



City & Guilds Level 4 Certificate of Competence in ETR 132 Resilience Arboricultural Surveyor (0038-41)

December 2021 Version 1.0

Qualification Handbook

Qualification at a glance

Industry area	Arboriculture
City & Guilds number	0038-41
Age group	18+
Entry requirements	<p>Candidates must have achieved Level 3 Certificate of Competence in Utility Arboriculture Basic Electrical Knowledge (0038-30), Level 3 Certificate of Competence in Utility Arboriculture Tree Species Recognition, Growth Characteristics and Associated Hazards (0038-31) and Level 4 Certificate of Competence in Utility Arboriculture Surveyor (0038-40) or equivalent qualifications.</p> <p>Centres must ensure that any pre-requisites stated are met.</p>
Assessment	<p>To gain this qualification, candidates must successfully achieve the following assessments:</p> <ul style="list-style-type: none"> One to one practical assessment with oral questioning by an NPTC City & Guilds approved assessor
Grading	Pass only
Approvals	<p>Full centre approval</p> <p>Qualification approval</p>
Support materials	n/a
Registration and certification	Registration and certification of this qualification is through the Walled Garden and is subject to end dates.

Title and level	Size (GLH)	TQT	City & Guilds qualification number	Ofqual accreditation number
City & Guilds Level 4 Certificate of Competence in ETR 132 Resilience Arboricultural Surveyor	16	18	0038-41	603/7892/X

Version and date	Change detail	Section
1.0	First version	

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1 Introduction

Purpose of this qualification?

The following purpose is for the **City & Guilds Level 4 Certificate of Competence in ETR 132 Resilience Arboricultural Surveyor (603/7892/X)**.

Area	Description
OVERVIEW	
Who is this qualification for?	Individuals who operate around utility services as part of their work in arboriculture, forestry, or other industries. It will provide the individual with the knowledge, understanding and skills required to carry out a ETR 132 resilience arboriculture survey.
What does this qualification cover?	It covers Hazards, risks and controls, reasons behind undertaking an Electrical Technical Report ETR 132 survey, office-based pre-survey, tree inspection equipment, survey information, fungal decay organisms, notifiable pests and diseases, factors for hardwood woodlands and softwood forestry plantations, risk rating, machinery for tree management and tree inspection.
WHAT COULD THIS QUALIFICATION LEAD TO?	
Will the qualification lead to employment, and if so, in which job role and at what level?	This qualification will support progression into employment, where working around utility services is part of the role. Safe operational skills are key to efficient use, good working practice and preventing accidents, leading to business benefits in terms of less machinery damage and down time.
Why choose this qualification over similar qualifications?	This is a specialist qualification demonstrating the individual can safely carry out duties associated with working around utility services to a recognised level of competency.
Will the qualification lead to further learning?	Individuals who successfully complete this qualification could go on to increase their level of proficiency through consolidation practice within a working environment or develop other skills within the Utility Arboriculture suite of qualifications.
WHO SUPPORTS THIS QUALIFICATION?	
Employer/Higher Education Institutions	The Arboricultural Association
FURTHER INFORMATION	Please refer to the City & Guilds NPTC website for more information on the assessment.

Qualification structure

For the **City & Guilds Level 4 Certificate of Competence in ETR 132 Resilience Arboricultural Surveyor (0038-41)** learners must be trained and assessed in the unit listed below.

Unit number	Unit title	GLH
Learners must achieve		
403	ETR 132 Resilience Arboricultural Surveyor	16

2 Centre requirements

Approval

New centres will need to gain centre approval. Existing City & Guilds centres who do not currently offer this qualification must go through the Qualification Approval (QAP) process. For centres currently offering Level 3 Certificate of Competence in Utility Arboriculture (UA10 Unit UA5.1 & 5.2) there is a Fast Track method of approval. Please email qasupport@cityandguilds.com for further information on the approval process.

Centre staffing

Staff delivering these qualifications must be able to demonstrate that they meet the following requirements:

- be technically competent in the areas in which they are delivering
- be able to deliver across the breadth and depth of the content of the qualification being taught
- have recent relevant teaching and assessment experience in the specific area they will be teaching, or be working towards this
- demonstrate continuing CPD.

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 assessments.

Assessment Guidance for the Assessor

Staff assessing these qualifications must be approved Certificate of Competence City & Guilds NPTC Assessors and must be independent **and cannot have been involved with the training of the Candidate**. This qualification can only be assessed by an Assessor who is suitably qualified and meets the requirements of the awarding body.

