

APT Qualifications

Certificate IV in Permaculture

Course Information & Units of Competency - Amended Sept 2011

General Information

Copyright owner of the course

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Copyright acknowledgement

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Permaculture International Limited P. O. Box 500, St Ives, NSW 2075

Or email: APT Admin info@permaculture.com.au

Course accrediting body: Training and Employment Recognition Council (TERC)

AVETMISS information – ***refer to general accreditation document***

Period of accreditation: 18/11/2009 to 17/11/2014 - 5 years

NB for imported units please go to training.gov.au

Vocational or educational outcomes of the course

Certificate IV in Permaculture will provide skills training in permaculture for those who will be supervising permaculture works on rural and urban properties, who are working as project officers on community permaculture projects, and those seeking to become permaculture designers and/or advisors. Outcomes include employment as a supervisor/project coordinator in permaculture, agriculture, horticulture or land management industries. On completion the student will be able to demonstrate a broad understanding of permaculture principles and practices, apply permaculture solutions to a range of

unpredictable problems and apply skills and knowledge to a wide variety of contexts with depth in some areas. They will take responsibility for own outputs and take limited responsibility for the quantity and quality of the output of others.

30869QLD Certificate IV in Permaculture

Packaging to gain the qualification

Core	Complete all 5 units in the Core Group including one of *QLD124DES02B or *QLD124DES03C, the other may be chosen as an Elective.
Elective	Complete at least 7 units from the Elective Group of which at least <u>4 must</u> be Accredited Permaculture Training units. <i>A unit taken from the Core Group <u>cannot</u> be repeated as an Elective.</i>
Total number of units of competency	12 units

Apart from the listed elective options, students may select up to three(3) elective units from national Training Packages so long as the selected units:

- *do not replicate other units undertaken as part of the current qualification*
- *align with other electives to make an appropriate job-related or enterprise-required set of skills and knowledge*
- *are taken from AQF levels 3,4 or 5*

Code	Unit of Competency	Pre-requisite	Nominal Hours
Core Group			
QLD124PPP01B	Provide advice on permaculture principles and practices	nil	100
QLD124DES02B <i>*One as Core</i>	Design a rural permaculture system	nil	100
*QLD124DES03C <i>One as Core</i>	Design an urban permaculture system	nil	100
QLD124BUI04B	Plan and implement permaculture works	nil	80
QLD124BUI05B	Select appropriate technology for a permaculture system	nil	60
QLD124BIO06C	Identify and analyse bioregional characteristics and resources	nil	80
Nominal Hours			520
Elective Group			
QLD124DES02B <i>If not taken as a Core Unit</i>	Design a rural permaculture system	nil	100
QLD124DES03C <i>If not taken as a Core Unit</i>	Design an urban permaculture system	nil	100
QLD124RES07B	Design harvesting and storage systems for permaculture products	nil	60
QLD124IPA08B	Implement and monitor animal health	nil	60

	and welfare programs for a permaculture system		
QLD124RES09B	Manage a permaculture seed bank	nil	50
QLD124COM10B	Recommend approaches for sustainable community and bioregional development	nil	50
TAEDEL301A	Provide work skill instruction	nil	30
AHCBUS402A	Cost a project	nil	30
AHCBUS404A	Operate within a budget framework	nil	25
AHCLPW401A	Process applications for changes in land use	nil	
AHCMER401A	Coordinate customer service and networking activities	nil	
AHCORG403A	Manage organic soil improvement	nil	
AHCSAW401A	Set out conservation earthworks	nil	
AHCCCF408A	Promote community programs	nil	60
AHCCCF411A	Develop approaches to include cultural and human diversity	nil	40
AHCCCF405A	Develop community networks	nil	40
AHCCCF406A	Facilitate ongoing group development	nil	60
Nominal Hours			305-525

Employability Skills

Qualification Title: Certificate IV in Permaculture

The following table contains a summary of the employability skills as identified by the course proponent for this qualification. The employability skills facets described here are broad industry requirements that may vary depending on qualification packaging options and job role requirements.

Employability skill	Industry requirements for this qualification include the following facets:
Communication:	<ul style="list-style-type: none"> Listening and understanding Speaking clearly and directly Negotiating responsively Reading independently Using numeracy effectively Understanding the needs of internal and external clients Establishing and using networks Sharing information
Teamwork:	<ul style="list-style-type: none"> Working with people of different ages, gender, race, religion, or political persuasion Working as individual and as a member of team Knowing how to define a role as part of a team Applying teamwork skills to a range of solutions e.g. futures planning, crisis problem solving Identifying the strengths of team members Coaching, mentoring and giving feedback
Problem solving:	<ul style="list-style-type: none"> Developing practical solutions

	<p>Applying a range of strategies to problem solving</p> <p>Using mathematics including budgeting and financial management to solve problems</p> <p>Applying problem-solving strategies across a range of areas</p> <p>Testing assumptions taking the context of data and circumstances into account</p> <p>Resolving customer concerns in relation to project issues</p> <p>Applying the permaculture principles to solve both agricultural and non-agricultural problems</p>
Initiative and enterprise:	<p>Adapting to new situations</p> <p>Being creative</p> <p>Identifying opportunities not obvious to others</p> <p>Translating ideas into action</p> <p>Generating a range of options</p> <p>Initiating innovative solutions</p>
Planning and organising:	<p>Managing time and priorities – setting timelines, co-ordinating tasks for self and with others</p> <p>Allocating people and other resources to tasks</p> <p>Planning the use of resources including time management</p> <p>Developing a vision and a proactive plan to accompany it</p> <p>Participating in continuous improvement and planning processes</p> <p>Predicting – weighing up risk, evaluating alternatives and applying evaluation criteria</p> <p>Collecting, analysing and organising information</p> <p>Understanding basic business systems and other relationships</p>
Self management:	<p>Having a personal vision and goals</p> <p>Evaluating and monitoring own performance</p> <p>Having knowledge and confidence in own ideas and vision</p> <p>Taking responsibility for own work outputs</p>
Learning:	<p>Making own learning</p> <p>Contributing to the learning community at the workplace</p> <p>Applying learning to technical issues (e.g. learning about products) and people issues (e.g. interpersonal and cultural aspects of work)</p> <p>Being willing to learn in any setting – on and off the job</p> <p>Being open to new ideas and techniques</p> <p>Being prepared to invest time and effort in learning new skills</p>
Technology:	<p>Having a range of basic IT skills</p> <p>Applying IT as a management tool</p> <p>Using IT to organise data</p>

APT Certificate IV Units of Competency

QLD124PPP01B

Provide advice on permaculture principles and practices

Unit Descriptor

This unit provides the skills and knowledge to provide advice on permaculture principles and practices. It requires knowledge of permaculture principles and practices, skills in identifying client needs and requirements, providing advice on permaculture practices, and in researching and relating detailed permaculture information and advice to clients.

Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills

The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements

Application of the Unit

Providing advice on permaculture is likely to be undertaken without supervision. It requires a broad range of permaculture skills and the application of underpinning knowledge with depth in some areas. Responsibility for the work of others may be involved.

ELEMENT

Elements describe the essential outcomes of a unit of competency.

PERFORMANCE CRITERIA

Performance criteria describe the required performance needed to demonstrate achievement of the element. Where ***bold italicised text*** is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

1 Identify client requirements for advice

1.1 Initiate contact with the ***client*** when appropriate according to quality ***customer service practices***.

1.2 Determine the ***scope*** of the advice required.

1.3 Clarify the ***ethical type*** of the ***permaculture advice*** required by gathering all relevant ***client information***.

1.4 Clarify the ***needs and requirements*** of the client by asking relevant questions and engaging in active listening.

1.5 Determine ***client resources***.

1.6 Confirm the scope of advice, type of advice, and the needs and requirements of the clients in a written ***brief***.

2 Provide information on permaculture principles and practices

2.1 Provide the client information on ***permaculture principles and ethics, permaculture practices and permaculture protocols and viewpoints***.

2.2 Provide ***permaculture design information*** relevant to client needs and requirements.

2.3 Provide information that encompasses personal, household, community and ***bioregional strategies***.

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|---|--|--|
| | 2.4 | Respond to client requests for clarification and/or expansion of information. |
| | 2.5 | Outline relevant literature on permaculture and other sources of information to client. |
| | 2.6 | Record information given to the client. |
| 3 | Undertake permaculture principles and practices research | 3.1 Research specific applications of permaculture principles and practices related to client needs and requirements. |
| | 3.2 | Determine research strategies and sources. |
| | 3.3 | Research and investigate latest developments in permaculture principles and practices. |
| 4 | Provide advice on permaculture principles and practices | 4.1 Prepare advisory documentation and/or presentations based on the client brief. |
| | 4.2 | Explain contents of advisory documentation to the client. |
| | 4.3 | Include a statement of limitations of advice. |
| | 4.4 | Respond to Client requests for clarification and/or expansion of permaculture principles and practices. |
| | 4.5 | Take feedback from client regarding use of permaculture principles and practices during the advisory process. |

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Essential knowledge:

- Principles of permaculture
- Ethics of permaculture
- Permaculture practices
- Permaculture strategies
- Elements of permaculture systems
- Functions of permaculture systems
- Permaculture design techniques
- Innovation in plant, animal and technology selection, use and performance
- Recent practice in bioregional community development and local energy descent planning
- Transition Towns
- Customer service and client communication technique

Essential skills:

Ability to:

- Identify client needs and requirements for information and advice
- Determination of client resources
- Provide information after careful observation of the site and site records
- Propose a selection of permaculture practices and strategies that best suit the needs and resources of the client and the potential of the site
- Provide information on permaculture principles
- Provide advice on permaculture practices and strategies

RANGE STATEMENT

The Range Statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

Client may include but is not limited to:

- private landholder
- students on courses and workshops
- businesses
- general public
- customers
- business associates
- community groups
- staff members
- industry counterparts

Customer service practices may include:

- reply to client request in a timely manner
- communicate with the client in a professional manner
- record notes of client contact
- assess own ability to meet client needs
- clarity of expression and voice modulation
- patience and respect for all people

Scope must include:

- Identification of the geographic boundaries
- financial limitations to the project
- functional boundaries/needs of advice required on permaculture principles and practices

Scope may include:

- land use requirements
- cultural practices
- behavioural practices

Ethical type may include:

- Advice related to care for the earth
- Advice related to care for all people
- Advice related to the return of surpluses and setting limits to biophysical growth (population, resource use and waste)

Permaculture advice may include:

- directions for the placement of permaculture design elements
- recommendations of permaculture design elements
- suggestions for functions to be included in permaculture design
- suggestions of application of relevant permaculture principles
- guidance on the use of permaculture practices
- suggestions on the use of permaculture design concepts
- guidance in the use of permaculture research and analysis
- guidance in the preparation of a permaculture design brief
- guidance in the development of information and educational materials and multi-media productions

Client Information may include:

- contact details
- permaculture knowledge level
- property location, boundaries and Title or Deed type
- health concerns or mobility issues
- family structure
- sustainability goals
- enterprise or program goals and guidelines

Needs and requirements may include:

- food production
- system efficiency
- system production
- fibre, energy and building material production
- water harvesting
- waste treatment
- energy planning and design
- biodiversity habitat
- soil carbon building
- soil fertility
- establishment financial budget
- establishment time budget
- maintenance financial budget
- maintenance time budget
- establishment design documents
- planting plan
- maintenance plan
- community strategies
- social outreach

Client resources must include:

- time resources
- financial resources

Client resources may include:

- other in-kind resources
- skills and knowledge
- life experiences
- community relationships

Brief must include:

- statement of scope of advice
- ethical type/s of advice required
- client needs and requirements

Permaculture principles and ethics must include:

- The main summaries of permaculture principles and ethics are found in Bill Mollison *Permaculture: A Designers Manual*, (1988); Bill Mollison and Reny Mia Slay *Introduction to Permaculture* (1991) and David Holmgren *Permaculture: Principles & Pathways Beyond Sustainability* (2002)
- earth care
- people care
- return of surpluses to the earth
- setting limits to biophysical growth

Permaculture practices may include:

