

Apprenticeships +

# Building Services Design Technician

Apprenticeship  
Level 3

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**The  
Sheffield  
College**

4 Excellent Campuses  
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## Quick Information

### New Apprenticeship Standard designed by employers for employers

#### Sector

Construction

#### Who is it for?

Trainee's in design, surveying and engineering roles

#### Start date

September start

#### Level

3

#### Duration

The typical duration for this apprenticeship is 36 months but this will depend on the previous experience of the apprentice and access to opportunities to gain the full range of competence.

#### How does it work?

Attending Sheffield college 1 day a week, Studying a Level 3 Diploma in Construction for 2 years and working towards an End Point Assessment in year 3.

#### Content

The Pearson BTEC Level 3 National Extended Diploma in Construction and the Built Environment is intended as a Tech Level qualification. It allows learners to develop a substantial core of knowledge, to study in depth a full range of optional units, and to develop the broader skills highly valued by higher education institutions.

#### Assessment

The Level 3 Diploma assessment has both examinations and assignments, to show a relevant level of learning has taken place over the 2 years.

#### Qualification

Pearson BTEC Level 3 National Diploma in Construction and the Built Environment

#### Additional qualifications

GCSE English and Maths (Grade C or above); apprentices without level 2 English and Maths will need to achieve this level prior to taking the end-point assessment.

#### Review

The Apprenticeship Standard will be reviewed after 3 years.

## Building Services Design Technician

Supporting engineers, surveyors and architects on construction projects

A building services design technician provides assistance to engineers and other construction professionals in the development of cost effective technical and sustainable design solutions involving the production of three dimensional models, calculations, specifications, reports and drawings taking into account, where appropriate, pre-fabrication techniques. Their work typically includes systems such as renewable technologies, heating, ventilation, air conditioning, drainage, lighting, power, controls and lifts. Buildings and infrastructure take on many forms from newly built facilities to the refurbishment of premises for every sector of industry. As design technicians they could be working under supervision in a design consultancy, a contractor or a manufacturing company.

A design technician's work could also involve:

- Analysis – using appropriate software and simulation systems to solve technical problems.
- Project delivery – contributing to planning, managing work schedules, budgets and deadlines working as a member of a team
- Site engineering - operating quality systems and Health, Safety and Risk Management procedures, progress monitoring, see that installations generally comply with the design intent, responding to site queries, commissioning and post occupancy evaluations.

## Knowledge

### A Building Services Design Technician will know

1. **The different techniques and methods used to design building engineering services projects.** This includes an understanding of how technologies, components and requirements are converted into building engineering systems designs including use of relevant standard
  2. **The appropriate scientific, technical and engineering principles relating to the design of building engineering services projects.** This includes an understanding of the mathematical, scientific and engineering techniques required to support the design and construction processes
  3. **How to work effectively and contribute to engineering solutions by the correct use of resources and time.** This includes an understanding of project management systems, tools and techniques as they are applied to the design and construction process
  4. **How to communicate effectively using a range of techniques.** This includes an understanding of different communication methods and when to use them; how to write technical reports, technical drawing conventions and engineering terminology; collaboration and effective team working.
  5. **The code of conduct of relevant professional bodies and institutions including ethics and their application in design and delivery of projects.** Understanding of the protection of client confidentiality, the need to adhere to corporate and institutional policies on ethics and diversity and the professional obligation to make a contribution to society
  6. **Safe working practices and how to comply with the Understanding of regulations** such as Construction, Design and Management (CDM), hazard identification, and risk mitigation.
  7. **Sustainable development and their own contribution to economic, environmental and social wellbeing.** Understanding of legislative, company and client sustainability and environmental policies and their effect on the design and construction of buildings.
  8. **Sources of and approaches to Continuing Professional Development (CPD).** Understanding of appraisal schemes, CPD obligations and competency requirements relating to self and others.
2. **Work with others to contribute to produce integrated engineering solutions by the correct use of resources and time.** This includes the ability to contribute to developing and evolving solutions to engineering problems whilst working to programme and within budget
  3. **Manage and maintain the quality of their work and that of others.** Assess the task to be done, plan/schedule work and manage time; decide when to allocate work to other people; maintain the flow of information; follow technical procedures, check work at an appropriate level and against appropriate standards and specification Keep well organised personal records of work undertaken
  4. **Communicate effectively and appropriately with others** using a range of techniques including verbal communication, written reports, models and drawings.
  5. **Keep themselves and others safe by adhering to safe working practices.** Ability to identify hazards and assess risks, follow safe systems of work and adhere to all company safety policies.
  6. **Maintain their skills base and learning.** Ability to assess their own competence against training objectives and identify development needs and training action plans.

