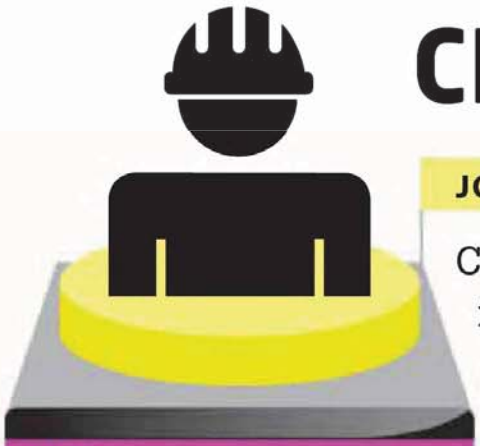
CIVIL ENGINEER



JOB DESCRIPTION

Civil engineers design and manage a wide range of infrastructure projects, both large and small, such as roads, bridges, and pipelines. A civil engineer's role is challenging and varied. It includes talking to clients, surveying sites, preparing designs (called blueprints), budgeting, assessing a project's environmental impact, and making sure a site meets health and safety standards.

SALARY

Newly qualified graduate ★★☆☆☆
Experienced civil engineer ★★★★★

INDUSTRY PROFILE

Worldwide sector • Steadily growing market • Many engineering jobs in the construction industry • Few opportunities for part-time work or self-employment

SKILLS GUIDE

- Creativity and innovation to realize an engineering design successfully.
- The ability to lead teams of engineers and construction workers on a range of tasks.
- Problem-solving skills to process complex calculations using computer software.
- Good technology skills to use Computer-aided Design (CAD) software to create blueprints.
- Skills in developing contracts, budgeting, and creating proposals for new projects.

AT A GLANCE

YOUR INTERESTS Engineering • Construction • Physics • Mathematics • Computer-aided Design (CAD) • Geology • Materials science

ENTRY QUALIFICATIONS Most entrants hold an engineering degree, but it is possible to combine work and study to qualify as an engineer.

LIFESTYLE Civil engineers usually work regular hours. However, most roles will require frequent travel to work sites.

LOCATION Depending on the nature of a project, civil engineers work in an office or at a building site. They may need to travel both locally or overseas.

THE REALITIES Projects may require you to be away from home for periods of time. On-site environment is usually hazardous, and you may be working at great heights.

CAREER PATHS

Civil engineers can choose from a number of specializations, including transportation, planning and designing roads and ports, working on dams and pipelines, dealing with waste and pollution, disaster prevention, and others.

The giant roller coasters in theme parks have all been designed by civil engineers.

GRADUATE A degree in civil engineering is the most common route into this career. Most companies offer a graduate training program.

ENGINEERING TECHNICIAN Although higher education is required for a career in civil engineering, you can gain practical experience as an engineering technician while you work toward your degree.

CIVIL ENGINEER After gaining experience, you can study for further qualifications and seek professional accreditation. This will allow you to progress to more senior positions and specialized roles.

CONTRACTING CIVIL ENGINEER Implements the designs of consulting engineers on site, overseeing the work of contractors, checking quality and progress, and buying in appropriate materials and equipment.

CONSULTING CIVIL ENGINEER Plans and advises on engineering projects, working closely with clients and architects. They produce detailed designs and oversee the entire project.

PROJECT MANAGER Is in charge of an engineering project and makes sure the solutions are delivered to the highest possible standards, on time, and on budget.

▼ RELATED CAREERS

- **MECHANICAL ENGINEER** *see pp. 182–183*
- **STRUCTURAL ENGINEER** *see pp. 196–197*
- **COST ENGINEER** *see pp. 198–199*
- **ENGINEERING GEOLOGIST** Primarily analyzes the earth of a chosen site to ensure that a man-made structure will sit safely upon it.
- **MARINE ENGINEER** Designs and develops offshore structures, such as oil platforms, wind farms, and tidal barriers.