SEG Awards Level 6 Certificate and Diploma in Arboriculture

Qualification Guidance

England
Level 6 Certificate – 600/2586/4
Level 6 Diploma – 600/2785/X

Wales
Level 6 Certificate – C00/1377/0
Level 6 Diploma – C00/1377/2

About Us

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

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

Copyright

Specification Code, Date and Issue Number

The specification code is C9300-06 and D9300-06.
The date of this specification is November 2021. The Issue number is 5.7.

Issue	Date	Details of change
5.7	01/11/2021	Qualification guide updated in new format
5.7	01/11/2021	All reference to ABC removed and replaced with Skills and Education Group Awards / SEG
5.7	01/11/2021	Operational End Date inserted – 31st August 2022
5.7	01/11/2021	Certification End Date inserted – 31st August 2025

Contents

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.

Introduction

The Level 6 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

Aims

The SEG Awards Level 6 Certificate and Diploma in Arboriculture aim to:

- Provide a stimulating and supportive environment for learners to develop their potential ability fully and to use their own ideas and research in response to complex problems and situations
- Develop a high level of professional knowledge of arboriculture enabling learners to apply the essential skills, knowledge and understanding required for employment at senior level in arboriculture and related industries
- Enable learners to progress to professional memberships
- Enable learners to apply arboricultural research findings, new concepts and principles to the everyday practice of managing tree populations
- Provide learners with the skills to analyse and critically review information and to exercise judgement within complex planning, design, technical and/or management functions
- Demonstrate a high level of understanding and application of relevant technology to arboricultural matters
- Develop, propose plans and supervise their implementation to secure the long term sustainability of tree cover in the urban and countryside environments

Target Group

This qualification is designed for learners currently working in arboriculture, both in the public and private sectors, either to provide opportunities for progression to senior positions or to complement their experience and provide evidence of their competence at a high level

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

Progression Opportunities

Learners could progress to a Higher Degree or to membership of a chartered professional body.

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

Language

These specifications and associated assessment materials are in English only.

Qualification Summary

Qualifications	
Level 6 Certificate in Arboriculture - 600/2586/4 Level 6 Diploma in Arboriculture - 600/2785/X	
Regulated	The qualifications identified above are regulated by Ofqual and Qualifications Wales
Assessment	Internal assessment, internal and external moderation
Grading	Pass/Fail
Progression	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
Operational Start Date	01/08/2011
Review Date	31/08/2022
Operational End Date	31/08/2022
Certification End Date	31/08/2025
Skills and Education Group Awards Sector	Land Based/Environmental
Ofqual SSA Sector	03.2 Horticulture and Forestry
Stakeholder Support	These qualifications are supported by Lantra, the Sector Skills Council for environmental and land-based industries
Skills and Education Group Awards Administering Office	Additional guidance and advice to support these qualifications and units is freely available to approved Skills and Education Group Awards centres See Skills and Education Group Awards web site for the contact details of the administering office

Level 6 Certificate in Arboriculture

Rules of Combination: Learners must achieve a minimum of 31 credits. This must include 25 credits from the mandatory units.

Unit	Level	Credit Value	GLH
Mandatory Units			
Tree risk management [L/503/4168]	6	9	40
Tree and hedge management [R/503/4169]	6	8	30
Selection, planting and design with hardy nursery stock for amenity and landscape purposes [L/502/3330]	5	8	40
Optional Units			
Arboricultural plant health [J/503/4170]	6	8	40
Planning and development in arboriculture [L/503/4171]	6	9	30
Structural damage investigations for the arboriculturist [R/503/4172]	7	8	40
Woodland management [Y/503/4173]	5	8	40
New native woodland planting [D/503/4174]	5	6	30
Management of special trees [H/503/4175]	6	6	30
Independent research project in Arboriculture [K/503/4176]	6	6	15

Numbers in box brackets indicate RQF unit Number
If learners achieve credits from units of the same title (or linked titles) at more than one level, they cannot count credits achieved from both units towards the credit target of a qualification

Entry Requirements	***19+***					
Section 96/97	**Pre 16**		**16 – 18**		**19 +**	✓
Learning Aim Reference	600/2586/4					
Recommended Guided Learning (GL)	72hrs					
Total Qualification Time (TQT)	310hrs					

Points Score	See Skills and Education Group Awards web site
ASL Option	N/A
Foundation Learning	N/A
Type of Funding Available	See FaLE (Find a learning aim)
Minimum Qualification Fee	See Skills and Education Group Awards web site for current fees and charges
Unit Fee	Unit fees are based upon a unit's individual credit value. Please see the Skills and Education Group web site for the current fee charged per credit
Additional Information	Please see Skills and Education Group web site for qualifications that are eligible for Credit Transfer/RPL/Exemption

Level 6 Diploma in Arboriculture

Rules of Combination: Learners must achieve a minimum of 60 credits. This must include 48 credits from the mandatory units.

Unit	Level	Credit Value	GLH
Mandatory Units			
Tree risk management [L/503/4168]	6	9	40
Planning and development in arboriculture [L/503/4171]	6	9	30
Tree and hedge management [R/503/4169]	6	8	30
Arboricultural plant health [J/503/4170]	6	8	40
Independent research project in arboriculture [K/503/4176]	6	6	15
Selection, planting and design with hardy nursery stock for amenity and landscape purposes [L/503/3330]	5	8	40
Optional Units			
Woodland management [Y/503/4173]	5	8	40
New native woodland planting [D/503/4174]	5	6	30
Structural damage investigations for the arboriculturist [R/503/4172]	7	8	40
Management of special trees [H/503/4175]	6	6	30

Numbers in box brackets indicate RQF unit Number
If learners achieve credits from units of the same title (or linked titles) at more than one level, they cannot count credits achieved from both units towards the credit target of a qualification

Entry Requirements	***19+***						
Section 96/97	**Pre 16**		**16 – 18**		**19 +**	✓	
LAD Aim Reference	600/2785/X						
Recommended Guided Learning (GL)	255hrs						
Total Qualification Time (TQT)	600hrs						
Points Score	See Skills and Education Group web site						
ASL Option	N/A						
Foundation Learning	N/A						
Type of Funding	See FaLE (Find a learning aim)						

Available	
Minimum Qualification Fee	See Skills and Education Group web site for current fees and charges
Unit Fee	Unit fees are based upon a unit's individual credit value. Please see the Skills and Education Group Awards web site for the current fee charged per credit
Additional Information	Please see the Skills and Education Group Awards web site for qualifications that are eligible for Credit Transfer/RPL/Exemption

Unit Details

Tree Risk Management

Unit Reference	L/503/4168
Level	6
Credit Value	9
Guided Learning Hours	40
Unit Summary	This unit covers the strategic and proactive management of trees through systematic inspections in order to provide a sustainable tree population with minimum risk to people and property.
Learning Outcomes (1 to 5) ***The learner will***	**Assessment Criteria (1.1 to 5.2)** ***The learner can***
1. Know the responsibilities that any tree owner has to maintain 'acceptably safe' trees	1.1 Interpret relevant court precedents, statute legislation and best practices that are applicable to owners or those responsible for the safety of trees drawing conclusions related to the general requirements of dispensing the duty of care and tree inspection. 1.2 Set out specific information for a tree owner or those responsible for tree safety for each of the following situations regarding how their duty of care may be dispensed: • A residential property with one large tree within falling distance of a busy highway • A Local Government organisation • The owner of a private woodland with an adjoining busy public highway • A large estate property with paying visitors
2. Understand the	2.1 Analyse the principal present day

philosophy of risk assessment	controversies and problems of tree safety in relation to risk assessment and risk management. 2.2 Identify the key approaches required to address the controversies and problems identified in tree risk assessment and management. 2.3 Explain the concept of 'as low as reasonably practicable' in the context of industrial and occupational safety and how this could be related to assisting in tree risk management. 2.4 Describe the role of the: • Crown Prosecution Service • Health and Safety Executive in relation to deaths or injury caused by complete or partial tree failure.
3. Be able to develop a tree risk management strategy for a tree owner	3.1 Develop a written tree risk management strategy for either a public or private owner of a large number of trees. 3.2 Justify the inclusion of the content for each section of the strategy. 3.3 Critically evaluate a given tree risk management strategy, refining the content as applicable and specify any additions that are required to ensure the strategy is fit for purpose.
4. Be able to undertake a risk assessment of tree(s) and produce results in an appropriate professional format	4.1 Undertake a ground level tree survey to assess risks posed by a number of defective trees (numbering 8-10 trees) using a systematic methodology, draw conclusions and make recommendations, producing the results in an appropriate professional format. 4.2 Undertake a safety inspection of a single defective tree that potentially poses a risk, producing the results in an appropriate professional format.

