN WHILE YOU LEARN AND BECOME AN APPRENTICE
   What to look out for: Look for an apprenticeship with a company in the building services or construction related sector – the government apprenticeship website should be able to help.

3. GO TO UNIVERSITY
   What to look out for: Degree courses covering:
- building services engineering
- mechanical engineering
- electrical engineering
- architectural engineering
- environmental engineering.

What you need to study: University entry requirements may include good grades in Mathematics and Sciences.

Course types: Full time degree courses can last from 3 to 5 years, depending on whether they lead to BEng(hons) or MEng and include a period working in industry.

The Chartered Institution of Building Services Engineers (CIBSE) recognises some degree courses – look out for the CIBSE name or logo in the course details. By following a CIBSE accredited course you may gain a head start in your career, and in working towards CIBSE membership.

Become a Building Services Engineer
Protective systems – for fire, security and other risks

Daylight and artificial lighting

Energy use and technologies

Heating, ventilation and air conditioning

Water, drainage and plumbing

Escalators and lifts

Communications technology

Building services engineering is a broad field, covering areas including:
Attending college or university open days is a good way to find out about your options and explore individual teaching approaches and facilities.

Many different courses can help you along the road to a career in building services engineering. Courses vary in content and practical experience, and have their own individual strengths, so it’s important to think about what’s right for you.

Before you apply to study, try thinking about the questions on our checklist.

- Do you want to study full time, or alongside work?
- Do you like doing practical hands-on work?
- Would you rather work on your own or in a team?
- How much lecture time does the course offer?
- How many hours of work outside of lectures does the course involve?
- What links does the course have with industry?
- What flexibility is there in the course?
HOW THEY GOT THERE

NIKKI KANE
Consultant

Nikki began her career with a college course in construction. She was able to develop her learning when her first employer gave her the chance to study via a day release programme for a BEng degree in building services engineering at London Southbank University.

Nikki says: “I’ve always enjoyed maths and the sciences and was good at those subjects at school.”

LOUIS FIFELED
Energy researcher

Louis went to university to study aerospace engineering, but switched course to mechanical engineering, where he developed an interest in low carbon buildings. Since then, Louis has carried out research into energy use in hospitals.

Louis says: “The thing I like most about my role is making the regular visits to the hospitals where I can learn first hand how building services are operated in a hospital environment.”

MATTHEW KIRKHAM
Consultant

Matthew was eager to get into the workplace so found a traineeship with an engineering consultancy, combining work experience with part-time study. He followed this with full time study for a degree.

Matthew says: “I enjoy the day-to-day challenges of solving technical problems, and the variety of project work the job provides.”

TYPICAL SALARY LEVELS
*correct at 2017

£26.5k
For a new starter

£50k
For a chartered engineer

£70k+
For a senior manager/project director
Eight reasons to work in building services engineering:

1. It takes you out of the office to building projects
2. It can give you chances to travel abroad to work on projects or discuss technologies with manufacturers
3. You get the opportunity to work in teams, alongside other construction professionals
4. You could be working for major consultancies, a local firm, or for a client organisation, such as a big property developer
5. Every working day – and every project – poses fresh challenges and opportunities
6. Your skills are likely to be in demand, as the incorporation of new technology into buildings is generating significant need for building services engineers
7. There are great opportunities to climb high on the career and salary ladder. You could rise to become a senior manager, or even a director. With the right experience and qualifications, you could ultimately become a Chartered Engineer, recognised by the Chartered Institution of Building Services Engineers
8. You’ll have the satisfaction of knowing that you’re making a difference to the way people live and work in buildings, and to the use of natural resources.

WHAT’S A TYPICAL WORKING WEEK?

Here are some of the tasks a building services engineer can be doing in their working week:

- 35-40 working hours in a typical week
- Drawing up plans – using computer aided design
- Making sure jobs meet regulations
- Attending meetings with colleagues and clients in the office and on site
- Coordinating the work of technicians and craftspeople

Become a Building Services Engineer
ENGINEERING DEVELOPMENT TRUST – ENGINEERING EDUCATION SCHEME

The Engineering Development Trust (EDT) offers short courses and initiatives about science subjects and careers. This nationwide education charity also has guidance for teachers and parents. Check out: www.etrust.org.uk

CHARTERED INSTITUTION OF BUILDING SERVICES ENGINEERS

The Chartered Institution of Building Services (CIBSE) is the professional body for building services engineers. CIBSE approves courses and work-based training programmes, providing routes to professional registration and membership. Log on to the website to find lists of approved courses and companies that offer a CIBSE accredited training and development scheme. Check out: www.cibse.org

ENERGY ENVOYS

If you are targeting the Bronze, Silver of Gold Duke of Edinburgh’s Award, why not get relevant hands-on volunteering experience by becoming an Energy Envoy? Under the Energy Envoy scheme you can help people in your local area to use energy wisely. Check out: www.energyenvoys.org.uk

YOUNG ENGINEERS AND SCIENCE CLUBS SCOTLAND (YESC)

Young Engineers and Science Clubs Scotland (YESC) has clubs in more than 1,400 Scottish schools, and its network is growing. Check out: www.yescotland.co.uk