Civil Engineer

Civil engineers design and manage a wide range of construction projects including roads, railways, airports, buildings of all types and power stations ranging from nuclear to wind power generation. They usually specialise in one particular area.

The Work

You could be:

- using computer-aided design (CAD) to produce plans and designs
- undertaking complex calculations as part of the design process
- discussing the design plans with the client, architect and contractors
- making sure that the foundations and supporting structures, such as beams, will be strong enough for their purpose
- surveying sites and existing buildings
- making decisions about materials, labour, budgets and deadlines and managing projects
- checking that the work is done to design, on time, within budget and meets legal and safety regulations
- taking responsibility for the present and future stability of the structure
- writing bids to tender for new projects.

Pay

The figures below are only a guide. Actual pay rates may vary, depending on:

- where you work
- the size of the company or organisation you work for
- the demand for the job.

The starting pay is around £25,000 to £30,000, rising to around £40,000 a year with experience. Chartered engineers with a number of years' experience can expect to earn over £55,000 a year rising up to £80,000 a year or more at senior levels.

Conditions

- You work from an office, but spend time outdoors on site in all weathers.
- You have to wear protective clothing, including hard hat, safety boots and overalls.
- You travel to different locations and may live away from home for periods of time.
- You may have to work overtime, including evenings and weekends.

Getting In

- You usually need a BEng or MEng degree (SCQF Levels 9-11) in civil or structural engineering.
- The entry requirements for a degree is usually 4-5 Highers. Maths and Physics or Engineering Science may be required, plus National 5 English.

- There are HNC (SCQF Level 7) and HND (SCQF Level 8) courses in civil engineering, but you still need further study to degree level to work as a chartered engineer.
- You could enter this profession through a Technical Modern Apprenticeship in Construction at (SCQF Level 9). This gives you the chance to earn while you learn. For a Technical Apprenticeship you normally need 4 good Highers.
- Studying for a Foundation Apprenticeship in Civil Engineering while in fifth and sixth year at school could give you entry to a HND or degree in Civil Engineering. For entry you would need 3 subjects at National 5 including English and Maths. You would be expected to have Higher Maths, Chemistry or Physics by the end of sixth year.
- You need to have a Construction Skills Certification Scheme (CSCS) card or equivalent to work on sites.
- You can get the necessary experience through a sandwich course or through sponsorship from your employer.

Jobs for civil or structural engineers can be with industrial companies, contractors, consulting firms, water companies, oil companies, local government or in research organisations.

What Does It Take

You should be:

- able to analyse complex data and produce solutions
- able to produce and interpret technical diagrams
- responsible and aware of health and safety issues
- confident about making decisions
- able to manage projects and meet deadlines
- good at working in teams.

You should have:

- strong problem solving skills
- good written and verbal communication skills
- strong maths, physics and IT ability
- knowledge of relevant legal regulations.

Training

- If you enter through a Technical Apprenticeship, you would train on the job while in employment, and attend college or university on a day release basis.
- After gaining your HNC, HND or degree and some practical experience with an employer, you can go on to register with the Engineering Council as a professional engineer – either Incorporated Engineer (IEng) or Chartered Engineer (CEng).
- For IEng you need to have either a recognised Bachelor's degree or a recognised HNC or HND plus further study to Bachelor's degree level.
- For CEng you need to have a recognised Bachelor's degree with Honours plus a recognised Masters degree (or equivalent), or a recognised integrated Master of Engineering (MEng) degree.
- If you do not have any of the above qualifications, you may still be able to achieve IEng or CEng by other

approved routes. You can check these alternative routes with the Engineering Council or with the appropriate professional engineering institution.

- For those who don't have academic qualifications but have experience in civil engineering, registration with the Institute of Civil Engineers (ICE) is still possible. Contact the Institute of Civil Engineers (ICE) for details.

Getting On

- Your promotion prospects rise with further professional development and increasing experience. You can progress from being one member of a project team to being project leader.
- Some engineers move on to teaching and academic research in universities and colleges.
- You may be able to work abroad.
- Some highly qualified engineers are partners in firms of consultants which offer specialist engineering services.
- As a member of any of the professional engineering bodies, you have to complete a certain number of hours continuing professional development (CPD) each year.

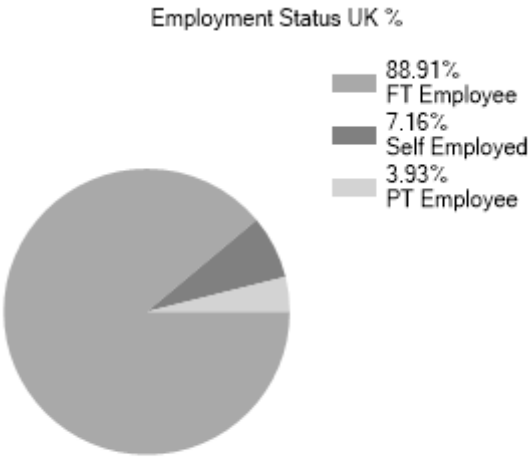
More Information

- The Engineering Council sets and maintains the standards of the engineering profession in the UK. It does so through 35 professional engineering institutions which are Licensed Members of the Engineering Council.
- Tomorrow's engineers website http://www.tomorrowsengineers.org.uk provides further information.
- The Construction Industry Training Board (CITB) is the Sector Skills Council which covers a wide range of sectors in the development and maintenance of the built environment.

Contacts

GoConstruct
Website: www.goconstruct.org
X: @GoConstructUK
Facebook: www.facebook.com/goconstructuk

Statistics



LMI data powered by LMI for All

Past Unemployment - Scotland

No Claimant statistics available for Scotland.

Predicted Employment Statistics : Not available this career.