	4.3 Analyse the present schools of thought related to quantifying the risk posed by a tree. 4.4 Undertake a quantified risk assessment of a defective tree using a suitable methodology and critically evaluate the result of the quantified risk assessment process. 4.5 Critically evaluate two principal theories/concepts that underpin the practice of using failure criteria to determine the safety of hollow/decayed trees.
5. Know what treatments are required to reduce risk and understand their implications for future safety	5.1 Critically evaluate each of the following treatments as defined and described in BS3998 to a) prevent or b) reduce risk to a target: • Formative pruning • Crown reduction • Crown thinning • Selective branch removal • Monolithing • Treatment of significant decay/cavities • Treatment of weak structures 5.2 Specify appropriate treatment options for a single large tree with extensive but undetermined decay at the base of the trunk situated in a busy park. 5.3 Select one treatment option from AC5.2 and justify the decision.

Supporting Unit Information

Tree Risk Management - L/503/4168 – Level 6

Indicative Content

Note: Indicative content provides an indication of the scope for the Learning Outcomes and Assessment Criteria. It is intended as a resource to help guide the delivery and assessment of the unit. Indicative content is NOT a statement of material which must be covered and evidenced for assessment.

Learning Outcome 1: Know the responsibilities that any tree owner has to maintain 'acceptable safe' trees.

Interpret relevant *court precedents, a summary is required of each case highlighting the issues towards a tree owner's responsibility.
Specific information required for:

- A residential property with one large tree within falling distance of a busy highway
- A Local Government organisation
- The owner of a private woodland with an adjoining busy public right of way
- A large estate property with paying visitors

*(court precedent comes from the higher courts)

Learning Outcome 2: Understand the philosophy of risk assessment.

Analyse the principal present day controversies and problems of tree risk assessment in relation to risk assessment and risk management. Identify the key approaches that assist to resolve issues of difficulty with risk assessments related to trees. Explain the concept of 'as low as reasonably practicable' (ALARP). Define the role of the Crown Prosecution Service (CPS). It is a non-ministerial department of the Government of the United Kingdom. Define the role of the Health and Safety Executive (HSE) as the national independent watchdog for work-related health, safety and illness.

Learning Outcome 3: Be able to develop a tree risk management strategy for a tree owner.

Developing a written tree risk management strategy for either a public or private owner of a large number of trees. Justify the inclusion of the

content use a scenario of a committee judging why the content is needed. Critically evaluate a given tree risk management strategy strengths and weaknesses plus a conclusion with key reasons that answers the question being asked – is the strategy fit for purpose or not.

Learning Outcome 4: Be able to undertake a risk assessment of tree(s) and produce results in an appropriate professional format.

Undertake a ground level tree risk assessment collecting data regarding safety and condition of trees and then presented the findings and recommendations in a professionally acceptable format. Undertake a safety inspection of a single defective tree and produce work in a report format. Analyse the present schools of thought related to quantifying the risk posed by a tree.

Numerous methods are available e.g. QTRA, THREATS, ISA, Matheny and Clark. Undertake a quantified risk assessment of a defective tree using a suitable methodology and critically evaluate the result of the risk assessment process. Critically evaluate two principal theories/concepts that underpin the practice of using failure criteria to determine the safety of hollow/decayed trees. Wagener, Mattheck and Breloer, Bartlett, Coder formulae.

Learning Outcome 5: Know what treatments are required to reduce risk and understand their implications for future safety.

Critically evaluate two principal theories/concepts that underpin the practice of using failure criteria to determine the safety of hollow/decayed trees. Wagener, Mattheck and Breloer, Bartlett, Coder formulae. Risk in this context is related to a target, failure of any part or whole tree should be referred to as 'likelihood of failure' and NOT the risk of failure. Criteria is required to use as the evaluation mechanism e.g. removal of defect, reduction of leverage, wind loading, wounding/colonisation by fungi, diminished target area. Specify appropriate treatment options for a single large tree with extensive but undetermined decay at the base of the trunk situated in a busy park. Select one option as a preferred option and justify the decision.

Teaching Strategies and Learning Activities

Centres should adopt a delivery approach which supports the development of their particular learners. The aims and aspirations of all learners, including those with identified special needs, including

learning difficulties/disabilities, should be considered and appropriate support mechanisms put in place.

Methods of Assessment

This unit will be internally assessed, internally and externally moderated via a learner's portfolio and other related evidence, against the unit outcomes and assessment criteria.

The assessment of some knowledge and understanding may take place in a non-work based environment e.g. training centre, however it must link directly to workplace performance and include performance evidence.

All learners must complete a portfolio of evidence that shows achievement of all the relevant learning outcomes and assessment criteria

Minimum requirements when assessing this unit
Skills and Education Group Awards expects that staff will be appropriately qualified to assess learners against the outcomes and criteria within the units. Generally teaching staff should be qualified and/or vocationally experienced to at least a level above that which they are teaching

It is important that practical assessment activities are supervised appropriately.

Evidence of Achievement

Evidence presented to support achievement is not prescribed for each learning outcome. It **could** typically include:

- Product evidence
- Observation reports
- Oral/written questions and answers
- Reports/notes
- Worksheets/job sheets/workbooks
- Witness statements
- Taped evidence (video or audio)
- Photographic evidence
- Case studies/assignments/projects
- Interview/professional discussion

- Site risk assessment
- Tool / equipment inventory lists / maintenance schedules
- Pictorial identifications
- Letters / emails seeking clarification / confirmation of understanding
- Internet research / copies of items with relevant knowledge highlighted

This is not an exhaustive list and learners should be encouraged to develop the most appropriate evidence to demonstrate their achievement of the learning outcomes and assessment criteria.

All evidence must be clearly signposted and made available for the external moderator upon request.

All internal assessments must be accompanied by a signed Declaration of Authenticity (this document is available on the Skills and Education Group Awards web site).

Additional Information

Additional guidance for delivering and assessing Skills and Education Group Awards qualifications and information about Internal Quality Assurance is available on the Skills and Education Group Awards web site.

Tree and Hedge Management

Unit Reference	R/503/4169
Level	6
Credit Value	8
Guided Learning Hours	30
Unit Summary	This unit covers strategic pro-active tree management and maintenance that facilitates sustained tree cover for future generations to enjoy.
Learning Outcomes (1 to 8) ***The learner will***	**Assessment Criteria (1.1 to 8.1)** ***The learner can***
1. Understand the need for arboriculturists to participate in providing a sustainable treed landscape.	1.1 Clarify the contributions that can be made by a professional arboriculturist at a strategic level to the planning of 'green infrastructure'. 1.2 Critically analyse the relevance of including trees, hedges and woodlands in the planning and design of new urban environments and draw conclusions. 1.3 Critically evaluate the role of street trees today where society demands value for money.
2. Be able to prepare information for publicity materials.	2.1 Prepare the content of publicity material to inform the public of the need for a sustainable tree population.
3. Know what data is required	3.1 Describe the concepts and requirements involved in developing and managing a robust

to be collected from a tree population to be used in the preparation of action plans.	tree population for the next 100 years. 3.2 Research the potential of using aerial imagery and new technology when collecting tree inventory data for a population of trees.
4. Understand the processes of preparing proactive tree management policies.	4.1 For an owner of a large population of trees critically compare the policies of re-active tree management to that of pro-active tree management adopted at executive level drawing conclusions. 4.2 Identify the 'stakeholders' and the contributions that they can make to the preparation of a tree strategy. 4.3 Prepare a proposal for the outline of a tree strategy that takes account of and includes references to National, and Local policies. 4.4 Present examples of SMART objectives covering 10 years appropriate to the following aspects of tree management: • 70% single tree species present (use a typical large city species). • No regular tree inspection programme is in place. 4.5 Critically evaluate a current tree strategy indicating its strengths and weaknesses, refine the content as applicable and specify what information is required to address any weaknesses found in the strategy.
5. Understand the purpose and processes of preparing a tree renewal programme.	5.1 Produce a tree renewal programme incorporating four specified different options on a given complex scenario dealing with the following issues where appropriate: • Landscape value • Historic • Mature/over mature age class • Wildlife • Public consultation • Tree species choice • Climatic change robustness

