City & Guilds Level 3 Technical Occupational Entry in Bricklaying (Diploma) (7255-53)

Version 1.0 (January 2026)

Qualification Handbook

Qualification at a glance

Subject area	Construction
City & Guilds number	7255
Age group approved	16–18, 19+
Entry requirements	N/A
Assessment	Multiple-choice question paper(s) Practical assignment
Grading	Pass/fail
Approvals	Full approval required
Support materials	Sample assessments (SAMs)
Registration and certification	Consult Walled Garden/Online Catalogue for last dates
Occupational Standard(s)	ST1334 Craft Bricklayer

Title and level	City & Guilds qualification number	Regulatory reference number	GLH	TQT
City & Guilds Level 3 Technical Occupational Entry in Bricklaying (Diploma)	7255-53	610/6210/8	505	660

Version and date	Change detail	Section
1.0 January 2026	Initial version	All

Contents

1 Introduction

What is this qualification about?

Area	Description
Who is the qualification for?	This qualification is for those individuals who are looking to work in the construction industry, specifically in bricklaying. Learners will gain an understanding of the knowledge, skills and behaviours that are important when working as a bricklayer. This qualification is suitable for those aged 16–18 and 19+.
What does the qualification cover?	This qualification aligns to the knowledge, skills and behaviours in the ST1334 Craft Bricklayer Occupational Standard.
What opportunities for progression are there?	Following successful completion of this qualification, learners will be qualified to work as a craft bricklayer with entry level competence or can progress onto further learning (L4 site supervisor).
Why choose this qualification?	The City & Guilds Level 3 Technical Occupational Entry in Bricklaying (Diploma) 7255-53 is a high-quality qualification that supports entry into an occupation at Level 3 by providing as close to full occupational competence as is possible in a classroom-based setting.

Content coverage and mapping

Occupational Standards

This qualification(s) has been developed to cover as many of the knowledge, skills and behaviours (KSBs) in the relevant Occupational Standard as it may be reasonable to attain by undertaking a course of education or training. Where KSBs in a relevant Occupational Standard cannot be reasonably obtained within a course of education or training in an educational setting, City & Guilds seeks the validation from credible employers to ensure that the qualification is fit for purpose.

The knowledge and skills content within this qualification has been amplified to reflect the KSBs. High level mapping to the KSBs in the Occupational Standard can be found in the Qualification Structure section. Detailed mapping at unit level can be found in Appendix 1 within this qualification handbook.

The table below shows the Occupational Standard the qualification aligns to:

Qualification	Occupational Standard title/reference
City & Guilds Level 3 Technical Occupational Entry in Bricklaying (Diploma)	ST1334 Craft Bricklayer

2 Employer engagement

City & Guilds would like to take this opportunity to thank all the employers, trade associations, professional bodies, providers, subject matter experts and consultants who have dedicated time to review and validate this qualification. These stakeholders have been used throughout the development and validation of this qualification to ensure that it meets the requirements of the Occupational Standard and the needs of the industry. Employer validation recognises the demand or likely demand for learners who have completed the Level 3 Technical Occupational Entry in Bricklaying (Diploma). This collaborative work is to ensure that a learner studying the Level 3 Technical Occupational Entry in Bricklaying (Diploma) has the best opportunities available to them as they progress through their career with a solid base as a starting point.

3 Qualification structure

Structure

To achieve the City & Guilds Level 3 Technical Occupational Entry in Bricklaying (Diploma) learners must achieve all units. All units are mandatory.

City & Guilds unit number	Unit title	GLH
Mandatory units		
301	Health, safety, welfare and the environment	75
302	Principles of construction	65
303	Principles of organising, planning and pricing of construction work	55
304	Constructing radial, battered brickwork and arches	160
305	Constructing decorative and reinforced brickwork	150

Total Qualification Time (TQT)

Total Qualification Time (TQT) is the number of notional hours which represents an estimate of the total amount of time that could reasonably be expected for a learner to demonstrate the achievement of the level of attainment necessary for the award of a qualification.

TQT comprises of the following two elements:

1) the number of hours that an awarding organisation has assigned to a qualification for guided learning
2) an estimate of the number of hours a learner will reasonably be likely to spend in preparation, study or any other form of participation in education or training, including assessment, which takes place as directed by – but, unlike guided learning, not under the immediate guidance or supervision of – a lecturer, supervisor, tutor or other appropriate provider of education or training.

Title and level	GLH	TQT
City & Guilds Level 3 Technical Occupational Entry in Bricklaying (Diploma)	505	660

4 Centre requirements

Approval

Full approval

To offer this qualification, new centres will need to gain both centre and qualification approval. Please refer to the document **Centre Approval Process: Quality Assurance Standards** for further information.

Centre staff should familiarise themselves with the structure, content and assessment requirements of the qualification before designing a course programme.

Resource requirements

Centre staffing

Staff delivering these qualifications must be able to demonstrate that they meet the following occupational expertise requirements. They should:

- be occupationally competent or technically knowledgeable in the area(s) for which they are delivering training and/or have experience of providing training (this knowledge must be to the same level as the training being delivered)
- have recent relevant experience in the specific area that they will be assessing
- have credible experience of providing training.

Continuing professional development (CPD)

Centres are expected to support their staff in ensuring that their knowledge remains current of the occupational area and of best practice in delivery, mentoring, training, assessment and quality assurance, and that it takes account of any national or legislative developments.

Physical resources

Centres must be able to demonstrate that they have access to the equipment and technical resources required to deliver this qualification and its assessment.

Materials:

- Facing bricks
- Blocks
- Lintels
- Training mortar

Equipment:

- Battery operated or petrol driven cut-off saw or table cutting saw.
- Bed/table cutter
- Preformed templates
- Personal protective equipment (PPE)
- Expanded metal lath (EML) reinforcement

Hand tools:

- Tape measure (3 m or 5 m)
- Straight edge
- Mortar spot board
- Scutch hammer/scutch chisel
- Stringline, line pins and line blocks
- Timber or steel profiles

- Spirit level (900 mm, 1200 mm and/or 1.8 m)
- Contrasting bricks
- Brick hammer
- Lump/club hammer and bolster
- Mortar chariot/joint raking tool
- Gun template (set required angle for practical assessments)
- Trammels and trammel heads for radius work
- Bricklaying trowel
- Pocket/torpedo/boat level

Ancillary:

- Brushes
- Wheelbarrow
- Gauge rod
- Shovel
- Buckets
- Builder’s square

Quality assurance

Approved centres must have effective quality assurance systems to ensure optimum delivery and assessment of qualifications. Quality assurance includes initial centre approval, qualification approval and the centre's own internal procedures for monitoring quality. Centres are responsible for internal quality assurance and City & Guilds is responsible for external quality assurance (EQA). All EQA processes reflect the minimum requirements for verified and moderated assessments, as detailed in the Centre Assessment Standards Scrutiny (CASS), section H2 of OFQUAL's General Conditions. For more information on both CASS and City & Guilds quality assurance processes visit: the What is CASS? and Quality Assurance Standards documents on the City & Guilds website.

Standards and rigorous quality assurance are maintained by the use of:

- internal quality assurance
- City & Guilds external quality assurance.

In order to carry out the quality assurance role, internal quality assurers (IQA) must:

- have appropriate teaching and vocational knowledge and expertise
- have experience in quality management/internal quality assurance
- hold or be working towards an appropriate teaching/training/assessing qualification
- be familiar with the occupation and technical content covered within the qualification.

External quality assurance for the qualification will be provided by the City & Guilds EQA process. EQAs are appointed by City & Guilds to approve centres and to monitor the assessment and internal quality assurance carried out by centres. External quality assurance is carried out to ensure that assessment is valid and reliable, and that there is good assessment practice in centres.

The role of the EQA is to:

- provide advice and support to centre staff
- ensure the quality and consistency of assessments within and between centres by the use of systematic sampling
- provide feedback to centres and to City & Guilds.

Learner entry requirements

City & Guilds does not set entry requirements for this qualification. However, centres must ensure that candidates have the potential and opportunity to gain the qualification successfully. It is recommended that a candidate has gained the knowledge and skills at Level 2 in Bricklaying prior to beginning this qualification.

Initial assessment and induction

An initial assessment of each learner should be made before the start of their programme to identify:

- if the learner has any specific training needs
- support and guidance they may need when working towards their qualification
- any units they have already completed or credit they have accumulated which is relevant to the qualification

- the appropriate type and level of qualification.

We recommend that centres provide an induction programme so the learner fully understands the requirements of the qualification, their responsibilities as a learner and the responsibilities of the centre. This information can be recorded on a learning contract.

Age restrictions

This qualification is approved for learners aged 16–18 and 19 or above.

Access to assessment and special consideration

City & Guilds has considered the design of this qualification and its assessments in order to best support accessibility and inclusion for all learners. We understand however that individuals have diverse learning needs and may require reasonable adjustments to fully participate. Reasonable adjustments, such as additional time or alternative formats, may be provided to accommodate learners with disabilities and support fair access to assessment.

Access arrangements are adjustments that allow candidates with disabilities, special educational needs and temporary injuries to access the assessment and demonstrate their skills and knowledge without changing the demands of the assessment. These arrangements must be made before assessment takes place.

The Equality Act 2010 requires City & Guilds to make reasonable adjustments where a disabled person would be at a substantial disadvantage in undertaking an assessment.

It is the responsibility of the centre to ensure at the start of a programme of learning that candidates will be able to access the requirements of the qualification.

Please refer to the JCQ access arrangements and reasonable adjustments and Access arrangements – when and how applications need to be made to City & Guilds for more information. Both are available on the City & Guilds website: http://www.cityandguilds.com/delivering-our-qualifications/centre-development/centre-document-library/policies-and-procedures/access-arrangements-reasonable-adjustments

5 Delivering the qualification

Inclusion and diversity

City & Guilds is committed to improving inclusion and diversity within the way we work and how we deliver our purpose which is to help people and organisations develop the skills they need for growth.

More information and guidance to support centres in supporting inclusion and diversity through the delivery of City & Guilds qualifications can be found here:

Inclusion and diversity | City & Guilds (cityandguilds.com)

Sustainability

City & Guilds is committed to net zero. Our ambition is to reduce our carbon emissions by at least 50% before 2030, and to develop environmentally responsible operations to achieve net zero by 2040 or sooner if we can. City & Guilds is committed to supporting qualifications that support our customers to consider sustainability and their environmental footprint.

