Structural Engineer

Structural engineers specialise in designing the framework and foundations of structures such as bridges, sports stadia, masts, tower blocks and coastal and offshore oil platforms. They ensure the structures can withstand forces such as machinery, traffic, storms and earthquakes.

The Work

You could be:

- developing design ideas and plans using computer-aided design (CAD)
- discussing the design plans with the client, other engineers, architects and contractors
- using computer modelling to predict how structures react under different conditions, such as wind or vibrations
- calculating the load and stresses that all components of the structure will be subject to
- considering the properties of different materials, such as concrete and steel, and their suitability for use in projects
- surveying sites, existing buildings and examining subsoil
- examining unsafe buildings and structures and advising on improvements and repair
- managing projects, including budgets, deadlines and staff and that work meets all regulations
- 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 for structural engineers is around £25,000 to £30,000 a year. With a number of years' experience this can rise to around £50,000. Chartered engineers with over 10 years' experience can expect to earn up to around £65,000 a year, sometimes more.

Conditions

- You work from an office, but spend time outdoors on construction sites, in all weathers.
- You have to wear protective clothing, including a hard hat, safety boots and overalls when visiting sites.
- You travel to different locations and on some projects you might work away from home.
- You may have to work overtime, including evenings and weekends when meeting a deadline.

Getting In

- You usually need a BEng or MEng degree (SCQF Levels 9-11) in civil or structural engineering.
- Heriot-Watt University and the Universities of Aberdeen and Edinburgh offer degrees in structural

engineering.

- The entry requirements for a degree are usually 4-5 Highers including Maths plus National 5 English. Physics or Engineering Science at Higher may be required.
- There are HNC (SCQF Level 7) and HND (SCQF Level 8) courses in civil engineering, but you still need further study to degree level in order 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 there are no set entry requirements, which may range from no formal entry requirements to a group of subjects at National 4 or 5. You may need some subjects at Higher.
- Studying for a Foundation Apprenticeship while in fifth and sixth year at school could give you entry to a HND or degree in Civil Engineering. For entry you would require 3 subjects at National 5 including English and Maths. You would be expected to have Higher Maths 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:

- good at maths, physics and IT
- able to analyse complex data and produce solutions
- able to produce and interpret technical diagrams
- responsible and aware of health and safety regulations
- confident about making decisions
- able to manage projects and meet deadlines.

You need:

- excellent written and spoken communication skills
- an interest in the design and technical aspects of buildings
- good teamworking skills
- 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.
- You would first become a member of the Institution of Structural Engineers (IStructE). See their website 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.
- Membership of the IStructE is recognised worldwide, so 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.

Contacts

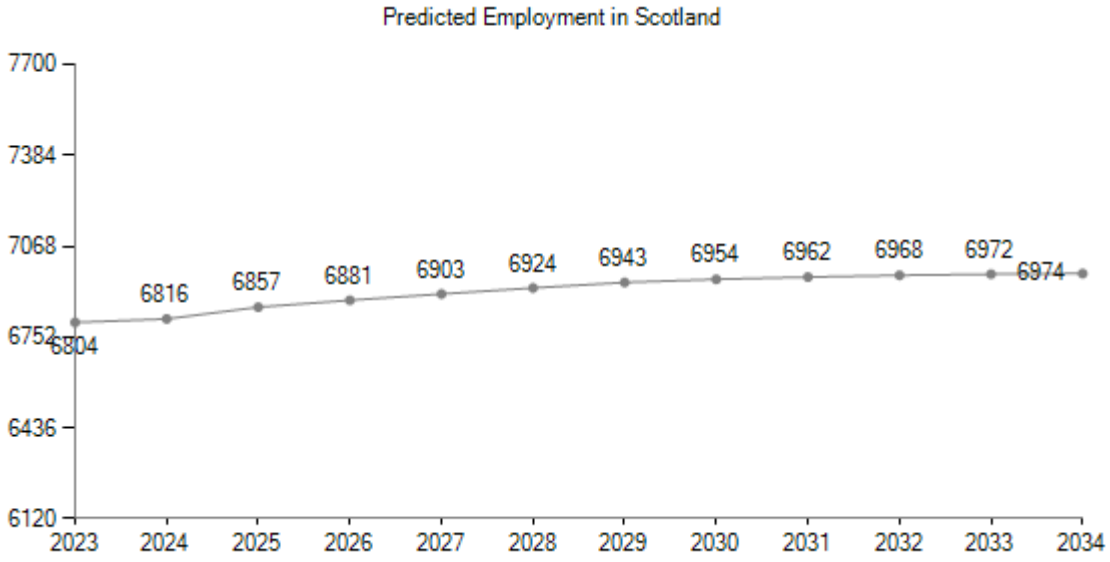
GoConstruct
Website: www.goconstruct.org
X: @GoConstructUK
Facebook: www.facebook.com/goconstructuk

Statistics

Past Unemployment - Scotland

No Claimant statistics available for Scotland.

LMI data powered by LMI for All



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