TQUK Level 2 Certificate in Design Engineer Construct! The Digital Built Environment (RQF)

Qualification Specification

Qualification Number: 603/1992/6

Introduction

Welcome to TQUK.

TQUK is an Awarding Organisation recognised and regulated by the Office of Qualifications and Examinations Regulation (Ofqual) in England, the Council for the Curriculum, Examinations and Assessment (CCEA) in Northern Ireland and by Qualifications Wales in Wales. TQUK offers qualifications which are regulated by Ofqual and, in some cases, by CCEA and/or Qualifications Wales, sit on the Regulated Qualifications Framework (RQF) and are listed on the Register of Regulated Qualifications (http://register.ofqual.gov.uk/).

Our qualifications are designed to support and encourage learners to develop their knowledge and skills. This development may result in progression into employment or career development in the workplace. Our qualifications also allow learners to progress onto further qualifications. Please visit our website www.tquk.org for news of our latest developments.

Qualification Specifications

Each qualification which TQUK offers is supported by a specification that includes all the information required by a centre to deliver a qualification. Information in the specification includes unit information, assessment and learning outcomes. The aim of the Qualification Specification is to guide a centre through the process of delivering the qualification.

Please read it alongside the TQUK Centre Handbook.

Details of TQUK's procedures and policies can be found on our website: www.tquk.org

Qualification specifications can be found on the TQUK website: www.tquk.org

Please check the website regularly to ensure that you are using the most up to date version. If you have any further questions, please contact TQUK.

Use of TQUK Logo, Name and Qualifications

TQUK is a professional organisation and use of its name and logo is restricted. TQUK's name may only be used by recognised centres to promote TQUK qualifications. Recognised centres may use the logo for promotional materials such as on corporate/business letterheads, pages of a centre's website relating to TQUK qualifications, printed brochures, leaflets or exhibition stands. When using TQUK's logo, there must be no changes or amendments made to it, in terms of colour, size, border and shading. The logo must only be used in a way that easily identifies it as TQUK's logo. Any representation of TQUK's logo must be done so as a representation of the true logo,

It is the responsibility of the centre to monitor the use and marketing of TQUK 's logos and qualifications on their own materials as well as on those of any re-sellers or third parties that they may use. TQUK should be made aware of relationships with re-sellers or third parties including

any additional websites that the centre will use in addition to their own website. If this information is changed TQUK should be notified. TQUK is required to monitor centre's websites and materials to ensure that learners are not being misled.

If a centre is no longer a TQUK recognised centre it must immediately discontinue the use of TQUK's logo, name and qualifications.

The TQUK and Class Of Your Own Partnership

'Design Engineer Construct! The Digital Built Environment' qualifications have been developed from the Design Engineer Construct! [®] (DEC) Learning Programme, created by social enterprise Class Of Your Own[®] Limited (COYO).

COYO has licensed the Intellectual Property Rights in the DEC Learning Programme to TQUK, on an exclusive basis, for incorporation into the TQUK/COYO Qualifications framework, using approaches, methods and formats agreed with COYO, for the exclusive purpose of the Parties collaborating in the provision of the TQUK/COYO Qualifications to Centres and learners in the UK.

Qualification Suite

The Design Engineer Construct! The Digital Built Environment suite of qualifications has been developed from the Design Engineer Construct! ® Learning Programme developed by Class Of Your Own Limited to support the Government's 'Building Schools for the Future' school building programme. The purpose of the programme is to develop awareness of the career opportunities for professionals who work in Architecture, Engineering and Construction ('AEC') sectors and bring real-world applications to core subjects.

The Design Engineer Construct! ® Learning Programme (now commonly known as 'DEC!') has gained a solid reputation as "the most innovative, challenging and relevant secondary school curriculum development in recent years", championed by respected leaders, and referenced in numerous national reports (see Useful Websites and Resources).

DEC! aims to address the serious lack of young technical and professional Built Environment talent through the delivery of a dedicated curriculum subject, which develops a range of skills and knowledge fundamental to successful engagement in an exciting 21st Century digital industry, creating a clear awareness of the range of excellent career opportunities in Architecture, Engineering and Construction ('AEC').

The themes of social, environmental and economic sustainability run throughout the programme, and learners discover how to minimise their own, and their communities, impact on the planet through role play and project-based learning. They understand the value of inclusivity and diversity, designing for a world where everyone matters.