More information and guidance to support centres in developing sustainable practices through the delivery of City & Guilds qualifications can be found here:

Our Pathway to Net Zero | City & Guilds (cityandguilds.com)

Support materials

The following resources are available for this qualification:

Description	How to access
Sample assessments	www.cityandguilds.com

6 Assessment

Summary of assessment methods

For City & Guilds Level 3 Technical Occupational Entry in Bricklaying (Diploma) candidates must successfully complete:

Assessment component	Assessment method	Description and conditions
350	Externally marked MCQ exam	This assessment covers unit 301. The multiple-choice question (MCQ) exam is externally set and externally marked and will be online only. The exam is designed to assess the candidate's depth and breadth of understanding across content in unit 301 (and should only be attempted following learner completion of this unit), using multiple-choice questions and will be sat under invigilated examination conditions. See JCQ requirements for details: http://www.jcq.org.uk/exams-office/ice---instructions-for-conducting-examinations The test specification shows the coverage of the assessment across the unit content. Sample assessment materials can be downloaded from the City & Guilds website. Live assessment will be delivered by the City & Guilds online platform e-volve.

Assessment component	Assessment method	Description and conditions
351	Externally marked MCQ exam	This assessment covers units 302, 303 and 305. The MCQ exam is externally set and externally marked and will be online only. The exam is designed to assess the candidate's depth and breadth of understanding across content in units 302, 303 and 305 (and should only be attempted following learner completion of these units), using multiple-choice questions and will be sat under invigilated examination conditions. See JCQ requirements for details: http://www.jcq.org.uk/exams-office/ice---instructions-for-conducting-examinations The test specification shows the coverage of the assessment across the unit content. Sample assessment materials can be downloaded from the City & Guilds website. Live assessment will be delivered by the City & Guilds online platform e-volve.
360	Practical assignment	This assessment covers units 304 and 305. The practical assignment is externally set and internally marked with external verification. The assignment is designed to assess the candidate's depth and breadth of knowledge, understanding and skills from across content in the qualification, at the end of their period of learning, and will be completed under supervised, controlled assessment conditions. See JCQ requirements for details: http://www.jcq.org.uk/exams-office/ice---instructions-for-conducting-examinations The test specification shows the coverage of the assessment across the qualification content.

Scheme of assessment overview

For City & Guilds Level 3 Technical Occupational Entry in Bricklaying (Diploma) candidates must successfully complete:

Candidates must complete all assessment components					
Assessment component	**Method**	**Duration**	**Marks**	**Marking approach**	**Grading**
350	On demand e-volve online MCQ	45 mins	30	Externally set and externally marked	Pass/fail
351	On demand e-volve online MCQ	55 mins	35	Externally set and externally marked	Pass/fail
360	Practical assignment	25 hours	N/A	Externally set and internally marked	Pass/fail

Assessment specifications

The assessment specifications outlined in the tables below highlights at high level the way that the qualification content will be assessed within the different assessment components.

Test: 350	**Duration: 45 minutes**		
Unit	**Outcome**	**Number of marks**	**Percentage %**
301	LO1. Understand health and safety in the workplace	20	67%
	LO2. Understand environmental management systems and standards	10	33%
	Total	30	100%

Permitted materials: None

Graded: Pass/fail

Pass mark: the pass mark for this examination is set at approx. 66% (20 marks)

This boundary may be subject to slight variation to ensure fairness should any variations in the difficulty of the individual assessment versions be identified.

Test: 351	Duration: 55 minutes		
Unit	**Outcome**	**Number of marks**	**Percentage %**
302	LO1 Understand the principles of building construction	15	43%
	LO2 Safe use and maintenance of construction tools	4	11%
303	LO1 Understand calculations and costings for construction activities	2	7%
	LO2 Understand planning requirements for construction activities	4	11%
	LO3 Understand the documentation used to communicate effectively in the construction industry	6	17%
305	LO2 Set out, construct and reinforce decorative brickwork features and panels	4	11%
	Total	35	100%

Permitted materials: None

Graded: Pass/fail

Pass mark: the pass mark for this examination is set at approx. 62% (22 marks)

This boundary may be subject to slight variation to ensure fairness should any variations in the difficulty of the individual assessment versions be identified.

Results processing of external assessments
City and Guilds will always strive to process and issue results as soon as possible. However, when a new version of the assessment is launched, candidate results will be held until we have received a representative number of completed exam scripts and completed an analysis of the live results to ensure that the test is producing valid and reliable outcomes and that the grade boundary is set correctly.

This is an important step to ensure that the pass mark set is a fair and accurate reflection of the pass standard.

As a result of this, please be aware that results may take up **27** working days. Once the pass mark has been confirmed, it will go back to instant results (ie on the Walled Garden within 48 hours).

If you have any specific queries please contact centresupport@cityandguilds.com for further information.

The table below highlights at a high level the practical assessment coverage within the **360** assessment.

Units	Task
304/305	Planning for the build
304/305	Complete geometrical setting out
304/305	Set out and build a sample panel

Permitted materials: Permitted materials will be given to candidates by centres

Graded: Pass/fail

Candidates must gain a pass in all tasks within the assignment to achieve a pass overall for this component.

The table below shows how assessment **component 360** is mapped to the units and learning outcomes, alongside the associated tasks.

Units	Outcome	Task
304	LO1 Plan to set out and construct radial and battered brickwork	1, 3
	LO2 Set out and construct brickwork curved on plan	3
	LO3 Set out and construct battered brickwork	3
	LO4 Set out and construct axed arches	2, 3
305	LO1 Plan to set out and construct decorative and reinforced brickwork	1, 3
	LO2 Set out, construct and reinforce decorative brickwork features and panels	2, 3
	LO3 Set out and construct obtuse and acute angles	3

Assessment objectives

The following assessment objectives are used within the MCQ exams and assessment components 350 and 351.

The weightings for how the assessment objectives are applied in the assessments are shown in the table below.

Assessment objective	Description	Weighting in Assessment 350
AO1a Demonstrate knowledge of the content	The ability to demonstrate basic recall of relevant knowledge in response to straightforward questioning.	12 marks – 40%
AO1b Demonstrate understanding of the content	The ability to demonstrate understanding of principles and concepts beyond recall of definitions.	18 marks – 60%
AO2 Apply knowledge and understanding of the content to different situations and contexts	Applying knowledge and understanding, taking the understanding of generalities and applying them to specific situations.	0 marks – 0%

Assessment objective	Description	Weighting in Assessment 351
AO1a Demonstrate knowledge of the content	The ability to demonstrate basic recall of relevant knowledge in response to straightforward questioning.	14 marks – 40%
AO1b Demonstrate understanding of the content	The ability to demonstrate understanding of principles and concepts beyond recall of definitions.	21 marks – 60%
AO2 Apply knowledge and understanding of the content to different situations and contexts	Applying knowledge and understanding, taking the understanding of generalities and applying them to specific situations.	0 marks – 0%

Availability of assessments

Assignment material availability will be communicated through the publication of a key date schedule. This schedule will include when assignment materials will be released to centres.

All assessments that are on e-volve are on demand and can be booked by the provider when the candidate is ready to be entered for the assessment.

Retakes/resits

Multiple-choice test(s)
Candidates who have failed an online multiple-choice test(s) assessment are permitted up to **four** resits of the assessments before re-registration is required to retake the qualification.

Assignment(s)
Candidates who have failed one or more tasks in the practical assignment, but have **not** met the conditions for the resubmission of evidence (detailed below and within the grading section of the Assessor Pack), will be advised to complete a further period of learning before then resitting fully, all tasks within a different version of the assignment. Candidates can resit a different version of the assignment up to a maximum of **three** times (total **four** attempts) before re-registration is required.

Resubmission of evidence
At the approval of the centre a candidate can resubmit evidence for an assessment if they have not met specific criteria required for a pass. This is intended to provide candidates who have broadly met the standard set with only minor gaps in their performance an opportunity to achieve the pass standard without a full resit. This must only be granted if the following conditions are met.

When can the resubmission of evidence process be used:

- There is evidence the candidate has not met the pass standard on specific assessment criteria.
- The candidate has demonstrated competency/capability to the required standard during a programme of study through formative assessments that can be evidenced.
- The candidate has met agreed deadlines and conditions for the assessment.
- The candidate and assessor have authenticated the evidence submitted.
- The resubmission of evidence has been agreed by the IQA.
- The resubmission of evidence process does not take place until a task has been completed, assessed and recorded.
- All evidence submitted as part of the resubmission process has been generated within the same assessment conditions as the first submission.
- All evidence submitted as part of the initial submission and resubmission is made available for external quality assurance as required.

When the resubmission of evidence process cannot be used:

- The candidate has not met agreed deadlines and not met the conditions for the assessment.
- The candidate has only partially completed a task or not attempted the assessment.
- The candidate and assessor have not authenticated the evidence submitted.
- The IQA does not agree that the candidate has met the conditions set out in the assessment to allow for a resubmission of evidence.
- Evidence is not available for external quality assurance as required.

If the resubmitted evidence does **not** meet the required standard for a pass, then the candidate will need to take a different assignment. Candidates can only resubmit evidence **once per version** of the assessment.

In cases where a candidate has attempted and resubmitted on **three** separate versions but has still not met the pass standard, they must undergo a period of additional study before being offered the opportunity to re-register and retake the qualification.

Please note that further information and guidance for centre assessors on the resubmission of evidence process will be found within the assessment materials of this qualification.

Recognition of prior learning

Recognition of prior learning (RPL) means using a person's previous experience or qualifications which have already been achieved to contribute to a new qualification. RPL can be used to exempt learners from areas of learning previously achieved but does not exempt them from assessment.

RPL is allowed and is also sector-specific.

7 Units

Structure of the units

These units each have the following:

- City & Guilds reference number
- title
- level
- guided learning hours (GLH)
- unit aim
- assessment type
- learning outcomes, which are comprised of a number of topics

8) supporting information.

Unit guidance for delivery

This qualification comprises a number of **units**. A unit describes what is expected of a competent person in particular aspects of their job.

Each **unit** is divided into **learning outcomes** which describe in further detail the knowledge and skills that a candidate should possess.

Each **learning outcome** has a set of **topics** (knowledge or skills) that are simple and concise statements that indicates to a learner something specific they will be learning in relation to the learning outcome. It should provide clarity to a learner at a high level on what they should be expecting to learn or be able to do about a specific area of the learning outcome.

The **content elements** sections define the 'depth and breadth' to which the teaching/learning must be delivered.

It is important that these sections define all the essential content that must be covered for learners to achieve the learning outcome. It is the information in this section that learners will be assessed on.