	• Infrastructure services • Financial considerations • Site management • Pest and disease robustness. 5.2 Evaluate the four options provided in AC5.1 indicating their individual strengths and weaknesses. 5.3 Select one option from those identified in 5.1 and justify the decision taken. 5.4 Explore the concept of 'continuous cover urban forestry'.
6. Know how to prepare information suitable for inclusion in a contract document in relation to the management of trees and hedges.	6.1 Produce arboricultural specifications suitable for inclusion in a contract document for tree works and hedge management that covers interpretation of each of the following: • A principal pruning section of BS 3998 • Acts/regulations related to protected wildlife • Plant • Physiological/phenological requirements related to pruning • Planting a container grown extra heavy standard tree in a street to include after care.
7. Understand how to apply common law precedent to commonly found scenarios.	7.1 Interpret for a client how five common law precedents may apply in a minimum of two given scenarios related to neighbour disputes covering: • Overhanging branches • Honey dew nuisance from a neighbouring tree • Encroaching roots causing direct damage • Potentially unsafe tree • Restricted sunlight to a rear garden
8. Know what Health and Safety statutes and best	8.1 Clarify which statutes and best practice apply when dismantling a large tree with the use of a climber and a MEWP in a public place with a chipper and stump grinder in use.

practice applies and understand how it is implemented on a work site	8.2 Draw up an appropriate systematic methodology for assessing whether a contractor is working safely on a work site as described in AC8.1. 8.3 Critically evaluate a specific work site risk assessment and method statement for a tree surgery task and identify the weaknesses by refining the content and stating the required improvements.
9. Understand the application and implications of pruning methods to tree management	9.1 Critically evaluate each of the following pruning methods as described in BS 3998 to manage trees identifying examples of tree species for each but excluding risk to a target: • Formative pruning post establishment • Crown reduction • Crown thinning • Pollarding

Supporting Unit Information

Tree and Hedge Management - R/503/4169 – Level 6

Indicative Content

Note: Indicative content provides an indication of the scope for the Learning Outcomes and Assessment Criteria. It is intended as a resource to help guide the delivery and assessment of the unit. Indicative content is NOT a statement of material which must be covered and evidenced for assessment.

Learning Outcome 1: Understand the need for arboriculturists to participate in providing a sustainable treed landscape.

Know the role, expertise and values that a professional arboriculturist can provide to the management of trees. Understand the roles that trees play in society but also the costs of their maintenance versus the values.

Learning Outcome 2: Be able to prepare Information for publicity materials.

Know what is meant by a sustainable population of trees.

Learning Outcome 3: Know what data is required to be collected from a tree population to be used in the preparation of action plans.

Describe the concepts and requirements involved in developing and managing a robust tree population taking into account urban design and planning, pest and disease resilience, climate change resilience and understanding trees are long term assets. Know what new technologies can assist in tree data collection and how this can assist tree management.

Learning Outcome 4: Understand the processes of preparing proactive tree management policies.

Compare the policies of re-active tree management to that of pro-active tree management. Know what it takes to prepare and produce a tree strategy for a large population of trees. Identify those stakeholders and their contributions that can be made to the process of producing a tree

strategy. Be able to evaluate a current tree strategy and form a conclusion as to its validity. Be able to demonstrate an ability to write specific objectives that are also measurable, achievable, realistic and timebound (SMART) for a set aim related to tree management.

Learning Outcome 5: Understand the purpose and processes of preparing a tree renewal programme.

Examine an aging population of trees with a view to undertaking a tree renewal programme to replace the trees that has options to consider. The replacement would deal with the following issues:

- Landscape value
- Historic
- Mature/over mature age class
- Wildlife
- Public consultation
- Tree species choice
- Climatic change robustness
- Infrastructure services
- Financial considerations
- Site management
- Pest and disease robustness

Explore the concept of 'continuous cover urban forestry' for an urban environment.

Learning Outcome 6: Know how to prepare information suitable for inclusion in a contract document in relation to the management of trees and hedges.

Demonstrate an ability to interpret and then write arboricultural information relating to Acts, Regulations, BS3998, tree planting and tree physiological/phenological requirements in to a contract document using appropriate language that ensures the document is enforceable.

Learning Outcome 7: Understand how to apply common law precedent to commonly found scenarios.

Interpret how common law precedents may apply related to neighbour disputes covering:

- Overhanging branches
- Honey dew nuisance from a neighbouring tree
- Encroaching roots causing direct damage
- Potentially unsafe tree

- Restricted sunlight to a rear garden

Learning Outcome 8: Know what Health and Safety statutes and best practice applies and understand how it is implemented on a work site.

Understand and be able to apply statute legislation and best practice to tree surgery operations. Know that a client local authority has overall responsibility for the health and safety of contractors working on their sites and be able to assess if a contractor is working safely by compiling a check list. Know the contents of a specific work site risk assessment and method statement as used in tree surgery work.

Learning Outcome 9: Understand the application and implications of pruning methods to tree management.

Know the positive and negative aspects of carrying out the following tree pruning operations to include physiological aspects, aesthetics, wind loading, ecological values and social/environmental values but excluding risk to people and property:

- Formative pruning post establishment
- Crown reduction
- Crown thinning
- Pollarding

Teaching Strategies and Learning Activities

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

Unit Reference	L/503/3330
Level	5
Credit Value	8
Guided Learning Hours	40
Unit Summary	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.
Learning Outcomes (1 to 8) **The learner will:**	**Assessment Criteria** (is to be assessed by a method as deemed appropriate by the training provider in order to achieve this unit) **(1.1 to 8.2)** **The learner can:**
1. Understand nomenclature and how to use a botanical key and other source to identify trees and shrubs.	1.1. Identify 100 trees/shrubs by their genera, species cultivar or variety names as applicable using their characteristics and features to include a minimum of 15 each from: • Evergreen broadleaved • Deciduous broadleaved • Conifer • Shrubs 1.2. Demonstrate the use of a botanical key to identify a species 1.3. For each tree or shrub identified in 1.1 state their main arboricultural: • Attributes • Uses

	• Limitations • In urban, rural or woodland landscapes as applicable
2. Understand the principles of taking trees from the nursery to independence in the landscape	2.1. Summarise the processes of taking trees from the nursery to independence in the landscape under the following headings: • Policy and strategy • Site evaluation and constraints assessment • Species selection • Nursery Production and procurement • Handling and Storage • Planting • Post Planting management and maintenance 2.2. Discuss the concept of adding or not adding soil ameliorants to the planting pit at the time of planting
3. Know what species to select for any set of conditions or requirements.	3.1 Prepare and present advice with justifications for clients on species choice related to three sets of different difficult site conditions/usage.
4. Know what woody plant stock size and type is available.	4.1 Specify an appropriate species, size, stock type and appropriate protection for each of the following sites, justifying the selection for each aspect • Tree in a city street • Canopy tree for an amenity woodland • Tree for a motorway embankment • Ornamental tree for a public open space • Tree for prestigious development • Shrubs for mass planting adjacent to a highway

	4.2. Critically compare the selection of each of the following stock types for planting • Bare rooted whip versus cell grown • Bare root standard versus air pot standard 4.3. Critically evaluate the quality of one sample of purchased standard sized tree stock against British Standards and the HTA plant specification manual
5. Understand current methods of tree and shrub production.	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: • Worked tree (budded or grafted) to include rootstock and scion production • Tree from seed to include collection and breaking of dormancy
6. Know how to select hardy nursery stock and have it delivered in good condition.	6.1 Produce a list of criteria to be used in selecting a supplier of good quality nursery stock. 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. 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.
7. Know how to prepare a site for planting	7.1 Conduct a preliminary site survey and undertake a basic soil analysis drawing conclusions regarding suitableness and if improvements are required.