The DEC suite integrates creativity and applied science, technology, engineering and mathematics in the context of the Digital Built Environment, within the context of recognised qualifications across three progressive levels:

- TQUK Level 1 Certificate in Design, Engineer Construct! The Digital Built Environment (RQF)
- TQUK Level 2 Certificate in Design, Engineer Construct! The Digital Built Environment (RQF)
- TQUK Level 3 Certificate in Design, Engineer Construct! The Digital Built Environment (RQF)
- TQUK Level 3 Diploma in Design, Engineer Construct! The Digital Built Environment (RQF)

The technical awards at Level 1 and 2 give learners an insight into the industry. The TQUK Level 3 Diploma in Design, Engineer Construct! The Digital Built Environment (RQF) explores the industry further and is designed specifically to be delivered alongside an additional subject with 3 A Levels at lower 6th. The rationale for learners taking this qualification is to enable access to higher education institutes and higher and degree apprenticeships. Learners may also begin studying this qualification in year 13 to support an application to university to study a relevant degree course.

The TQUK Level 3 Certificate in Design Engineer Construct! The Digital Built Environment (RQF) is a shorter qualification which requires completion of three out of the five available units which might be more relevant to learners who are working towards more A levels and would like to participate in an applied learning option.

Qualification Purpose

Qualification regulator	This qualification is regulated by Ofqual in England, sits on the Regulated Qualifications Framework (RQF) and is listed on the Register of Regulated Qualifications http://register.ofqual.gov.uk/4 This qualification is equivalent to Level 4 on the European Qualifications Framework (EQF). Further information about the EQF can be found at: http://ec.europa.eu/eqf/home_en.htm This qualification is regulated by SQA in Scotland and sits on Scottish Credit and Qualifications Framework (SCQF).
Qualification type	This qualification has been submitted to the Department of Educations as a Technical Awards. Technical awards are high quality level 1 and 2 qualifications that equip 14 to 16-year olds with applied knowledge and practical skills. This qualification may be included in the 2020 Performance Tables subject to DfE approval.

Qualification Number	603/1991/4		Qualification registration period	2 Years	
Qualification operational start date	01 September 2017		Qualification review date	30 September 2019	
Qualification size	Guided Learning Hours	120	Total Qualification Time/Notional Learning	160	
	Directed Study Hours	40	RQF Credit Value/SCQF Credit Point[1]	16	

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[1] The credit value, where given, for the qualification is determined by TQT, as one credit corresponds to 10 hours of learning.

Qualification Overview

The purpose of the TQUK Level 2 Certificate in Design Engineer Construct! is to recognise learning at Level 2 relevant to digital building design, engineering and construction, with an emphasis on social, economic and environmental sustainability. It is suitable for learners who are interested in pursuing technical and professional careers in the Built Environment, providing them with a solid understanding of the people and processes involved in the development and delivery of building projects.

Qualification Audience

Learners and entry requirements
This qualification is suitable for learners who are interested in pursuing technical and professional careers in the Digital Built Environment, providing them with a solid understanding of the people and processes involved in the development and delivery of building projects. The qualification is suitable for learners in secondary education and above and are accessible in secondary schools, University Technical Colleges, Further Education Colleges, International Schools and other educational institutions.

There are no specific entry requirements however learners should have literacy and numeracy at minimum of level one.

This qualification is suitable for learners aged 16 years and above.

Learner progression opportunities
Successful learners can progress through the DEC! suite, to Level 3 Design, Engineer Construct! The Digital Built Environment, often combined with traditional A levels due to its UCAS points status, or other vocational qualifications, advanced apprenticeships and then to Higher Education institutions to study Architecture, Engineering, Surveying and other Construction related Higher National Diploma and Degree level courses.

Qualification Objective

The qualification objective is to provide a benefit to learners by preparing learners to progress to a qualification in the Digital Built Environment but at a higher level. This qualification also serves as a benefit to learners as some learners may choose to use this to prepare them for employment in the Digital Built Environment. The TQUK Level 2 Certificate in Design Engineer Construct! The Digital Built Environment further develops the skills, knowledge and behaviours, introduced in the Level 1 qualification, which are required for successful engagement in the professional aspects of the digital built environment. Learners will develop an understanding of key professional roles and responsibilities in design, engineering and construction. Learners are required to demonstrate scientific and mathematical knowledge and understanding in the context of the built environment.

The qualification includes a wide range of general knowledge, understanding and competences which support progression routes to Level 3 that will benefit any young person aspiring to progress to a professional career.

Qualification structure

This qualification consists of six mandatory units. Learners must successfully complete all six mandatory units to achieve the qualification. Unit specifications are available upon request from TQUK.