Certificate of Competence City & Guilds NPTC Assessors must meet the following requirements:

- show competence and provide evidence of industry expertise in the qualification/s they wish to assess
- hold the qualification as a candidate and have been technically evaluated as an Assessor
- be up to date with their verification and relevant first aid
- demonstrate continuing technically relevant CPD

Compliance with these requirements is a pre-requisite for Assessors remaining on the list of approved Assessors.

Verification is a process of monitoring assessment; it is an essential check to confirm that the assessment procedures are being carried out in the way City & Guilds has laid down. The overall aim of verification is to establish a system of quality assurance that is acceptable in terms of both credibility and cost effectiveness and approved Assessors will be subject to a regular visit by the Verifier at a time when assessments are being undertaken.

A selection of assessment reports completed by the Assessor will be evaluated by a City & Guilds approved Quality Consultant.

Safe Practice

Appropriate PPE must be worn at all times

All equipment must be operated in such a way that the Candidate, Assessor, other persons, animals or other equipment are not endangered.

If these conditions are not observed this will result in the Candidate not meeting the required standard.

Validation of Equipment

Any item(s) of equipment used for the assessment must comply with current legal requirements.

Additional information may be sought from the relevant manufacturer's instruction book, operators' manual, product label/database or any other Government/Government Agency publication.

Age restrictions

This qualification is approved for learners aged 18+.

3 Administration

Approved centres must have effective quality assurance systems to ensure valid and reliable delivery and assessment of qualifications. Quality assurance includes initial centre registration by City & Guilds and the centre's own internal procedures for monitoring quality assurance procedures.

Consistent quality assurance requires City & Guilds and its associated centres to work together closely; our Quality Assurance Model encompasses both internal quality assurance (activities and processes undertaken within centres) and external quality assurance (activities and processes undertaken by City & Guilds).

External quality assurance

City & Guilds will undertake external moderation activities to ensure that the quality assurance criteria for this qualification are being met. Centres must ensure that they co-operate with City & Guilds staff and representatives when undertaking these activities.

City & Guilds requires the Head of Centre to

- facilitate any inspection of the centre which is undertaken on behalf of City & Guilds
- make secure arrangements to receive, check and keep assessment material secure at all times, maintain the security of City & Guilds confidential material from receipt to the time when it is no longer confidential and keep completed assignment work and examination scripts secure from the time they are collected from the candidates to their dispatch to City & Guilds.

Malpractice

Please refer to the City & Guilds guidance notes *Managing cases of suspected malpractice in examinations and assessments*. This document sets out the procedures to be followed in identifying and reporting malpractice by candidates and/or centre staff and the actions which City & Guilds may subsequently take. The document includes examples of candidate and centre malpractice and explains the responsibilities of centre staff to report actual or suspected malpractice. Centres can access this document on the City & Guilds website.

Examples of candidate malpractice are detailed below (please note that this is not an exhaustive list):

- falsification of assessment evidence or results documentation
- plagiarism of any nature
- collusion with others
- copying from another candidate (including the use of ICT to aid copying), or allowing work to be copied
- deliberate destruction of another's work
- false declaration of authenticity in relation to assessments
- impersonation.

These actions constitute malpractice, for which a penalty (eg disqualification from the assessment) will be applied.

Where suspected malpractice is identified by a centre after the candidate has signed the declaration of authentication, the Head of Centre must submit full details of the case to City & Guilds at the earliest opportunity. Please refer to the form in the document *Managing cases of suspected malpractice in examinations and assessments*. Alternatively please complete the form, JCQ/M1. Copies of this form can be found on the JCQ website: <http://www.jcq.org.uk>

Access arrangements and special consideration

We have taken note of the provisions of equalities legislation in developing and administering this specification.

We can make arrangements so that candidates with disabilities, special educational needs and temporary injuries can access the assessment. These arrangements must be made before assessment takes place.

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>

Special consideration

We can give special consideration to candidates who have had a temporary illness, injury or indisposition at the time of the examination. Where we do this, it is given after the examination.

Applications for either access arrangements or special consideration should be submitted to City & Guilds by the Examinations Officer at the centre. For more information please consult the current version of the JCQ document, *A guide to the special consideration process*.

Language of examinations

City & Guilds has a responsibility to ensure that candidates can be assessed in the following languages only:

- English
- English in Northern Ireland
- English in Wales.

4 Units

Level:	4
GLH	16

What is this unit about?