	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.
8. Know how to plant, protect and care for newly planted trees and shrubs	8.1 Describe an appropriate planting method for each of the following in a given site situation • 40-60 transplant • Bare-rooted standard tree • Container grown shrub • Semi-mature tree 8.2 Evaluate four given methods/ materials for each of the following practices drawing conclusions • Support systems • Protection methods • Moisture control methods • Soil ameliorants 8.3 Describe the post planting aftercare requirements for each in a given situation • 40-60 transplant • Bare-rooted standard tree • Container grown shrub • Semi-mature tree 8.4 Cost the stock and materials for the following • Whip in a tree shelter • Standard tree with stake requiring rabbit protection • 2 litre shrub with a strimmer/mower guard 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

Supporting Unit Information

Selection Planting and Design with Hardy Nursery Stock for Amenity and Landscape Purposes - L/503/3330 – Level 5

Indicative Content

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Learning Outcome 1: Understand nomenclature and how to use a botanical key and other source to identify trees and shrubs.

The purpose of the International Code of Nomenclature for algae, fungi, and plants, define the terms, Family, Genus, Species, Variety, Cultivar, Clone, Common name, Interspecifc hybrid, Intergeneric hybrid, Chimera/graft hybrid.
Write scientific and common names correctly in accordance with the International code. Demonstrate the use a botanical key to identify a species of tree or shrub. Able to identify trees and shrubs stating their main attributes.

Learning Outcome 2: Understand the principles of taking trees from the nursery to independence in the landscape.

The principles of taking trees from the nursery to independence in the landscape – BS8545. Site evaluation and constraints assessment, Species selection, Nursery Production and procurement, Handling and Storage, Planting, Post Planting management and maintenance. Benefits and dis-benefits of adding soil ameliorants to a planting pit.

Learning Outcome 3: Know what species to select for any set of conditions or requirements.

Species selection and justification for varying site conditions or requirements and preparing of advice for clients.

Learning Outcome 4: Know what woody plant stock size and type is available.

What woody plant stock sizes are available - Seedling, cutting, transplant, maiden, whip, feathered tree, standard trees, semi-mature tree, multi-stem trees. Types - bare root, cell grown, container grown- black bag/pot, white bag, spring ring, air pot, root balled/wrapped, containerized. Compare the selection of bare rooted seedling versus cell grown and bare root standard versus air pot. Evaluate a sample of tree stock for quality.

Learning Outcome 5: Understand current methods of tree and shrub production.

Current methods of tree and shrub production - worked tree in the field or bench graft and a tree from seed to point of sale to include details of typical nursery operations grafting/budding staking, watering, nutrition, pruning, undercutting. Production for a shrub or conifer from a semi-ripe cutting to sale as a 2 litre size.

Learning Outcome 6: Know how to select hardy nursery stock and have it delivered in good condition.

How to select hardy nursery stock and have it delivered in good condition – JCLI /HTA Plant Handling Code. Specification required for delivery of stock from lifting in the nursery to temporary storage after delivery. Preparation of a schedule of purchase for hardy nursery.

Learning Outcome 7: Know how to prepare a site for planting.

How to prepare a site for planting - conduct a site and soil survey on a specific site. Specify the required preparations and or further site/soil analysis requirements.

Learning Outcome 8: Know how to plant, protect and care for newly planted trees and shrubs.

How to plant, protect and care for newly planted trees and shrubs.
A wide range of plating methods – notch, pit, bare root, root balled, container, semi mature, standard, whip, over ground support, underground support, short stake long stake, various protection – rabbit guard, vandal resistant, stock proof, shelter, mulching, soil amendments, moisture control methods. Costs of stock and accessories. Aftercare requirements – 3-year programme. Investigate why trees fail to establish.

Teaching Strategies and Learning Activities

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Methods of Assessment

This unit will be internally assessed, internally and externally moderated via a learner's portfolio and other related evidence, against the unit outcomes and assessment criteria.

The assessment of some knowledge and understanding may take place in a non-work based environment e.g. training centre, however it must link directly to workplace performance and include performance evidence.

All learners must complete a portfolio of evidence that shows achievement of all the relevant learning outcomes and assessment criteria

Minimum requirements when assessing this unit
Skills and Education Group Awards expects that staff will be appropriately qualified to assess learners against the outcomes and criteria within the units. Generally teaching staff should be qualified and/or vocationally experienced to at least a level above that which they are teaching

It is important that practical assessment activities are supervised appropriately.

Evidence of Achievement

Evidence presented to support achievement is not prescribed for each learning outcome. It **could** typically include:

- Product evidence
- Observation reports
- Oral/written questions and answers
- Reports/notes

- Worksheets/job sheets/workbooks
- Witness statements
- Taped evidence (video or audio)
- Photographic evidence
- Case studies/assignments/projects
- Interview/professional discussion
- Site risk assessment
- Tool / equipment inventory lists / maintenance schedules
- Pictorial identifications
- Letters / emails seeking clarification / confirmation of understanding
- Internet research / copies of items with relevant knowledge highlighted

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Additional Information

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Arboricultural Plant Health

Unit Reference	J/503/4170
Level	6
Credit Value	8
Guided Learning Hours	40
Unit Summary	This unit covers the identification, diagnosis, understanding, implications and treatment of both present and future pests, diseases and disorders that are a threat to woody vegetation populations in the UK to include International, European and UK protection procedures through to local deployment of treatments.
Learning Outcomes (1 to 6) ***The learner will***	**Assessment Criteria (1.1 to 6.3)** ***The learner can***
1. Understand the world-wide procedures in place that help pest and disease control.	1.1 Interpret how the mechanisms of International, European and National agreements and organisations operate for a named pest or disease in the following circumstances: • International pest or disease of significance not yet present or established in GB • A GB established pest or disease of significance to an important tree population 1.2 Explore the concept of tree health care in relation to the development of new pesticides, biological control and treatments and form a conclusion related to future resilience of urban tree cover.
2. Be able to	2.1 Identify in the field, with the aid of available

undertake an investigation to establish the presence of a pest, disease or disorder.	resources, the presence of 5 pests, 5 diseases and one abiotic disorder from signs and symptoms present on woody vegetation.
3. Be able to undertake diagnosis of ill health in trees with the aid of specialist equipment	3.1 Critically evaluate the following current tree decay detection tools/principles of operation to provide an understanding of their capabilities and technical limitations: • Computerised Tomography • Micro drills • Fractometer 1 3.2 Critically evaluate the strengths and weaknesses of one specialist item of equipment from a category identified in 3.1 for use within a given scenario to include: • The environmental conditions (winter or drought stress) • Tree species • Location of defect on the tree • Fungal pathogen and/or structural defect 3.3 Undertake an investigation of symptoms or signs of ill health using one type of specialist equipment from the following categories, analyse the results and provide management recommendations in a professionally accepted format: • Micro Drill Recording • Tomogram 3.4 Review the schools of thought related to measuring tree vitality in urban trees through tree growth, physiological measurements and chlorophyll fluorescence testing.
4. Know what preventative or remedial treatments are available	4.1 Prescribe appropriate treatment or preventative options for each a given pest, disease or abiotic disorder of significance. 4.2 Critically evaluate the options provided in AC 4.1 and state a preferred option with

	justifications.
5. Understand the interaction of host and fungi within woody tissues	5.1 Analyse living tree wood degradation by fungi and how it is influenced by the characteristics of the wood substrate and other factors. 5.2 Describe the mechanism of reaction and barrier zone penetration for one of the following examples: • *Inonotus hispidus* • *Ganoderma australe* (syn.*adspersum)* • *Kretzschmaria (Ustulina) deusta* 5.3 Explain, using a range examples, the importance of recognising the different abilities of fungi invasiveness and their relationship with various hosts in connection to the management of risk posed by trees.