Unit Title	Unit ref.	GL[2]	Directed[3] Study	Unit Credit
Defining a sustainable construction project	H/615/8831	40	10	5
Developing a sustainable construction project	K/615/8832	30	10	4
Delivering a sustainable construction project	M/615/8833	30	10	4
Evaluate a sustainable construction project	T/615/8834	20	10	3
Total Qualification Time	120			

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[2] GL: Guided learning hours under the direct supervision of a teacher.
[3] Directed study is defined as preparation, study or any other self-directed learning and the assessment portfolio.

Qualification support

Industry Bodies	
The qualification is formally supported by the following industry bodies; leaders in the Built Environment sector and represent some of the UK's most respected companies. These include:	Mott MacDonald Topcon Positioning Systems Laing O'Rourke Gardiner & Theobold Willmott Dixon Arup Happold Foundation BAM Balfour Beatty ICES Seddon The Survey Association
Professional Bodies and Specialist Organisations	
The qualification is formally supported by professional bodies and specialist organisations including:	• Royal Institution of Chartered Surveyors • Chartered Institute of Building • Chartered Institution of Civil Engineering Surveyors • UK BIM Alliance
Further and Higher Educational Establishments	
The qualification has specific support from the following further education providers:	• Atrium Studio • Heathcote School and Science College • St Ambrose Barlow RC High School and Sixth Form College • Clacton Coastal Academy • Norbury Manor Business and Enterprise College for Girls

Qualification Delivery

Centre Recognition

To offer any TQUK qualification each centre must be recognised by TQUK and meet qualification approval criteria. Qualification Approval must be confirmed prior to any assessment of learners taking place. It is essential that centres provide learners with access to appropriate support in the form of specialist resources.

The TQUK Centre Recognition process requires a centre to have in place a number of policies and procedures to protect the learners undertaking a TQUK qualification and the integrity of TQUK's qualifications. The policies and procedures will also support an approved Centre's quality systems.

Recognised centres must seek approval for each qualification they wish to offer.

The approval process requires centres to demonstrate that they have the resources, including staff, to deliver and assess the qualification.

Support from TQUK

Recognised centres will be able to access support from TQUK whenever necessary. External Quality Assurance activities will be undertaken on a regular basis. TQUK also offer recognised centres the service of a Client Relationship Officer whose role is to support centres with any administration queries or qualification support.

Centres will also be able to access support and resources from Class Of Your Own Limited,

Qualification Resources

Teacher/Assessor Requirements

TQUK recommend that teachers delivering and assessing the DEC suite of qualifications are qualified to degree level in a relevant subject and have experience of teaching a related subject area. Teachers are eligible to conduct assessment in accordance with their Qualified Teacher Status. We do recommend for those without QTS that the following qualifications are achieved prior to conducting assessment:

- Level 3 Award in Assessing Vocationally Related Achievement or
- Level 3 Certificate in Assessing Vocational Achievement and
- show current evidence of continuing professional development in assessment and quality assurance

Internal Standardiser Requirements

TQUK recommend that teachers quality assuring the DEC suite of qualifications are qualified to degree level in a relevant subject and have experience of teaching a related subject area. Teachers are eligible to conduct internal standardisation in accordance with their Qualified Teacher Status.

It is recommended that those who undertake Internal Standardisation who have not achieved QTS possess or are working towards a relevant qualification. This could include; D34/D35, V1, Level 4 Award in the Internal Quality Assurance of Assessment Processes and Practice, Level 4 Certificate in Leading the Internal Quality Assurance of Assessment Processes & Practice or equivalent. Internal standardisers are employed by an approved TQUK centre and must:

1. have relevant knowledge, experience, competencies and qualifications in the qualification they are internally standardising. This includes having a working knowledge of the requirements of the qualification, and a thorough knowledge and understanding of the role of tutors/assessors and internal standardisation.
2. undertake continuous professional development (CPD) to ensure they are up to date with work practices and developments in the qualifications they internally standardise.
3.   support tutors and assessors in their teaching and assessment respectively. They should also observe assessments.

Internal standardisers who do not hold one of the internal quality assurance qualifications listed above must follow the principles set out in Learning and Development NOS 11 - Internally monitor and maintain the quality of assessment.

It is best practice that those who do not hold QTS status and engage in internally standardisation also hold one of the following assessing qualifications or their recognised equivalent:

* Level 3 Certificate in Assessing Vocational Achievement, or
* A1 Assess candidate performance using a range of methods, or
* D32 Assess candidate performance and D33 Assess candidate using differing sources of evidence.