The aim of this unit is to provide the learner with the knowledge, understanding and skills required to carry out a ETR 132 resilience arboriculture survey.

Learning outcomes

In this unit, learners will be able to

1. Understand the requirements of ETR 132 Resilience Arboricultural Surveyor

Scope of content

This section gives details of the scope of content to be covered in the teaching of the unit to ensure that all the learning outcomes can be achieved.

Learning outcome:

1. Understand the requirements of ETR 132 Resilience Arboricultural Surveyor

Topics:

- 1.1 Hazards, risks and controls
- 1.2 Reasons behind undertaking an Electrical Technical Report ETR 132 survey
- 1.3 Office-based pre-survey
- 1.4 Tree inspection equipment
- 1.5 Survey information
- 1.6 Fungal decay organisms, notifiable pests and diseases
- 1.7 Factors for hardwood woodlands and softwood forestry plantations
- 1.8 Risk rating
- 1.9 Machinery for tree management
- 1.10 Tree inspection

Topic 1.1

Identify hazards, risks, and controls relevant to the site and task.

Topic 1.2

The reasons behind undertaking an Electrical Technical Report ETR 132 survey may include:

- Government stipulation as part of the ESQCR regulations 2006 amendment
- Provide network resilience in both normal and adverse weather conditions
- Helps to maintain a continuous supply to homeowners and business
- A proactive approach can be cost effective for network operators and stakeholders
- Reduces the chances of overhead operatives reinstalling network during unsociable hours in potentially dangerous conditions
- Required work has the timescale to be meticulously planned
- Other

Topic 1.3

The elements covered with an office-based pre-survey, prior to visiting site may include:

- Landownership
- Environmental restrictions, e.g. SSSI
- Restricted areas
- Ancient monuments
- Eps present on site
- Generation issues windfarms, solar
- Other utilities, infrastructure
- Other

Topic 1.4

Equipment that could assist in the process of inspecting trees for safety reasons may include:

- Diameter (DBH) tape
- 30m measuring tape
- Probe
- Compass
- Torch
- Mallet
- Trowel
- Binoculars
- Mobile phone
- Clinometer/Laser range finder
- Knife with retractable blade
- Recording equipment (pens, paper, or tablet)
- Reference material
- Other

Topic 1.5

State the minimum level of data to be recorded:

- Circuit/line name/identification
- Voltage
- Pole numbers
- Tree/site number
- Species
- Age class
- Height
- Spread
- Distance from conductors
- Tree category
- Condition/details of defects
- Direction of lean if applicable
- Risk rating
- Management recommendations
- Live line /deadline working
- Time/staff/equipment required
- Details of access/egress
- Details regarding disposal of arisings

Different methods of identifying that a tree is within falling distance of the overhead network may include:

- Laser range finder
- Clinometer and measuring tape
- Reference to known distances
- Experience
- Other

Tree defects and indicators to be recorded on a basic tree survey may include:

- Root heave
- Undermining of root system
- Cavities
- Fruiting bodies
- Staining/bacterial infections
- Insect damage

- Included/compression unions
- Cracking/splitting
- Flaking bark
- Hazard beams
- Reaction wood/adaptive growth
- Crown dieback
- Thinning crown
- Major deadwood
- Storm damaged/hanging branches
- Other

Topic 1.6

Identification and knowledge of principal fungal decay organisms may include:

Armillaria mellea (Honey Fungus):

- Host – wide range of conifers and broadleaves
- Area affected – lower stem
- Type of decay – white rot

Kretzschmaria deusta (Brittle Cinder):

- Host – wide range of broadleaves
- Area affected – buttresses and roots
- Type of decay – soft rot in early stages, a white rot can develop

Meripilus giganteus (Giant Polypore):

- Host – common on beech
- Area affected – main root structure
- Type of decay - white rot but with soft rot in early stages

Inonotus hispidus (Shaggy/Velvet Bracket):

- Host – broadleaves, mainly ash
- Area affected – upper stem and principal branches
- Type of decay – simultaneous white rot

Heterobasidion annosum (Fomes Root Rot):

- Host - range of conifers and broadleaves
- Area affected – roots then stem
- White pocket rot

Phellinus ignarius (Willow Bracket):

- Host – mainly willow
- Area affected – main stems
- Type of decay – white rot

Fomitopsis betulina (Birch Polypore):

- Host – birch
- Area affected – main stems
- Type of decay – brown rot

Fistulina hepatica (Beefsteak Fungus):

