Qualification Specification

ProQual Level 7 Diploma in Civil Engineering

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This qualification is part of ProQual's broad offer of qualifications in the Construction Sector.

To find out more about other qualifications in this, or any other sector, or for our latest fees; check our Fees Schedule via the QR code below:

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Contents

Introduction

The **ProQual Level 7 Diploma in Civil Engineering** provides a nationally recognised qualification for individuals responsible for developing, implementing, and maintaining civil engineering systems within an organisation. This qualification is ideal for managers seeking to enhance their expertise in civil engineering practices, compliance, and industry best practices.

The aims of this qualification are:

- To allow candidates to develop knowledge of advanced civil engineering procedures and methodologies.
- To provide candidates with opportunities to apply their knowledge of civil engineering principles and practices in their organisation.
- To facilitate career development for those interested in leadership roles in civil engineering.

The awarding body for this qualification is ProQual AB. This qualification has been approved for delivery in England, and to international candidates by approved centres based in England. This qualification is regulated by Ofqual and has been entered into the Regulated Qualification Framework (RQF).

This qualification is not an NVQ and candidates for this qualification will not be eligible for a CSCS card.

Qualification Profile

Qualification Title:	ProQual Level 7 Diploma in Civil Engineering
Qualification Number:	610/5247/4
Level:	7
Total Qualification Time (TQT):	1200 Hours 120 Credits
Guided Learning Hours (GLH):	600 Hours
Assessment:	Pass / Fail
	Internally assessed and verified by centre staff
	Externally verified by ProQual Verifiers
Qualification Start Date:	24/01/2025
Qualification Review Date:	24/01/2028

Learner Profile

There are no formal academic entry requirements for this qualification. Centres should carry out an initial assessment of candidate skills and knowledge to identify and gaps and inform the assessment plan.

Candidates must be aged 19 years or older on the day they are registered for this qualification. Centres are reminded that no assessment should take place before candidates are registered.

Qualification Structure

This qualification consists of **ten** mandatory units. Candidates must complete all mandatory units to complete this qualification.

Unit Number	Unit Title	Level	TQT	GLH
Mandatory Units – Candidates must complete **all** units in this group.				
T/651/4578	Advanced Surveying and Site Investigation	7	120	60
Y/651/4579	Structural Design and Analysis	7	120	60
F/651/4580	Estimation and Costing for Civil Engineering Projects	7	120	60
H/651/4581	Construction Project Management	7	120	60
J/651/4582	Construction Drawing, Drafting, and BIM	7	120	60
K/651/4583	Sustainability and Environmental Impact in Construction	7	120	60
L/651/4584	Advanced Geotechnical Engineering	7	120	60
M/651/4585	Legal and Regulatory Framework for Construction	7	120	60
R/651/4586	Health, Safety, and Risk Management in Civil Engineering	7	120	60
T/651/4587	Advanced Materials and Construction Technologies	7	120	60

Centre Requirements

Centres must be approved to deliver this qualification. If your centre is not approved to deliver this qualification, please complete and submit the **ProQual Additional Qualification Approval Form.**

Materials produced by centres to support candidates should:

- Enable them to track their achievements as they progress through the learning outcomes and assessment criteria.
- Provide information on where ProQual's policies and procedures can be viewed.
- Provide a means of enabling Internal and External Quality Assurance staff to authenticate evidence.

Centres must have the appropriate equipment to enable candidates to carry out the practical requirements of this qualification.

Certification

Candidates who achieve the requirements for this qualification will be awarded:

- A certificate listing all units achieved, and
- A certificate giving the full qualification title:

ProQual Level 7 Diploma in Civil Engineering

Claiming certificates

Centres may claim certificates for candidates who have been registered with ProQual and who have successfully achieved the qualification. All certificates will be issued to the centre for successful candidates.

Unit certificates

If a candidate does not achieve all of the units required for a qualification, the centre may claim a unit certificate for the candidate which will list all of the units achieved.