Centre facilities

The recognised centre is required to have one or more delivery sites which contain facilities to support the programme of learning and assessment. These must comply with health and safety regulations and have in place appropriate access arrangements. All training and/or assessment sites must include the following facilities:

* A practical space to be used for learning and assessment activities. This should contain multimedia facilities such as data projector and laptop, flipchart and pens.
* Model making facilities.
* A high specification IT suite and IT hardware (minimum requirements will be advised to each Centre).
* Industry standard software (advised to each Centre).

Examination facility requirements

The recognised centre is required to have access to examination facility requirements in accordance with the TQUK guidance found in the Centre Handbook and must have:

- minimum levels of outside noise
- no display material that may aid learners
- a reliable clock. Where two or more clocks exist, these must display the same time
- centre number and start and finish times of the exam clearly on display for learners
- seating arranged in a manner to prevent learners overlooking fellow learners, ideally on separate desks
- signs displayed to alert others to an exam in progress
- a secure room for the storage of examination question papers and other confidential materials prior to the exam and post exam.

Learning programme delivery, internal assessment and examinations should only take place in environmental conditions where the level of light and temperature are appropriate to the needs of learners.

Learning and assessment materials

Class Of Your Own® Limited are the leading technical experts in the education of the Digital Built Environment and provide a range of support solutions. These include:

- Class Of Your Own® Student Workbooks
- Class Of Your Own® Training Programmes
- Class Of Your Own® Resource Banks
- Class Of Your Own® Online Teaching Network Support
- Class Of Your Own® Bespoke Industry Engagement

The assessment materials have been externally set by TQUK as the awarding organisation and are fully aligned to the qualification. The list of materials includes:

- TQUK Learner Assessment Brief (LAB)
- TQUK Learner Attainment Record (LAR)
- TQUK Teaching, Assessing and Quality Assurance Approach (TAQAA)
- TQUK Sample Exam Paper
- TQUK Sample Exam Marking Guidance

Qualification Coordination

Learner recruitment

The recognised centre is required to advertise the qualification in an appropriate manner, ensuring the expectations of learners are managed and the fair recruitment and initial assessment of learners complied with. This includes:

- appropriate use of the awarding organisation's logo
- appropriate use of the awarding organisation's name
- appropriate and correct use of the full qualification title
- confirmation of the correct qualification accreditation number
- accurate advertising of the complete cost of completing the qualification, and any other associated fees
- appropriate and correct reference to any confirmed or potential funding opportunities
- appropriate marketing of the delivery model and time expected of a typical learner to complete the learning programme, undertake assessment and obtain a certificate.
- appropriate communication of the facilities and resources belonging to the location where learning and assessment will take place
- evidence to show that the recognised centre only registers learners for the qualification where they reasonably expect them to be able to complete the qualification

Initial Assessment requirements

Centres should ensure that any learner registered on a TQUK qualification undertakes an initial assessment to ensure the right learners are registered onto the qualification. The initial assessment should be used to inform a teacher on the level of the learner's current knowledge and/or skills and to establish a baseline. Initial assessment can be undertaken by a teacher in any form suitable for the qualification to be undertaken by the learner. It is the centre's responsibility to make available forms of initial assessment that are valid, applicable and relevant to the qualifications. The outcomes of the process inform:

- Early judgements about the learner
- The focus and level of learning
- The skills and needs that will be developed and supported

A review of a learner's prior achievements, well-managed interviews and diagnostic tests are all suitable form of initial assessment. In doing so it is important to understand the learners preferred the style of learners to ensure that the applied route is relevant to their needs.

Initial assessment and learner pre-requisites

The recognised centre is required to conduct an initial assessment of learners to ensure that pre-requisites to registration and certification are considered and outcomes recorded during the application process. Prior to registration learners are required to:

- Be accurately identified
- Be at least 14 years of age
- Be able to communicate effectively in English (listening, speaking, reading and writing must all be considered)

There are no additional pre-requisites to certification other than the successful completion of all learning outcomes and assessment criteria having successfully completed the portfolio of evidence and the invigilated written exam.

Initial assessment and access arrangements

The recognised centre is required to conduct an initial assessment of learners to consider barriers to access in accordance with the Equality Act 2010 and its protected characteristics. Barriers have been identified in order to preserve the integrity of the qualification, the technical requirements and duty of care. These include:

Age: individuals under the age of 16 are not permitted to undertake this qualification. As a result, no adjustments to this barrier can be applied.
Race: individuals who do not speak English to an appropriate standard for regulatory purposes when registered in England. In such cases, reasonable adjustments will not be applied.
Disability: individuals with mental or physical or learning disabilities may find some of the competencies difficult and/or dangerous to their wellbeing.

