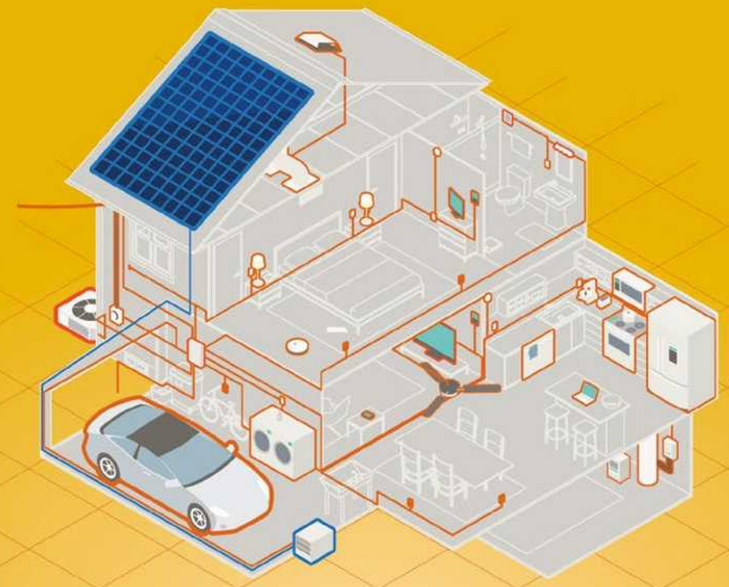
Make a career in building services engineering

…and create greener, smarter buildings for the future

A guide for GCSE students



WHAT IS BUILDING SERVICES ENGINEERING?

Around half of the energy used in the UK goes into running services like heating, cooling and lighting in our buildings, and that has a massive impact on the environment, accounting for almost half of damaging carbon emissions.

Building services engineers are playing a key role in tackling climate change by reducing energy and water use in schools, hospitals, offices and other buildings. They design buildings so that the people inside don't get too hot, too cold or waste precious natural resources. They do all the detailed planning to enable environmental technologies to be incorporated into buildings, like solar panels to generate green energy and computer systems that automatically close blinds or turn down the central heating. These building services all keep a building working as efficiently and sustainably as possible and ensure people are safe and comfortable.

Building services engineering covers such areas as:

- Energy use and technologies
- Heating, ventilation and air conditioning
- Daylight and artificial lighting
- Escalators and lifts
- Water, drainage and plumbing
- Communications technology
- Building façades
- Protective systems – for fire, security and other risks.

Thinking about becoming a building services engineer?

There are lots of different career opportunities in building services engineering in the UK and overseas.

You could find yourself designing a system to keep hotel guests cool in Dubai or creating a green heating system for a historic house in the UK.

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 will need:

GCSE mathematics (grade 4 or higher) + GCSE science or physics/ chemistry (grade 4 or higher)

It's also useful to study GCSE design and technology.

Your key study options are:

Go to college

Look for a T-level in building services engineering or design surveying and planning. Or another college course such as BTEC level 3 award in building services engineering, mechanical engineering, electrical engineering, energy or a related construction or engineering subject.

Earn while you learn and become an apprentice

Look for an apprenticeship with a company in the building services or construction related sector – the government careers website should be able to help. This route could progress to part-time study at university, studying while working as an apprentice.

Go to university with A-levels

Look for degree courses covering:

- Building services engineering
- Mechanical engineering
- Electrical engineering
- Architectural engineering
- Environmental engineering.

Course types: Full-time degree courses can be three or four years depending on whether they include a year working in industry and/or overseas.

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 and registration as a professional engineer.

Where and how to study

Attending college or university open days is a good way to find out about your options and explore 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?

Gemma Taylor

Energy, environment, engineering and carbon lead

Career path: Studied a BTEC in architecture, civil engineering and surveying, then a BEng in architecture and environmental engineering.

> People spend over 80% of their lives indoors, and building services engineering has a direct positive impact on that experience. The link between architecture and the environment is extremely exciting and has a direct influence over sustainability and climate change and how we transition to a net zero world.

Jagannatha Reddy

Power engineer

Career path: Completed a BTEC in electrical and electronics engineering and Master of technology in power electronics.

> I am passionate about making a difference through innovation and technology. I always add a digital touch to engineering to help with calculating cost, carbon and lifecycle.

Tom Hopton

Digital building consultant, associate director

Career path: Began his career as a building services technician. While working, he was sponsored by his employer to study and gained an HNC, HND and a degree in building services.

> I love my job, it's so rich with opportunity to have an impact and so rewarding working with such a diverse range of people unified to creating a better-built environment.

5 reasons to work in building services engineering

1. There's a big demand for building services engineers as we adapt the way we build for climate change and incorporate new technologies into buildings

2. You'll be making a difference to the way people live and work in buildings and be tackling climate change

3. Every working day – and every project – poses fresh challenges and opportunities

4. Work can take you anywhere in the UK or even overseas

5. There are great opportunities to climb 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 Engineering Council through the Chartered Institution of Building Services Engineers.

CIBSE by numbers

21,000

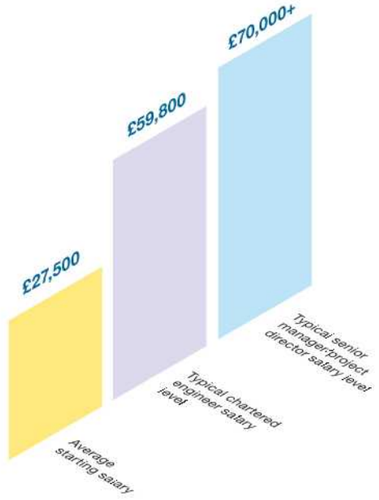
Members of the Chartered Institution of Building Services Engineers

96

Countries around the world where CIBSE members can be found

Typical salary levels per year

Salaries correct at 2022



Here are some websites to get you started...
...Or just google building services engineering

Chartered Institution of Building Services Engineers

The Chartered Institution of Building Services Engineers (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.

cibse.org

Neon Futures

Neon Futures offers resources and information for schools, students and parents about engineering careers.

neonfutures.org.uk

Energy Envoys

Get relevant hands-on volunteering experience by becoming an Energy Envoy. Under the Energy Envoy scheme you can help people in your local area use energy wisely.

energyenvoys.org.uk

She can engineer

Inspiration for the increasing number of girls and women who choose engineering careers

shecanengineer.com

Young Engineers and Science Clubs Scotland (YESC)

Young Engineers and Science Clubs Scotland (YESC) has clubs in more than 1,500 Scottish schools, with more than 30,000 members.

scdi.org.uk/yesc/

This is Engineering

Young engineers show how engineering is behind many things you may already be interested in and how they followed what they love into engineering, helping to shape the future.

thisisengineering.org.uk

Become an apprentice

Further information about becoming an apprentice

gov.uk/become-apprentice

To find out more visit
cibse.org/careers