Unit 301 Health, safety, welfare and the environment

Unit level:	3
Guided Learning Hours (GLH):	75
Unit aim:	This is a **theory only** unit. This unit provides learners with an understanding of the way health, safety and welfare considerations are managed within the construction industry, in relation to the role of the employer and the employee. Learners will understand the safety techniques associated with safety control equipment, and will be able to identify types of incidents, mitigation methods and the characteristics of incident management techniques. The unit will enable learners to gain an understanding of the environmental management systems and standards that are used when completing construction work.
Assessment method:	MCQ exam
Links to Occupational Standard:	ST1334 Craft Bricklayer

Learning outcomes

1. Understand health and safety in the workplace
2. Understand environmental management systems and standards

Learning outcome 1

Understand health and safety in the workplace

Topics	Content elements
1.1 Health and safety regulations and guidance	1.1.1 The purpose of health, safety and welfare regulations and guidance: a) Regulations: i) Health and Safety at Work Act (HASWA) – primary piece of legislation covering occupational health and safety in Great Britain ii) Control of Substances Hazardous to Health (CoSHH) – chemicals, fumes, vapours, dusts, germs that cause diseases, gases, biological agents iii) Lifting Operations and Lifting Equipment Regulations (LOLER) – regulations that aim to reduce risk of injury from lifting equipment used at work iv) Manual Handling Operations Regulations (MHR) – transporting a load by hand, outlines the steps to good manual handling v) Reporting Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR) – Outlines the types of reportable dangerous occurrences in the workplace vi) Provision and Use of Work Equipment Regulations (PUWER) – Requires that any equipment provided for use at work must be suitable for the intended use vii) The Control of Asbestos Regulations – asbestos awareness viii) The Confined Spaces Regulations – Outlines procedures for working in confined spaces safely. ix) Working at Height Regulations (WAHR) – ensures work is properly planned and organised – considering competency of workers, risks assessed, appropriate work equipment is selected and used, and fragile surfaces are properly managed x) Electricity at Work Regulations (EAWR) – safe isolation/equipment checks for electrical safety. b) Guidance: i) fire safety – Fire Safety in Construction – HSG168 ii) fire extinguishers: five types: red/cream/blue/yellow/black

Topics	Content elements
	iii) safety signage and meaning: red – prohibition sign; yellow – warning sign; blue – mandatory sign; green – information iv) situational awareness: understanding of the environment, the people, objects and occurring events v) safe systems of work: Risk Assessment and Method Statements (RAMS) – driven by the risk assessment process that will identify risks, hazards and control measures that need to be implemented to undertake the works in a safe manner (control measure implementation and monitoring) vi) slips, trips and falls (control measure implementation to avoid incidents) vii) near miss reporting: all near misses that have the potential to cause harm, injury, damage or loss must be reported so interventions/mitigations can be put in place to prevent a potential accident in future. 1.1.2 The impact of health, safety and welfare regulations and guidance on role, role of the team and other construction trade, considering employee and employer responsibilities: a) Impact: i) control work practices ii) reduce accidents iii) reduce chance of litigation iv) ensure employee safety v) conformity across workplaces. b) Employer responsibilities: i. to ensure that a safe system of work is applied to all site activity to reduce potential risk with a structured management process that is compliant with health and safety regulations ii. provision to avoid accidents with site hoardings, signage, site traffic control systems iii. provision of site inductions iv. provision of PPE v. provision of toolbox talks vi. provision of training vii. provision for welfare viii. safe systems of work – risk assessments and method statements

Topics	Content elements
	ix. ensure compliance with HASWA and associated regulations x. ensure compliance with Construction (Design and Management) Regulations (CDM) xi. ensure supervision and management xii. ensure site records are maintained and acted upon for near misses, hazards and accidents. xiii. comply with Health and Safety requirements – reporting accidents to Health and Safety Executive (HSE) xiv. record keeping, documentation generation and training xv. psychological wellbeing – prevention of poor wellbeing, employers must grant access to mental health professionals for employees through medical professionals to offer advice, support and guidance or referral to specialist xvi. employers to ensure equality, diversity and inclusion (EDI) in the workplace through provision of facilities, staff training and reporting procedures. c) Employee responsibilities: i) work safely complying with risk assessments, method statements and safe systems of work ii) consider the implications of their own actions in relation to the health and safety of themselves and others iii) work safely alongside others and other trades iv) undertake required training/Continuous Professional Development (CPD) opportunities v) report hazards, accidents and near misses vi) follow organisational procedures, polices and practice vii) access mental health advice, support and guidance where necessary and recognise when others may require support.
1.2 Safety control equipment and safety techniques	1.2.1 The uses of safety control equipment and the safety techniques associated with each: a) Safety control equipment: i) respiratory protective equipment (RPE) – respirator filtered masks: FFP1, FFP2, FFP3 ii) breathing apparatus (air provided from a source): personal protective equipment – PPE classification.

Topics	Content elements
	b) Safety techniques: i) dust suppression and solvents – compliance with CoSHH ii) water control procedures and techniques – use of water bottles and hoses iii) water cooled reservoir – clipper saws iv) use of eye and face protection v) use of head and body protection vi) use of hearing protection.
1.3 Types of incidents, mitigation methods and incident management techniques	1.3.1 Types of incidents, mitigation methods and the characteristics of incident management techniques: a) Types of incidents: i) accident (an undesirable event that normally results in harm, injury, damage or loss) ii) near miss (an undesirable event that has the potential to cause harm, injury, damage or loss) – near misses should be reported so interventions/mitigations can be put in place to prevent a potential accident iii) fatal and non-fatal injuries. b) Types of incident mitigation methods and when to carry them out: i) risk assessment and method statements (RAMS) ii) safe systems of work iii) site inductions iv) toolbox talks. c) Characteristics of incident management techniques: i) investigation into an incident to put interventions in place to prevent incident reoccurrence ii) the five steps of incident management: identification, reporting, investigation, corrective action, prevention.
1.4 Risk assessments and method statements	1.4.1 The purpose of safe systems of work; RAMS used in brickwork: a) Purpose of a safe system of work: i. formal procedure that ensures tasks are carried out safely ii. prevents accidents and injuries by identifying hazards and controlling risks iii. ensure compliance with health and safety legislation

Topics	Content elements
	iv. promote consistency in how tasks are performed safely v. protect workers and others on site, including visitors and the public. b) Purpose of method statement: i. outlines how required tasks will be carried out safely and efficiently ii. identifies how to carry out required tasks in a specific order from start to finish iii. identifies tools and equipment to be used for the required tasks iv. advises about the control measure requirements (identified in the risk assessment) for the required tasks v. outlines the roles and responsibilities of workers for the required tasks. c) Purpose of a risk assessment: i. identify and evaluate risks before work begins ii. determine who might be harmed and how iii. recommend control measures iv. fulfil legal duties under the HASWA and related regulations. d) How risk assessments and methods statements work together to form a safe system of work: i. risk assessments identify the dangers ii. method statements describe how to do the required tasks safely iii. together they ensure that the required bricklaying tasks are carried out with minimal risk. 1.4.2 The five steps required when managing typical risks and hazards and the associated monitoring and control measures for work practices and tools: a) The five steps: i) identify hazards ii) assess risks iii) identify control measures iv) recording v) monitoring and reviewing progress. b) Hazards: i) sharp objects

Topics	Content elements
	ii) loose materials iii) poorly managed working environment iv) lifting and carrying v) working at height vi) exposure to hazardous substances vii) repetitive use of vibrating machinery. c) Risks: i) cuts/lacerations ii) falling objects iii) slips, trips and falls iv) musculoskeletal injury v) falling from height vi) dust/fumes inhalation vii) hand/arm vibration. d) Control measures: i) PPE ii) training – toolbox talks/CPD iii) good housekeeping iv) RPE v) dust extraction (LEV) vi) supervision vii) safe isolation procedures viii) safe handling of hazardous materials ix) safe disposal of waste x) maintenance of equipment xi) safety signage. 1.4.3 The information required to complete a risk assessment and its purpose: a) Information: i) risk rating – high, medium, low ii) persons affected iii) actions to take to control risk and responsibility.

Learning outcome 2

Understand environmental management systems and standards

Topics	Content elements
2.1 Pollution and control measures	2.1.1 Types of pollution and characteristics of their control methods: a) Noise: i) undertaking works with a consideration to the removal processes that include high impact and other noise generating process ii) hours of working and undertaking certain activities iii) considerations of neighbours. b) Water: i) sump drainage ii) filtration iii) segregation iv) site and surface water management plans. c) Air pollution: i) suppressions techniques ii) misting the area with water iii) water-cooled cutting and demolition techniques iv) vehicle management v) site design and planning. d) Smells: i) environmental concern – proper waste management process ii) dust suppression iii) physical barriers iv) likely odours and their suppression systems. e) Spills: i) spill kits positioned on site in case of spills (next to plant refilling stations) ii) training for operatives/CPD opportunities. f) Waste: i) site waste management plans and contract values for their production

Topics	Content elements
	ii) segregation of waste to allow for recycling or reuse iii) BS 5906 code of practice for waste management iv) ENV15343 sustainable construction (waste management guidelines) v) specialist personal protective equipment (PPE) and respiratory protective equipment (RPE). g) Disposal of hazardous waste (asbestos): i) licensed contractors – specialist contractors and control measures to include lidded skips, washing facilities on site for contractors, specialist PPE and RPE.
2.2 Legislation, systems and standards in relation to the importance and considerations of the environment	2.2.1 The purpose of environmental legislation, management systems and standards: a) Legislation: i) Environmental Protection Act ii) The Hazardous Waste (England and Wales) Regulations (disposal of hazardous waste – asbestos (specialist contractors and control measures, for example lidded skips, washing facilities on site for contractors)) iii) Control of Pollution Act. b) Management systems: i) surface water management plan (prevention of contamination of surrounding areas or water courses) ii) Sustainable Urban Drainage Systems (SUDS) iii) environmental signage and notices (raise awareness of issues, encourage environmental consciousness and behaviour, educate about environmental regulations and control). c) Standards: i) ISO 14001 – Environmental Management Standard. 2.2.2 Principles of construction and their importance for the environment: a) U values – measure of the rate of heat transfer through a material b) R Values – measures of materials' resistance to heat flow

Topics	Content elements
	c) thermal bridging – areas in a structure that allow a cold bridge, allowing heat loss through the envelope of the building d) airtightness – the removal of gaps or cracks that allow air/heat to escape in the envelope of the building, testing for gaps and leaks e) acoustic performance – the ability and factors that affect sound transmission, material type, design, quality of work (resistance to sound, building regulation E) f) applicable building regulations to the environment – Approved Doc A: Structure (including standard measurements), Approved Doc E: Resistance to the passage of sound, Approved Doc F: Ventilation, Approved Doc J: Combustion appliances and fuel storage systems, Approved Doc L: Conservation of fuel and power, Approved Doc O: Overheating, Regulation 7: Materials and workmanship.
2.3 Purpose of environmental signage and notices	2.3.1 The purpose of environmental signage: a) Environmental signage: i. recycling – use of skips for various types of material ii. environmental hazards – encourage environmentally conscious behaviour.