- sustainable agriculture
- organic gardening
- sustainable horticulture
- sustainable aquaculture
- economic alternatives that support sustainable living
- low energy and low embodied energy building and manufacturing
- appropriate technology
- soil restoration
- bush regeneration
- restoration ecology and maintenance of biodiversity
- sustainable community development
- direction of yields and resources to sustainable projects and enterprises
- sustainable project and enterprise development
- bioregional development
- relocalisation
- sustainable design
- sustainability education
- reuse and return of products in manufacturing cycle and waste utilisation
- waste water, grey water, sewage and resource treatment for re-use and recycling

Permaculture protocols and viewpoints may include:

- those principles and practices developed by Mollison and Holmgren, developed in permaculture literature and accepted by the permaculture community
- care for the earth
- care for all people
- the return of surpluses and setting limits to biophysical growth
- the inclusion of aboriginal, traditional, modern and post modern values and ethics in design for modern society
- perspectives consistent with environmental stewardship, ecological agriculture and food production and sustainable community development

Permaculture design information may include:

- climate data
- soil data
- geological data
- ecological data
- hydrological data
- available human, energy, financial, plant, animal, and natural resources
- technology
- energy descent planning
- planning for climate change
- existing maps and plans
- site observations of flora, fauna, soil, ecological, geological and climatic characteristics of importance to permaculture design
- community groups and enterprises

Bioregional strategies may include:

- identification and awareness-raising of bioregional boundaries
- education in the importance of bioregionalism
- development of bioregionally-based agricultural production and distribution schemes
- relocalisation of essential services and industries
- localised economic and financial systems
- local sustainable community development

Other sources may include:

- Other sources include permaculture demonstration projects and learning centres
- permaculture consultants and resources available via public library, business and organisation websites, community groups, suppliers and contractors, and colleagues
- maps
- climate and weather information
- resources available such as human, energy, financial, plant, animal and technological

Record information may include:

- audio recordings
- video recordings
- written notes
- culturally appropriate memory strategies
- diagrams and drawings
- electronic and web documentation

Research may include:

- permaculture books and publications
- online material
- audio and video material
- plans, charts, maps and tables
- searches in libraries and databases
- primary sources
- reading the landscape

Advisory documentation may include:

- written documentation
- diagrams and drawings
- electronic and web documentation
- culturally appropriate memory strategies
- plans, charts, maps and tables

Presentations may include:

- group and/or public presentations
- use of PowerPoint, slide shows and other multi-media presentation techniques
- visual displays and information panels
- question and answer session
- writing articles
- radio and television presentations
- interviews
- oral history including interviewing for information and providing information

Statement of limitations may include:

- limit of liability and legal responsibilities
- scope of applicability of advice
- client responsibility in making use of advice
- issues related to transferring the advice to other locations or contexts

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Course.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

- The assessee must provide evidence of specified essential knowledge as well as skills.
- Consistency of performance should be demonstrated over the required range of situations relevant to the workplace.
- Where for reasons of safety, safety space or access to equipment and resource, assessment takes place away from the workplace the assessment environment should represent realistic workplace conditions as closely as possible.

Context/s of Assessment and specific resources

- Competency is demonstrated by performance of all stated criteria, including paying particular attention to the critical aspects and the knowledge and skills elaborated in the Evidence Guide, and within the scope as defined by the Range Statement
- Assessment of performance requirements in this unit should be undertaken in an actual workplace or in a realistically simulated environment
- Assessment should reinforce the integration of the key competencies and the common competencies for the particular AQF level
- The learner and trainer should have access to appropriate documentation and resources normally used in the workplace
- Resources for the assessment include:
 - access to SKOPE sheets developed for this unit to reinforce complete understanding in aid of achieving the most positive outcomes.
 - access to relevant Permaculture texts and audio-visual material.
 - access to a working permaculture site for practical study purposes.

Method of assessment

- While the knowledge can be tested in written and oral assignments, performance evidence needs to be collected in actual or realistic simulated

situations. It also needs to be assessed on a number of occasions.

- This unit is best undertaken in a workplace or in a realistically simulated workplace situation.

And must include (verbal and /or written) to address essential knowledge as outlined in this unit

- Written evidence
- Verbal evidence
- Group interaction
- Recorded evidence
- In order to achieve consistency of performance, evidence should be collected over a set period of time which is sufficient to include dealings with an appropriate range and variety of situations
- Assessment if this unit will be undertaken by a registered training organisation
- Assessment of knowledge must be conducted through appropriate written/oral examination
- Practical assessment must occur:
 - ~ through appropriately realistically simulated activities at the RTO, and/or
 - ~ in an appropriate range of situations in the workplace
- The learner and trainer should have access to appropriate documentation and resources normally used in the workplace
- All workers in this industry should be aware of access and equity issues in relation to their own area of work.
- All workers should develop their ability to work in a culturally diverse environment.

Access and Equity Considerations

QLD124DES02B

Design a rural permaculture system

Unit Descriptor

This unit provides the skills and knowledge to design a rural permaculture system. It requires the ability to negotiate with clients to develop a permaculture design brief, undertake a site analysis, develop design concepts and produce final design documentation.

Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills.

The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements

Application of the Unit

The preparation of a permaculture design is likely to be undertaken without supervision. It requires a broad range of permaculture skills and the application of underpinning knowledge with depth in some areas. Responsibility for the work of others may be involved.

ELEMENT

Elements describe the essential outcomes of a unit of competency.

PERFORMANCE CRITERIA

Performance criteria describe the required performance needed to demonstrate achievement of the element. Where ***bold italicised text*** is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

1 Develop a design brief

- 1.1 Initiate contact with the ***client*** when appropriate according to quality ***customer service practices***.
- 1.2 Establish purpose, ***needs and requirements*** of design by consulting with client.
- 1.3 Develop a ***design brief*** in consultation with the client.
- 1.4 Negotiate ***cost structures*** and timelines with the client.