- Host – oak and sweet chestnut
- Area affected – heartwood
- Type of decay – brown rot

Ganoderma species (Brackets):

- Host – broadleaves
- Area affected – buttresses, main stems
- Type of decay – white rot

Grifola frondose (Hen of the Woods):

- Host – oak and hornbeam
- Area affected – central rootplate or stem
- Type of decay – soft rot in early stages then white rot

Laetiporus sulphureus (Chicken of the Woods):

- Host – broadleaves and conifers
- Area affected - roots, buttresses, main stems and branches
- Type of decay – brown rot

Cerioporus squamosus (Dryads Saddle):

- Host – broadleaves
- Area affected - main stem and branches
- Type of decay - white rot

Sparassis crispa (Cauliflower Fungus):

- Host – conifers
- Area affected – roots and main stem
- Types of decay – brown rot

Phaeolus schweinitzii (Dyer's Mazegill):

- Host – conifers
- Area affected – roots
- Type of decay – brown rot

Perenniporia fraxinea (Giant Ash Bracket):

- Host – ash
- Area affected – buttresses and roots
- Type of decay – white rot

Rigidoporus ulmarius (Giant Elm Bracket):

- Host – broadleaves
- Area affected – buttresses
- Type of decay – brown rot

Pseudoinonotus dryadeus (Eiffel Tower Bracket):

- Host – oak, occasionally beech
- Area affected – central buttresses
- Type of decay – selective delignification

Pholiota squarrosa (Shaggy Scaly cap):

- Host – broadleaves
- Area affected – buttresses and principal roots
- Type of decay – white rot

Pleurotus ostreatus (Oyster Mushroom):

- Host – broadleaves
- Area affected – main stem and principal branches
- White rot
- Other

Notifiable pests and diseases may include:

Phytophthora ramorum (Ramorum disease):

- Host – larch, sweet chestnut
- Spread – water born

Hymenoscyphus fraxineus (Ash Dieback):

- Host – ash
- Spread – wind, movement of infected plants and timber

Thaumetopoea processionea (Oak Processionary Moth):

- Host – oak
- Spread – eggs laid on host trees

Dendroctonus micans (Great Spruce Bark Beetle):

- Host – spruce and pine
- Spread – beetle movements
- Other

Contact regional forestry bodies

Topic 1.7

Factors to be considered when dealing with hardwood woodlands in relation to resilience requirements may include:

Species:

- Fruit orchard, susceptibility to disease, summer branch drop etc.

Historic treatment:

- Avenues, veteran trees, coppicing, planning constraints

Silvicultural selective thinning:

- Type of thinning already used, can a silvicultural thin preclude smaller trees falling out of the woodland, age of trees, density of planting

Timing of work:

- Risk of disease spread for certain species at certain times of the year, branch removal in spring

Windfirm edges:

- Fully understands the critical aspect of the woodlands windfirm edge and the effect of even partial removal
- Other

Factors to be considered when dealing with commercial softwood forestry plantations in relation to resilience requirements may include:

Age of planting:

- Newer plantations will be less of a problem to extend falling distance
- The long-term problem of “side pruning” softwood trees.

Species:

- Health problems -*phytophthora*, *dendroctonus* etc;
- Species more likely to snap than fail at the base – e.g., norway spruce, or break branches e.g., larch

Ground conditions:

- Slope hazards including constraints on harvesting equipment and extraction
- Peat/wet areas
- Poorly maintained drains

Windthrow hazard classification:

- How resilience working can affect the overall scoring

Red zone harvesting:

- Full understanding of the complexity and necessity of ENA ER G96
- Types of harvesting equipment that can be used
- Fundamental electrical requirements of the operation

Felling license implications:

- Exemptions for resilience clearance up to falling distance plus VZ
- Felling license applications for felling beyond exemption distances
- Timings of operations due to other constraints

Forestry produce, felling and extraction methods:

- Type of produce
- Produce selection tables
- Calculation of volumes
- Stacking areas
- Extraction routes

Stump treatment:

- Specific areas this is still used
- The purpose of stump treatment

Site watercourse management:

- Operational timings
- Silt traps
- Extraction routes
- Temporary drains

Replanting requirements:

- Species selection
- Timing
- Local plant restrictions
- National plant restrictions
- Other

Topic 1.8

Principles of risk rating may include:

- Probability of failure occurring
- Severity of the damage
- People/property/equipment present – target
- Frequency of use
- Overhead electrical network -100% target – constantly present
- Other