Replacement certificates

If a replacement certificate is required a request must be made to ProQual in writing. Replacement certificates are labelled as such and are only provided when the claim has been authenticated. Refer to the Fee Schedule for details of charges for replacement.

Assessment Requirements

Each candidate is required to produce a portfolio of evidence which demonstrates their achievement of all of the learning outcomes and assessment criteria for each unit.

Evidence can include:

- Observation report by assessor
- Assignments/projects/reports
- Professional discussion
- Witness testimony
- Candidate product
- Worksheets
- Record of oral and written questioning
- Recognition of Prior Learning

Candidates must demonstrate the level of competence described in the units. Assessment is the process of measuring a candidate's skill, knowledge and understanding against the standards set in the qualification.

Centre staff assessing this qualification must be **occupationally competent** and qualified to make assessment decisions. Assessors who are suitably qualified may hold a qualification such as, but not limited to:

- ProQual Level 3 Certificate in Teaching, Training and Assessment.
- ProQual Level 3 Award in Education and Training.
- ProQual Level 3 Award in Assessing Competence in the Work Environment. *(Suitable for assessment taking place in a working salon only.)*
- ProQual Level 3 Award in Assessing Vocational Achievement. *(Suitable for assessment taking place in a simulated training environment only.)*

Candidate portfolios must be internally verified by centre staff who are **occupationally knowledgeable** and qualified to make quality assurance decisions. Internal verifiers who are suitably qualified may hold a qualification such as:

- ProQual Level 4 Award in the Internal QA of Assessment Processes and Practice.
- ProQual Level 4 Certificate in Leading the Internal QA of Assessment Processes and Practice.

Occupationally competent means capable of carrying out the full requirements contained within a unit. **Occupationally knowledgeable** means possessing relevant knowledge and understanding.

Enquiries, Appeals and Adjustments

Adjustments to standard assessment arrangements are made on the individual needs of candidates. ProQual's Reasonable Adjustments Policy and Special Consideration Policy sets out the steps to follow when implementing reasonable adjustments and special considerations and the service that ProQual provides for some of these arrangements.

Centres should contact ProQual for further information or queries about the contents of the policy.

All enquiries relating to assessment or other decisions should be dealt with by centres, with reference to ProQual's Enquiries and Appeals Procedures.

Units – Learning Outcomes and Assessment Criteria

Title:	Advanced Surveying and Site Investigation			Level:	7
Unit Number:	T/651/4578	TQT:	120	GLH:	60

Learning Outcomes *The learner will be able to:*		Assessment Criteria *The learner can:*	
1	Understand advanced surveying techniques used in civil engineering	1.1	Analyse the role of lobbying and advocacy in shaping environmental policies.
		1.2	Analyse how the interests of different stakeholders align or conflict in the policy development process.
		1.3	Identify examples of stakeholder collaboration or conflict in real-world environmental policy cases.
2	Evaluate site investigation methods for civil engineering projects	2.1	Identify geotechnical investigation techniques, for example borehole drilling and CPT.
		2.2	Explain the importance of site investigations in project feasibility.
		2.3	Explain how the data gathered from site investigations is used for effective planning.
3	Interpret and analyse data from site assessments	3.1	Interpret soil mechanics and geotechnical test data.
		3.2	Evaluate the impact of soil conditions on construction design and planning.
		3.3	Suggest appropriate foundation solutions based on site investigation results.
4	Assess environmental factors during site investigation	4.1	Identify environmental considerations in site investigations.
		4.2	Explain methods for assessing environmental risks.
		4.3	Propose sustainable practices in site assessments.

