

# **SEG Awards Level 4 Award, Certificate and Diploma in Arboriculture**

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## **Qualification Guidance**

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### **England**

**Award – 600/2490/2**

**Certificate – 600/2698/4**

**Diploma – 600/2582/7**

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### **Wales**

**Award – C00/1376/8**

**Certificate – C00/1377/1**

**Diploma – C00/1376/9**

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## About Us

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At Skills and Education Group Awards we continually invest in high quality qualifications, assessments, and services for our chosen sectors. As a UK leading sector specialist we continue to support employers and skills providers to enable individuals to achieve the skills and knowledge needed to raise professional standards across our sectors.

Skills and Education Group Awards has an on-line registration system to help customers register learners on its qualifications, units and exams. In addition it provides features to view exam results, invoices, mark sheets and other information about learners already registered.

The system is accessed via a web browser by connecting to our secure website using a username and password: [Skills and Education Group Awards Secure Login](#)

### Sources of Additional Information

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Skills and Education Group Awards website <https://skillsandeducationgroupawards.co.uk/> provides access to a wide variety of information.

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### Specification Code, Date and Issue Number

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The specification codes are **Award** A9300-04 / **Certificate** C9300-04 / **Diploma** D9300-04.

Version	Date	Details of change
1.0	14/12/2021	Qualification guide published in new format
1.0	14/12/2021	Indicative Content removed and added to ORS
1.0	14/12/2021	New qualification review date
1.1	01/12/2022	Rule of Combination - Maximum requirement of 12 credits removed on page 4 for the Level 4 Award in Arboriculture
1.2	12/02/2025	Operational and Certification End Date set

This guide should be read in conjunction with the Indicative Content document **version 1.0** which is available on our secure website using the link above.

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This is a live document and as such will be updated when required. It is the responsibility of the approved centre to ensure the most up-to-date version of the Qualification Guide is in use. Any amendments will be published on our website and centres are encouraged to check this site regularly.

# Skills and Education Group Awards Partners for this Qualification

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Royal Forestry Society (RFS): Royal Forestry Society, The Hay Barns, Home Farm Drive, Upton Estate, Banbury OX15 6HU. Tel: 01295 678588 Fax: 01295 670798 Website: [www.rfs.org.uk](http://www.rfs.org.uk)

These qualifications are recognised by Royal Forestry Society as providing the skills required for this industry.

## Introduction

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The SEG Awards Level 4 Award, Certificate and Diploma in Arboriculture are designed for those people working in arboriculture, in both the public and private sectors, to complement their training and experience, and to provide evidence of their knowledge of arboriculture. They have been developed in collaboration with industry, providers and Lantra, the Sector Skills Council for the Land based industries.

## Pre-requisites

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No formal entry requirements but Skills and Education Group Awards expects approved centres to recruit with integrity on the basis of a learner's ability to contribute to and successfully complete all the requirements of a unit/s or the full qualification.

## Qualification Structure and Rules of Combination

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### Rules of Combination: Level 4 Award in Arboriculture

Learners must achieve a minimum of 9 credits, of which 7 credits must be at Level 4 or above.

Unit	Unit Number	Level	Credit Value	GL
Optional Units				
Woody vegetation formation and physiology	D/503/3316	4	6	35
Tree biomechanics and maintenance	M/503/3319	4	7	40
Pest, disease and disorder identification	M/503/3322	3	5	24
Principles of tree management	T/503/3323	5	9	45
Development and tree protection	A/503/3324	4	5	25

Optional Units				
Selection, planting and design with hardy nursery stock for amenity and landscape purposes	L/503/3330	5	8	40
Principles of woodland establishment and management	F/503/3325	3	5	25
Tree related damage to built structures	L/503/3327	4	4	20

### Rules of Combination: Level 4 Certificate in Arboriculture

Learners must achieve a minimum of 31 credits. This must include 27 credits from the mandatory units.

Unit	Unit Number	Level	Credit Value	GL
Mandatory Units				
Woody vegetation formation and physiology	D/503/3316	4	6	35
Tree biomechanics and maintenance	M/503/3319	4	7	40
Pest, disease and disorder identification	M/503/3322	3	5	24
Principles of tree management	T/503/3323	5	9	45
Optional Units				
Development and tree protection	A/503/3324	4	5	25
Selection, planting and design with hardy nursery stock for amenity and landscape purposes	L/503/3330	5	8	40
Principles of woodland establishment and management	F/503/3325	3	5	25
Tree related damage to built structures	L/503/3327	4	4	20

### Rules of Combination: Level 4 Diploma in Arboriculture

Learners must achieve a minimum of 49 credits. This must include 40 credits from the mandatory units.

Unit	Unit Number	Level	Credit Value	GL
<b>Mandatory Units</b>				
Woody vegetation formation and physiology	D/503/3316	4	6	35
Tree biomechanics and maintenance	M/503/3319	4	7	40
Pest, disease and disorder identification	M/503/3322	3	5	24
Principles of tree management	T/503/3323	5	9	45
Development and tree protection	A/503/3324	4	5	25
Selection, planting and design with hardy nursery stock for amenity and landscape purposes	L/503/3330	5	8	40
<b>Optional Units</b>				
Principles of woodland establishment and management	F/503/3325	3	5	25
Tree related damage to built structures	L/503/3327	4	4	20

## Aims

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The SEG Awards Level 4 Award, Certificate and Diploma in Arboriculture aim to:

- Improve job prospects
- Encourage knowledge and application of current arboricultural industry best practice
- Encourage learners to follow a programme of structured continuing professional development (CPD)
- Facilitate access to higher level management qualifications

## Target Group

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These qualifications are designed for those learners who:

- Have been involved in the practical side of the industry and wish to progress into a more managerial role
- Work in related disciplines such as horticulture, forestry, countryside management, landscape architecture and planning and wish to increase their knowledge of arboriculture
- Are currently working as tree officers, technicians and those involved in tree survey works who wish to achieve a recognised vocational qualification

Skills and Education Group Awards expects approved centres to recruit with integrity on the basis of a learner's ability to contribute to and successfully complete all the requirements of a unit/s or the full qualification.

