

Civil engineer

Job description

Civil engineering is all about creating, improving and protecting the environment in which we live. It provides the facilities for day-to-day life such as transport, and the infrastructure allowing industry to prosper. Civil engineers plan, design and oversee construction and maintenance of building structures and facilities, such as roads, railways, airports, bridges, harbours, dams, irrigation projects, power plants, water and sewage systems. They also design large structures, like the Aviva Stadium, to withstand both the ravages of time and the elements.

Civil engineers can either be consulting engineers who advise on projects and design them, or contracting engineers who turn their plans into reality and maintain the structures once they are built.

Work activities

- Undertaking technical and feasibility studies including site investigations.
- Using a range of computer packages for developing detailed designs.
- Undertaking complex and repetitive calculations.
- Liaising with clients and a variety of professionals including architects and subcontractors.
- Compiling job specs and supervising tendering procedures.
- Resolving design and development problems.
- Managing budgets and project resources.
- Scheduling material and equipment purchases and delivery.
- Ensuring projects run smoothly and structures are completed within budget and on time.

Work conditions

Travel: frequent visits to sites may be necessary, especially for new graduates. You may be required to work away from home for periods of time. Travel abroad may be possible with a large consultancy company.

Working hours: regular office hours are the norm, with occasional long days and some weekends depending on projects deadlines. Overnight and weekend stays may be required for site inspections. Site engineers and managers may be on call 24 hours a day.

Location: throughout the country.

Opportunities for self-employment: possible for those interested in setting up their own consultancy firm, but will normally take several years of proven professional experience.

Typical employers

- Local authorities
- Government departments
- Railways
- Water/electricity/gas companies
- Civil engineering contractors/consultants.

Career development

Promotion to senior engineer level is achievable, and with more experience, to principal engineer level and beyond. Opportunities to specialise in a diverse range of areas, including coastal and marine, power, water and roads, are possible.

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Salaries

Salaries will vary depending on the employer or size of the practice.

Republic of Ireland: €30,000–€55,000.

Northern Ireland: £20,000–£36,000.

Entry requirements and training

Specific degree subjects required

- Civil engineering.
- Other relevant degree subjects
- Construction engineering
- Structural engineering
- Environmental engineering
- Geomatics
- Mechanical engineering
- Electrical engineering.

Postgraduate study

From 2013 graduates wishing to become chartered engineers will need to hold an accredited masters degree (level 9) or equivalent.

Training

Engineers Ireland's CPD training programme organises, promotes and delivers a wide variety of technical and non-technical training courses, workshops and seminars. These are available both in-company and as public courses.

Skills and qualities

- Sound mathematical and technical skills including physics.
- Ability to think methodically, to design, plan and manage projects.
- Ability to maintain an overview of entire projects while continuing to attend to detailed technicalities.
- Excellent verbal and written communication skills.
- Negotiating, supervisory and leadership skills combined with the ability to delegate.

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