Reasonable adjustments should be requested in accordance with the *TQUK Access Arrangements Policy w*here learners have declared disability, pregnancy or maternity barriers. No other barriers to access in accordance with the protected characteristics have been identified.

Pre-Course Information requirements

All learners should be given appropriate pre-course information, advice and guidance regarding any TQUK qualifications. The information should include an explanation about the qualification the form of the assessment and any resources needed to undertake the qualification.

Learner Registration requirements and tracking

Once approved to offer a qualification the centre should register learners before any assessment can take place. Recognised centres must follow TQUK's procedures for registering learners. These can be found in the TQUK centre handbook.

TQUK and Class Of Your Own® will track the achievements of learners, and their progress into higher education, further education or work settings for the purpose of ensuring the qualification remains relevant and valued by industry and educational bodies. Class Of Your Own will collect this data on behalf of TQUK from school and college administration teams. Learners will be asked upon registration for their permission for this data to be shared between Class Of Your Own and TQUK. This data will be used to submit reports to the Department of Education on a regular basis, in line with the requirements of the *Technical and Applied qualifications for 14 to 19 year olds* document.

Qualification Delivery Programme

The qualification is designed to ensure that all learning and assessment is completed within completed within two years. It has been developed from the Design Engineer Construct! ® Learning Programme developed by Class Of Your Own® to support the Government's 'Building Schools for the Future' school building programme. The purpose of the programme is to develop awareness of the career opportunities for professionals who work behind the scenes in the Architecture, Engineering and Construction ('AEC') industries and bring real-world applications to core subjects. The learning programme is designed to encompass all learning outcomes and is designed to be delivered through a combination of innovative theory and practical workshops.

Guided learning and Notional Learning requirements (England RQF)

Guided Learning Hours are the hours that a learner will spend during workshops and under the supervision of their tutor. The expected guided learning hours for this qualification is 160.

Directed study requirements

Learners are expected to study and complete aspects of their assessment portfolio in their own time. This additional time is expected to be approximately 120 hours over the cycle of the programme.

Notional Learning hours (Scotland SCQF)

It is advisable that 160 hours be apportioned to classroom-based teaching, and 120 hours to guided self-directed study.

Class of Your Own Limited, as the leading industry experts, have collaborated with teachers to produce an example delivery programme aligned to the qualification. This is customisable to meet the needs of each centre and considers all learning outcomes, the assessment strategy and the guided and extended study requirements. This is available on request.

Qualification Assessment Framework

Assessment Strategy

The qualification is assessed by a combination of an

- internally assessed and externally moderated portfolio (40%)
- externally set and externally marked examination (60%).

The externally set and marked exams will take place on a date published in advance by TQUK.

Dates for submission of work for standardisation and moderation will be published alongside dates for the exams.

The externally set and externally marked examination requires learners to sit the exam in conditions as set out in the TQUK Exam and Invigilation Procedure in the TQUK Centre Handbook. The exam will test learners on the knowledge assessment criteria identified in the unit tables. Where an assessment criterion has been identified as 'knowledge' the exam will test general knowledge of a learner on this topic where the portfolio will show the application of this knowledge in a specific context. The Exam serves as the synoptic element of the assessment in accordance with DfE requirements.

Unit Title	Internal assessment	External assessment
Defining a sustainable construction project	Project-based portfolio	Invigilated written synoptic exam
Developing a sustainable construction project	Project-based portfolio	Invigilated written synoptic exam
Deliver a sustainable construction project	Project-based portfolio	Invigilated written synoptic exam
Evaluate a sustainable construction project	Project-based portfolio	Invigilated written synoptic exam
Assessment grade weightings	Total: 40% of the total grade	Total: 60% of the total grade

The qualification is graded with grades A*/A/B/C. The overall grade for the qualifications is calculated using a points-based system. A point score is awarded for each assessment component (exam and portfolio), before being weighted, combined and translated into a grade.

Assessment Marking Strategy

Internal assessment portfolio marking

Allocating task marks

The internal assessor will mark the portfolio tasks in accordance with the clear levels of attainment contained in the assessment brief. Each attainment level per task is allocated a mark. Each task is eligible to achieve between 1 – 4 marks. Less than 1 constitutes a fail in that task and therefore in that unit.

Allocating unit marks and points
The marks for each task per unit are added together in line with the attainment levels.