Unit guidance for delivery

Opportunities for efficiencies in delivery across/between units:	Deliver alongside the Level 2 Health and Safety and Welfare in Construction Environments as there may be efficiencies. Providers should consider candidate cohort and relevant chosen construction specialism when preparing to deliver to see where contextualisation can be added to enhance relevance. There may be some efficiencies with health and safety practice before/in line with associated practical activities from the trade-specific content area.
Suggestions for formative assessment opportunities, both for knowledge and practical outcomes:	Short formative assessments at the end of sessions/aligned to outcome Sample test exam preparation sessions to prepare for assessment
Opportunities for visits/engagement with local industry and employers:	Employer engagement is an excellent way to maximise the learner's experience. A partnership approach should be adopted wherever possible, using employers with whom the centre has links to provide work experience placements. Employers could also contribute to learners' progress by acting as guest speakers.
Considerations for innovative methods of delivery:	Blended learning approach, online learning opportunities Learners research and investigate local/national health and safety incidents that have made recent news, related to their trade area and explore their impacts, eg changes in legislation/practice implications for employers, fines etc.
Ways of ensuring content is delivered in line with current, up-to-date industry practice:	Health, safety and welfare issues are paramount and should be strictly reinforced through close supervision of all activities, and risk assessments must be undertaken prior to any visits to sites, or any other places of interest.
EDI or accessibility considerations:	Teaching for some specific areas may need adaption, eg PPE considerations based on religious grounds, eg headwear
Digital initiative considerations:	Online virtual reality tools to explore risks and hazards in workshop
Sustainability considerations:	Encouraging paperless working practices, printing materials only when necessary

Books:	Best, A, de Valence, B, & Langstone, C, (2002) *Design and Construction,* Butterworth-Heinemann, ISBN: 0-750-65149-0 HSE Pamphlets available from HSE website Beattie, J, Tucker, T, Burdfield, M and Fearn, C, *Level 3 Diploma in Bricklaying*, City & Guilds, ISBN-13: 978-0851933030
Websites:	National Education and Business Partnership Network – www.nebpn.org Work Experience/Workplace Learning Frameworks – Centre for Education and Industry (CEI University of Warwick) – www.warwick.ac.uk/wie/ce Construction Industry Joint Council – Working rule agreement for the construction Industry UK – www.builders.org.uk/resources/nfb/000/322/301/May_2013_WRA_Final_Version.pdf Born to build – www.borntobuild.org.uk The UK Contractors Group – www.ukcg.org.uk/representing-industry/open-doorsweekend

Unit 302 Principles of construction

Unit level:	3
Guided Learning Hours (GLH):	65
Unit aim:	This is a **theory only** unit. The purpose of this unit is to provide learners with the knowledge and understanding of the principles of building construction and common defects. The unit will provide learners with the knowledge and understanding of the types of tools and equipment used for construction work and the methods of safe use, maintenance and storage.
Assessment method:	MCQ exam
Links to Occupational Standard:	ST1334 Craft Bricklayer

Learning outcomes

1. Understand the principles of building construction
2. Safe use and maintenance of construction tools

Learning outcome 1

Understand the principles of building construction

Topics	Content elements
1.1 The principles of building construction	1.1.1 How the principles of building construction are considered during the building process: a) Fire safety – fire evacuations processes and procedures, fire prevention through the design of the structure (exit planning) b) Fire stopping – fire prevention through construction (correct selection of materials, correctly employed installation techniques, fire barriers within a cavity wall) c) Water ingress – water being able to enter the structure through incorrectly installed building materials/elements of failure, poor workmanship or design, poor quality assurance procedures employed on site, poor materials to prevent water ingress d) Masonry defects – cracking, movement, bowing, efflorescence, spalling e) Concrete defects – cracking, delamination, honeycombing, efflorescence, spalling, scaling, sulphate attack f) Timber defects and repair – warping, shakes, infestation, fungal decay – rot (wet and dry), knots, splitting g) Repair of masonry structures – replacement of wall ties and lintels, damp treatment h) Structural stability (brick ties) – designed to tie the internal and external masonry walls to provide structural stability, positioned to specific dimensions (dependant on the wall structure – Approved Document A: Structure, bonding arrangement of the wall (Flemish/English bond) consideration of loading i) Gas barriers – impermeable barriers used between the ground and foundation structures, Radon barrier and sumps j) Retaining walls – height of substrate to be retained, drainage, thickness of retaining wall required, bonding, material section, foundation design, movement – linear length and at the rear of the wall k) Mortar additives – plasticisers – improve the workability of mortars; retardants – delays the setting time of mortars; accelerants – speeds up the setting time of mortars; water repellents – increases the ability of the mortar to repel water; bonding agents – increase the

Topics	Content elements
	bonding ability of mortars; dyes – dyes the colour of mortars to a required colour l) Brick specials – bricks that are specifically shaped to provide a feature: bullnose, cants, squints, kings, copping bricks, radial, plinth.
1.2 Standards and regulations associated with bricklaying activities	1.2.1 Purpose of the standards and regulations associated with bricklaying activities: a) Standards: i) British Standards – BS 5628 – code of practice for use of masonry ii) technical standards iii) warranty provider standards – Local Authority Building Control (LABC) ensuring building work complies with the building regulations iv) New Homes Quality Board (NHQB) – dedicated to improving the quality of new homes v) National House Building Council (NHBC) – assessing, inspecting and directly insuring new homes registered with them. b) Regulations: i) building regulations – approved documents: • Approved Document A: Structure • Approved Document E: Resistance to the passage of sound • Approved Document F: Ventilation • Approved Document J: Combustion appliances and fuel storage systems • Approved Document L: Conservation of fuel and power • Approved Document O: Overheating • Regulation 7: Materials and workmanship
1.3 Modern methods of construction	1.3.1 The types, characteristics and uses of modern methods of construction: a) Types: i) timber frame ii) steel frame iii) insulated concrete forms (ICF) iv) modular frames

Topics	Content elements
	v) concrete frames vi) cross laminated timber frames. b) Characteristics: i) timber frame – factory-fabricated timber units assembled on site and cladded normally with a brick outer skin ii) steel frame – steel structures consisting of vertical columns and horizontal beams providing a skeletal frame to the structure iii) insulated concrete forms (ICF) – hollow forms (normally polystyrene) that can be bonded on site and then filled with concrete to provide the walls of the structure iv) modular frames – standardised components/modules constructed in a factory and then assembled on site v) concrete frames – consist of a temporary mould located/fabricated on site. The concrete is then poured to form the structure of the building vi) cross laminated timber frames – layers of timber that are stacked and glued together at right angles to form large panels and then used to form structural elements. c) Uses: i) timber frame – used for building domestic or low-level builds ii) steel frame – used in industrial or commercial builds to provide strength to high level builds often in conjunction with glass panels iii) insulated concrete forms (ICF) – used to create a thermal, airtight and weather-resistant barrier iv) modular frames – sectional structures used to build cost-effective modular buildings v) concrete frames – a grid of beams and columns used to provide support to floors, roof, walls and cladding, sometimes with additional structural elements vi) cross laminated timber frames – used to span large areas and can be manipulated into design features (arches).
1.4 Heritage building and like-for-like wall replacement	1.4.1 The principles, considerations and specialist training requirements for heritage building works: a) The principles of heritage building works:

Topics	Content elements
	i) maintaining historical buildings ii) repair using like-for-like materials. b) The considerations of heritage building works: i) types of materials required (reclaimed building materials) ii) type of mortar to use or not use (lime base, dye requirements, white cement, cement mortar, earth-based mortar, type O mortar) iii) implications of heritage works (support requirements of the existing structure, dead shoring techniques) iv) implications of incorrectly sourced or used materials that may have an impact on the existing structure (the breathability of the structure if covering stonework with incorrectly specified materials) v) bonding and tie arrangements of brickwork/masonry to match existing vi) health and safety considerations: increased risk of dust, hazardous materials vii) potential restrictions (listed building categories, building control requirements, English Heritage). c) Specialist training requirements for heritage techniques required: i) when to use replacement materials to match existing heritage building (like-for-like wall replacement) ii) use of lime mortar. 1.4.2 Techniques applicable to the bricklayer for working on heritage buildings: i) lime based mortars (natural hydrated lime) ii) earthen materials iii) hot-mixed mortars.
1.5 Fireplace and chimney setting out and construction	1.5.1 Process of fireplace setting out and construction: a) Setting out process: i) constructional hearth, jambs and breast to adhere to building regulations obtained from working drawings ii) set out opening using rough ringed arches. b) Construction process: i) position throat unit, concrete lintel, rough-ringed arch

Topics	Content elements
	ii) fire backs – use of corrugated cardboard and vermiculite fill for expansion iii) positioning of superimposed hearth iv) positioning, fixing and sealing surrounds v) work in line with manufacturer instructions. 1.5.2 Process of chimney setting out and construction: a) Setting out process: i) set out size of chimney at first floor level ii) correct positioning of withe/midfeathers iii) positioning of the leadwork iv) weather proofing. b) Construction process and materials: i) install flue liners (male and female correct position) ii) reduce the breast at first floor level, install lead trays iii) necking course – to allow water dispersal iv) construct chimney stack (provisions for flashings, corbelling and flaunching) v) positioning pots and cowl vi) use of suitable joint finish (weather struck) vii) work in line with manufacturer instructions.
1.6 Components associated with fireplaces and chimney construction	1.6.1 The components and materials associated with fireplaces and chimney construction and their uses: a) Hearths: i) constructional/structural hearth – prevent fire reaching flammable materials ii) superimposed hearth – decorative feature to contain fire within structure. b) Fire opening: i) fireback – to contain fire within fireplace opening ii) throat unit – the connection between fireplace opening and the flue iii) fire surround – decorative feature iv) fire cement – seals the joints between the fireback and fire surround v) insulating infill – used to fill gaps between fireplace opening and fireback (lightweight vermiculite, corrugated cardboard). c) Plinth – special brick used to reduce thickness of a wall

Topics	Content elements
	d) Flue liners (metal, clay, concrete) – direct gases away from fireplace e) Chimney pots: i) cowls – assists the exit of gasses from chimney pot. f) Lead trays, stepped flashings, soakers, gutters and aprons – weathers the chimney stack at roof level.