2 Undertake design analysis

- 2.1 Obtain existing maps, ***geospatial data*** and aerial photographs of property.
- 2.2 ***Survey area*** included in ***Zones 1, 2 and 3*** using ***appropriate survey tools and equipment***.
- 2.3 Prepare a ***base plan***.
- 2.4 Record ***site assessment*** data on the base plan.
- 2.5 Undertake ***bioregional analysis*** of the site.
- 2.6 Undertake ***research*** into potential ***permaculture design elements***.
- 2.7 Choose appropriate permaculture design elements.
- 2.8 Revise brief with client in relation to completed research and analysis.

- | | | |
|---|--------------------------|---|
| 3 | Prepare a design concept | <p>3.1 Evaluate and determine an appropriate concept.</p> <p>3.2 Prepare conceptual design drawings to illustrate conceptual themes and patterns informing the location and layout of proposed design elements.</p> <p>3.3 Develop and compile a bill of quantities.</p> <p>3.4 Prepare a list of plant and animal species and varieties suitable for the chosen concept.</p> <p>3.5 Prepare a preliminary budget for conceptual design.</p> <p>3.6 Present the concept plan in a consistent graphic style.</p> <p>3.7 Consult the client and agree on options and approaches for design development.</p> <p>3.8 Review and revise concepts, elements and the design brief after taking feedback from the client.</p> |
| 4 | Produce final design | <p>4.1 Design rural permaculture system in accordance with design brief, research, analysis, chosen elements and concepts.</p> <p>4.2 Produce detailed rural permaculture design documents.</p> <p>4.3 Present design plans, drawings and documents to the client.</p> <p>4.4 Seek feedback from the client and revise or modify the design as required.</p> |

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Essential knowledge:

- Elements of rural permaculture design
- Principles of rural permaculture design

- Strategies in rural permaculture design
- Design brief elements
- Design analysis and research techniques
- Plan interpretation and map reading
- Site surveying methods and tools
- Design concept generation
- Permaculture design methods
- Conventional design symbols
- Design drafting and drawing conventions
- Plant and animal selection
- Methods of design

Essential skills:

Ability to:

- Draft and draw permaculture and landscape plans
- Communicate with clients
- Undertake a site analysis
- Provide rural permaculture design solutions
- Select plants and animals
- Analyse zones and sectors of site
- Develop concepts
- Develop planting schedules and bills of quantity
- Develop a design budget
- Present design to client

RANGE STATEMENT

The Range Statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

Client may include but is not limited to:

- private landholders
- farmers and agribusinesses
- 'lifestyle'/'hobby' farmers
- individuals seeking to purchase a rural property
- other organisations
- public bodies
- community groups

Customer service practices may include:

- reply to client request in a timely manner
- communicate with the client in a professional manner
- record notes of client contact
- assess own ability to meet client needs
- clarity of expression and voice modulation
- patience and respect for all people

Needs and requirements may include:

- food production
- system efficiency
- system productivity
- fibre, energy and building material production
- water harvesting
- waste treatment
- energy planning and design
- biodiversity habitat
- soil carbon building
- soil fertility
- establishment financial budget
- establishment time budget
- maintenance financial budget
- maintenance time budget
- establishment design documents
- maintenance plan
- sustainable commercial rural enterprise

Design brief must include:

- statement of scope of design
- statement of client needs and requirements

- Design brief** may include:
- list of project elements
 - list of assessable tasks
 - options for dealing with client needs and requirements
- Cost structures** may include:
- design budgets
 - cost ceilings
 - estimates of cost
- Geospatial data** may include:
- cadastral data
 - contour lines
 - drainage features
 - vegetation mapping
 - fire hazard zones
 - soil and geological data
 - geological mapping
 - climate mapping
- Survey area** must include:
- onsite measurement of site boundaries
 - mapping of boundaries to scale to a plan drawing
 - measurement of contour lines on site
 - plotting of contour lines to a scale plan drawing
 - measure and locate existing infrastructure and natural features of site
 - mapping of existing infrastructure and natural features to a scale plan drawing
- Survey area** may include:
- onsite layout of contours at 1m spacings
 - measuring and plotting location of services (power, water, sewer)
 - measuring and plotting location of meters or access points
 - measuring and plotting water courses
- Zones 1, 2 and 3** may include:
- elements and systems suitable for the zones of household use, intensive production and extensive production respectively
- Appropriate survey tools and equipment** must include:
- surveying instruments for taking vertical measurements on site
 - surveying instruments for measuring angles on site
 - surveying instruments for measuring distance and horizontal measurements on site

Appropriate survey tools and equipment may include:

- dumpy level
- laser level
- Cowley level
- staff
- measuring tapes
- pegs
- boning rods
- string lines
- string level
- marking paint
- directional compass
- 3-4-5 triangle
- GPS

Base plan must include:

- property boundaries
- contour lines
- drainage features
- existing infrastructure and natural features
- scale of drawing
- direction of North
- details of land location, client, author of plan, date and drawing number

Site assessment may include:

- initial on site estimations of soil type, pH, texture
- topography
- aspect
- zone and sectors planning
- existing vegetation
- climatic factors
- indicator species or other landscape-reading notes

Bioregional may include:

- soils data
- topographical maps
- geological maps and surveys
- flora and fauna types and data
- fire hazard estimations
- potential for flood, tsunami, severe storm, wind or other natural disasters
- hydrology
- ecosystems and EVCs (Ecological Vegetation Classes)
- site history and history of the area
- climate data and history
- land-use patterns
- catchment health data
- Local Authority planning schemes
- Overlays and Caveats on the land
- Primary source and anecdotal information

Analysis may include:

- soil testing
- weather and climate monitoring
- vegetation identification
- contour mapping
- measurements of vertical height of site features
- observation and measurement of drainage features of site
- calculations of rainfall runoff
- calculations of evaporation
- land stocking rates

Research may include:

- investigation of permaculture books and publications, online material, audio and video material, maps, plans, charts and tables
- searches in libraries and databases
- viewing maps
- searching geospatial data
- talking to people in the local area or neighbours

Permaculture design elements may include:

- plants
- animals
- fences and gates
- permaculture guilds
- dams and other water systems
- roads and tracks
- gardens
- orchards
- plantation forests
- swales and drains
- irrigation systems
- appropriate alternative technology
- farm infrastructure and buildings

Appropriate concept may include:

- design ideas
- themes relevant to the site, its context and the design requirements
- patterns relevant to the site, its context and the design requirements
- location of client's requested features in the permaculture design

Concept design drawings may include:

- preliminary conceptual sketches
- bubble diagrams
- preliminary plan, section and elevation design drawings
- use of design drawing and drafting conventions
- presentable and legible design drawings for client use

Bill of quantities may include:

- lists of materials
- quantities of materials
- machinery hire
- labour and wages
- contingencies

Preliminary budget may include:

- estimates of design budget based on conceptual work
- cost ceilings
- recommendations for design costs

Design must include:

- integration of brief requirements, analytical information and conceptual planning
- rational justification of placement of design elements
- integration of elements to produce an efficient and functional rural permaculture system

Permaculture design documents may include:

- rendered plan, elevation and section drawings to scale
- use of design drawing and drafting conventions
- use of consistent graphic style
- supporting legends and keys of elements
- supporting materials lists, tables, bills of quantity, timelines, installation plans and management plans
- construction detail drawings

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Course.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

- The assessee must provide evidence of specified essential knowledge as well as skills.
- Consistency of performance should be demonstrated over the required range of situations relevant to the workplace.
- Where for reasons of safety, safety space or access to equipment and resource, assessment takes place away from the workplace the assessment environment should represent realistic workplace conditions as closely as possible.

Context/s of Assessment and

- Competency is demonstrated by performance of all

specific resources

stated criteria, including paying particular attention to the critical aspects and the knowledge and skills elaborated in the Evidence Guide, and within the scope as defined by the Range Statement

- Assessment of performance requirements in this unit should be undertaken in an actual workplace or in a realistically simulated environment
- Assessment should reinforce the integration of the key competencies and the common competencies for the particular AQF level
- The learner and trainer should have access to appropriate documentation and resources normally used in the workplace
- Resources for the assessment include:
 - access to SKOPE sheets developed for this unit to reinforce complete understanding in aid of achieving the most positive outcomes.
 - access to relevant Permaculture texts and audio-visual material.
 - access to a potential rural permaculture site for site surveying and design work.

Method of assessment

- While the knowledge can be tested in written and oral assignments, performance evidence needs to be collected in actual or realistic simulated situations. It also needs to be assessed on a number of occasions.
- This unit is best undertaken in a workplace or in a realistically simulated workplace situation.

And must include (verbal and /or written) to address essential knowledge as outlined in this unit

- Written evidence
- Verbal evidence
- Group interaction
- Recorded evidence
- In order to achieve consistency of performance, evidence should be collected over a set period of time which is sufficient to include dealings with an appropriate range and variety of situations
- Assessment if this unit will be undertaken by a registered training organisation
- Assessment of knowledge must be conducted through appropriate written/oral examination
- Practical assessment must occur:
 - ~ through appropriately realistically simulated activities at the RTO, and/or
 - ~ in an appropriate range of situations in the workplace

***Access and Equity
Considerations***

- The learner and trainer should have access to appropriate documentation and resources normally used in the workplace
- All workers in this industry should be aware of access and equity issues in relation to their own area of work.
- All workers should develop their ability to work in a culturally diverse environment.

QLD124DES03C

Design an urban permaculture system

Unit Descriptor

This unit provides the skills and knowledge to design an urban system. It requires the ability to negotiate with clients to develop a permaculture design brief, undertake site analysis, develop design concepts and produce final design documentation.

Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills.

The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements

Application of the Unit

The preparation of a permaculture design is likely to be undertaken without supervision. It requires a broad range of permaculture skills and the application of underpinning knowledge with depth in some areas. Responsibility for the work of others may be involved.

ELEMENT

Elements describe the essential outcomes of a unit of competency.

PERFORMANCE CRITERIA

Performance criteria describe the required performance needed to demonstrate achievement of the element. Where ***bold italicised text*** is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

1 Develop a design brief for an urban permaculture system

- 1.1 Initiate contact with the ***client*** when appropriate according to quality ***customer service practices***.
- 1.2 Establish purpose, ***needs and requirements*** of design by consulting with client.
- 1.3 Develop a ***design brief*** for an ***urban permaculture system*** in consultation with the client.
- 1.4 Negotiate ***cost structures*** and timelines with the client.

2 Undertake design analysis

- 2.1 Obtain existing maps, ***geospatial data*** and aerial photographs of property.
- 2.2 ***Survey area*** to provide information not on existing maps using ***appropriate survey tools and equipment***.
- 2.3 Prepare a ***site plan***.
- 2.4 Record ***site assessment*** on the site plan.
- 2.5 Undertake ***bioregional analysis*** of the site.
- 2.6 Undertake ***research*** of potential ***permaculture design elements***.
- 2.7 Choose appropriate permaculture design elements.
- 2.8 Revise brief with client in relation to completed research and analysis.

- | | | |
|---|--------------------------|---|
| 3 | Prepare a design concept | <p>3.1 Determine an appropriate concept.</p> <p>3.2 Prepare conceptual design drawings to illustrate conceptual themes and patterns informing the location and layout of proposed design elements.</p> <p>3.3 Compile a bill of quantities.</p> <p>3.4 Prepare a list of plant and animal species and varieties suitable for the chosen concept.</p> <p>3.5 Prepare a preliminary budget for conceptual design.</p> <p>3.6 Present the concept plan in a consistent graphic style.</p> <p>3.7 Consult the client and agree on options and approaches for design development.</p> <p>3.8 Review and revise concepts, elements and the design brief as necessary after taking feedback from client.</p> |
| 4 | Produce final design | <p>4.1 Design urban permaculture system in accordance with design brief, research, analysis, chosen elements and concepts.</p> <p>4.2 Produce detailed urban permaculture design documents.</p> <p>4.3 Present design plans, drawings and documents to the client.</p> <p>4.4 Take feedback from the client and revise or modify design as required.</p> |

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Essential knowledge:

- Elements of urban permaculture design
- Principles of urban permaculture design
- Strategies in urban permaculture design
- Edible landscapes and aesthetics in design
- Public landscapes and community garden design
- Design brief elements
- Design analysis and research techniques
- Plan interpretation and map reading
- Site surveying methods and tools
- Design concept generation
- Permaculture design methods
- Conventional design symbols