Unit task attainment score					
Task attainment score	0	1	2	3	4
	Fail	C	B	A	A*

The overall task score per unit is then aggregated by dividing the total unit score by the number of tasks:

Unit marking scale (three tasks per unit)						
Unit 1 combined task score (X4 tasks)	0	4	8	12	16	Score / 4 = X
Unit 2 combined task score (X3Tasks)	0	3	6	9	12	Score / 3 = X
Unit 3 combined task score (X2 tasks)	0	2	4	6	8	Score / 2 = X
Unit 4 combined task score (x3 Tasks)	0	2	4	6	8	Score / 2 = X
Unit Points	Fail	C	B	A	A*	

The aggregated unit score is then allocated points for each unit as below.

Unit marking scale					
Unit score scale	0-3	4-6	7-9	10-12	13-16
Grade	Fail	C	B	A	A*

Portfolio Mark and Grade

The unit points are then added together to create an overall grade for the portfolio for submission to the awarding organisation.
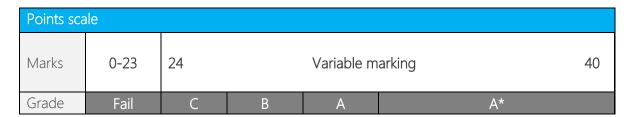
Portfolio marking scale					
Combined unit score	0	4-6	7-9	10-12	13-16
Portfolio Grade	Fail	C	B	A	A*

The learner attainment record is designed in a way to lead the assessors though this process. The portfolio points are then submitted to TQUK.

External exam marking

The TQUK external assessors are required to mark the exam in accordance with the pre-standardised mark scheme. All papers are then subject to the application of variable marking boundaries in order to maintain comparable standards over time.

There is a minimum pass mark per unit of 6 marks. Learners are eligible to achieve up to 10 marks per unit. Variable marking boundaries are then applied to each paper that achieved the minimum pass mark.

Points scale					
Marks	0-23	24	Variable marking		40
Grade	Fail	C	B	A	A*

Calculating the qualification grade

The grade from the portfolio and the grade from the exam are converted into points.

Grade	Fail	C	B	A	A*
Points	0	1	2	3	4

The portfolio and exam points are then weighted as follows:

- 40% Portfolio: Points X 0.4 to weight the portfolio score
- 60% Exam: Points X 0.6 to weight the exam score

Weighted points are added to produce a Final Points Score. These points used to determine the overall grade for the qualification.

Grade	Points
A*	16
A	12-15
B	8-11
C	4-7
Fail	0-3

All assessments are required to have a minimum of Grade E awarded in order for the learner to achieve a final grade. Learners who do not reach a minimum of Grade E for all assessments will not be awarded the qualification.

Special Consideration requirements

The recognised centre is required to ensure all learners who are disadvantaged, unable to complete the full learning programme due to emotional or physical difficulties, or subject to any adverse circumstances during their registration period are made aware of and able to access and request specification consideration in accordance with the *TQUK Access Arrangements Policy*.

Re-assessment requirements

Internal assessment portfolio resubmission
Learners who are unsuccessful in any unit of the internal assessment are offered a maximum of one opportunity to resubmit the evidence associated with that unit within their period of registration.

Learners are not eligible to be offered feedback on their original internal assessment portfolio to prevent learners who have not passed from being given an unfair advantage. Learners will only be permitted one internal reassessment opportunity per failed assessment.

Externally assessed exam resits
External reassessment requires learners to retake the examination within in the TQUK Examination Timetable. Learners will be permitted one external reassessment opportunity per failed examination.

Centres may be required to pay an additional reassessment fee per learner. All reassessments must be conducted in accordance with the assessment specification.

Qualification Quality Control

Internal Standardisation

The recognised centre is required to have in place an internal standardisation strategy which is directly related to the internal moderation of the portfolios and includes strategic objectives which require:

- all personnel with internal quality assurance responsibilities are suitably qualified to undertake this role and have not had involvement in the training or assessment at a programme where they are conducting verification activities
- a selected sample of learner evidence and assessor feedback from 25% of registered learners or a minimum of five learners across the rank order is internally standardised from 100% of the programmes authorised.
- all assessors and all activities within the portfolios are standardised across all active assessment sites, over a twelve-month period
- standardisation meetings are conducted annually and are focussed on the assessment and internal verification. Ideally, this would progress from unit to unit across years.
- internal standardisation must adopt a risk-based approach and those assessors and assessments that are perceived as higher risk experience greater interventions and vice-versa.