Learning outcome 2

Safe use and maintenance of construction tools

Topics	Content elements
2.1 Safe use, maintenance and storage for tools including defect or fault escalation	2.1.1 Safe use, maintenance and storage of tools and the processes to follow if defects or faults are established: a) Hand tools: i) chisels (bolster, jointing/plugging, cold) ii) hammers iii) trowels iv) angle rules v) spring dividers vi) site protractors vii) straight edges viii) spirit levels ix) sliding bevels x) trammels xi) squares xii) scutch hammer. b) Power tools: i) masonry cut-off saw ii) table saw iii) hammer drill iv) cartridge gun v) tile cutters vi) grinder vii) pneumatic breaker. c) Safe use: i) training/CPD ii) booking out process iii) awareness of method statements and risk assessments iv) time considerations for tool usage v) booking in process. d) Maintenance and storage of hand tools: i) visual checks ii) regular cleaning routines iii) removal of burrs iv) ensuring tools are fit for purpose

	v) check levels vi) safe and secure storage. e) Maintenance and storage of power tools: i) visual checks (blades, cables, guards, split casings, leakage, damage to equipment) ii) regular cleaning routines iii) Provision and Use of Work Equipment Regulations (PUWER) iv) safe and secure storage (blade removal during transport and storage, fuel consideration, suitably stored with consideration for access, exposure to elements). f) Processes to follow if defects or faults are found in tools: i) identification of defect or fault ii) report to supervisor iii) checks/rectification to be carried out iv) decommission process v) safe disposal with environmental considerations.

Unit guidance for delivery

Opportunities for efficiencies in delivery across/between units:	Team building and/or group working should be encouraged, as it would be beneficial to complete the underpinning knowledge activities working in small groups, allowing deeper learning and understanding to take place. It is recommended that this unit be taught alongside the building and constructing units so that practical activities are more contextualised.
Suggestions for formative assessment opportunities, both for knowledge and practical outcomes:	This unit is a theory-based unit that requires training on the methods required to repair and maintain structures, this will support a holistic delivery and assessment approach to facilitate the subject.
Opportunities for visits/engagement with local industry and employers:	Employer engagement is an excellent way to maximise the learner's experience. A partnership approach should be adopted wherever possible, using employers with whom the centre has links to provide work experience placements. Employers could also contribute to learners' progress by acting as guest speakers. Involving local employers who have experience of working with building maintenance or facilities management will provide the learners with clear examples of where this type of work is applied in industry.
Considerations for innovative methods of delivery:	Tutors delivering this unit will have opportunities to use a wide range of techniques. Lectures, discussions, research, visits to exhibitions and workshop visits. Delivery should stimulate, motivate and educate the learner.
Ways of ensuring content is delivered in line with current, up-to-date industry practice:	Health, safety and welfare issues are paramount and should be strictly reinforced through close supervision of all activities, and risk assessments must be undertaken prior to any activities taking place. All maintenance tasks have risks which must be addressed to ensure safe systems of work are set up and maintained. Adhere to all current building regulations and associated guidance.
EDI or accessibility considerations:	Providers must deliver the unit in line with their EDI policy and organisational procedures allowing access for all to participate where possible and as required.

Digital initiative considerations:	Learners should be encouraged to explore the internet and access current documents that are required to ensure compliance of regulations etc.
Sustainability considerations:	Learners should be encouraged to consider sustainability throughout the unit and consider the environmental impact of their actions, particular attention is encouraged to 2.4.2.
Books:	Best, A, de Valence, B, & Langstone, C, (2002) *Design and Construction*, Butterworth-Heinemann, ISBN: 0-750-65149-0 Beattie, J, Tucker, T, Burdfield, M and Fearn, C, *Level 3 Diploma in Bricklaying*, City & Guilds, ISBN-13: 978-0851933030
Websites:	The Brick Development Association – www.brick.org.uk The Guild of Bricklayers – www.guildofbricklayers.org.uk

Unit 303 Principles of organising, planning and pricing of construction work

Unit level:	3
Guided Learning Hours (GLH):	55
Unit aim:	This is a **theory only** unit. This unit provides learners with an understanding of the way the building process is planned, costed and managed within the construction industry. The unit will enable learners to gain an overview of the way a construction site is run, completed and occupied efficiently. Learners will understand how to communicate efficiently, and the many ways of ensuring information is passed from person to person using traditional and digital means.
Assessment method:	MCQ exam
Links to Occupational Standard:	ST1334 Craft Bricklayer

Learning outcomes

1. Understand calculations and costings for construction activities
2. Understand planning requirements for construction activities
3. Understand the documentation used to communicate effectively in the construction industry

Learning outcome 1

Understand calculations and costings for construction activities

Topics	Content elements
1.1 Resource quantity calculations and costing techniques	1.1.1 Standard industry methods of calculating resource quantities (including formulas used), considering wastage and recycling allowance to enable costing: a) Standard industry methods: i) bricks in 1 m² (half brick thick) – A = L x H (standard 10 block/m², standard 60 brick/m²) ii) blocks in 1 m² – A = L x H (standard 10 block/m², standard 60 brick/m²) iii) mortar required for 1 m² (brickwork and blockwork) – 1 kg of mortar/brick, 2 kg/block iv) area of a gable end – to determine the amount and cost of a triangular structure (peak) – ½B x H = m². b) Wastage: i) applying percentages for wastage – to allow for breakage use/poor handling) ii) recycling allowance – application of credit to the overall project cost when materials can be salvaged and reused.

Learning outcome 2

Understand planning requirements for construction activities

Topics	Content elements
2.1 Planning of construction works and resources	2.1.1 The techniques and considerations for management of time and resources: a) Time and resource management techniques: i) bar charts (Gantt chart) – to monitor tasks and resources as the work progresses ii) work schedules show the number of hours a task should take iii) critical path analysis – project management technique to create an accurate project schedule. b) Time and resource management considerations: i) material availability and shortages (national, regional demand) and the use of Gantt charts to plan order dates allowing for delays

Topics	Content elements
	ii) labour allocation and monitoring of progress against plan iii) stock lead times are considered in the planning stage of a project to ensure materials are available when required iv) correct handling and storage methods to prevent damage: • mechanical or manual handling techniques (prevention of potential damage) • check materials when delivered and location of storage to avoid potential damage. v) the value of stock: • control of stock and the security arrangements to reduce loss • site security locks, compounds design • store controls (control of materials to avoid theft). vi) faulty stock and returns process • return or report faulty goods to help in the progress of tasks and to reduce possible delays. vii) considerations of stock rotation and quality control: • ensure older stock is used first, checking sell by dates and delivery times • reduce costs • waste considerations and environmental concerns – any waste to be accounted for and reduced if possible, this also includes possible environmental concerns. 2.1.2 The causes for delay and methods used to bring work back on programme: a) Causes for delay – weather, shortage of materials and resources, labour shortages, changes to plan b) Methods to bring work back on programme – increase labour, use approved suppliers to improve lead times, use of agencies to provide additional resources, extended work hours, incentive schemes.
2.2 Quality assurance management	2.2.1 Quality assurance roles and responsibility of management on site, complying with relevant quality assurance guidance: a) The roles and responsibility of on-site management: i) site manager/agent runs the everyday activities to ensure contracts are completed on time and on schedule ii) supervisor reports to the site manager/agent to help keep their area on schedule. b) Quality assurance responsibilities of roles:

Topics	Content elements
	i) induction process conducted by a member of the management team to ensure that all site protocols are followed and that all staff have the correct understanding of health and safety practices on site ii) inspections and site walks are conducted by site management teams, building inspectors or supervisors to check that all standards are met and practices are followed iii) risk assessments and method statements used by supervisors to identify possible hazards or risks while completing the set task to a given method ensuring safe working practices for each task iv) toolbox talks and training given to all new members of staff by supervisors v) subcontractors undertake specialist work to ensure high quality across work carried out. c) Quality assurance guidance: i) British Standards – BS 5628 – ensures resources are manufactured to British Standards ii) NHBC (National House Building Council)/New Homes Quality Board (NHQB) – sets the standards of modern house building iii) warranty provider standards – legal documentation covering new build homes iv) building regulations (approved documents setting standards complying with local authority regulations): • Approved Document A: Structure • Approved Document F: Ventilation • Approved Document J: Combustion appliances and fuel storage systems • Approved Document L: Conservation of fuel and power.

Learning outcome 3

Understand the documentation used to communicate effectively in the construction industry

Topics	Content elements
3.1 Documentation used on site	3.1.1 Types and requirements of digital and paper-based documentation used on site: a) Types and requirements: i) job sheets – outlines the required work to be done ii) time sheets – required to record the time spent on site or on a job iii) risk assessments – required to identify the risks attached to an activity and identify the control measures selected to control the risk iv) method statements – work instructions required to outline how works should be carried out v) Gantt charts – to schedule work and manage time for self and other members of the team vi) equipment service/maintenance records – required to document the service of a piece of equipment vii) handover documents – required documents during handover to a client for confirmation of works completed viii) delivery notes – checking against orders and deliveries ix) work sheets/work instructions – notes, drawings, specifications required – used for the completion of construction works x) checklists – required to list the activities or elements to be checked/completed xi) damage incident report – required to report the important details of an occurrence which has caused damage on the site xii) production plan – report which uses time management techniques to achieve targets, identifies causes of delay to the project and outlines implementation methods to bring work back on programme xiii) order forms and requisition sheets – required documents that are completed to request resources xiv) quality records – required documentation that defines a systematic process applied to the structure's quality. 3.1.2 Clear written communication (plain English principles) and its importance in gathering information: a. Principles: i) ensure it is clear what is to be communicated

Topics	Content elements
	ii) consider requirements of the audience iii) state major point(s) iv) ensure specific details are covered v) stick to topic and subject vi) bullet point as required.
3.2 Methods of interpreting construction information from documentation by using traditional and digital methods	3.2.1 Sources of information used to determine site requirements and restrictions for building works using methods of common scale: a) Sources of information and associated methods to interpret information, using common scale: i) block plans – 1:1250, 1:2500 ii) site production plans – 1:50, 1:100, 1:200 iii) detailed drawings – 1:10, 1:5, 1:1 iv) assembly drawings – 1:20, 1:10, 1:5 v) manufacturer's literature. 3.2.2 The advantages and disadvantages of traditional and digital methods: a) Advantages of traditional methods: i) paper-based project bar charts/Gantt charts help to plan and monitor progress of works and usually printed on a large scale and displayed in site offices ii) manual drawings do not require computer software as opposed to CAD methods. b) Advantages of digital methods: i) quick response (QR) codes on site ensure that up-to-date versions are used and implemented in production plans and producing work instructions ii) building information modelling (BIM) makes it easier to make alterations to a CAD drawing as opposed to manual methods iii) CAD drawings are more accurate than traditional drawings iv) CAD drawings can be easily duplicated as opposed to manual methods. c) Disadvantages of traditional methods: i) paper-based drawings can become damaged or lost ii) manual methods which require changes would need to be recreated as opposed to digital methods. d) Disadvantages of digital methods: i) restricted access to digital devices can slow down progress ii) potential for loss of data

Topics	Content elements
	iii) training requirements for software/CPD to remain up to date.