Supporting Unit Information

Arboricultural Plant Health - J/503/4170 – Level 6

Indicative Content

Note: Indicative content provides an indication of the scope for the Learning Outcomes and Assessment Criteria. It is intended as a resource to help guide the delivery and assessment of the unit. Indicative content is NOT a statement of material which must be covered and evidenced for assessment.

Learning Outcome 1: Understand the world-wide procedures in place that help pest and disease control.

Interpret how the mechanisms of the World Trade Organisation (WTO), WTO-Sanitary & Phytosanitary Agreement, International Plant Protection Convention (IPPC), European & Mediterranean Plant Protection Organisation (EPPO), European Union (EU) strategy, National Plant Protection Organisation (NPPO) for the United Kingdom (UK) Defra and the Forestry Commission (FC) operate for a named pest or disease in the following circumstances

- International pest or disease of significance not yet present or established in GB
- A GB established pest or disease of significance to an important tree population

Know what developments are taking place regards the use of new pesticides, biological controls and new treatments for the control of pests and diseases of trees.

Learning Outcome 2: Be able to undertake an investigation to establish the presence of a pest, disease or disorder.

Be able to identify the presence of pests, diseases and abiotic disorders in the field. Know the difference between a sign and a symptom.

Learning Outcome 3: Be able to undertake diagnosis of ill health in trees with the aid of specialist equipment.

Know the principles of operation and have an understanding of the capabilities and technical limitations of the following groups of decay detection equipment:

- Computerised Tomography
- Micro drills
- Fractometer 1

Be able to undertake an investigation of a tree defect using one type of specialist equipment and produce the results with analysis and management recommendations in a report format.
Review the schools of thought related to measuring tree vitality in urban trees through tree growth, physiological measurements and chlorophyll fluorescence testing.

Learning Outcome 4: Know what preventative or remedial treatments are available.

Prescribe appropriate treatment or preventative options for each a given pest, disease or abiotic disorder of significance. Be able to evaluate each option.

Learning Outcome 5: Understand the interaction of host and fungi within woody tissues.

Know how wood substrate is broken down by wood decay fungi and what factors influence the degradation. Know how reaction zones and the barrier zone as identified by the CODIT model are penetrated by fungi e.g. *Inonotus hispidus, Ganoderma australe* (syn. *adspersum) or Kretzschmaria (Ustulina) deusta*
Recognise the different abilities of fungi invasiveness and their relationship with various hosts in connection to the management of risk posed by trees e.g. *Inonotus hispidus* when found on ash and London plane.

Teaching Strategies and Learning Activities

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Methods of Assessment

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Evidence of Achievement

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- Site risk assessment
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Planning and Development in Arboriculture

Unit Reference	L/503/4171
Level	6
Credit Value	9
Guided Learning Hours	30
Unit Summary	This unit covers the integration of the planning system with woody vegetation and the management of site development that facilitates sustained tree cover for future generations to enjoy.
Learning Outcomes (1 to 3) ***The learner will***	**Assessment Criteria (1.1 to 3.5)** ***The learner can***
1. Be able to prepare arboricultural information related to site development where trees are present.	1.1 Carry out a site development survey and prepare information for a client that fulfils the following criteria: • Determination of the value and quality of the woody vegetation on and around the site • Identifies the constraints posed by the vegetation to development • Identifies and quantifies the impacts of development on the vegetation and vice versa • Provides appropriate advice with justifications that aids the final design of the site • Provides specific advice on how the retained vegetation and new planting sites shall be protected during the construction period • Produces the required information in a professionally acceptable format to form the arboricultural part of a planning application 1.2 Critically evaluate arboricultural information submitted as part of a planning application where trees are present and indicate the strengths and

	weaknesses 1.3 Provide specific arboricultural information to cover the following situations for the construction industry: • Driveway over tree roots • Foundation construction within a tree rooting zone • Cable installation (broad band network) underground within a tree rooting zone
2. Understand planning appeals policy and guidance.	2.1 Prepare information in a professionally acceptable format, (as required by the planning inspectorate) either as a consultant or local authority officer, in preparation for a planning appeal to be conducted as a hearing following an LPA refusal for development planning consent
3. Understand the implications of planning policy related to tree protection and conservation.	3.1 Prepare information in a suitable format to be used in the serving of a Tree Preservation Order (TPO) 3.2 Critically evaluate a current TPO document and indicate its possible validity or otherwise 3.3 Give an example and describe when each of the following are most appropriately used of each of the following in relation to managing TPOs: • An objection • A representation • An appeal • A challenge 3.4 Explain how each of the following may be managed by all interested parties: • Section 211 notice • Tree replacement notice and enforcement • Revoking of a TPO • Potential breach of a TPO or Conservation Area designation

Supporting Unit Information

Planning and Development in Arboriculture - L/503/4171 – Level 6

Indicative Content

Note: Indicative content provides an indication of the scope for the Learning Outcomes and Assessment Criteria. It is intended as a resource to help guide the delivery and assessment of the unit. Indicative content is NOT a statement of material which must be covered and evidenced for assessment.

Learning Outcome 1: Be able to prepare arboricultural information related to site development where trees are present.

Carry out a site development survey and prepare information at the design stage for a client e.g. tree survey, plan of the constraints overlaid with a draft tree protection plan, information related to constraints and impacts and advice for a client. Prepare information for a planning application in a report that covers the main elements of an impact assessment, a stand-a-lone arboricultural method statement, tree survey, tree protection plan and appendices. Be able to critically evaluate the arboricultural contents of a planning application.

Learning Outcome 2: Understand planning appeals policy and guidance.

Provide information for the planning inspectorate in the form of a statement of case for an appeal to be conducted as a hearing. Complete an appeal form.

Learning Outcome 3: **Understand the implications of planning policy related to tree protection and conservation.**

Prepare information in a suitable format to be used in the serving of a Tree Preservation Order (TPO). Explain how aspects of TPOs are managed by all interested parties e.g. an objection, a representation, an appeal, a challenge, tree replacement notice, revoking of a TPO and enforcement, a section 211 notice and a potential breach of a TPO or Conservation Area designation. Critically evaluate a current TPO document and indicate its possible validity or otherwise.

Teaching Strategies and Learning Activities

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Methods of Assessment

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Evidence of Achievement

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- Product evidence
- Observation reports
- Oral/written questions and answers
- Reports/notes
- Worksheets/job sheets/workbooks

- Witness statements
- Taped evidence (video or audio)
- Photographic evidence
- Case studies/assignments/projects
- Interview/professional discussion
- Site risk assessment
- Tool / equipment inventory lists / maintenance schedules
- Pictorial identifications
- Letters / emails seeking clarification / confirmation of understanding
- Internet research / copies of items with relevant knowledge highlighted

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Additional Information

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Structural Damage Investigations for the Arboriculturist

Unit Reference	R/503/4205
Level	7
Credit Value	8
Guided Learning Hours	40
Unit Summary	Learners will develop, through both a theoretical and a practical approach, sufficient working knowledge to be able to undertake an investigation where it is alleged woody vegetation roots are the cause or contributory to damage to built structures and to produce their findings and recommendations in a structured format.
Learning Outcomes (1 to 6) ***The learner will***	**Assessment Criteria (1.1 to 6.2)** ***The learner can***
1. Understand the likely indirect damage potential of different species to built structures	1.1 Analyse published work related to the relative risk posed by different tree species of causing indirect damage to built structures 1.2 Understand the concepts of carrying out a predictive type report in relation to house purchase
2. Be able to conduct an investigation	2.1 Obtain and analyse data from a wide range of sources in order to determine if woody vegetation is contributing to damage caused to built structures by • One case of direct means – contact • One case of indirect means – subsidence 2.2 Complete the following from a case of subsidence:

	• Interpretation of crack or level monitoring information and form a conclusion • The identification of any gaps in data and the sources of any further information required • An extrapolation of the evidential tests and the key evidential information and explain why they are key • Prepare information for a discussion with at least one other specialist involved in a subsidence case
3. Understand the strengths and weaknesses of available solutions and their implementation	3.1 Critically evaluate the various arboricultural options for • Subsidence damage where woody vegetation was the most probable cause • direct damage caused by tree roots 3.2 Identify and describe realistic and practical engineering solutions where • Subsidence damage where woody vegetation was the most probable cause • Direct damage has been caused by tree roots 3.3 Form judgements based on the value of the woody vegetation versus the costs of both engineering and tree management solutions • Subsidence damage by woody vegetation is the most probable cause • Direct damage has been caused by tree roots
4. Know what actions are required at the completion of an investigation	4.1 Compile clearly identified findings, conclusions and recommendations for a client related to one case direct damage and one case of indirect damage, in line with current professional practice see AC2.1
5. Know what information is available to provide support for other professions or organisations	5.1 Critically evaluate the contents and accuracy of the arboricultural guidance and recommendations provided by your profession to other professions in BS 5837 Annex A and NHBC chapter 4.2 Building near trees 5.2 Summarise applicable case law related to

	subsidence damage and how this may influence the following • The extent of investigations required by all parties for a low and a high value tree • vegetation management
6. Understand the needs of tree planting and street infrastructure for avoiding damage in the future	6.1 Draw conclusions from a critical analysis of developments and research in the area of subsidence prevention 6.2 Critically analyse current developments and research in the area of prevention/remediation of damage to street infrastructure, drawing conclusions

Support Unit Information

Structural Damage Investigations for the Arboriculturist - R/503/4205 – Level 7

Indicative Content

Note: Indicative content provides an indication of the scope for the Learning Outcomes and Assessment Criteria. It is intended as a resource to help guide the delivery and assessment of the unit. Indicative content is NOT a statement of material which must be covered and evidenced for assessment.

Learning Outcome 1: Understand the likely indirect damage potential of different species to built structures.

Analyse published work related to the relative risk posed by different tree species of causing indirect damage to built structures. Published works primarily come from the National House Building Council and P.F. McCombie. Understand the processes and date required for carrying out a predictive type report for mortgage purposes. Understand the limitations of doing such a report.

Learning Outcome 2: Be able to conduct an investigation.

Obtain and analyse data from a wide range of sources in order to determine if woody vegetation is contributing to damage caused to built structures by:

- One case of direct means – contact
- One case of indirect means – subsidence

For the investigation related to subsidence this will include interpretation of crack or level monitoring information, the identification of any gaps in data and the sources of any further information required, an extrapolation of the evidential tests and the key evidential information and explain why they are key to the investigation and prepare information for a discussion with at least one other specialist involved in a subsidence case.

Learning Outcome 3: Understand the strengths and weaknesses of available solutions and their implementation.

To carry out a critically evaluation of the various arboricultural options for cases of indirect and direct damage to include crown reduction, crown

thinning, root pruning and removal. Identify and describe realistic and practical engineering solutions indirect and direct damage e.g. underpinning, root barriers, flexible paving, wall lintels, pavement bridges, pipe lining, pipe replacement and a combination of arboricultural and engineering solutions.

Form judgements based on the value of the woody vegetation versus the costs of both engineering and tree management solutions using amenity/tree valuation methodology e.g. Helliwell and CAVAT versus the cost of engineering solutions and/or the cost tree management solutions as discussed above.

Learning Outcome 4: Know what actions are required at the completion of an investigation.

Compile clearly identified findings, conclusions and recommendations for a client related to one case direct damage and one case of indirect damage, in line with current professional practice (report format).

Learning Outcome 5: Know what information is available to provide support for other professions or organisations.

Understand and be able to critically evaluate the contents and accuracy of the arboricultural guidance and recommendations provided in BS 5837 Annex A and NHBC chapter 4.2 Building near trees. Provide a conclusion as to whether or not the information supports other professional well enough. Examine and summarise applicable case law related to subsidence damage and how this may influence the extent of investigations required by all parties for a low and a high value tree and subsequent vegetation management. (court precedent comes from the higher courts)

Learning Outcome 6: Understand the needs of tree planting and street infrastructure for avoiding damage in the future.

Know of developments and research in the area of subsidence prevention. Know of current developments and research in the area of prevention/remediation of damage to street infrastructure.

Teaching Strategies and Learning Activities

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Methods of Assessment

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Woodland Management (Community Woodland)

Unit Reference	Y/503/4173
Level	5
Credit Value	8
Guided Learning Hours	40
Unit Summary	This unit covers the planning and management of trees grown in woodlands and forests which are open to public access and where the main aims of management feature public enjoyment, conservation of wildlife and landscape value.
Learning Outcomes (1 to 7) ***The learner will***	**Assessment Criteria (1.1 to 7.1)** ***The learner can***
1. Understand silvicultural principles and their application to the management of community woodlands	1.1 Analyse the use of continuous cover systems in respect of the following primary and secondary management aims: Primary aims • Conservation of wildlife • Landscape value • Recreation Secondary aim • Timber or coppiced products 1.2 Analyse the main social roles that community woodland/forests offer 1.3 Summarise the government's approach to: • Sustainable forestry • Pest and disease resilience in a UK context and draw conclusions for each
2. Be able to identify woodland communities and	2.1 From species identification interpret the National Vegetation Classification and apply a classification to a woodland site

classify woodland types	2.2 Demonstrate the use of a botanical key used for ground flora vegetation identification
3. Understand a woodland ecosystem	3.1 Describe a woodland ecosystem and how it functions under the following headings: • Food chain • Plant and animal subsystem • Decomposition sub system 3.2 Explore the concept that trees display ecological strategies in finding their own niche 3.3 Describe how tree morphology, physiology and reproduction influences woodland ecology
4. Be able to carry out a site assessment as a prelude to forming a management plan	4.1 Carryout a woodland site assessment using broadscale (level 1) and site survey (level 2) methodologies 4.2 Form conclusions for future management based on the following considerations: • Importance of the woodland • Importance of the site for conservation • Threats to conservation • Need for further surveys 4.3 Identify four possible 'stakeholders' and state the possible contributions that each stakeholder can make to managing a woodland
5. Be able to select aims and objectives to deliver a woodland management plan	5.1 Write appropriate aims for the woodland surveyed in AC4.1: Primary aims • Conservation of wildlife • Landscape value • Recreation Secondary aim • Timber or coppiced products 5.2 Select objectives and prioritise them into short, medium and long term timescales necessary to achieve the set aim

	5.3 Devise performance indicators for each aim to show how the objectives are meeting minimum success thresholds 5.4 Assess the compatibility of objectives that reflect the following two aspects, identifying any conflicts: • Conservation of wildlife • Recreation 5.5 Clarify with justification how the conflicts may be resolved 5.6 Specify, with seasonal timings, woodland operations that are required in the first 1-5 years to meet the set objectives
6. Know how the effects of management are to be monitored	6.1 Devise a method of monitoring using both qualitative and quantitative data 6.2 Interpret any statute legislation as necessary that applies to the woodland used in AC4.1 6.3 Describe in detail what grants are available to support woodland management
7. Understand the values of reinstating traditional forms of woodland management	7.1 Critically evaluate the strengths and weaknesses of reinstating the following traditional forms of woodland management: • Wood pasture • Coppice with standards • Coppice

Supporting Unit Information

Woodland Management (Community Woodland) - Y/503/4173 – Level 5

Indicative Content

To successfully achieve this unit, learners need to provide evidence that they have met the learning outcomes and assessment criteria for the unit.

Unit content is offered as key learning that is essential to aid delivery of the unit and to set the learning outcomes and assessment criteria in context.