## Assessment

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Internal assessment, external assessment, internal and external moderation. Specific requirements and restrictions may apply to individual units within qualifications. Please check unit and qualification details for specific information.

## Teaching Strategies and Learning Activities

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Centres should adopt a delivery approach which supports the development of all individuals. The aims and aspirations of all the learners, including those with identified special needs or learning difficulties / disabilities, should be considered and appropriate support mechanisms put in place.

## Progression Opportunities

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These qualifications provide access to continued Further Education, enhanced employability and / or an opportunity for employed learners to up-date existing skills.

In addition, achievement of these qualifications should provide a solid foundation of skills supporting progression to higher levels of responsibility and opening up the possibility of entrepreneurial activities such as starting one's own business.

Centres should be aware that reasonable Adjustments which may be permitted for assessment may in some instances limit a learner's progression into the sector. Centres must, therefore, inform learners of any limits their learning difficulty may impose on future progression.

## Tutor/Assessor Requirements

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Skills and Education Group Awards require those involved in the teaching and assessment process to be suitably experienced and / or qualified. Assessors should also be trained and qualified to assess or be working towards appropriate qualifications.

Those responsible for Internal Quality Assurance (IQA) must be knowledgeable of the subject / occupational area to a suitable level to carry out accurate quality assurance practices and processes.

## Language

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This specification and associated assessment materials are in English only.



## Qualification Summary

<b>Qualification</b>							
SEG Awards Level 4 Award in Arboriculture – 600/2490/2 SEG Awards Level 4 Certificate in Arboriculture – 600/2698/4 SEG Awards Level 4 Diploma in Arboriculture – 600/2582/7							
<b>Qualification Purpose</b>	<b>B.</b> Prepare for further learning or training and / or develop knowledge and/or skills in a subject area Sub Purpose <b>B1.</b> Prepare for further learning or training, B2. Develop knowledge and / or skills in a subject area						
<b>Age Range</b>	Pre 16		16-18	✓	18+	✓	19+ ✓
<b>Regulated</b>	The qualifications identified above are regulated by Ofqual and Qualifications Wales						
<b>Assessment</b>	<ul style="list-style-type: none"> <li>Internal assessment</li> <li>Internal and external moderation</li> </ul>						
<b>Type of Funding Available</b>	See FaLa (Find a learning aim)						
<b>Qualification/Unit Fee</b>	See Skills and Education Group Awards web site for current fees and charges						
<b>Grading</b>	Pass/Fail						
<b>Operational Start Date</b>	01/08/2011						
<b>Review Date</b>	31/08/2025						
<b>Operational End Date</b>	31/08/2025						
<b>Certification End Date</b>	31/08/2028						
<b>Guided Learning (GL)</b>	L4 Award – 44 hours L4 Certificate – 164 hours L4 Diploma – 254 hours						
<b>Total Qualification Time (TQT)</b>	L4 Award – 90 hours L4 Certificate – 310 hours L4 Diploma – 490 hours						
<b>Skills and Education Group Awards Sector</b>	Land Based						
<b>Ofqual SSA Sector</b>	03.2 Horticulture and Forestry						
<b>Stakeholder Support</b>	This qualification is supported by Lantra, the Sector Skills Council for environmental and land-based industries						
<b>Administering Office</b>	See Skills and Education Group Awards web site						



## Woody Vegetation Formation and Physiology

<b>Unit Reference</b>	<b>D/503/3316</b>
<b>Level</b>	<b>4</b>
<b>Credit Value</b>	<b>6</b>
<b>Guided Learning (GL)</b>	<b>35 hours</b>
<b>Unit Summary</b>	<p>This unit covers the physiological function of woody vegetation and the application of that understanding to arboriculture.</p> <p>The learner will understand the effects on the tree system when conditions are not at their optimum for growth and how adverse conditions may be prevented or improved.</p>
<b>Learning Outcomes (1 to 9)</b> <i>The learner will</i>	<b>Assessment Criteria (1.1 to 9.3)</b> <i>The learner can</i>
1. Understand primary and secondary growth processes in trees.	<p>1.1. Describe determinate and indeterminate shoot development in trees.</p> <p>1.2. Describe secondary growth processes in trees.</p> <p>1.3. Compare the benefits and limitations of ring porous, diffuse porous xylem anatomy in tree.</p>
2. Understand the makeup of woody cell connections and water movement.	<p>2.1. Explain the symplastic and apoplastic movement that occurs in the tree.</p> <p>2.2. Explain each of the following related to water movement:</p> <ul style="list-style-type: none"> <li>• Root pressure (pushed up)</li> <li>• Tension-cohesion theory (pulled up)</li> </ul>
3. Understand the relationship between the concepts of dynamic and static mass and potential energy.	<p>3.1. Explain how a tree regulates its mass/energy ratio as it ages.</p> <p>3.2. Analyse five ways in which the impact of tree work on potential energy (Non-structural carbohydrates) can be reduced.</p>
4. Understand how the efficiency of a tree's system can be adversely affected.	<p>4.1. Describe the significant effects on the tree system of:</p> <ul style="list-style-type: none"> <li>• Carrying out any operation as named in BS 3998</li> </ul>