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Title:	Structural Design and Analysis			Level:	7
Unit Number:	Y/651/4579	TQT:	120	GLH:	60

Learning Outcomes *The learner will be able to:*		Assessment Criteria *The learner can:*	
1	Apply advanced structural design techniques to civil engineering projects	1.1	Describe the principles of structural design for buildings and infrastructure.
		1.2	Identify the factors influencing the selection of materials in structural design.
		1.3	Apply design codes and standards to structural elements, including: • Beams. • Columns. • Foundations.
2	Perform structural analysis for complex civil engineering structures	2.1	Use analytical methods to assess structural loads and stresses.
		2.2	Evaluate the behaviour of structures under different loading conditions.
		2.3	Use computer software for structural analysis.
3	Optimize structural design for safety and efficiency	3.1	Analyse the structural integrity of designs to ensure safety standards.
		3.2	Recommend design modifications for improving structural efficiency.
		3.3	Assess the cost implications of different structural design approaches.
4	Evaluate the impact of environmental conditions on structural design	4.1	Identify environmental factors affecting structural integrity (e.g., seismic activity, weather conditions).
		4.2	Suggest solutions for mitigating adverse environmental impacts.
		4.3	Evaluate the resilience of structures to environmental challenges.

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Title:	Estimation and Costing for Civil Engineering Projects			Level:	7
Unit Number:	F/651/4580	TQT:	120	GLH:	60

Learning Outcomes *The learner will be able to:*		Assessment Criteria *The learner can:*	
1	Prepare accurate cost estimates for civil engineering projects	1.1	Identify the key components of a cost estimate.
		1.2	Use estimating software and techniques to prepare detailed cost estimates.
		1.3	Identify contingencies to account for uncertainties in cost estimation.
2	Develop project budgets and financial plans for large-scale construction projects	2.1	Produce a comprehensive budget based on project scope and specifications.
		2.2	Allocate financial resources effectively for different project phases.
		2.3	Monitor and control project budgets during execution.
3	Evaluate cost implications of design and material choices	3.1	Analyse the cost impact of different construction materials and methods.
		3.2	Analyse cost-effective alternatives for construction processes.
		3.3	Recommend design modifications to optimize project costs.
4	Implement financial management strategies in construction projects	4.1	Apply financial management techniques to ensure project profitability.
		4.2	Produce a cost-benefit analysis for different phases of the project.
		4.3	Assess risks related to project financing and propose mitigation strategies.

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Title:	Construction Project Management			Level:	7
Unit Number:	H/651/4581	TQT:	120	GLH:	60

Learning Outcomes *The learner will be able to:*		Assessment Criteria *The learner can:*	
1	Apply advanced project management principles to civil engineering projects	1.1	Explain key project management principles, including: • Scope. • Time. • Cost. • Quality.
		1.2	Develop a project management plan for a civil engineering project.
		1.3	Integrate project scheduling and resource allocation into project management plans.
2	Allocate resources effectively in construction projects	2.1	Identify key resources required for construction, including: • Labour. • Materials. • Equipment.
		2.2	Plan and allocate resources efficiently to meet project milestones.
		2.3	Monitor resource utilization and adjust allocation as needed.
3	Manage risks in construction project execution	3.1	Identify potential risks during the project lifecycle.
		3.2	Develop risk management plans and mitigation strategies.
		3.3	Evaluate the impact of risk events on project timelines and costs.
4	Monitor and evaluate project performance	4.1	Use performance metrics to assess project progress.
		4.2	Implement corrective actions based on performance evaluations.
		4.3	Report on project status to stakeholders.

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Title:	Construction Drawing, Drafting, and BIM			Level:	7
Unit Number:	J/651/4582	TQT:	120	GLH:	60

Learning Outcomes *The learner will be able to:*		Assessment Criteria *The learner can:*	
1	Understand advanced drafting techniques in civil engineering	1.1	Describe traditional and modern drafting methods used in civil engineering.
		1.2	Produce detailed construction drawings for civil engineering projects.
		1.3	Apply drafting standards and conventions in project documentation.
2	Implement Building Information Modelling (BIM) in design and construction	2.1	Define BIM and its role in the design and construction process.
		2.2	Produce and manage a BIM model for civil engineering projects.
		2.3	Evaluate the benefits and challenges of using BIM in project execution.
3	Coordinate multidisciplinary design through BIM integration	3.1	Integrate architectural, structural, and MEP designs in a BIM environment.
		3.2	Collaborate with different teams to ensure consistency in BIM models.
		3.3	Resolve conflicts and clashes in the BIM model.
4	Use BIM for construction scheduling and cost estimation	4.1	Integrate scheduling and budgeting into the BIM process.
		4.2	Use BIM tools for cost estimation and material management.
		4.3	Analyse the accuracy of cost predictions using BIM data.

