Civil Engineering Career options

As a **level 3 apprenticeship as a Civil Engineering Technician** you support the planning, design, building, management, maintenance or dismantling of the built environment (such as buildings, structures, parks and public spaces, schools, offices, museums and hospitals) and infrastructure, such as transportation (road, rail, bridges, tunnels, ports and airports), water and waste management, marine and coastal engineering (irrigation systems, sustainable drainage systems (SuDS), flood, river and coastal defences), water and power supplies (utilities, hydropower, power stations, nuclear plants, on and offshore wind farms).

Technicians may also be exposed to other professional disciplines, such as surveyors, environmental practitioners, architects, planners or legal teams. As well as liaising with internal colleagues across a variety of multidisciplinary areas, some technicians will also be responsible for working with customers, suppliers, and stakeholders or with representatives from appropriate regulatory bodies.

Civil engineering technicians, depending on their employer, will spend their time in an office environment, working on site, working remotely or a combination of these. There is also potential for visiting customers or suppliers.

After completing a level 3 Apprenticeship your next step could be:

Level 4 apprenticeship as a Civil Engineering Senior Technician

The broad purpose of the occupation is to coordinate, manage and provide the technical planning, design, building, management, maintenance or dismantling of the built environment (such as buildings, structures, parks and public spaces, schools, offices, museums, hospitals) and infrastructure, such as transportation (road, rail, bridges, tunnels, ports and airports), water and waste management, marine and coastal engineering (irrigation systems, sustainable drainage systems (SuDS), flood, river and coastal defences), water and power supplies (utilities, hydropower, power stations, nuclear plants, on and offshore wind farms).

Level 4 apprenticeship as Information Manager

The broad purpose of the occupation is to support the delivery and management of critical information, whether digital or otherwise, in the (capital) delivery phase of an infrastructure project and the ongoing management of that information within the operational phase of the resulting asset. The Information Manager ensures that information meets required quality and specifications and is collected, managed and transferred effectively ensuring its value is understood, maximised and reused where it describes its physical asset counterpart (the digital twin). Effective information management not only enables efficiencies to be achieved throughout an asset's lifecycle, it also provides the opportunity to develop further insight or innovation by using, collaborating and manipulating information in more effective ways.

Level 6 apprenticeship as Civil Engineer (Degree).

Civil Engineers provide technical and management input to develop design solutions for complex civil engineering problems. They will work as part of a team of engineers and other construction professionals through all lifecycle stages of development, design, construction, commissioning, operation, maintenance, and decommissioning of civil engineering infrastructure. A Civil Engineer will be required to have a broad skills base to work in areas including sustainable construction, structural integrity, geotechnics (engineering behaviour of earth materials), materials, tunnelling, marine and coastal engineering, water, waste management, flood management, transportation and power. A Civil Engineer might work in public and private sector organisations including local authorities, central government departments and agencies, engineering consultancy practices, contracting firms and research and development organisations.

- **Project delivery** – An awareness of business, client and end user needs throughout the project lifecycle. Plan and manage tasks, people and commercial budgets to deliver quality assured outputs on time and to client and industry specifications, standards and guidance.
- **Design** – Define engineering and other constraints, identify risks and how these may be resolved through design. Develop safe and sustainable technical solutions and provide guidance to others by producing design models, calculations, reports and drawings, surveying a site, using applicable analysis and relevant codes.
- **Analysis** – Identify and use applicable digital solutions, other data gathering tools and tests to solve technical problems. Evaluate the effectiveness of the analysis, refine as required, and apply to an integrated solution.
- **Construction** – Determine construction methods and technical aspects of site activities. Identify and mitigate risk, develop and operate quality systems and health, safety and risk management procedures.

Civil engineering is everything you see that's been built around us. It's about roads and railways, schools, offices, hospitals, water and power supply and much more. The kinds of things we take for granted but would find life very hard to live without.

'Civil engineer' covers a huge range of jobs and all types of engineering. Civil engineers come from all different backgrounds but they all spend years training, learning and getting qualifications.

There are several disciplines in civil engineering:

- Buildings;
- Energy;
- Coastal, maritime and offshore engineering;
- Development, planning and urban engineering;
- Geology, geotechnical and ground engineering;
- Transportation (highway, railway, …);
- Water engineering and wastewater management.

Starting a career in Civil Engineering can also lead to

- Site management
- Surveying
- Sustainability roles
- Estimator