DIGITAL ENGINEERING TECHNICIAN
Apprenticeship

EMPLOYER FACTSHEET

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Completing complex tasks using digital engineering techniques such as virtualisation and simulation of design, construction and management of assets. The occupation covered by this standard is associated with the built environment where an apprentice will perform the role of Digital Engineering Technician.

Key Information

Level	3
Duration	Typically 36 months
Entry requirements	- 16 years or over. - Please contact our Apprenticeship team for further entry requirements.
Delivery	A minimum of 30 hours of on the job training at work place, 2 days per week including a day to study theory at our Uxbridge campus
Occupational profile	The role is to produce detailed solutions to achieve the optimum performance of built environment projects via digital models and presentations using software, sketches and electronic visualisations. The apprentices will typically support Digital Engineers or other functional specialists in completing complex tasks using digital engineering techniques, specifically: - virtualisation and simulation of design, construction and management of assets - digital measurement of design, production and management of assets - communication of complex engineering principles to stakeholders digitally - integration of construction data and information throughout the whole life cycle of the asset - adherence to the standards and regulation of digital information.

Choose a Trusted Provider

We are a top provider in London with consistently high success rates

We are the largest college provider of apprenticeships in west London

We work with major companies including Brunel University London, Martin-Baker Aircraft Limited & Menzies etc.

Government funding may be available. Eligibility and criteria apply

Employers involved in creating this standard:

Laing O'Rourke, Crown House Technologies, Expanded, Carillion, Balfour Beatty, BAM Nuttall, Skanska, Costain, Seddon, Lovell Homes, Institution of Civil Engineers, Institute of Engineering and Technology, Chartered Institute of Building Services Engineer, Chartered Institute of Building, Royal Institution of Chartered Surveyors, Imtech, Chartered institute of architectural technologists, BRE

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Progression and Professional Registration/Membership

Progression from the Level 3 Apprenticeship could lead to Construction Design Manager, Construction Quantity Surveyor, Construction Site Manager, and Civil Engineering Site Manager. This standard has been designed to deliver sufficient competence, underpinning knowledge and understanding in the identified job role to allow apprentices to meet the requirements of the Construction Skills Certification Scheme (CSCS) or other industry affiliated schemes.

Qualifications

The following qualifications will be gained:

English and Maths will be required to be demonstrated at Level 2;
BTEC Level 3 Construction and the Built Environment;
NVQ Level 3 Diploma in Built Environment Design.

Link to Professional Registration

This Apprenticeship will include the knowledge, skills and behaviours required to achieve

Technician/Associate status through the following professional institutions. The professional review process is included in the assessment process for this Apprenticeship. The options are:

Associate Construction Manager (ACIOB) - The Chartered Institute of Building
Civil Engineering Technician (EngTech TMICE)- The Institution of Civil Engineers
Technician Surveyor (AssocRICS)– The Royal Institution of Chartered Surveyors
Building Services Engineering Technician (EngTech LCIBSE) - The Chartered Institution of Building Services Engineers
Associate Technician (AIET) – The Institution of Engineering and Technology
Professionally Qualified Architectural Technician (TCIAT) - Chartered Institute of Architectural Technologists

Knowledge	What is required?
Health and Safety	Aware of Health and Safety (H&S) industry regulations and moral, legal and financial implications of poor H&S performance. Know how to identify basic H&S outputs digitally.
Sustainability	Understand the sustainability issues in projects across economic, social, legal and environmental aspects
Engineering	Know how engineering principles, codes and standards work in the built environment and the purpose of them. Understand various management principles and the project management lifecycle – specifications, methods and materials
Commercial & Financial	Aware of principles of the commercial procedures and reporting on all stages of construction project and an appreciation of commercial risk. Aware of financial and legal obligations and constraints for all stakeholders in construction projects.
	Understanding of quantification and costing within a digital environment.
Design	Understand how proposals for design briefs, recommendations, programmes and detailed designs are prepared. Aware of the purpose of the digital environment and its role in design management.
	Understanding of different disciplines and their role in coordination of design
Technology & Innovation	Aware of the appropriate application of technology and the human to technology interfaces. Understanding the impact of sensory networks and the internet of things.
Planning	Understand the importance of project planning and resourcing and be able to analyse different digital engineering (DE) techniques, such as simulation of construction logistics and progress.
Quality	Understand how to identify the level of quality required delivering a built asset throughout the lifecycle.
Construction Industry and Sectors	Aware of the structure of the construction industry and its respective sectors. Understanding of the institutions and how the construction industry serves the economy as a whole.
Customer Care	Awareness of DE objectives set by Clients and Employers.
Maintain and operate	Aware of the information interdependencies of delivering information throughout a product / asset lifecycle. Understanding the purpose of information standards and regulation.
Knowledge Sharing	Awareness of social networking and appropriate sources of information / knowledge sharing. Understanding basic research techniques to ensure integrity of knowledge discovery.

Skills	What is required?
Health and Safety	Able to identify risk activities and encourage all employees to demonstrate safety-conscious behaviours. Able to extract reports and images for tool-box talks and site- inductions using models and simulations.
Sustainability	Assess, identify and record the environmental impact of project. Using models to demonstrate the reduction of waste to stakeholders.
Engineering	Assist in applying engineering principles by using established and emerging engineering technologies.
Commercial & Financial	Prepare simple commercial schedules and reports demonstrating digital workflows.
Design	Prepare initial design briefs, recommendations, programmes and detailed designs via a digital workflow considering design risks and responsibilities
Technology & Innovation	Assist in the implementation of innovation, contributing to case studies that demonstrate value. Good general IT skills and their application
Planning	Create simple construction simulations and logistic planning using a digital workflow.
Quality	Assess and report on quality standards of the projects via the digital environment.
Construction Industry and Sectors	To identify where the current role ties in to the construction industry. Articulating the respective position in the construction sector and highlighting how it integrates with other sectors / disciplines.
Customer Care	Support the development of stakeholder engagement and carry out a stakeholder presentation, demonstrating the appropriate presentation skills.
Maintain and operate	Demonstrate the ability to move information from project delivery into commissioning and operation through involvement in the handover of digital assets.

Behaviours	What is required?
Professional Judgement	Be able to work within own level of competence and know when to seek advice from others and work on own initiative
Commitment to code of ethics	Work within rules and regulations of professional competence and conduct. Gain the trust of both team members and the management team.
Personal and Continuing Professional Development	Identify own development needs and acts to meet those needs. Use own knowledge and expertise to help others when requested. Understands role in the team, constantly seek opportunities to improve own work and maximize efficiency.
Commitment to Equality and Diversity	Is able to accept and deal with changing priorities related to both their own work and to the organisation.
Effective Communication	Contribute to effective meetings and present information in a variety of ways including oral and written. Adaptable with the confidence to facilitate meetings with stakeholders.
Work in Teams	Work with others and demonstrating collaborative behaviours.
Innovation and commitment	Focus on areas for process improvement and learn from innovative solutions. Challenge current practice and be open minded about how to improve and implement a new way of working.
Collaboration	Understand the existence of team dynamics and application of personal strengths and weaknesses in group situations. Awareness of collaborative frameworks and contract / organisational level of collaboration.
Personal Effectiveness	Understand personal strengths and weaknesses and show development of personal effectiveness.