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Title:	Sustainability and Environmental Impact in Construction			Level:	7
Unit Number:	K/651/4583	**TQT:**	120	**GLH:**	60

Learning Outcomes *The learner will be able to:*		**Assessment Criteria** *The learner can:*	
1	Understand sustainable construction practices	1.1	Define the term "sustainable construction".
		1.2	Identify the key principles of sustainable construction
		1.3	Identify sustainable materials and methods for construction.
		1.4	Evaluate the environmental benefits of sustainable construction practices
2	Conduct environmental impact assessments (EIA) for construction projects	2.1	Explain the EIA process and its importance in construction projects.
		2.2	Discuss the environmental impact of construction activities.
		2.3	Produce mitigation strategies for negative environmental impacts.
3	Implement green building technologies in civil engineering projects	3.1	Identify and apply green building technologies.
		3.2	Apply green technologies to project planning and building design, including: • Solar. • LEED. • Passive Design
		3.2	Evaluate the energy efficiency of building designs.
		3.3	Integrate sustainability into project planning and execution.

4	Promote energy-efficient and low-carbon construction solutions	4.1	Propose energy-efficient building systems and materials.
		4.2	Evaluate the potential for reducing carbon emissions in construction projects.
		4.3	Recommend methods for optimising energy use in the construction process.

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Title:	Advanced Geotechnical Engineering			Level:	7
Unit Number:	L/651/4584	TQT:	120	GLH:	60

Learning Outcomes *The learner will be able to:*		Assessment Criteria *The learner can:*	
1	Apply advanced principles of soil mechanics in civil engineering projects	1.1	Explain key soil mechanics concepts relevant to civil engineering.
		1.2	Use soil test data to assess soil behaviour under load.
		1.3	Recommend appropriate foundation solutions based on soil characteristics.
2	Design and analyse foundations for large infrastructure projects	2.1	Apply foundation design principles for different soil types.
		2.2	Assess the stability and settlement of foundation designs.
		2.3	Recommend foundation solutions for challenging geotechnical conditions.
3	Implement ground improvement techniques for large-scale infrastructure	3.1	Describe ground improvement methods, including, but not limited to, soil stabilization and compaction.
		3.2	Evaluate the effectiveness of ground improvement techniques.
		3.3	Design and implement ground improvement solutions for specific project needs.

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Title:	Legal and Regulatory Framework for Construction			Level:	7
Unit Number:	M/651/4585	TQT:	120	GLH:	60

Learning Outcomes *The learner will be able to:*		Assessment Criteria *The learner can:*	
1	Understand construction law and contract management	1.1	Explain key legal principles governing construction contracts.
		1.2	Analyse common construction contract types and their terms.
		1.3	Identify legal risks and disputes in construction contracts.
2	Apply regulatory frameworks to ensure compliance in construction projects	2.1	Identify relevant construction laws and regulations.
		2.2	Evaluate compliance requirements for construction projects.
		2.3	Recommend strategies for ensuring regulatory compliance throughout the project.
3	Understand the impact of legal issues on project delivery	3.1	Analyse legal issues affecting project timelines, costs, and quality.
		3.2	Develop strategies to mitigate legal risks in construction projects.
		3.3	Resolve legal disputes related to construction projects.

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Title:	Health, Safety, and Risk Management in Civil Engineering			Level:	7
Unit Number:	R/651/4586	TQT:	120	GLH:	60

Learning Outcomes *The learner will be able to:*		Assessment Criteria *The learner can:*	
1	Apply health and safety best practices in civil engineering projects	1.1	Identify health and safety hazards in construction environments.
		1.2	Produce health and safety plans for civil engineering projects.
		1.3	Implement safety measures to minimize risks to workers.
2	Conduct risk assessments in civil engineering projects	2.1	Identify potential risks in construction activities.
		2.2	Assess the severity and likelihood of identified risks.
		2.3	Develop risk mitigation strategies to reduce safety hazards.
3	Ensure legal and ethical compliance in health and safety practices	3.1	Identify legal obligations related to health and safety in construction.
		3.2	Ensure compliance with safety regulations and standards.
		3.3	Discuss potential ethical considerations in health and safety decision-making.
		3.4	Implement ethical considerations in health and safety decision-making.