- Design drafting and drawing conventions
- Plant and animal selection
- Methods of design

Essential skills:

Ability to:

- Draft and draw permaculture and landscape plans
- Communicate with clients
- Undertake a site analysis
- Provide urban permaculture design solutions
- Select plants and animals
- Analyse zones and sectors of site
- Develop design concepts
- Developed detail and construction drawings
- Develop planting schedules and bills of quantity
- Develop a design budget
- Present design to client

RANGE STATEMENT

The Range Statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

Client may include but is not limited to:

- home owners
- businesses
- not-for-profit enterprises and projects
- individuals seeking to purchase urban property
- other organisations
- public bodies
- community groups

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Customer service practices may include:

- reply to client request in a timely manner
- communicate with the client in a professional manner
- record notes of client contact
- assess own ability to meet client needs
- clarity of expression and voice modulation
- patience and respect for all people

Needs and requirements may include:

- food production
- system efficiency
- system productivity
- fibre, energy and garden building material production
- water harvesting
- waste treatment
- energy planning and design
- biodiversity habitat
- soil carbon building
- soil fertility
- social considerations, privacy and security
- public safety and amenity
- aesthetic considerations
- establishment financial budget
- establishment time budget
- maintenance financial budget
- maintenance time budget
- establishment design documents
- maintenance plan
- relationship to neighbouring properties including solar access

Design brief may include:

- statement of scope of design
- statement of client needs and requirements
- list of project elements
- list of assessable tasks
- options for dealing with client needs and requirements

Urban permaculture system may include

- domestic systems for urban and suburban properties
- rooftop, balcony and courtyard gardens
- public landscapes such as streets, parks, car parks, commercial premises, industrial estates and community centres
- school gardens and learnscapes
- community gardens and city farms
- Community Supported Agriculture systems, urban market gardens and peri-urban small holdings
- urban forestry

Cost structures may include:

- design budgets
- cost ceilings
- estimates of cost

Geospatial data may include:

- cadastral data
- contour lines
- drainage features
- vegetation mapping
- fire hazard zones
- soil and geological data
- town planning proposal maps
- neighbourhood or precinct maps
- mapping of underground pipes and structures

Survey area may include:

- onsite measurement of site boundaries
- mapping of boundaries to scale to a plan drawing
- mapping of contour lines to a scale plan drawing
- measure and locate existing infrastructure and features on site
- mapping of existing infrastructure and features to a scale plan drawing
- measuring and plotting location of services (power, water, sewer, gas)
- measuring and plotting location of meters or access points

Appropriate survey tools and equipment must include:

- surveying instruments for taking vertical measurements on site
- surveying instruments for measuring angles on site
- surveying instruments for measuring distance and horizontal measurements on site

Appropriate survey tools and equipment may include:

- dumpy level
- laser level
- Cowley level
- staff
- measuring tapes
- pegs
- boning rods
- string lines
- string level
- marking paint
- directional compass
- 3-4-5 triangle
- GPS

Site plan must include:

- property boundaries
- contour lines, or if not available indicate the direction and gradient of fall or slope
- drainage features
- existing infrastructure and natural features
- scale of drawing
- direction of North
- details of land location, client, author of plan, date and drawing number

Site assessment may include:

- initial on site estimations of soil type, pH, texture
- topography
- aspect
- zone and sectors planning
- existing vegetation
- climatic factors
- microclimates indicator species or other landscape-reading notes
- impact of neighbouring properties and land use
- load bearing limits of rooftops and balconies
- Local Council planning guidelines and ordinances, landscape standards
- By-laws and other legal restrictions relating to property landscape and structures

Bioregional analysis may include:

- soils data
- street maps
- topographical maps
- geological maps and surveys
- flora and fauna types and data
- fire hazard estimations
- potential for flood, tsunami, severe storm, wind or other natural disasters
- hydrology
- ecosystems and EVCs (Ecological Vegetation Classes)
- site history and history of the area
- climate data and history
- urban development patterns and neighbourhood character
- social or socio-economic data
- proximity to services and public transport
- Local Authority planning schemes
- local sources and suppliers of materials and plants
- local community and special interest groups such as organic growers, Transition Town, community gardens
- local specialists and tradespeople
- Overlays and Caveats on the land
- primary source and anecdotal information

Research may include:

- investigation of permaculture books and publications, online material, audio and video material, maps, plans, charts and tables
- searches in libraries and databases
- consulting local authorities
- searching geospatial data
- talking to people in the local area or neighbours

Permaculture design elements may include:

- plants
- animals including pets, small livestock and wildlife
- fences, hedges, screens and gates
- permaculture guilds
- ponds, natural swimming pool or water systems
- drive/cycle ways, tracks and pathways and parking areas
- gardens
- aquaponic systems
- orchard and food forest species
- trees and bamboos
- swales and drains and stormwater systems
- irrigation systems
- appropriate alternative technology
- infrastructure and buildings
- recreation and social amenity such as play areas, outdoor cooking and eating
- composting and recycling systems
- building retrofitting
- small-scale intensive systems

Appropriate concept may include:

- design ideas
- themes relevant to the site, its context and the design requirements
- patterns relevant to the site, its context and the design requirements
- location of client's requested features in the permaculture design

Concept design drawings may include:

- preliminary conceptual sketches
- bubble diagrams
- photographic images, collages
- preliminary plan, section and elevation design drawings
- use of design drawing and drafting conventions
- presentable and legible design drawings for client use

Bill of quantities may include:

- lists of materials
- quantities of materials
- machinery hire
- labour and wages
- contingencies

Preliminary budget may include:

- estimates of design budget based on conceptual work
- cost ceilings
- recommendations for design costs

Design must include:

- integration of brief requirements, analytical information and conceptual planning
- rational justification of placement of design elements
- integration of elements to produce an efficient and functional urban permaculture system

Permaculture design documents may include:

- rendered plan, elevation and section drawings to scale
- use of design drawing and drafting conventions
- use of consistent graphic style
- supporting legends and keys of elements
- supporting materials lists, tables, timelines, installation plans and management plans
- construction detail drawings

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Course.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

- The assessee must provide evidence of specified essential knowledge as well as skills.
- Consistency of performance should be demonstrated over the required range of situations relevant to the workplace.
- Where for reasons of safety, safety space or access to equipment and resource, assessment takes place away from the workplace the assessment environment should represent realistic workplace conditions as closely as possible.