Topic 1.9

Different machinery to aid safe and efficient tree management may include:

Mobile Elevating Work Platform:

- Wide range of MEWP's are now available and can eliminate the need to use a climber in a tree with known defects

Remote controlled winch/mulcher:

- Can be fitted with attachments such as a winch for controlled felling and mulcher to improve access to trees

360' Excavator:

- 360' excavators can be fitted with attachments such as a timber grab to move timber on site

Articulated telescopic telehandler:

- Articulated telescopic telehandler can be fitted with grapple saws or timber shears to safely dismantle trees
- Other

Considerations when using machinery in proximity to the network may include:

- Whether the use of certain machinery requires the line to be isolated
- GS6 regulations may apply
- Operators should be suitably trained and competent
- Other

Topic 1.10

Visual tree assessment:

- Accurate network location established
- Tree species correctly identified
- Reference number attributed
- Generic data collected
- (height, spread, weighting, age class, tree category)
- Defects correctly identified
- Appropriate risk rating given
- Suitable management recommendation and timeframe for work to commence
- Correct allocation of time/staff/equipment
- Disposal of arisings

All activities must be completed in a way which protects the operator and those around them.

Appendix 1 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 the **Centres and Training Providers homepage** on www.cityandguilds.com.

City & Guilds Centre Manual

This document provides guidance for organisations wishing to become City & Guilds approved centres, as well as information for approved centres delivering City & Guilds qualifications. It covers the centre and qualification approval process as well as providing guidance on delivery, assessment and quality assurance for approved centres.

It also details the City & Guilds requirements for ongoing centre and qualification approval, and provides examples of best practice for centres. Specifically, the document includes sections on:

- the centre and qualification approval process
- assessment, internal quality assurance and examination roles at the centre
- registration and certification of candidates
- non-compliance and malpractice
- complaints and appeals
- equal opportunities
- data protection
- management systems
- maintaining records
- internal quality assurance
- external quality assurance.

Our Quality Assurance Requirements

This document explains the requirements for the delivery, assessment and awarding of our qualifications. All centres working with City & Guilds must adopt and implement these requirements across all of their qualification provision. Specifically, this document:

- specifies the quality assurance and control requirements that apply to all centres
- sets out the basis for securing high standards, for all our qualifications and/or assessments
- details the impact on centres of non-compliance

Our Quality Assurance Requirements document encompasses the relevant regulatory requirements of the following documents, which apply to all UK centres working with City & Guilds:

- Ofqual's General Conditions of Recognition

The **centre homepage** section of the City & Guilds website also contains useful information on

- **Walled Garden:** how to register and certificate candidates on line
- **Events:** dates and information on the latest Centre events
- **Online assessment:** how to register for e-assessments.

Useful contacts

UK learners General qualification information	E: learnersupport@cityandguilds.com
International learners General qualification information	E: intcg@cityandguilds.com
Centres Exam entries, Certificates, Registrations/enrolment, Invoices, Missing or late exam materials, Nominal roll reports, Results	E: information@cityandguilds.com
Single subject qualifications Exam entries, Results, Certification, Missing or late exam materials, Incorrect exam papers, Forms request (BB, results entry), Exam date and time change	E: singlesubjects@cityandguilds.com
International awards Results, Entries, Enrolments, Invoices, Missing or late exam materials, Nominal roll reports	E: intops@cityandguilds.com
Walled Garden Re-issue of password or username, Technical problems, Entries, Results, e-assessment, Navigation, User/menu option, Problems	E: walledgarden@cityandguilds.com
Employer Employer solutions, Mapping, Accreditation, Development Skills, Consultancy	T: +44 (0)121 503 8993 E: business@cityandguilds.com

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About City & Guilds

As the UK's leading vocational education organisation, City & Guilds is leading the talent revolution by inspiring people to unlock their potential and develop their skills. City & Guilds is recognised and respected by employers across the world as a sign of quality and exceptional training.

City & Guilds Group

The City & Guilds Group operates from three major hubs: London (servicing Europe, the Caribbean and Americas), Johannesburg (servicing Africa), and Singapore (servicing Asia, Australia and New Zealand). The Group also includes the Institute of Leadership & Management (management and leadership qualifications), City & Guilds Licence to Practice (land-based qualifications) and Learning Assistant (an online e-portfolio).

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City & Guilds

Giltspur House

5 -6 Giltspur Street

London EC1A 9DE

www.cityandguilds.com