Unit guidance for delivery

Opportunities for efficiencies in delivery across/between units:	Team building and/or group activities should be encouraged, as it would be beneficial to complete the underpinning knowledge activities working in small groups allowing deeper learning and understanding to take place. It is recommended that this unit be taught alongside the building and constructing units so that practical activities are more contextualised.
Suggestions for formative assessment opportunities, both for knowledge and practical outcomes:	This unit is a theory-based unit that requires training on the various methods of calculations and costings for construction activities, documentation and processes of planning requirements for construction activities and the documentation used to communicate effectively in the construction industry in the lead up to knowledge situations.
Opportunities for visits/engagement with local industry and employers:	Employer engagement is an excellent way to maximise the learner's experience. A partnership approach should be adopted wherever possible, using employers with whom the centre has links to provide work experience placements. Employers could also contribute to learners' progress by acting as guest speakers.
Considerations for innovative methods of delivery:	Tutors delivering this unit will have opportunities to use a wide range of techniques. Lectures, discussions, research, visits to exhibitions and workshop visits. Delivery should stimulate, motivate and educate the learner. QR codes could be used in addition to centre learning platforms for access to teaching, learning and revision materials.
Ways of ensuring content is delivered in line with current, up-to-date industry practice:	Health, safety and welfare issues are paramount and should be strictly reinforced through close supervision of all activities, and risk assessments must be undertaken prior to any visits to sites, or any other places of interest.
EDI or accessibility considerations:	Providers must deliver the unit in line with their EDI policy and organisational procedures allowing access for all to participate where possible and as required.

Digital initiative considerations:	Accessing teaching and revision materials though QR codes directly on site through use of mobile electrical devices will allow candidates quick and easy access to qualification resources.
Sustainability considerations:	Candidate should gain an awareness of basic sustainability principles such as waste segregation and the purposes of sustainable construction in relation to meeting government needs or targets in the reduction of carbon emissions.
Books:	Best, A, de Valence, B, & Langstone, C, (2002) *Design and Construction*, Butterworth-Heinemann, ISBN: 0-750-65149-0 Beattie, J, Tucker, T, Burdfield, M and Fearn, C, *Level 3 Diploma in Bricklaying*, City & Guilds, ISBN-13: 978-0851933030
Websites:	National Education and Business Partnership Network – www.nebpn.org Work Experience/Workplace Learning Frameworks – Centre for Education and Industry (CEI University of Warwick) – www.warwick.ac.uk/wie/ce Construction Industry Joint Council – Working rule agreement for the construction Industry UK – www.builders.org.uk/resources/nfb/000/322/301/May_2013_WRA_Final_Version.pdf Born to build – www.borntobuild.org.uk The UK Contractors Group – www.ukcg.org.uk/representing-industry/open-doorsweekend

Unit 304 Constructing radial, battered brickwork and arches

Unit level:	3
Guided Learning Hours (GLH):	160 TBC
Unit aim:	The purpose of this unit is to provide the learner with the knowledge and skills to set out and build brickwork curved on plan, battered brickwork and arches of various geometrical shapes. The content will provide the learner with the knowledge required to identify required materials and equipment to maintain the required standards of this work. Learners will be able to demonstrate methods of construction used in building radial and bettered brickwork, brickwork curved on plan, battered brickwork and a variety of arches. Learners must demonstrate an understanding of the wide range of materials used, their properties and application. The learners must also understand the importance of the building regulations and relevant codes of practice.
Assessment method:	Practical assignment
Links to Occupational Standard:	ST1334 Craft Bricklayer

Learning outcomes

1. Plan to set out and construct radial and battered brickwork
2. Set out and construct brickwork curved on plan
3. Set out and construct battered brickwork
4. Set out and construct axed arches

Learning outcome 1

Plan to set out and construct radial and battered brickwork

Topics	Content elements
1.1 Interpret information from a brief	1.1.1 Interpret and extract information from a given drawing and specification to create and complete build documentation and calculate cost quantities: a) Use information to create the following: i) method statement ii) risk assessment. b) Calculate and cost quantities of resources: i) take off measurements from drawings using scale ii) percentage of waste iii) materials/resource list.
1.2 Implement safe working practices	1.2.1 Complete safe working practices, implementing and monitoring safe systems of work and control measures for setting out and constructing decorative and reinforced brickwork: a) Safe working practices: i) identify and use correct safety control equipment, considering the appropriate dust suppression, PPE/RPE for the given task ii) safely check, safely use and store power tools and equipment correctly iii) ensure tools and masonry cut-off saws have received appropriate maintenance (check PAT testing dates, check tools before use) iv) apply quality assurance procedures to the given task, to consider conducting quality checks and compliance with method statements v) ensure responsibility for high quality work against industry standards, guidance and tolerances while completing task, applying principles from: • British Standards – BS 5628 – code of practice for use of masonry • technical standards • building regulations – approved documents. b) Comply with relevant regulations, standards and systems, applying principles from:

Topics	Content elements
	i) Health and Safety at Work Act (HASWA) – primary piece of legislation covering occupational health and safety in Great Britain ii) Control of Substances Hazardous to Health (CoSHH) – chemicals, fumes, vapours, dusts, germs that cause diseases, gases, biological agents iii) Lifting Operations and Lifting Equipment Regulations (LOLER) iv) Manual Handling Operations Regulations (MHR) – transporting a load by hand, seven steps to good manual handling v) Reporting Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR) – three types of reportable dangerous occurrence vi) Provision and Use of Work Equipment Regulations (PUWER) – requires that any equipment provided for use at work must be suitable for the intended use vii) The Control of Asbestos Regulations – asbestos awareness viii) The Confined Spaces Regulations – working in confined spaces ix) Working at Height Regulations (WAHR) work is properly planned and organised – considering competency of workers, risks assessed and appropriate work equipment is selected and used, and fragile surfaces are properly managed x) Electricity at Work Regulations (EAWR) – safe isolation/equipment checks. 1.2.2 Complete brickwork task while applying environmental and sustainable principles, complying with relevant regulations, standards and systems: a) Correct waste disposal – segregate resources for reuse/recycle b) Identification and correct disposal of hazardous waste c) Comply with relevant regulations, standards and systems: i) BS 5906 code of practice for waste management ii) ENV15343 sustainable construction (waste management guidelines) iii) Environmental Protection Act

Topics	Content elements
	iv) The Hazardous Waste (England and Wales) Regulations (disposal of hazardous waste – asbestos (specialist contractors and control measures, for example lidded skips, washing facilities on site for contractors)) v) Control of Pollution Act.

Learning outcome 2

Set out and construct brickwork curved on plan

Topics	Content elements
2.1 Setting out and construction techniques for brickwork curved on plan	2.1.1 The techniques, considerations and equipment used in setting out and constructing brickwork curved on plan: a) Brickwork curved (convex, concave) on plan: i) serpentine walling ii) radial brickwork. b) Setting out techniques: i) work to given dimensions and tolerances extracted from working drawings ii) maintain the circumference iii) measurements. c) Setting out considerations: i) plumb ii) gauge iii) level iv) angle of batter. d) Construction techniques: i) form the bond to give the best aesthetic appearance ii) apply relevant finish to joints iii) use of special bricks. e) Equipment: i) templates ii) trammels iii) plumb points

Topics	Content elements
	iv) special bricks v) header bond vi) string line vii) optical and laser levels viii) tape measure ix) radius rod.
2.2 Set out and construct brickwork curved on plan	2.2.1 Set out and construct brickwork that is curved on plan using appropriate equipment and techniques while maintaining the curve: a) Brickwork that is curved (concave or convex) on plan: i) serpentine walling ii) radial brickwork. b) Set out brickwork curved on plan: i) work to given dimensions and tolerances extracted from working drawings ii) maintain the circumference iii) take measurements. c) Build brickwork curved on plan using appropriate equipment: i) templates ii) trammels iii) plumb points iv) special bricks v) header bond vi) string line vii) optical and laser levels viii) tape measure ix) radius rod. d) Build brickwork curved on plan using appropriate techniques: i) form the bond to give the best aesthetic appearance ii) cut brick using traditional (hammer, bolster chisel, scutch hammer) and mechanical methods (cut-off saw, bench saw) iii) apply relevant finish to joints iv) use of special bricks.

Learning outcome 3

Set out and construct battered brickwork

Topics	Content elements
3.1 Setting out and construction techniques for sloped (vertical angles on plan) brickwork	3.1.1 The techniques, considerations and equipment used in setting out and constructing sloped (vertical angles on plan) brickwork: a) Sloped (vertical angles on plan) brickwork: i) tumbling in ii) battered brickwork. b) Setting out techniques: i) maintain angle ii) measurements. c) Setting out considerations: i) maintain plumb ii) maintain gauge iii) maintain level iv) maintain angle of batter. d) Construction techniques: i) establish the angle of batter or tumbling in ii) form the bond to give the best aesthetic appearance iii) apply relevant finish to joints iv) use of special bricks. e) Equipment: i) tapered plumb rules ii) protractors iii) template iv) battered profiles v) gauge gun vi) sliding bevel vii) string line viii) spirit level ix) site square.

Topics	Content elements
3.2 Set out and construct sloped (vertical angles on plan) brickwork	3.2.1 Set out and construct sloped (vertical angles on plan) brickwork using appropriate equipment and techniques while maintaining the correct angle of batter: a) Sloped (vertical angles on plan) brickwork: i) tumbling in ii) battered brickwork. b) Setting out techniques: i) maintain angle ii) measurements. c) Construct brickwork using appropriate equipment: i) tapered plumb rules ii) protractors iii) template iv) battered profiles v) gauge gun vi) sliding bevel vii) string line viii) spirit level ix) site square. d) Construct brickwork using appropriate techniques: i) cut brick using traditional (hammer, bolster chisel, scutch hammer) and mechanical methods (cut-off saw, bench saw) ii) safely use and maintain tools and masonry cut-off saws for cutting brick to required angles and/or dimensions iii) apply relevant finish to joints iv) establish the angle of batter or tumbling in v) form the bond to give the best aesthetic appearance vi) use of special bricks.