	<ul style="list-style-type: none"> <li>• A named abiotic disorder (excluding any climatic factor)</li> <li>• A named climatic condition</li> <li>• A named pest attacking the foliage</li> <li>• A named pest attacking the vascular system</li> <li>• A named pathogen attacking the root system</li> <li>• A 'complex' decline (combination of problems)</li> </ul> <p>4.2. Describe how the principal requirements of an urban tree can be provided for in practice to achieve a healthy full-term life.</p>
<p>5. Understand the process of photosynthesis.</p>	<p>5.1. State what occurs in the light and dark reactions during photosynthesis.</p> <p>5.2. Explain factors affecting the rate of photosynthesis.</p> <p>5.3. Describe how chlorophyll fluorescence can be measured to monitor tree performance.</p>
<p>6. Understand branch formation and shedding.</p>	<p>6.1. Describe and compare the theories regarding fork / branch formation and attachment for similarities and differences (Shigo, Mattheck and Slater).</p> <p>6.2. Explain how significant structural weaknesses found in branch and co-dominant stem formation can lead to failure.</p> <p>6.3. Describe measures that can reduce the incidence of branch or co-dominant stem failure.</p> <p>6.4. Describe four unsound arboricultural practices explaining how each may increase the risk of tree / branch failure.</p>
<p>7. Understand the benefits of trees forming symbiotic relationships.</p>	<p>7.1. Evaluate the symbiotic relationship as formed between trees and:</p> <ul style="list-style-type: none"> <li>• Fungi</li> <li>• Bacteria</li> </ul> <p>7.2. Describe how the above relationships can be encouraged to develop by cultural practices.</p>

<p>8. Understand how soil conditions affect root system development and function.</p>	<p>8.1. Describe the formation, distribution and depth of a typical temperate root system.</p> <p>8.2. Describe the principal effects on root development and / or function of each of the following soil factors:</p> <ul style="list-style-type: none"> <li>• Hydraulic conductivity</li> <li>• Bulk density</li> <li>• Soil aeration</li> <li>• Soil temperature</li> <li>• PH</li> <li>• Poor cation exchange</li> <li>• A man-made or natural barrier</li> </ul>
<p>9. Understand how a tree responds to wounding.</p>	<p>9.1. Evaluate the process called compartmentalisation that a tree goes through following wounding.</p> <p>9.2. Explain, with examples, why some species are better than others at compartmentalisation of wounds.</p> <p>9.3. Describe and justify the use of three practices that can be adopted at the time of carrying out tree surgery operations that may assist a tree to form barriers as represented in the CODIT model.</p>

## Tree Biomechanics and Maintenance

<b>Unit Reference</b>	<b>M/503/3319</b>
<b>Level</b>	<b>4</b>
<b>Credit Value</b>	<b>7</b>
<b>Guided Learning (GL)</b>	<b>40 hours</b>
<b>Unit Summary</b>	This unit covers the inspection of trees related to their condition and remedial actions that maybe required as a result of finding defects.
<b>Learning Outcomes (1 to 4)</b> <i>The learner will</i>	<b>Assessment Criteria (1.1 to 4.4)</b> <i>The learner can</i>
1. Understand tree form as an ideal structure.	<p>1.1. Summarise the concept that is the foundation of the principle 'The Axiom of Uniform Stress'.</p> <p>1.2. Outline the reasoning for the school of thought that the axiom of uniform stress is an incomplete concept.</p> <p>1.3. Explain why sound trees might break.</p>
2. Be able to recognise warning signs or symptoms of impending mechanical failure in trees.	<p>2.1. Identify ten symptoms of mechanical defects and explain how each defect can lead to a named failure type.</p> <p>2.2. Undertake a systematic inspection of five trees and record any defects found: evaluate the defects, without the use of specialised equipment,</p> <ul style="list-style-type: none"> <li>• Draw conclusions regarding the potential risk posed by each tree</li> <li>• Present the findings in an appropriate format</li> </ul> <p>2.3. Apply one hollow tree failure criteria to a tree.</p>
3. Understand the treatment of defects in trees.	<p>3.1. Describe how each of the following may reduce or prevent risks to a target posed by trees:</p> <ul style="list-style-type: none"> <li>• Formative pruning</li> <li>• Crown reduction</li> <li>• Selective branch removal</li> <li>• Monolithing</li> <li>• Treatment of significant decay / cavities</li> <li>• Treatment of weak structures</li> </ul>

	<p>3.2. Prescribe an appropriate treatment for each of five given tree conditions in accordance with best practice.</p> <p>3.3. Evaluate the effectiveness of each treatment prescribed in assessment criteria 3.2.</p>
<p>4. Understand the principles of operation of specialised devices used to assist tree inspection.</p>	<p>4.1. Prescribe the use of an appropriate device to a given range of three different tree conditions and justify the decision.</p> <p>4.2. Evaluate the use of specialist equipment listed in one of the following categories identifying four strengths and four weaknesses excluding cost:</p> <ul style="list-style-type: none"> <li>• Sonic or ultrasonic</li> <li>• Electrical impedance</li> <li>• Computerised tomography</li> <li>• Micro-drills</li> <li>• Fractometer</li> <li>• Ground penetrating radar</li> </ul> <p>4.3. Evaluate the use of invasive decay detection devices and draw conclusions in relation to:</p> <ul style="list-style-type: none"> <li>• Wounding of woody tissues</li> <li>• Providing a pathway for colonisation by fungi</li> <li>• Monetary cost of their use versus the benefits</li> </ul> <p>4.4. Demonstrate the application of one specialist item of equipment used to undertake an investigation of symptoms or signs of structural defects from the following:</p> <ul style="list-style-type: none"> <li>• Sonic or ultrasonic</li> <li>• Electrical impedance</li> <li>• Computerised tomography</li> <li>• Micro-drills</li> <li>• Fractometer</li> <li>• Ground penetrating radar</li> </ul>