External Quality Assurance

External Quality assurance will be undertaken by TQUK to ensure that centres are satisfying TQUK quality assurance compliance with the requirements associated with their TQUK recognised centre status and formal written agreement. The external quality assurers will also conduct physical visits or remote reviews in order to verify the delivery, assessment and internal quality assurance of the Design, Engineer, Construct suite of qualifications.

External Moderation – portfolio

Each scheduled exam windows will have a corresponding window in which portfolios will be quality assured by TQUK prior to confirmation of the final grade. Prior to this window, all assessment and Internal Quality Assurance activities related to the portfolios will need to be completed by the centre and the provisional marks and grades reported to TQUK. TQUK will then use this information to arrange an External Quality Assurance activity with the centre.

This external quality assurance process is intended to confirm the marks which the assessors have awarded to the learners for individual assessments and to ensure that the Internal Quality Assurance procedures and outcomes are in line with the expectations of TQUK external quality assurance team. It is possible that the result of these External Quality Assurance checks will result in the adjustment of marks awarded by individual assessors. It is expected that the centre IQA will already have taken a view on the marks awarded by assessors and made adjustments where they see fit.

External Moderation – Exam

TQUK will conduct external moderation on the exam scripts which are completed by learners. This moderation will occur in several stages from the marking of the scripts submitted by all learners in the given exam window through to the final awarding and confirmation of grades by TQUK.

Unit Specification

Unit 1	
Title:	Defining a sustainable construction project H/615/8831
Level:	2
Credit value:	5
Guided learning hours:	40

Learning outcomes The learner will:		**Assessment criteria** The learner can:	
1.	Understand a client's needs	1.1	Identify the contextual needs of a client
		1.2	Record project requirements and client expectations
		1.3	Understand the requirement to establish a budget in relation to the agreed client's needs
2.	Be able to formulate a project brief	2.1	Outline the functional requirements of the project
		2.2	Establish quality objectives for the project
		2.3	Set the sustainability aspirations of the project
3.	Understand constraints on the project	3.1	Identify constraints associated with the site location and present solutions
		3.2	Test initial ideas against planning protocol
		3.3	Explain the principles of legislation relevant to the project
		3.4	Carry out a feasibility study and present the results
		3.5	Make a judgement on project viability based on evidence

		3.6	Explain how the building design helps minimize energy use
4	Be able to draft a project plan	4.1	Create a draft project plan
		4.2	Match project planning to the human resources of the team
		4.3	Create an Organogram for the project
		4.4	Forecast the lifespan of the completed project
		4.5	Forecast facilities management costs
		4.6	Take account of environmental considerations in planning the project
Suggested evidence, advice and guidance available in the 'Criteria and Learning Outcomes Advice and Guidance document'.			

Unit 2	
Title:	Developing a sustainable construction project K/615/8832
Level:	2
Credit value:	4
Guided learning hours:	30

Learning outcomes The learner will:		Assessment criteria The learner can:	
1.	Be able to develop a feasible proposal from a needs analysis	1.1	Prepare concept diagrams to describe and communicate ideas
		1.2	Present the quality of the proposal to a client
		1.3	Communicate the concept design to the project team
		1.4	Identify procurement options related to key elements of the project
2.	Be able to produce technical support collateral for a project	2.1	Prepare 3D representations of outline information
		2.2	Utilise the 3D environment to test the design in virtual locations
		2.3	Use quantitative methods to establish the energy requirements, and a lighting strategy
		2.4	Prepare detailed, scaled drawings that can form the basis of a planning application
		2.5	Describe the project in writing to form the basis of a planning application
		2.6	Produce a financial model of the budget that aggregates the elemental costs of the project
3.	Be able to support development of a project concept	3.1	Explain the importance of compatibility between existing infrastructure and the project proposals
		3.2	Explain the environmental and climate change reduction strategies

		3.3	Monitor the execution of the plan to ensure compliance with client requirements, taking appropriate action where necessary
		3.4	Establish strategies for the proposed construction that support health and safety, occupancy, management and operation
		3.5	Relate building design specification to energy efficiency
		3.6	Inform planning through collaborative working groups

Assessment Guidance:
Suggested evidence, advice and guidance available in the 'Criteria and Learning Outcomes Advice and Guidance document'.