Learning outcome 4

Set out and construct axed arches

Topics	Content elements
4.1 Setting out and construction techniques for axed arches	4.1.1 The techniques, considerations and equipment used in setting out and constructing axed arches and surrounding haunch brickwork: a) Axed arches: i) segmental ii) semi-circular. b) Setting out techniques: i) take measurements ii) carry out geometrical setting out iii) produce face template. c) Setting out considerations: i) span ii) rise iii) bisect iv) radius v) chord vi) striking point vii) springing line viii) bisecting line ix) springing point x) skewback xi) voussoirs xii) face depth. d) Construction techniques: i) establish the bond ii) position temporary support iii) remove temporary support (striking) iv) apply appropriate joint finish v) cut brick using traditional (hammer, bolster chisel, scutch hammer) and mechanical methods (cut-off saw, bench saw) vi) methods of temporary (turning piece, centre) and permanent supports vii) form the bond to give the required strength and aesthetic appearance viii) maintain plumb

Topics	Content elements
	ix) maintain bond x) level xi) easing and striking. e) Equipment: i) props ii) folding wedges iii) proprietary formers iv) arch lintels.
4.2 Set out and construct axed arches	4.2.1 Set out and construct axed arches using appropriate equipment and techniques: a) Axed arches: i) segmental ii) semi-circular. b) Setting out techniques: i) take measurements ii) carry out geometrical setting out iii) produce face template. c) Construct axed arches using appropriate equipment: i) Props ii) folding wedges iii) proprietary formers iv) arch lintels. d) Construct axed arches using appropriate techniques: i) establish the bond ii) position temporary support iii) remove temporary support (striking) iv) apply appropriate joint finish v) cut brick using traditional (hammer, bolster chisel, scutch hammer) and mechanical methods (cut-off saw, bench saw) vi) methods of temporary (turning piece, centre) and permanent supports vii) form the bond to give the required strength and aesthetic appearance viii) maintain plumb ix) maintain bond x) level xi) easing and striking.

Unit guidance for delivery

Opportunities for efficiencies in delivery across/between units:	Arch materials and repair (1.1.2) may be incorporated from repair unit as terminology and materials may be similar for traditional and heritage maintenance principles. Team building and group work should be encouraged, as it would be beneficial to complete the practical activities working in small groups. It is recommended that this unit be taught alongside the theoretical units so that practical activities are more contextualised.
Suggestions for formative assessment opportunities, both for knowledge and practical outcomes:	Candidates undertaking this unit should have some prior understanding and experience of radial and battered brickwork techniques and terminology. This could come from previous qualifications completed or external experiences. Candidates should also be introduced to the various methods of bonding and constructing radial and battered brickwork in both knowledge and practical situations.
Opportunities for visits/engagement with local industry and employers:	Employer engagement is an excellent way to maximise the learner's experience. A partnership approach should be adopted wherever possible, using employers with whom the centre has links to provide work experience placements. Employers could also contribute to learners' progress by acting as guest speakers. Involving employers who have experience of working on projects where chimneys and flues are being built or maintained will provide learners with good examples of where this type of work is applied in the construction industry.
Considerations for innovative methods of delivery:	Tutors delivering this unit will have opportunities to use a wide range of techniques, lectures, discussions, research, visits to exhibitions and workshop, manufacturer and/or site visits. Delivery should stimulate, motivate and educate the learner.
Ways of ensuring content is delivered in line with current, up-to-date industry practice:	Health, safety and welfare issues are paramount and should be strictly reinforced through close supervision of all activities and risk assessments must be undertaken prior to any activities taking place. All maintenance tasks have risks which must be addressed to ensure safe systems of work are set up and maintained.

EDI or accessibility considerations:	Relation to types of religious building using radial and battered brickwork could relate to elements of EDI, requirements of building access with ramped brickwork will also relate to this. Providers must deliver the unit in line with their EDI policy and organisational procedures allowing access for all to participate where possible and as required.
Digital initiative considerations:	Candidate production of arch setting out could be explored in either traditional or electronic versions, this will depend on facilities and systems within the centre.
Sustainability considerations:	Learners should be encouraged to consider sustainability throughout the unit and consider the environmental impact of their actions in relation to waste disposal and recycling requirements.
Books:	Beattie, J, Tucker, T, Burdfield, M & Fearn, C, *Level 3 Diploma in Bricklaying*, City & Guilds, ISBN-13: 978-0851933030 The Brick Development Association (2020) *Guide to Successful Brickwork*, 4th ed., Routledge, Taylor & Francis Group, ISBN: 9780367486617
Websites:	National Education and Business Partnership Network – www.nebpn.org Work Experience/Workplace Learning Frameworks – Centre for Education and Industry (CEI University of Warwick) – www.warwick.ac.uk/wie/ce Construction Industry Joint Council – working rule agreement for the construction industry UK – www.builders.org.uk/resources/nfb/000/322/301/May_2013_WRA_Final_Version.pdf Born to build – www.borntobuild.org.uk The UK Contractors Group – www.ukcg.org.uk/representing-industry/open-doorsweekend BCIS – RICS – www.rics.org/uk/knowledge/bcis/ The Brick Development Association – www.brick.org.uk The Guild of Bricklayers – www.guildofbricklayers.org.ukThe Brick Development Association – https://www.brick.org.uk/guides

Unit 305 Constructing decorative and reinforced brickwork

Unit level:	3
Guided Learning Hours (GLH):	150
Unit aim:	The purpose of this unit is to provide the learner with the knowledge and skills to set out and build decorative brickwork features, obtuse and acute angle quoins and reinforced brickwork. The content will provide the learner with the knowledge required to identify required materials and equipment to maintain the required standards of this work. Many buildings contain decorative features in their design and various shapes that help to make buildings more aesthetically pleasing. Learners will be able to demonstrate methods of construction used in building decorative panels, forming acute and obtuse angles and reinforcement of brickwork. Learners must demonstrate an understanding of the wide range of materials used, their properties and application. The learners must also understand the importance of the building regulations and relevant codes of practice.
Assessment method:	Practical assignment MCQ exam
Links to Occupational Standard:	ST1334 Craft Bricklayer

Learning outcomes

1. Plan to set out and construct decorative and reinforced brickwork
2. Set out, construct and reinforce decorative brickwork features and panels
3. Set out and construct obtuse and acute angles

Learning outcome 1

Plan to set out and construct decorative and reinforced brickwork

Topics	Content elements
1.1 Interpret information from a brief	1.1.1 Interpret and extract information from a given drawing and specification to create and complete build documentation and calculate cost quantities: a) Use information to create the following: i) method statement ii) risk assessment. b) Calculate and cost quantities of resources: i) take off measurements from drawings using scale ii) percentage of waste iii) materials/resource list.
1.2 Implement safe working practices	1.2.1 Complete safe working practices, implementing and monitoring safe systems of work and control measures for setting out and constructing decorative and reinforced brickwork: a) Safe working practices: i) identify and use correct safety control equipment, considering the appropriate dust suppression, PPE/RPE for the given task ii) safely check, safely use and store power tools and equipment correctly iii) ensure tools and masonry cut-off saws have received appropriate maintenance (check PAT testing dates, check tools for safe use) iv) apply quality assurance procedures to the given task to consider conducting quality checks and compliance with method statements v) ensure responsibility for high quality work against industry standards, guidance and tolerances while completing task, applying principles from: • British Standards – BS 5628 – code of practice for use of masonry • technical standards • building regulations – approved documents. b) Comply with relevant safety regulations, tolerances and guidance, applying principles from:

Topics	Content elements
	i) Health and Safety at Work Act (HASWA) – primary piece of legislation covering occupational health and safety in Great Britain ii) Control of Substances Hazardous to Health (CoSHH) – chemicals, fumes, vapours, dusts, germs that cause diseases, gases, biological agents iii) Lifting Operations and Lifting Equipment Regulations (LOLER) iv) Manual Handling Operations Regulations (MHR) – transporting a load by hand, seven steps to good manual handling v) Reporting Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR) – three types of reportable dangerous occurrence vi) Provision and use of Work Equipment Regulations (PUWER) – requires that any equipment provided for use at work must be suitable for the intended use vii) The Control of Asbestos Regulations – asbestos awareness viii) The Confined Spaces Regulations – working in confined spaces ix) Working at Height Regulations (WAHR) work is properly planned and organised – considering competency of workers, risks assessed and appropriate work equipment is selected and used, and fragile surfaces are properly managed x) Electricity at Work Regulations (EAWR) – safe isolation/equipment checks. 1.2.2 Complete decorative and reinforced brickwork while applying environmental and sustainable principles: a) Correct waste disposal – segregate resources for reuse/recycle b) Identification and correct disposal of hazardous waste c) Apply principles from: i) BS 5906 code of practice for waste management ii) ENV15343 sustainable construction (waste management guidelines) iii) Environmental Protection Act iv) The Hazardous Waste (England and Wales) Regulations (disposal of hazardous waste – asbestos (specialist contractors and control measures, for example lidded skips, washing facilities on site for contractors)) v) Control of Pollution Act.