Context/s of Assessment and specific resources

- Competency is demonstrated by performance of all stated criteria, including paying particular attention to the critical aspects and the knowledge and skills elaborated in the Evidence Guide, and within the scope as defined by the Range Statement
- Assessment of performance requirements in this unit should be undertaken in an actual workplace or in a realistically simulated environment
- Assessment should reinforce the integration of the key competencies and the common competencies for the particular AQF level
- The learner and trainer should have access to appropriate documentation and resources normally used in the workplace
- Resources for the assessment include:
 - access to SKOPE sheets developed for this unit to reinforce complete understanding in aid of achieving the most positive outcomes.
 - access to relevant Permaculture texts and audio-visual material.
 - access to a potential urban permaculture site for site surveying and design work.

Method of assessment

- While the knowledge can be tested in written and oral assignments, performance evidence needs to be collected in actual or realistic simulated situations. It also needs to be assessed on a number of occasions.
- This unit is best undertaken in a workplace or in a realistically simulated workplace situation.

And must include (verbal and /or written) to address

essential knowledge as outlined in this unit

- Written evidence
- Verbal evidence
- Group interaction
- Recorded evidence
- In order to achieve consistency of performance, evidence should be collected over a set period of time which is sufficient to include dealings with an appropriate range and variety of situations
- Assessment of this unit will be undertaken by a registered training organisation
- Assessment of knowledge must be conducted through appropriate written/oral examination
- Practical assessment must occur:
 - ~ through appropriately realistically simulated activities at the RTO, and/or
 - ~ in an appropriate range of situations in the workplace
- The learner and trainer should have access to appropriate documentation and resources normally used in the workplace
- All workers in this industry should be aware of access and equity issues in relation to their own area of work.
- All workers should develop their ability to work in a culturally diverse environment.

Access and Equity Considerations

QLD124BUI04B

Plan and implement permaculture works

Unit Descriptor

This unit provides the skills and knowledge to plan and implement permaculture works through preliminary planning, scope of works, safety and OHS procedures, equipment and materials, works schedules, specifications and environmental impacts; organising and directing works implementation.

Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills.

The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements

Application of the Unit

The implementation of a permaculture design is likely to be undertaken without supervision. It requires a broad range of permaculture skills and the application of underpinning knowledge with depth in some areas. Responsibility for the work of others may be involved.

ELEMENT

Elements describe the essential outcomes of a unit of competency.

PERFORMANCE CRITERIA

Performance criteria describe the required performance needed to demonstrate achievement of the element. Where ***bold italicised text*** is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

1 Carry out preliminary activities for permaculture works

1.1 Confirm and verify ***client preferences and contract requirements***.

1.2 Determine ***scope of works***.

1.3 Identify ***specific statutory obligations***.

1.4 Conduct initial site visit to verify the ***biophysical and other factors*** of the project area including ***environmental considerations*** and ***historical modifications***.

1.5 Identify ***safety hazards*** and ***OHS obligations*** associated with the permaculture works.

1.6 Verify the availability, quantity and costs of plants and other materials listed in the project schedules.

1.7 Identify and cost ***material resources*** and ***tools and equipment*** required for ***permaculture works***. Confirm availability with suppliers, contractors and appropriate personnel.

1.8 Investigate site access and establishment issues and plan for ***environmental impacts***.

2 Prepare a permaculture works plan

2.1 Document a statement of scope of works.

2.2 Prepare a ***safety plan*** for permaculture works.

- 2.3 List tools and materials required for permaculture works their amounts and their sources.
 - 2.4 Prepare a staged **program of works** to provide a sequential allocation of material resources and **works tasks** with **specifications** to meet determined project **timelines**.
 - 2.5 Determine the **establishment period** and maintenance period of works.
 - 2.6 Incorporate seasonal factors and impacts in the staging strategy to allow for planting supply and care, wet day access, machinery use, fire hazards and establishment period.
 - 2.7 Include, where required, special project works related to habitat resource development and enhancement in the **staged implementation** plan.
 - 2.8 Prepare a consistently formatted **permaculture works plan document** including statement of scope of works, safety plan, materials and equipment lists and supply, scheduled program of works and **statement of environmental effects**.
- 3 Implement a permaculture works plan.
- 3.1 Take delivery of materials and equipment.
 - 3.2 Assemble human resources on site and allocate team leaders.
 - 3.3 Undertake **works briefing** and **safety briefing**.
 - 3.4 Undertake and **supervise permaculture works**.
 - 3.5 Inspect works tasks for adherence to specifications; correct and modify as necessary.
 - 3.6 Monitor environmental impacts of works and modify where required.
 - 3.7 Complete permaculture works and confirm permaculture works completion with client.

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Essential knowledge:

- Permaculture principles and practices.
- Permaculture design techniques including zone and sector planning.
- Practical understanding of the environmental issues associated with undertaking permaculture works.
- Principles of ecology including specific plant and animal relationships and habitat requirements.

- Identification, propagation, establishment and maintenance techniques of specific plant species.
- Statutory compliance and obligations.
- Site evaluation techniques including methods of analysing soils, waterways and their condition.
- Practical understanding of the advantages and disadvantages of a range of permaculture procedures.
- Appropriate control techniques against unwanted plant/animal species.
- Soil conservation, erosion control and enhancement techniques and their advantages and disadvantages in reference to specific sites and habitats.
- Selection and use of appropriate combinations of machinery and tools.
- OHS hazards associated with undertaking permaculture works and the controls necessary to remove or minimise risks associated with them.
- Contract documentation including specifications, plans of permaculture works, services, supplies and surveyors documents.
- Scope of works determination.
- Works breakdown into tasks.
- Scheduling and time line generation.
- Task specifications and evaluation.