Unit 3		
Title:	Delivering a sustainable construction project M/615/8833	
Level:	2	
Credit value:	4	
Guided learning hours:	30	
Learning outcomes The learner will:	Assessment criteria The learner can:	
1. Be able to deliver a project	1.1	Coordinate a design proposal to ensure mistakes are avoided
	1.2	Identify potential problems at an early stage and take appropriate action
	1.3	Identify needs that require specialists from outside the team
	1.4	Monitor progress in consultation with peers
	1.5	Ensure the project is developed on time and to budget
2. Be able to respond to technical issues	2.1	Use a 3D model to test the design
	2.2	Validate the design against the brief using a technical investigation
	2.3	Ensure that the project complies with building regulations as it progresses
	2.4	Explain how the building works in practice using quantitative monitoring
	2.5	Review progress and reflect on decisions

		2.6	Consult and respond appropriately to peer review

Assessment Guidance:
Suggested evidence, advice and guidance available in the 'Criteria and Learning Outcomes Advice and Guidance document'.

Unit 4		
Title:	Evaluating a sustainable construction project T/615/8834	
Level:	2	
Credit value:	3	
Guided learning hours:	20	
Learning outcomes The learner will:	**Assessment criteria** The learner can:	
1.	Be able to test the final design against original intentions	1.1	Explain how the building works and what users need to do to optimise performance
		1.2	Explain how well final outcomes meet original intentions
		1.3	Evaluate feedback and use it as a basis for improvements in future projects
		1.4	Analyse data and use it as evidence to inform evaluation
		1.5	Use data to forecast the long-term performance of the building
2.	Be able to transfer project evaluation to other contexts	2.1	Identify issues in existing familiar buildings
		2.2	Make recommendations to improve existing buildings
		2.3	Carry out a qualitative audit reporting on aesthetics and sensory experiences of users
		2.4	Present the building project to a professional audience
Assessment Guidance: Suggested evidence, advice and guidance available in the 'Criteria and Learning Outcomes Advice and Guidance document'.		

Websites and Resources

Design Engineer Construct!: http://designengineerconstruct.com

Royal Institution of Chartered Surveyors: http://www.rics.org

Chartered Institute of Building: http://www.ciob.org

Royal Institution of British Architects: https://www.architecture.com

Institution of Civil Engineers: https://www.ice.org.uk

Institution of Structural Engineers: https://www.istructe.org

Chartered Institute of Civil Engineering Surveyors: https://www.cices.org

Chartered Institute of Building Services Engineers: http://www.cibse.org

Building Information Modelling Task Group (UK): http://www.bimtaskgroup.org

Health and Safety Executive www.hse.gov.uk

Office of Qualifications and Examinations Regulation www.ofqual.gov.uk

Register of Regulated Qualifications http://register.ofqual.gov.uk

Health and Safety Executive NI https://www.hseni.gov.uk/

"Building On Brexit" All Party Parliamentary Group for Excellence in the Built Environment: http://cic.org.uk/admin/resources/appgebereport-3.pdf

"Modernise or Die" The Farmer Review: http://www.cast-consultancy.com/news-casts/farmer-review-uk-construction-labour-model-3/

"Ten Point Plan" Laing O'Rourke: http://www.laingorourke.com/~/media/lor/files/lor-skills-final_vertical-layout.pdf

"Future of Construction" Product Manufacturing report: http://www.constructionproducts.org.uk/publications/corporate-and-industrial/the-future-of-construction-product-manufacturing/

Transport Infrastructure Skills Strategy: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/495900/transport-infrastructure-strategy-building-sustainable-skills.pdf

Construction 2025 Government Strategy:
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/210099/bis-13-955-construction-2025-industrial-strategy.pdf

"No More Lost Generations" Cross Parliamentary report:
http://www.ciob.org/sites/default/files/No%20more%20lost%20generations%20report.pdf

For further details regarding approval and funding eligibility please refer to the following websites:

Skills Funding Agency http://skillsfundingagency.bis.gov.uk/ for public funding information for 19+ learners in England

Learning Aim Reference Service (LARS)
https://www.gov.uk/government/publications/individualised-learner-record-ilr-sources-of-data

DAQW – Database of Approved Qualifications www.daqw.org.uk for public funding in Wales

Department for the Economy https://www.economy-ni.gov.uk/ or Department of Education www.deni.gov.uk for public funding in Northern Ireland.

Approval

For further details regarding approval, please refer to the following websites:

Regulated Qualifications Framework (RQF) in England (and includes vocational qualifications in Northern Ireland): https://register.ofqual.gov.uk

Scottish Credit and Qualifications Framework (SCQF): http://scqf.org.uk

Education and Skills Funding Agency (ESFA) and Learning Aim Reference Service (LARS): https://hub.fasst.org.uk/Pages/default.aspx