Learning outcome 2

Set out, construct and reinforce decorative brickwork features and panels

Topics	Content elements
2.1 Setting out and construction techniques for decorative features, panels	2.1.1 The techniques, considerations and equipment used in setting out and constructing decorative features and panels: a) Decorative brickwork features: i) dog-toothing ii) dentil courses iii) plinth courses iv) string courses v) brick and block bonded quoins vi) masonry corbelling vii) tumbling in viii) battered work. b) Decorative panels: i) basket weave ii) stack bond iii) herringbone iv) Victorian weave. c) Setting out techniques: i) work to given dimensions and tolerances extracted from working drawings ii) measurements iii) methods of transferring levels, using a straight edge and spirit level, optical and laser levels. d) Setting out considerations: i) maintain plumb ii) maintain gauge iii) maintain bond iv) maintain levels. e) Construction techniques: i) maintain face plane ii) cut brick using traditional (hammer, bolster chisel, scutch hammer) and mechanical methods (cut-off saw, bench saw) iii) apply joint finish iv) use of special bricks. f) Equipment: i) corner profiles

Topics	Content elements
	ii) string lines and blocks iii) optical and laser levels iv) tape measure v) craft brickwork tools vi) power tools.
2.2 Methods to reinforce brickwork	2.2.1 The purpose and uses of methods to reinforce brickwork: a) Methods: i) bed joint reinforcement ii) slip ties and sleeve iii) shelf angle iv) wind posts v) helical bar vi) damp proof course (DPC). b) Purpose: i) bed joint reinforcement – increased strength of naturally occurring straight joints in feature brickwork ii) slip ties and sleeve – allowing brick walls and masonry panels to expand or contract iii) shelf angle – supports brickwork and spreads the load iv) wind posts – vertical support between floors v) helical bar – masonry repair and reinforcement vi) DPC – to prevent damp penetrating the fabric of the building. c) Uses: i) bed joint reinforcement – proprietary (wall) ties, EML – reinforcement of bed joints, tramlines – reinforcement of bed joints ii) slip ties and sleeve joints – movement and expansion iii) shelf angle – steel membrane that supports and transfers the dead load of the outer brick iv) wind posts – to span vertically between floors to provide lateral support for panels of brickwork v) helical bar – used for masonry repair and reinforcement including crack stitching, lintel reinforcement and foundation repair vi) DPC – continuous strip on all walls that go onto the foundation to prevent damp rising.

Topics	Content elements
2.3 Set out and construct decorative features and panels	2.3.1 Set out and construct decorative features and panels using appropriate reinforcement methods, equipment and techniques: a) Features: i) dental courses ii) dog-tooth courses iii) block bonded quoins iv) masonry corbelling. b) Panels: i) basket weave ii) stack bond iii) Victorian weave iv) herringbone panel. c) Set out decorative features and panels: i) work to given dimensions and tolerances extracted from working drawings ii) take measurements iii) maintain the bond iv) transfer levels using a straight edge and spirit level, optical and laser levels. d) Construct decorative features and panels using reinforcement methods: i) bed joint reinforcement ii) slip ties and sleeve. e) Construct decorative features and panels using appropriate equipment: i) corner profiles ii) string lines and blocks iii) optical and laser levels iv) tape measure v) craft brickwork tools vi) power tools. f) Construct decorative features and panels using appropriate techniques: i) maintain face plane ii) cut brick using traditional (hammer, bolster chisel, scutch hammer) and mechanical methods (cut-off saw, bench saw) iii) apply joint finish

Topics	Content elements
	iv) use special bricks. 2.3.2 Use cutting equipment: a) Identify and use safety control equipment including RPE, dust suppression and PPE b) Implement and monitor safe systems of work: i) designated cutting area ii) cutting jig iii) dust suppression (wastewater management) iv) implement control measures from risk assessment and method statements (RAMS) to ensure safe systems of work. c) Safely use and maintain tools: i) masonry cut-off saws ii) lump hammer and bolster iii) brick hammer iv) scutch hammer.

Learning outcome 3

Set out and construct obtuse and acute angles

Topics	Content elements
3.1 Setting out and construction techniques for obtuse and acute angles	3.1.1 The techniques used in setting out and constructing angled on plan, off square masonry; types of acute and obtuse angles using appropriate resources: a) Types of angles (half brick, one brick and cavity walling): i) 60° – acute ii) 135°– obtuse. b) Setting out techniques: i) templates ii) measurement (3,4,5 method). c) Setting out considerations: i) maintain plumb ii) maintain gauge iii) maintain bond iv) maintain levels.

Topics	Content elements
	d) Construction techniques: i) identify bonding arrangement. e) Resources used to create angles (purpose-made bricks used): i) special bricks: • squint brick • dogleg brick • cut and stick • cant brick • double cant brick • easy angle. f) Equipment: i) tape measure ii) straight edge iii) string lines iv) level.
3.2 Set out and construct obtuse and acute angles	3.2.1 Set out and construct obtuse and acute angles on plan using appropriate equipment, techniques and reinforcement methods: a) Types of angles (half brick, one brick and cavity walling): i) 60° – acute ii) 135°– obtuse. b) Setting out techniques: i) use templates ii) take measurements (3,4,5 method). c) Construct angles on plan using appropriate equipment: i) templates ii) purpose-made bricks: • squint brick • dogleg brick • cant brick • double cant bricks • cut and stick. d) Construct angles on plan using appropriate techniques: i) identify bonding arrangement.

Topics	Content elements
	e) Reinforcement methods: i) bed joint reinforcement ii) slip ties and sleeve.

Unit guidance for delivery

Opportunities for efficiencies in delivery across/between units:	Team building and group work should be encouraged, as it would be beneficial to complete the practical activities working in small groups. It is recommended that this unit be taught alongside the theoretical units so that practical activities are more contextualised.
Suggestions for formative assessment opportunities, both for knowledge and practical outcomes:	Candidates carrying out this unit should have some experience or knowledge of bricklaying and be given opportunity to build a variety of decorative panels listed within. Candidates should also be introduced to the various methods of bonding, reinforcing and types of materials used to set out and build radial, decorative panels, obtuse and acute angled brickwork in both knowledge and practical situations.
Opportunities for visits/engagement with local industry and employers:	Employer engagement is an excellent way to maximise the learner's experience. A partnership approach should be adopted wherever possible, using employers with whom the centre has links to provide work experience placements. Employers could also contribute to learners' progress by acting as guest speakers. Involving employers who have experience of working on projects where chimneys and flues are being built or maintained will provide learners with good examples of where this type of work is applied in the construction industry.
Considerations for innovative methods of delivery:	Tutors delivering this unit will have opportunities to use a wide range of techniques: lectures, discussions, research, visits to exhibitions and workshop visits. Delivery should stimulate, motivate and educate the learner. QR codes could be used in addition to centre learning platforms for access to teaching, learning and revision materials.
Ways of ensuring content is delivered in line with current, up-to-date industry practice:	Health, safety and welfare issues are paramount and should be strictly reinforced through close supervision of all activities, and risk assessments must be undertaken prior to any activities taking place. All maintenance tasks have risks which must be addressed to ensure safe systems of work are set up and maintained.
EDI or accessibility considerations:	Providers must deliver the unit in line with their EDI policy and organisational procedures, allowing access for all to participate where possible and as required.

Digital initiative considerations:	Accessing teaching and revision materials though QR codes directly on site through use of mobile electrical devices will allow candidates quick and easy access to qualification resources.
Sustainability considerations:	Options of reclaimed special brick could be explored for this unit.
Books:	Beattie, J, Tucker, T, Burdfield, M and Fearn, C, *Level 3 Diploma in Bricklaying*, City & Guilds, ISBN-13: 978-0851933030 Curtin, WG et al (1983) *Designing in Reinforced Brickwork*, The Brick Development Association, ASIN: B0007B0CAU The Brick Development Association (2020) *Guide to Successful Brickwork*, 4th ed., Routledge, Taylor & Francis Group, ISBN: 9780367486617
Websites:	National Education and Business Partnership Network – www.nebpn.org Work Experience/Workplace Learning Frameworks – Centre for Education and Industry (CEI University of Warwick) – www.warwick.ac.uk/wie/ce Construction Industry Joint Council – Working rule agreement for the construction Industry UK – www.builders.org.uk/resources/nfb/000/322/301/May_2013_WRA_Final_Version.pdf Born to build – www.borntobuild.org.uk The UK Contractors Group – www.ukcg.org.uk/representing-industry/open-doorsweekend BCIS – RICS – www.rics.org/uk/knowledge/bcis/ The Brick Development Association – https://www.brick.org.uk/guides Ibstock brick – https://www.ibstock.co.uk/products/special-shapes The Guild of Bricklayers – www.guildofbricklayers.org.uk

Appendix 1 Qualification content mapping to Occupational Standard

The table below contains the mapping of the occupational standard ST1334 Craft Bricklayer Knowledge, Skills and Behaviours (KSBs) to the City & Guilds Level 3 Technical Occupational Entry in Bricklaying (Diploma) (7255-53)

The KSB reference to each unit in this document is not exhaustive.

Unit	Knowledge, skills and behaviours (KSBs) reference
Unit 301 Health, safety, welfare and the environment	K1, K2, K3, K4, K5, K6, K30, K31 B2
Unit 302 Principles of construction	K7, K9, K10, K11, K15, K16, K17, K25 S7
Unit 303 Principles of organising, planning and pricing construction work	K12, K13, K14, K26, K27, K28, K29 S19, S21, S22, S23 B4
304 Constructing radial and battered brickwork	K17, K18, K19, K20 S1, S2, S10, S12, S14, S20, S23 B3
305 Constructing decorative and reinforced brickwork	K8, K21, K22, K23, K24 S1, S2, S3, S4, S5, S6, S8, S9, S11, S13, S15, S16, S17, S18, S20, S23, S24 B1, B6

Appendix 2 Sources of general information

The following documents contain essential information for centres delivering City & Guilds qualifications. They should be referred to in conjunction with this handbook. To download the documents and to find other useful documents, go to **www.cityandguilds.com** or click on the links below:

Centre handbook: quality assurance standards
This document is for all approved centres and provides guidance to support their delivery of our qualifications. It includes information on:

- centre quality assurance criteria and monitoring activities
- administration and assessment systems
- centre-facing support teams at City & Guilds/ILM
- centre quality assurance roles and responsibilities.

The centre handbook should be used to ensure compliance with the terms and conditions of the centre contract.

Centre assessment: quality assurance standards
This document sets out the minimum common quality assurance requirements for our qualifications that feature centre-assessed components.

It incorporates our expectations for centre internal quality assurance and the external quality assurance methods we use to ensure that assessment standards are met and upheld. It also details the range of sanctions that may be put in place when centres do not comply with our requirements or actions that will be taken to align centre marking/assessment to required standards. Additionally, it provides guidance on administering portfolios and controlled assessments, including a definition of supervised conditions.

Access arrangements: when and how applications need to be made to City & Guilds
This provides full details of the arrangements that may be made to facilitate access to assessments and qualifications for candidates who are eligible for adjustments in assessment.

The **centre document library** also contains useful information on such things as:

- conducting examinations
- registering learners
- appeals and malpractice.

Useful contacts

Please visit the **contact us** section of the City & Guilds website.

City & Guilds

For almost 150 years, we have worked with people, organisations and economies to help them identify and develop the skills they need to thrive. We understand the life-changing link between skills development, social mobility, prosperity and success. Everything we do is focused on developing and delivering high-quality training, qualifications, assessments and credentials that lead to jobs and meet the changing needs of industry.

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