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Evidence of practical skills may be generated as part of the candidate's work in their real job role, or it may be generated through the use of case studies and simulated scenarios.

Title:	Advanced Materials and Construction Technologies			Level:	7
Unit Number:	T/651/4587	TQT:	120	GLH:	60

Learning Outcomes *The learner will be able to:*		Assessment Criteria *The learner can:*	
1	Explore the latest materials used in civil engineering projects	1.1	Identify emerging materials in construction, including composite materials and 3D-printed materials.
		1.2	Assess the properties and applications of advanced materials.
		1.3	Recommend material choices based on project requirements.
2	Analyse innovative construction technologies	2.1	Evaluate the potential of new construction technologies, including but not limited to prefabrication and automation.
		2.2	Discuss the impact of emerging technologies on construction efficiency and sustainability.
		2.3	Implement innovative technologies to improve construction processes.
3	Design and implement high-performance construction systems	3.1	Produce construction systems that optimize energy efficiency and durability.
		3.2	Analyse the performance of advanced construction technologies.
		3.3	Integrate high-performance materials into construction designs, justifying choices made.

Additional Assessment Information

Where an assessment criteria is **knowledge based.** This means that evidence is expected to take the form of candidate's written work and/or records of appropriate professional discussions.

Where an assessment criteria is **competency based.** This means that the candidate is expected to perform the tasks, and demonstrate the level of competence, outlined in the assessment criteria. It is expected that evidence will be a combination following:

- Photographic and/or video evidence of the candidate's practical work.
- Assessor's observation report.
- Expert witness testimony.
- Candidate reflection on own practical work.

An observation report and witness testimony are differentiated as follows:

- An **assessor's report** is completed by a qualified assessor who observes the candidate carrying out practical work. The assessor will make assessment decisions as they observe and record these in the report, alongside a commentary of what they observe.
- A **witness statement** is completed by a suitably qualified or experienced expert who observes the candidate carrying out practical work. The witness statement will contain **only** a commentary of what has been observed. An assessor must then use the witness statement, alongside any additional evidence to make assessment decisions.
- In all cases, an assessor's report is preferred as evidence over a witness statement; as it is always better for an assessor to observe a candidate live.

Assessors may wish use to use a checklist or evidence matrix to organise and track the assessment outcomes that have been achieved, but these **do not,** in themselves, constitute evidence of achievement.

An assessor's report or witness statement alone is unlikely to be sufficient evidence of achievement. Reports and statements should always be accompanied by photographic and/or video evidence.

Evidence of practical skills may be generated as part of the candidate's work in their real job role, or it may be generated through the use of case studies and simulated scenarios.

Appendix One – Command Verb Definitions

The table below explains what is expected from each **command verb** used in an assessment objective. Not all verbs are used in this specification

Apply	Use existing knowledge or skills in a new or different context.
Analyse	Break a larger subject into smaller parts, examine them in detail and show how these parts are related to each other. This may be supported by reference to current research or theories.
Classify	Organise information according to specific criteria.
Compare	Examine subjects in detail, giving the similarities and differences.
Critically Compare	As with compare, but extended to include pros and cons of the subject. There may or may not be a conclusion or recommendation as appropriate.
Describe	Provide detailed, factual information about a subject.
Discuss	Give a detailed account of a subject, including a range of contrasting views and opinions.
Explain	As with describe, but extended to include causation and reasoning.
Identify	Select or ascertain appropriate information and details from a broader range of information or data.
Interpret	Use information or data to clarify or explain something.
Produce	Make or create something.
State	Give short, factual information about something.
Specify	State a fact or requirement clearly and in precise detail.

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