## Pest, Disease and Disorder Identification

<b>Unit Reference</b>	<b>M/503/3322</b>
<b>Level</b>	<b>3</b>
<b>Credit Value</b>	<b>5</b>
<b>Guided Learning (GL)</b>	<b>24 hours</b>
<b>Unit Summary</b>	This unit covers the identification, diagnosis, understanding, implications and treatment of present diseases and disorders that are a threat to woody vegetation populations in GB.
<b>Learning Outcomes (1 to 5)</b> <i>The learner will</i>	<b>Assessment Criteria (1.1 to 5.3)</b> <i>The learner can</i>
1. Understand how the control of pests and diseases are regulated.	1.1. Describe how domestic legislation would operate for a named pest or disease which is subject to a plant health order.
2. Know how to undertake an investigation to establish the presence of a pest, disease or abiotic disorder.	2.1. Using signs or symptoms present on woody vegetation identify three different causal agents from each of the following categories: <ul style="list-style-type: none"> <li>• Bacteria</li> <li>• Mammals</li> <li>• Invertebrates</li> <li>• Abiotic disorders</li> </ul>
3. Know what preventative measures or remedial treatments are available.	3.1. Prescribe and justify an appropriate prevention, control or treatment intervention for those agents identified in 2.1.
4. Understand how fungi colonise woody tissues.	4.1 Describe the four principal strategies employed by tree decay fungi to colonise woody tissues. 4.2 Describe each of the following types of rot and give an example of a fungal pathogen for each: <ul style="list-style-type: none"> <li>• White – selective delignification</li> <li>• White simultaneous</li> <li>• Brown</li> <li>• Soft</li> </ul>



	<p>4.3 For each of 20 principal decay fungi identify the following aspects:</p> <ul style="list-style-type: none"> <li>• Common hosts</li> <li>• Colonisation strategy</li> <li>• Type of rot caused</li> <li>• Arboricultural significances</li> <li>• Parts of host affected</li> <li>• Any preventative measures / treatment</li> </ul>
<p>5. Understand about biosecurity.</p>	<p>5.1. Describe the main benefits to the UK of a biosecurity policy.</p> <p>5.2. Outline the main points to be included in a biosecurity policy.</p> <p>5.3. Undertake / produce a biosecurity risk assessment.</p>

# Principles of Tree Management

<b>Unit Reference</b>	<b>T/503/3323</b>
<b>Level</b>	<b>5</b>
<b>Credit Value</b>	<b>9</b>
<b>Guided Learning (GL)</b>	<b>45 hours</b>
<b>Unit Summary</b>	This unit covers management aspects of trees, legislation and common laws that apply to working practices.
<b>Learning Outcomes (1 to 7)</b> <i>The learner will</i>	<b>Assessment Criteria (1.1 to 7.4)</b> <i>The learner can</i>
1. Know the value of trees.	<p>1.1. Describe six principal values and four drawbacks of trees under each of the following headings:</p> <ul style="list-style-type: none"> <li>• Environmental</li> <li>• Ecological</li> <li>• Social / economic</li> <li>• Amenity / landscape</li> </ul> <p>1.2. Carry out an amenity evaluation of a tree using a recognized methodology and draw conclusions related to the outcome.</p> <p>1.3. Evaluate the strengths and weaknesses of the methodology used.</p>
2. Understand how common law precedent may be applied to trees.	<p>2.1. Extrapolate from previous cases, the current common law precedents related to the following:</p> <ul style="list-style-type: none"> <li>• Overhanging branches</li> <li>• Encroaching roots</li> <li>• Poisonous trees</li> <li>• Dangerous trees</li> <li>• Rights to light</li> </ul> <p>2.2. Apply common law to the following:</p> <ul style="list-style-type: none"> <li>• Overhanging branches</li> <li>• Encroaching roots</li> </ul>

	<ul style="list-style-type: none"> <li>• Dangerous trees</li> </ul>
<p>3. Understand the implications of statutes related to trees.</p>	<p>3.1. Interpret statute law related to each of the following scenarios:</p> <ul style="list-style-type: none"> <li>• The management of height clearance of highway trees</li> <li>• A dangerous tree within falling distance of a public bridleway</li> <li>• A high evergreen boundary hedge between house owners</li> <li>• The removal of an important hedge in the countryside</li> <li>• The movement of waste materials</li> <li>• The application of a systemic herbicide</li> <li>• A protected species harmed by the actions of a tree surgeon</li> <li>• The habitat of a protected species destroyed by tree removal</li> </ul>
<p>4. Understand the implications of Health and Safety legislation and best practice related to tree work.</p>	<p>4.1. Interpret statute law and / or best practice as applied to each of the following scenarios:</p> <ul style="list-style-type: none"> <li>• The manual lifting of wood</li> <li>• The use of work equipment</li> <li>• The use of noisy machinery</li> <li>• The use of hazardous substance</li> <li>• Working at height</li> <li>• The use of equipment used for lifting purposes</li> <li>• The requirement to have a first aid assistance</li> <li>• An accident at work carrying out tree work</li> <li>• The use of machinery that can vibrate</li> <li>• Carrying out tree work alongside a highway</li> <li>• Working near electric utility lines</li> </ul> <p>4.2. Identify the duties, rights, or responsibilities under the Management of Health and Safety at Work Regulations for:</p> <ul style="list-style-type: none"> <li>• Employer</li> </ul>