## Behaviours

- Take a responsible approach to health and safety
- Be professional, proactive and receptive to constructive advice and guidance
- Be willing to learn new skills and to adapt in the light of experience
- Know one's limitations and when to ask for help or escalate
- Work independently when appropriate and take responsibility for and pride in their work
- Demonstrate a positive approach to problem solving
- Show an ability to contribute to discussions as part of a team

## Skills

### A Building Services Design Technician will be able to:

1. **Select and use appropriate scientific, technical and engineering principles, techniques and methods to contribute to the design and delivery of building engineering services projects.** Ability to produce and self-check; calculations, models and drawings; use appropriate software systems and other tools for data gathering, CAD, BIM, Revit, project management; and assist with site surveys and inspection



## Apprentice Entry Requirements

Employers will set their own entry requirements, but apprenticeship candidates will typically have at least 5 GCSEs at Grades A\*-C including Maths (Grade B), English and Science or their equivalent.

Employers who recruit candidates without English or Maths at Grade C or above must ensure that the candidate achieves a level 2 equivalent standard prior to taking the end point assessment.

## Progression Opportunities

Following completion of this standard learners could choose to pursue a Level 4 HNC in Building Service Engineering

## More Information

To find out more about the opportunities and financing of apprenticeships and to discuss your particular requirements, please email **apprenticeshipsandtraining@sheffcol.ac.uk** or call **0114 260 2600** to speak to one of our friendly employer advisors.

## Get In Touch

### Email

apprenticeshipsandtraining@sheffcol.ac.uk

### Call

0114 260 2600

### Twitter

@ShefcolAppsPlus

### Facebook

facebook.com/ShefColAppsPlus

### LinkedIn

linkedin.com/company/the-sheffield-college



## Why choose The Sheffield College?

As one of the region's largest providers of apprenticeships, The Sheffield College is more than just your local provider; we deliver the dedicated support you need to source, train and get the best out of your apprentice.

*We appreciate how difficult and time consuming it can be to recruit suitable staff. That's why we will source, shortlist and prepare candidates before you meet them.*

*We help you get the best deal by finding the right funding and we handle the paperwork to make the process of arranging an apprenticeship training programme as smooth as possible. Our employer partnership team, apprenticeship tutors and assessment staff are experts, and we invest time and money in training and upskilling them regularly so their knowledge is up-to-date and industry standard.*

*At The Sheffield College we go above and beyond; we know that every business is different and we help to develop apprentices who will meet the needs of your business.*

## Training, Tutoring and Assessment

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We are committed to delivering a course that facilitates the students need to progress in education to allow them to expand their knowledge and experience to help with the opportunity of promotion within their own companies.

Our expectations are that the student fully engages with the course programme, allocating sufficient time with their studies at college and self directed studying and with the full support of their employers.

## End Point Assessment

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The end point assessment will be in two stages and undertaken in the last two months of the apprenticeship: -

### Stage 1

- A project which will test the apprentice's ability to integrate the knowledge, skills and behaviours acquired during the apprenticeship by developing a response to a technical project brief set by the Professional Engineering Institution, with a number of options and a rationale for the choice of one as the optimum solution.
- A written report submitted to the Assessor Panel demonstrating the knowledge and experience gained in the apprenticeship has been integrated to deliver required outputs and the attainment of the pre-defined Engineering Council UKSPEC competencies for an Engineering Technician The report will be used to inform the structured interview

### Stage 2

- A 10 minute presentation by the apprentice to the Assessor Panel showcasing their response to the project brief. This will be followed by 10-15 minutes of questions and discussion.
- A 30-40 minute structured interview based on the written report submitted prior to the interview the purpose being to determine the apprentice's ability to integrate the knowledge, skills and behaviours acquired during the apprenticeship

*For more information on the assessment for the **Building Services Design Technician Apprenticeship** please see the full assessment plan in the Apprenticeship Standard documentation. We will arrange the End Point Assessment.*