

# CIVIL ENGINEER (ST0417)

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.

## Core duties involve:

- **Civil Engineering** – Understanding and applying complex engineering and mathematical principles and techniques to develop and deliver civil engineering solutions.
- **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.
- **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.
- **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.

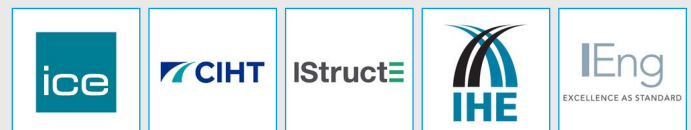
## Key elements include:

- Working independently, ensuring timekeeping and targets are met.
- Evaluating the impact of civil engineering infrastructure on society and the environment taking account of business, client and end user needs in its construction, management and use.
- Managing and applying safe systems of work including taking responsibility for own obligations for health, safety and welfare issues, assessing and controlling risk, working with health, safety and welfare legislation and best practice.
- Communicating effectively and provide guidance to others through design models, calculations, reports, drawings, specifications, presentations, digital media and discussions with those both inside and outside the industry.
- Managing the planning, budgeting and organisation of tasks, people and resources through the use of appropriate management systems, working to agreed quality standards, project programme and budget, within legal, contractual and statutory requirements.
- Demonstrating a personal commitment to professional and ethical standards, recognising one's obligations to society, the profession and the environment.
- Carrying out and maintaining competence in line with professional codes of conduct.

## Approved training providers:



## Professionally recognised by:



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### Training programme:

- 60-month training programme.
- Entry with good A-levels (including Maths), BTEC in Engineering, or completion of the level 3 Civil Engineering Technician apprenticeship typically sought.
- Minimum 20% off the job training including completion of:
  - An Engineering Council and JBM accredited civil engineering degree programme.
  - Development of IEng competence through the ICE's initial professional development programme.
- Development of competence supported by a supervising civil engineer (SCE) or on the job professional mentors.

### Four to six month EPA:

- Four to six month End Point Assessment (EPA) to complete apprenticeship.
- EPA Gateway requires successful completion of training programme, degree, and IEng competence development.
- EPA includes:
  - Written report.
  - Presentation and interview.
  - Written exam.
- Grades: pass/fail.
- Aligned to Incorporated Engineer (IEng) professional review process with ICE, CIHT, IStructE and IHE.
- Registered EPA organisation: ICE.

**Funding band assigned:** £27,000.

#### Additional costs:

- Providers may charge employers above the funding band.
- Professional membership and Engineering Council registration fees (optional).

**Approved:** October 2017.

- Three-yearly revision due early 2022.

**Employers involved:** Adept Consulting, Aecom, Arup, Balfour Beatty, BDP, Capita, Cormac, Clancy, Cormac, Curtins, EDF, Mott MacDonald, Stantec, Systra, TFL, Wiltshire Council, WSP.

**Others involved:** Pearson, Institution of Civil Engineers (ICE)\*, Chartered Institution of Highways and Transportation, Institute of Highways Engineers, Institution of Structural Engineers, Coventry University, Kingston University, Leeds Beckett University, Leeds College of Building, Liverpool John Moores University, Solihull College and University Centre, University of the West of England (UWE).

\*advised EPA organisations