	<ul style="list-style-type: none"> <li>• Employee</li> <li>• Self-employed</li> </ul> <p>4.3. Prepare a site specific risk assessment for a given tree surgery operation that conforms to the requirements of the regulations.</p> <p>4.4. Prepare a method statement for dismantling trees on a construction site.</p>
<p>5. Understand the application and implications of pruning methods to tree management, excluding risk management.</p>	<p>5.1. Evaluate each of the following pruning operations available to manage trees as described in the British Standard illustrated with named examples of tree species:</p> <ul style="list-style-type: none"> <li>• Formative pruning</li> <li>• Crown reduction</li> <li>• Crown thinning</li> <li>• Selective branch removal</li> <li>• Pollarding</li> </ul>
<p>6. Understand the advantages of pro-actively managing tree populations.</p>	<p>6.1. Contrast the pro-active and re-active management of a population of trees and form a conclusion.</p> <p>6.2. Identify the values of preparing a tree renewal programme for an example of over-mature trees in a street.</p>
<p>7. Understand the values of ancient and veteran trees.</p>	<p>7.1. Identify twelve reasons why a veteran or an ancient tree is recognised as being 'special'.</p> <p>7.2. Outline ten principles of managing Ancient / Veteran trees and justify why each principle contributes to enhancing the special aspects of those trees.</p> <p>7.3. Describe the principles and processes involved in 'veteranising' a tree and evaluate the potential results related to:</p> <ul style="list-style-type: none"> <li>• Habitat creation</li> </ul>

	7.4. Describe the treatment required for a 'lapsed pollard' that is to be retained as a pollard and identify the physiological threats to its continued survival as a result of the treatment.
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## Development and Tree Protection

<b>Unit Reference</b>	<b>A/503/3324</b>
<b>Level</b>	<b>4</b>
<b>Credit Value</b>	<b>5</b>
<b>Guided Learning (GL)</b>	<b>25 hours</b>
<b>Unit Summary</b>	This unit covers the arboricultural aspects of site development and tree protection and how this is managed through planning policies, legislation and best practice.
<b>Learning Outcomes (1 to 3)</b> <i>The learner will</i>	<b>Assessment Criteria (1.1 to 3.3)</b> <i>The learner can</i>
1. Understand the impacts on trees of development and how this may be mitigated or reduced.	<p>1.1. Explain how to determine the value and quality of the woody vegetation on and around the site.</p> <p>1.2. Identify:</p> <ul style="list-style-type: none"> <li>• The tree constraints on a development site</li> <li>• The likely impacts of development on woody vegetation and vice versa</li> <li>• The importance of physically protecting trees on a development site</li> </ul> <p>1.3. Identify the tree related components required in a planning application to assist a developer within the planning process.</p> <p>1.4. For each of the following impacts describe an appropriate measure which mitigates or eliminates the impact on trees within a root protection area:</p> <ul style="list-style-type: none"> <li>• Ground compaction and asphyxiation of roots</li> <li>• Severance of roots for foundation construction</li> <li>• Severance of roots for construction of a utility service</li> </ul> <p>1.5. For each of the following impacts describe an appropriate measure which mitigates or eliminates the impact on trees on a development site:</p> <ul style="list-style-type: none"> <li>• Mixing of materials</li> <li>• Use of cranes</li> <li>• Hard landscaping</li> </ul>

	<ul style="list-style-type: none"> <li>• Soft landscaping</li> <li>• Storage of materials</li> <li>• Entry by contractors to a Construction Exclusion Zone (CEZ)</li> <li>• Post development requests for pruning due to a shading issue</li> <li>• Impacts on new tree planting</li> </ul>
<p>2. Understand planning policy and guidance.</p>	<p>2.1. Summarise the aims of planning policies and legislation as used by local planning authorities to both plan for and control development.</p>
<p>3. Understand how tree protection mechanisms operate.</p>	<p>3.1. Distinguish between the purposes of each of the following:</p> <ul style="list-style-type: none"> <li>• Tree Preservation Order (TPO)</li> <li>• Designated Conservation Area (CA)</li> <li>• Felling license</li> </ul> <p>3.2. Identify the information that must be present on a:</p> <ul style="list-style-type: none"> <li>• Completed TPO</li> <li>• Regulation 5 notice</li> </ul> <p>3.3. Describe the procedures undertaken by the parties involved following:</p> <ul style="list-style-type: none"> <li>• A planning application to fell a protected tree</li> <li>• A notice to prune a tree in a Conservation Area</li> </ul>