Learning Outcome 1: Understand silvicultural principles and their application to the management of community woodlands.

Understand the silvicultural principles of shelterwood and selection described as continuous cover and their application to the management of community woodlands. Take into account aims of management such as conservation of wildlife, landscape value, recreation and timber or coppiced products when analysing the use of continuous cover as an approach to community woodland management. Identify the main social roles that community woodlands offer. Summarise the government's approach to sustainable forestry and pest and disease resilience in a UK context.

Learning Outcome 2: Be able to identify woodland communities and classify woodland types.

From species identification interpret the National Vegetation Classification and apply a classification to a woodland site. Demonstrate the use of a botanical key used for ground flora vegetation identification.

Learning Outcome 3: Understand a woodland ecosystem.

Know how a woodland ecosystem functions under the following headings - food chain, plant and animal subsystem and decomposition sub system. Understand what ecological strategies trees employ to find their own niche in a woodland and how tree morphology, physiology and reproduction influences woodland ecology.

Learning Outcome 4: Be able to carry out a site assessment as a prelude to forming a management plan.

Be able to carry out a woodland site assessment using broadscale (level 1) and site survey (level 2) methodologies. Know how the importance of a woodland, conservation aspects, threats to conservation and the need for further surveys that influence management decisions.

Learning Outcome 5: Be able to select aims and objectives to deliver a woodland management plan.

Be able to write appropriate primary aims – general direction to take for a woodland to include conservation of wildlife, landscape value. Recreation and a secondary aim of timber or coppiced products. Be able to write SMART objectives – how the aims will be achieved for the aforementioned aims. Be able to write performance indicators to be used in monitoring the progress of woodland management objectives. Know what conflicts can arise from objectives that provide conflicts e.g. conservation of wildlife and recreation and how these might be resolved. Know what woodland operations and timings are required to enable objectives to be met.

Learning Outcome 6: Know how the effects of management are to be monitored.

Know how the effects of management are to be monitored using both qualitative (contains non-measurable items) and quantitative (contains measurable items) information. Know what statute legislation applies to the management of woodlands.
Understand what national and local grant aid maybe available to help finance the management of a community woodland.

Learning Outcome 7: Understand the values of reinstating traditional forms of woodland management.

Understand the principles of the traditional forms of woodland management and the values of reinstating them to the management, landscape and ecology of a site e.g. wood pasture, coppice with standards and coppice.

Teaching Strategies and Learning Activities

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Methods of Assessment

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Evidence of Achievement

Evidence presented to support achievement is not prescribed for each learning outcome. It **could** typically include:

- Product evidence
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- Oral/written questions and answers
- Reports/notes
- Worksheets/job sheets/workbooks

- Witness statements
- Taped evidence (video or audio)
- Photographic evidence
- Case studies/assignments/projects
- Interview/professional discussion
- Site risk assessment
- Tool / equipment inventory lists / maintenance schedules
- Pictorial identifications
- Letters / emails seeking clarification / confirmation of understanding
- Internet research / copies of items with relevant knowledge highlighted

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Additional Information

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New Native Woodland Planting

Unit Reference	D/503/4174
Level	5
Credit Value	6
Guided Learning Hours	30
Unit Summary	This unit covers the planning, design, planting and maintenance of a new amenity native woodland on unimproved grassland or a reclaimed site
Learning Outcomes (1 to 6) The learner will	**Assessment Criteria (1.1 to 6.1) The learner can**
1. Be able to plan the planting of a new native woodland	1.1 Carry out a site assessment and soil assessment of a site proposed for new planting on either improved grassland or a reclaimed site 1.2 Identify the principal constraints posed by the site formulating realistic and cost-effective solutions
2. Know how to implement the principles of woodland design	2.1 Design a proposed new woodland for a given site to show the principal design features 2.2 Select appropriate percentages of canopy and shrub species taking account of the: • Management aims • Site evaluation data • Compatibility of species • Grant criteria 2.3 Select edge species taking account of the • Aims of management • Relative mature size and growth rates

	2.4 Justify the choice of species selected in 2.2 and 2.3 2.5 Determine the stocking density and identify the strengths and weaknesses of the choice 2.6 Explain how the design seeks to further biodiversity
3. Understand stock and plant protection selection	3.1 Select and justify the source of plants for the design completed in AC 2.1 3.2 Select the appropriate protection systems for each species and site conditions taking into account the threats to establishment and justify the selection
4. Know the aftercare requirements of the young trees until the thicket stage is attained	4.1 Prepare a maintenance programme for the newly planted young trees
5. Understand the values of using seed or natural regeneration	5.1 Critically evaluate the following methods of establishing woodland • Natural regeneration • Direct seeding • Planting
6. Know how to organise and manage a community tree planting day	6.1 Prepare a proposal (agenda) for a meeting and provide a description of the factors involved in organising and managing a community tree planting day

Supporting Unit Information

New Native Woodland Planting - D/503/4174 – Level 5

Indicative Content

Note: Indicative content provides an indication of the scope for the Learning Outcomes and Assessment Criteria. It is intended as a resource to help guide the delivery and assessment of the unit. Indicative content is NOT a statement of material which must be covered and evidenced for assessment.

Learning Outcome 1: Be able to plan the planting of a new native woodland.

Know how to carry out site and soil assessments prior to woodland planting and analyse the results identifying the constraints to establishing newly planted trees in order to make necessary improvements.

Learning Outcome 2: Know how to implement the principles of woodland design.

Know suitable woodland and woodland edge species that can work together that meet selected aims of management, site constraints and fit grant aid criteria. Know the attributes of chosen species and why they benefit the woodland and woodland edge. Be able to design the canopy, understorey and woodland edge planting taking into account management aims. Know what stocking density is appropriate and be able to justify the choice. Understand the term biodiversity and how this fits into woodland design.

Learning Outcome 3: Understand stock and plant protection selection.

Know what criteria can be used for selecting the source of quality stock for planting. Understand what protection methods are available for a range of threats posed to newly planted trees in a woodland environment from weeds, small mammals to large mammals.

Learning Outcome 4: Know the aftercare requirements of the young trees until the thicket stage is attained.

Be able to prepare a 3-year maintenance programme for newly planted young trees.

Learning Outcome 5: Understand the values of using seed or natural regeneration.

Know methods of establishing woodland by natural regeneration, direct seeding or planting and be able to select an appropriate method.

Learning Outcome 6: Know how to organise and manage a community tree planting day.

Provide a description of the factors involved in organising and managing a community tree planting day to include site preparation, safety, tree care, people organisation, and advertising, management of the day, tool source and completion of a successful event.

Teaching Strategies and Learning Activities

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Methods of Assessment

This unit will be internally assessed, internally and externally moderated via a learner's portfolio and other related evidence, against the unit outcomes and assessment criteria.

The assessment of some knowledge and understanding may take place in a non-work based environment e.g. training centre, however it must link directly to workplace performance and include performance evidence.

All learners must complete a portfolio of evidence that shows achievement of all the relevant learning outcomes and assessment criteria

Minimum requirements when assessing this unit
Skills and Education Group Awards expects that staff will be appropriately qualified to assess learners against the outcomes and criteria within the units. Generally teaching staff should be qualified and/or vocationally experienced to at least a level above that which they are teaching

It is important that practical assessment activities are supervised appropriately.