# Selection Planting and Design with Hardy Nursery Stock for Amenity and Landscape Purposes

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<b>Unit Reference</b>	<b>L/503/3330</b>
<b>Level</b>	<b>5</b>
<b>Credit Value</b>	<b>8</b>
<b>Guided Learning (GL)</b>	<b>40 hours</b>
<b>Unit Summary</b>	Learners will cover nomenclature, tree and shrub identification, nursery selection, plant selection, transportation, planting, protection, production, after care, planning, uses and design principles for planted hardy nursery stock used in amenity landscapes.
<b>Learning Outcomes (1 to 8)</b> <i>The learner will</i>	<b>Assessment Criteria (1.1 to 8.5)</b> <i>The learner can</i>
1. Understand nomenclature and how to use a botanical key and other source to identify trees and shrubs.	<p>1.1. Identify 100 trees / shrubs by their general, species cultivar or variety names as applicable using their characteristics and features to include a minimum of 15 each from:</p> <ul style="list-style-type: none"> <li>• Evergreen broadleaved</li> <li>• Deciduous broadleaved</li> <li>• Conifer</li> <li>• Shrubs</li> </ul> <p>1.2. Demonstrate the use of a botanical key to identify a species</p> <p>1.3. For each tree or shrub identified in 1.1 state their main arboricultural</p> <ul style="list-style-type: none"> <li>• Attributes</li> <li>• Uses</li> <li>• Limitations</li> <li>• In urban, rural or woodland landscapes as applicable</li> </ul>
2. Understand the principles of taking trees from the nursery to independence in the landscape.	<p>2.1. Summarise the processes of taking trees from the nursery to independence in the landscape under the following headings:</p> <ul style="list-style-type: none"> <li>• Policy and strategy</li> <li>• Site evaluation and constraints assessment</li> <li>• Species selection</li> </ul>



	<ul style="list-style-type: none"> <li>• Nursery Production and procurement</li> <li>• Handling and Storage</li> <li>• Planting</li> <li>• Post Planting management and maintenance</li> </ul> <p>2.2. Discuss the concept of adding or not adding soil ameliorants to the planting pit at the time of planting.</p>
<p>3. Know what species to select for any set of conditions or requirements.</p>	<p>3.1. Prepare and present advice with justifications for clients on species choice related to three sets of different difficult site conditions / usage.</p>
<p>4. Know what woody plant stock size and type is available.</p>	<p>4.1. Specify an appropriate species, size, stock type and appropriate protection for each of the following sites, justifying the selection for each aspect:</p> <ul style="list-style-type: none"> <li>• Tree in a city street</li> <li>• Canopy tree for an amenity woodland</li> <li>• Tree for a motorway embankment</li> <li>• Ornamental tree for a public open space</li> <li>• Tree for prestigious development</li> <li>• Shrubs for mass planting adjacent to a highway</li> </ul> <p>4.2. Critically compare the selection of each of the following stock types for planting:</p> <ul style="list-style-type: none"> <li>• Bare rooted whip versus cell grown</li> <li>• Bare root standard versus air pot standard</li> </ul> <p>4.3. Critically evaluate the quality of one sample of purchased standard sized tree stock against British Standards and the HTA plant specification manual.</p>
<p>5. Understand current methods of tree and shrub production.</p>	<p>5.1. For each of the following describe a production method used by nursery growers to produce one named ornamental tree to a standard size:</p> <ul style="list-style-type: none"> <li>• Worked tree (budded or grafted) to include rootstock and scion production</li> <li>• Tree from seed to include collection and breaking of dormancy</li> </ul>

<p>6. Know how to select hardy nursery stock and have it delivered in good condition.</p>	<p>6.1. Produce a list of criteria to be used in selecting a supplier of good quality nursery stock.</p> <p>6.2. Specify the measures required to get stock delivered at the planting site in good condition in accordance with the JCLI code of practice for plant handling – lifting in the nursery to delivery at site.</p> <p>6.3. Prepare a schedule of purchase for tree and shrub stock for a given scenario using the Horticultural Trades Association (HTA) plant specification guidance.</p>
<p>7. Know how to prepare a site for planting.</p>	<p>7.1. Conduct a preliminary site survey and undertake a basic soil analysis drawing conclusion regarding suitability and if improvements are required.</p> <p>7.2. Apply survey and analysis findings to determine the required preparation for planting site and be able to identify further analysis requirements as applicable.</p>
<p>8. Know how to plant, protect and care for newly planted trees and shrubs.</p>	<p>8.1. Describe an appropriate planting method for each of the following in a given site situation:</p> <ul style="list-style-type: none"> <li>• 40-60 transplant</li> <li>• Bare-rooted standard tree</li> <li>• Container grown shrub</li> <li>• Semi-mature tree</li> </ul> <p>8.2. Evaluate four given methods / materials for each of the following practices drawing conclusions:</p> <ul style="list-style-type: none"> <li>• Support systems</li> <li>• Protection methods</li> <li>• Moisture control methods</li> <li>• Soil ameliorants</li> </ul> <p>8.3. Describe the post planting aftercare requirements for each in a given situation:</p> <ul style="list-style-type: none"> <li>• 40-60 transplant</li> <li>• Bare-rooted standard tree</li> <li>• Container grown shrub</li> <li>• Semi-mature tree</li> </ul> <p>8.4. Cost the stock and materials for the following:</p> <ul style="list-style-type: none"> <li>• Whip in a tree shelter</li> </ul>

	<ul style="list-style-type: none"><li>• Standard tree with stake requiring rabbit protection</li><li>• 2 litre shrub with a strimmer / mower guard</li></ul> <p>8.5. Critically evaluate post-planting conditions on a recently (up to 5 years) planted site where trees are failing, draw conclusions and make management recommendations preparing advice for a client in line with current professional practice.</p>
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# Principles of Woodland Establishment and Management

<b>Unit Reference</b>	<b>F/503/3325</b>
<b>Level</b>	<b>3</b>
<b>Credit Value</b>	<b>5</b>
<b>Guided Learning (GL)</b>	<b>25 hours</b>
<b>Unit Summary</b>	This unit covers the maintenance of existing woodland and establishment of new amenity woodlands which are open to public access and where the main aims of management include public enjoyment, conservation of wildlife and landscape value.
<b>Learning Outcomes (1 to 7)</b> <i>The learner will</i>	<b>Assessment Criteria (1.1 to 7.4)</b> <i>The learner can</i>
1. Understand the principles of silviculture.	<p>1.1. Describe the main principles of the following silvicultural systems:</p> <ul style="list-style-type: none"> <li>• Clear fell</li> <li>• Selection</li> <li>• Single</li> <li>• Strip</li> <li>• Shelterwood</li> <li>• Group</li> <li>• Irregular</li> </ul> <p>1.2. Evaluate the application of a Continuous Cover Forestry approach where the primary aims include wildlife conservation, recreation and landscape value.</p>
2. Know the different types of woodland present in GB.	<p>2.1. Distinguish the main characteristics of the following:</p> <ul style="list-style-type: none"> <li>• Ancient woodland</li> <li>• Ancient semi-natural woodland</li> <li>• Plantation on an ancient woodland site</li> <li>• Semi-natural woodland</li> <li>• Recent semi-natural woodland</li> <li>• New native woodland</li> <li>• Pasture woodland</li> <li>• Coppice with standards</li> <li>• Coppice</li> </ul>

	<p>2.2. Summarise the main principles of managing five of the following:</p> <ul style="list-style-type: none"> <li>• Ancient woodland</li> <li>• Ancient semi-natural woodland</li> <li>• Plantation on an ancient woodland site</li> <li>• Semi-natural woodland</li> <li>• Recent semi-natural woodland</li> <li>• New native woodland</li> <li>• Pasture woodland</li> <li>• Coppice with standards</li> <li>• Coppice</li> </ul>
<p>3. Know what sources and types of funding are available to assist woodland management and establishment.</p>	<p>3.1. Summarise the main sources of funding for establishing and managing woodland.</p> <p>3.2. Provide details of one type of funding.</p>
<p>4. Understand the processes of forming a woodland management plan.</p>	<p>4.1. Identify the significant information to be collected as part of an existing woodland site assessment and justify how that information contributes to the formation of a management plan.</p> <p>4.2. Explain the purpose of the following when written in to a plan:</p> <ul style="list-style-type: none"> <li>• Aims</li> <li>• Objectives</li> <li>• Operation statements</li> </ul> <p>4.3. Analyse three given objectives and three given operational statements that cover the following two aims:</p> <ul style="list-style-type: none"> <li>• Wildlife conservation</li> <li>• Recreation</li> </ul>
<p>5. Understand the processes involved in establishing a new woodland.</p>	<p>5.1. Identify the significant information to be collected as part of a site assessment, prior to woodland creation and justify how each item of information contributes to the formation of a plan of operations.</p> <p>5.2. Provide and justify realistic and economic solutions for the following site constraints:</p> <ul style="list-style-type: none"> <li>• Low nutrient levels particularly nitrogen</li> <li>• Compacted slopes of 40 year old mining spoil</li> <li>• Improved grassland</li> </ul>

	<p>5.3. Provide solutions to the threats to tree establishment posed by one named example from each of the following groups:</p> <ul style="list-style-type: none"> <li>• Mammals</li> <li>• Mechanical damage</li> <li>• Excessive weed growth</li> <li>• Lack of moisture</li> </ul> <p>5.4. Select and justify the following to be used in the establishment of a new amenity woodland on a given site:</p> <ul style="list-style-type: none"> <li>• 5 main canopy trees</li> <li>• 3 understory shrub species</li> <li>• 5 woodland edge species</li> </ul>
<p>6. Understand the concept of woodland ecology.</p>	<p>6.1. Describe a basic food chain related to trees that covers the four levels of the recognized pyramid of trophic levels.</p> <p>6.2. Define the terms ecosystem and ecotone.</p> <p>6.3. Describe each of the following and explain their ecological interrelationship:</p> <ul style="list-style-type: none"> <li>• Plant subsystem</li> <li>• Herbivore / carnivore subsystem</li> <li>• Decomposition subsystem</li> </ul> <p>6.4. Define each of the following and explain their importance to woodland ecology:</p> <ul style="list-style-type: none"> <li>• Saproxylic invertebrate</li> <li>• Red data book species</li> <li>• Wood decay fungi</li> <li>• Deadwood</li> <li>• Phoenix regeneration</li> </ul>
<p>7. Understand plant survival or 'ecological' strategies.</p>	<p>7.1. Define the terms Competition, Stress Tolerance and Disturbance in relation to life-strategies within plant communities.</p> <p>7.2. Describe the impact of competition, stress and disturbance upon the diversity of plant communities.</p>

	<p>7.3. Exemplify and explain the evolutionary adaptations of named woodland species as life-strategies for survival in mature climax-woodland.</p> <p>7.4. Define the term biodiversity and explain why it is important to the success and survival of a woodland community.</p>
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## Tree Related Damage to Build Structures

<b>Unit Reference</b>	<b>L/503/3327</b>
<b>Level</b>	<b>4</b>
<b>Credit Value</b>	<b>4</b>
<b>Guided Learning (GL)</b>	<b>20 hours</b>
<b>Unit Summary</b>	Learners will gain a theoretical knowledge of how trees can cause damage to built structures by direct and indirect means and what possible solutions are available to reduce, mitigate or remediate the problem.
<b>Learning Outcomes (1 to 3)</b> <i>The learner will</i>	<b>Assessment Criteria (1.1 to 3.3)</b> <i>The learner can</i>
1. Understand the interaction and relationship between roots, clay soils and built structures.	<p>1.1. Describe the following:</p> <ul style="list-style-type: none"> <li>• A shrinkable clay soil</li> <li>• Modified plasticity index</li> <li>• Plastic limit</li> <li>• Liquid limit</li> <li>• A desiccated clay soil</li> </ul> <p>1.2. Explain how woody vegetation causes the following types of damage to built structures by contact:</p> <ul style="list-style-type: none"> <li>• Blockage of drainage pipes</li> <li>• Subsidence</li> <li>• Heave</li> </ul> <p>1.3. Briefly describe eight other possible causes of damage to built structures that are not woody vegetation related.</p>
2. Know what investigations are appropriate to inform actions.	<p>2.1. Identify the information required and the sources of that information in order to carry out an investigation into:</p> <ul style="list-style-type: none"> <li>• Direct damage</li> <li>• Subsidence damage</li> </ul>
3. Know what solutions are available related to structural damage.	<p>3.1. Evaluate the following four arboricultural options as solutions for direct and indirect damage:</p> <ul style="list-style-type: none"> <li>• Tree removal</li> </ul>