Evidence of Achievement

Evidence presented to support achievement is not prescribed for each learning outcome. It **could** typically include:

- Product evidence
- Observation reports
- Oral/written questions and answers
- Reports/notes
- Worksheets/job sheets/workbooks
- Witness statements
- Taped evidence (video or audio)
- Photographic evidence
- Case studies/assignments/projects
- Interview/professional discussion
- Site risk assessment
- Tool / equipment inventory lists / maintenance schedules
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Additional Information

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Management of Special Trees

Unit Reference	H/503/4175
Level	6
Credit Value	6
Guided Learning Hours	30
Unit Summary	This unit covers the recognition and management of trees or woodlands or sites that are recognised as 'special' and warrant retention or specific management
Learning Outcomes (1 to 8) ***The learner will***	**Assessment Criteria (1.1 to 8.1)** ***The learner can***
1. Understand the positive and negative issues that affect special trees or sites	1.1 Identify significant issues that impact on: • An Ancient or Ancient Veteran tree • An Ancient Woodland sites 1.2 Explain the concept of decay and disease in relation to longevity of an Ancient or Ancient Veteran tree 1.3 Describe management principles of ensuring the continuity of ancient tree populations, associated habitats and species 1.4 Describe the development stages of an ancient tree from maturity to late ancientness to include retrenchment and reiterative growth
2. Be able to collect data when undertaking a survey and	2.1 Compile suitable formats and headings for collecting data related to the following • An Ancient or Ancient Veteran tree • An Ancient Woodland site

assess the threats	2.2 Undertake a survey of each of the trees/sites listed in 2.1 2.3 Identify the current and future threats for each tree/site listed above assessing the level of threat in a prioritised manner
3. Understand the solutions available to problems identified in surveys	3.1 Recommend realistic solutions to the threats identified in 2.3 3.2 Critically evaluate the implications of the solutions recommended above
4.Understand how to plan and prioritise management actions	4.1 Plan a hierarchy of management actions arising from the solutions in relation to • An Ancient Veteran tree • An Ancient Woodland site 4.2 Evaluate the different options for pruning ancient trees in relation to: • Shoot production • Dysfunction and decay • Mechanical integrity • Suitability according to tree condition and species
5.Understand the importance of monitoring and recording changes in special trees and sites	5.1 Explain the importance of monitoring and recording changes in special trees and sites 5.2 Prepare a system for monitoring and recording changes for • An Ancient or Ancient Veteran tree • An Ancient woodland site
6. Know what assistance other specialists can provide	6.1 Identify the contribution that can be provided by other specialists when preparing management plans for either an Ancient Veteran tree or an Ancient Woodland site
7. Understand the special requirements of	7.1 Summarise the main special requirements of managing a woodland containing protected, rare and endangered flora and fauna species

managing an ancient woodland for flora or fauna	including • A named protected herbaceous plant species • Important tree lichen species • A named red data book endangered saproxylic invertebrate species • A named woodland dwelling bird species • A named woodland dwelling bat species • A named protected woodland mammal species (excluding bats)

Supporting Unit Information

Management of Special Trees - H/503/4175 – Level 6

Indicative Content

Note: Indicative content provides an indication of the scope for the Learning Outcomes and Assessment Criteria. It is intended as a resource to help guide the delivery and assessment of the unit. Indicative content is NOT a statement of material which must be covered and evidenced for assessment.

Learning Outcome 1: Understand the positive and negative issues that affect special trees or sites.

Know what an Ancient or Ancient Veteran tree and an Ancient Woodland site is by their characteristics. Describe principles of management of these special trees and sites that maintain or enhance them in relation to habitats and species present. Be able to describe the development stages of an ancient tree from maturity to late ancientness to include retrenchment and reiterative growth and the role that decay and disease in relation to longevity plays in the life of an Ancient or Ancient Veteran tree.

Learning Outcome 2: Be able to collect data when undertaking a survey and assess the threats.

Know what data to collect and be able to undertake surveys of an Ancient or Ancient Veteran tree and an Ancient Woodland site identifying current and future threats to them.

Learning Outcome 3: Understand the solutions available to problems identified in surveys.

Be able to counter threats to an Ancient or Ancient Veteran tree and an Ancient Woodland site with realistic solutions. This might include protection of the root system, avoiding pruning, pest and disease control, growing the tree crown down and removing of a target e.g. people.

Learning Outcome 4: Understand how to plan and prioritise management actions.

In addressing threats to an Ancient or Ancient Veteran tree and an Ancient Woodland site, plan operations in a prioritised programme. If pruning is required understand the pros and cons in relation to shoot production, dysfunction, decay, mechanical integrity and suitability according to tree condition and species.

Learning Outcome 5: Understand the importance of monitoring and recording changes in special trees and sites.

For an Ancient or Ancient Veteran tree and an Ancient Woodland site understand the importance of monitoring the progress of management actions. Know the components that need to be included in a monitoring programme for the above special trees and site.

Learning Outcome 6: Know what assistance other specialists can provide.

Understand that an Ancient or an Ancient Veteran tree and an Ancient Woodland site are special and that the arboriculturist cannot manage them alone. Be able to identify other specialists that can assist and what their contributions to management might be e.g. mycologist, entomologist, chiropterologist, lepidopterologist and botanist

Learning Outcome 7: Understand the special requirements of managing an ancient woodland for flora or fauna.

Know the main special requirements of managing a woodland containing protected, rare and endangered flora and fauna species that leads to maintaining or enhancing their habitat and populations. An examples of woodland flora and fauna to include cover a bird, a bat, a red data book endangered saproxylic invertebrate, a mammal other than a bat, a lichen and a herbaceous plant noting their special requirements.

Teaching Strategies and Learning Activities

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learning difficulties/disabilities, should be considered and appropriate support mechanisms put in place.

Methods of Assessment

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Evidence of Achievement

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Independent Research Project in Arboriculture

Unit Reference	K/503/4176
Level	6
Credit Value	6
Guided Learning Hours	15
Unit Summary	This unit covers an aspect of interest to the candidate that reflects current research and development in the field of arboriculture allowing the learning to carryout research, apply the learning to arboriculture, drawing conclusions and critically evaluating their findings.
Learning Outcomes (1 to 6) ***The learner will***	**Assessment Criteria (1.1 to 6.2)** ***The learner can***
1. Be able to select and justify a research project	1.1 Identify the area for the research project 1.2 Explain the factors that contribute to the process of successful research question selection 1.3 Provide a statement justifying the choice of research area
2. Be able to plan the research project	2.1 Provide a brief overview of the proposal to include • An introduction • Background of the study area • References to existing literature • Research questions or concepts to be answered • Methodology and research methods • An anticipated conclusion

3. Be able to choose the appropriate methodologies to research the project	3.1 Evaluate research methodologies applicable to the chosen area 3.2 Select appropriate research methodologies, justifying their selection 3.3 Implement the chosen research methodologies
4. Be able to present the findings of a research project	4.1 Critically analyse the findings 4.2 Present the findings, conclusions and any recommendations of the research in a professionally accepted format 4.3 Produce an executive summary of the findings
5. Be able to evaluate the project outcome	5.1 Evaluate the project outcome against the original project specification 5.2 Make recommendations and justify areas for further consideration
6. Be able to critically evaluate reference sources	6.1 Undertake a critical review of the key reference materials used 6.2 Explain the importance of validity and reliability of the data used in the research

Supporting Unit Information

Independent Research Project in Arboriculture - K/503/4176 – Level 6

Indicative Content

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Learning Outcome 1: Be able to select and justify a research project.

Be able to select and justify the selection of a research project of arboricultural value and interest to the learner. Explain the factors that contribute to the process of successful research question selection.

Learning Outcome 2: Be able to plan the research project.

Be able to plan the research project and to produce an overview to include:

- An introduction
- Background of the study area
- References to existing literature
- Research questions or concepts to be answered
- Methodology and research methods
- An anticipated conclusion

Learning Outcome 3: Be able to choose the appropriate methodologies to research the project.

Be able to choose the appropriate methodologies to research the project, implement them and evaluate the methodologies

Learning Outcome 4: Be able to present the findings of a research project.

Be able to present the findings of a research project in accepted format with an executive summary

Learning Outcome 5: Be able to evaluate the project outcome.

Be able to evaluate the project outcome against the original project specification

Learning Outcome 6: Be able to critically evaluate reference sources.

Be able to critically evaluate reference sources. Explain validity and reliability of data used in research

Teaching Strategies and Learning Activities

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Methods of Assessment

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Appendices

Recognition of Prior Learning, Exemption and Credit Transfer

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.

Certification

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

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

Glossary of Terms

Guided Learning (GL)

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.