	<ul style="list-style-type: none"><li>• Crown reduction as per BS 3998</li><li>• Crown thinning as per BS 3998</li><li>• Root pruning</li></ul> <p>3.2. Describe one engineering solution for each of the following:</p> <ul style="list-style-type: none"><li>• House subsidence damage</li><li>• Pavement damage</li><li>• A pushed up brick wall</li><li>• A blocked underground drainage pipe</li></ul> <p>3.3. Identify two strengths and two weakness for engineering solution</p>
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## Recognition of Prior Learning (RPL), Exemptions, Credit Transfers and Equivalencies

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Skills and Education Group Awards policy enables learners to avoid duplication of learning and assessment in a number of ways:

- Recognition of Prior Learning (RPL) – a method of assessment that considers whether a learner can demonstrate that they can meet the assessment requirements for a unit through knowledge, understanding or skills they already possess and do not need to develop through a course of learning.
- Exemption - Exemption applies to any certificated achievement which is deemed to be of equivalent value to a unit within Skills and Education Group Awards qualification but which does not necessarily share the exact learning outcomes and assessment criteria. It is the assessor's responsibility, in conjunction with the Internal Moderator, to map this previous achievement against the assessment requirements of the Skills and Education Group Awards qualification to be achieved in order to determine its equivalence. Any queries about the relevance of any certificated evidence, should be referred in the first instance to your centre's internal moderator and then to Skills and Education Group Awards. It is important to note that there may be restrictions upon a learner's ability to claim exemption or credit transfer which will be dependent upon the currency of the unit / qualification and a learner's existing levels of skill or knowledge. Where past certification only provides evidence that could be considered for exemption of part of a unit, learners must be able to offer additional evidence of previous or recent learning to supplement their evidence of achievement.
- Credit Transfer – Skills and Education Group Awards may attach credit to a qualification, a unit or a component. Credit transfer is the process of using certificated credits achieved in one qualification and transferring that achievement as a valid contribution to the award of another qualification. Units / Components transferred must share the same learning outcomes and assessment criteria along with the same unit number. Assessors must ensure that they review and verify the evidence through sight of:
  - Original certificates OR
  - Copies of certificates that have been signed and dated by the internal moderator confirming the photocopy is a real copy and make these available for scrutiny by the External Moderator.
- Equivalencies – opportunities to count credits from the unit(s) from other qualifications or from unit(s) submitted by other recognised organisations towards the place of mandatory or optional unit(s) specified in the rule of combination. The unit must have the same credit value or greater than the unit(s) in question and be at the same level or higher.

Skills and Education Group Awards encourages its centres to recognise the previous achievements of learners through Recognition of Prior Learning (RPL), Exemption, Credit Transfer and Equivalencies. Prior achievements may have resulted from past or present employment, previous study or voluntary activities. Centres should provide advice and guidance to the learner on what is appropriate evidence and present that evidence to the external moderator in the usual way.

Further guidance can be found in 'Delivering and Assessing Skills and Education Group Awards Qualifications' which can be downloaded from <https://skillsandeducationgroupawards.co.uk/for-centres/>

## Certification

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Learners will be certificated for all units and qualifications that are achieved and claimed.

Skills and Education Group Awards' policies and procedures are available on the Skills and Education Group Awards web site.

## Exemptions

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This qualification contains exemptions. For further details see Recognition of Prior Learning (RPL), Exemptions, Credit Transfers and Equivalencies.

# Glossary of Terms

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## **GL (Guided Learning)**

GL is where the learner participates in education or training under the immediate guidance or supervision of a tutor (or other appropriate provider of education or training). It may be helpful to think – ‘Would I need to plan for a member of staff to be present to give guidance or supervision?’

GL is calculated at qualification level and not unit / component level.

Examples of Guided Learning include:

- Face-to-face meeting with a tutor
- Telephone conversation with a tutor
- Instant messaging with a tutor
- Taking part in a live webinar
- Classroom-based instruction
- Supervised work
- Taking part in a supervised or invigilated formative assessment
- The learner is being observed as part of a formative assessment.

## **TQT (Total Qualification Time)**

‘The number of notional hours which represents an estimate of the total amount of time that could reasonably be expected to be required, in order for a learner to achieve and demonstrate the achievement of the level of attainment necessary for the award of a qualification.’ The size of a qualification is determined by the TQT.

TQT is made up of the Guided Learning (GL) plus all other time taken in preparation, study or any other form of participation in education or training but not under the direct supervision of a lecturer, supervisor or tutor.

TQT is calculated at qualification level and not unit / component level.

Examples of unsupervised activities that could contribute to TQT include:

- Researching a topic and writing a report
- Watching an instructional online video at home / e-learning
- Watching a recorded webinar
- Compiling a portfolio in preparation for assessment
- Completing an unsupervised practical activity or work
- Rehearsing a presentation away from the classroom
- Practising skills unsupervised
- Requesting guidance via email – will not guarantee an immediate response.