Essential skills:

Ability to:

- Research, communicate orally and in writing, negotiate, document plans and write reports for supervisors, clients and contractors.
- Assess a site for opportunities and constraints associated with implementation of permaculture works.
- Determine, document and communicate works specifications to the required standards for each task.
- Prepare schedules for implementation of permaculture works.
- Prepare a staged permaculture works plan.
- Complete an Occupational Health and Safety brief.
- Determine tools and equipment required.
- Determine scope works.
- Determine and calculate amounts of materials required.
- Prepare a Statement of Environmental Effects.

RANGE STATEMENT

The Range Statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

Client may include:

- private individual
- company
- community group
- government agency
- or a combination of these entities

Preferences and contract requirements may include:

- client expectations of methods used to meet contract specifications
- performance conditions and expected standards of work
- time frames indicated
- schedules of proposed materials and their unit costs

Scope of works may include:

- geographical, physical, financial and functional boundaries of permaculture works
- work staged over time
- any possible pre-conditions that have to be met

Specific statutory obligations may include:

- compliance with legislation, ordinances, regulations or by laws relating to the works or the work site
- site responsibilities include OHS, industrial relations and equal opportunity and employment

Biophysical and other factors may include:

- location of the site
- site boundaries
- environmental considerations
- access issues
- potential hazards
- utility services availability and locations
- adjacent landholder considerations
- security issues
- aspect of the site
- rainfall
- humidity
- wind and sunlight intensity
- soil types
- nutrients and deficiencies
- slope
- natural and artificial watercourses
- outcrops of rock
- presence of indigenous or other significant vegetation whether indigenous or otherwise
- plants that may become a weed problem
- animals that may become a management issue, whether feral species or otherwise

Environmental considerations may include:

- use of materials that come from sustainable sources
- duty of care in conserving sites natural values
- work practices
- the use and movement of machinery, storage of materials, removal of weeds and movement of soil and other materials into, across and beyond the site

Historical modifications may include:

- human intervention such as clearance, earthworks, commercial grazing and cultivation practices
- fire management
- buildings and structures
- natural events such as wildfire, flooding, drought, and the effects of modifications at environmentally linked sites

Safety hazards may include:

- soil and water contamination
- overhead branches
- buildings and structures
- machinery, equipment and tools
- dust, pollen and aerosols
- environmental conditions
- uneven and slippery surfaces
- animals and plants
- materials handling and delivery
- micro-organisms

- OHS obligations** may include:
- implementation of OHS policies and procedures
 - hazard identification
 - risk evaluation
 - implementation of control measures
 - OHS policies and procedures review
 - OHS policies and procedures record keeping and reporting

- Material resources** may include:
- soil, rocks and other earth materials
 - woodchips
 - compost
 - fencing material
 - bricks and pavers
 - weed barriers
 - building materials
 - plants and animals
 - containers
 - seeds and other propagation material
 - fertilizers and manures
 - landscaping materials

- Tools and equipment** may include:
- spades, forks, rakes, hoes, shovels, trowels
 - buckets, brooms, wheelbarrows
 - hoses and hose fittings
 - tree-planters
 - secateurs or snips, knives
 - machinery such as tractors and 3-point linkage or trailed equipment
 - fertiliser application machinery or backpacks

Permaculture works may include:

- food gardens
- community gardens
- urban permaculture systems
- rural permaculture systems
- aquaculture systems
- horticultural systems
- forest systems
- grazing and pasture systems
- animal systems and tractors
- integrated food, fiber and energy systems
- permaculture structures
- soil treatments
- preparation of soil surfaces
- installation of irrigation and/or drainage systems including earthworks
- planting methods such as hand sowing, direct seeding, tube planting, hand or machine assisted planting of seedlings, planting of divisions and transplanting
- natural area regeneration
- fencing of stock and pest animals
- the cultural or biological control of weeds and feral animals
- protection of plants by staking, tying and guarding

Environmental impacts may include:

- modifications to the surrounding environment
- removal or addition of soil and soil fertilizers
- soil compaction
- drainage modification
- soil erosion
- removal of vegetation
- destruction of habitat
- soil carbon degradation
- water table modification

Safety plan must include:

- site safety briefing
- hazard identification sheets
- risk assessment tables
- record of control measures
- review and evaluation sheets

Program of works may include:

- series of major stages of permaculture works
- materials lists and quantities
- source contact details
- Gantt charts
- task lists and specifications

Works tasks may include:

- sub tasks of major elements of works plan
- materials lists and quantities
- works directions and specifications
- tools lists

- Specifications** must include:
- objectively measurable standards of works performance by works task
- Timelines** may include:
- sequential list of works stages and tasks
 - Gantt charts
 - schedule diagrams
- Establishment period** may include:
- time period allocated in contract documents for permaculture works
 - period of establishment and completion of initial works
 - period of establishment and maintenance to a prescribed time
 - period of establishment and maintenance to a prescribed outcome
- Staged implementation** may include:
- gradual replacement of habitat
 - planting at different times
 - provision of access for future works
- Permaculture works plan document** must include:
- statement of scope of works
 - safety plan
 - tools and equipment lists
 - materials lists
 - schedule of stages and tasks
 - task specifications
 - timelines
 - consistent formatting
- Statement of environmental effects** may include but is not limited to:
- soil impacts
 - flora and fauna impacts
 - ecosystem impacts
 - water and drainage impacts
 - cultural and historical impacts
 - air quality impacts
- Works briefing** may include:
- site introduction
 - overview of works staging
 - allocation of teams and team leaders
 - review of specifications
 - safety considerations
- Safety briefing** may include:
- site safety induction
 - communication of hazards
 - communication of risks
 - instruction in control measures
 - participant feedback

Supervise permaculture works may include:

- directing work team activities
- ensuring adherence to specifications
- enforcing safety requirements
- allocation of material and human resources

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Course.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

- The assessee must provide evidence of specified essential knowledge as well as skills.
- Consistency of performance should be demonstrated over the required range of situations relevant to the workplace.
- Where for reasons of safety, safety space or access to equipment and resource, assessment takes place away from the workplace the assessment environment should represent realistic workplace conditions as closely as possible.

Context/s of Assessment and specific resources

- Competency is demonstrated by performance of all stated criteria, including paying particular attention to the critical aspects and the knowledge and skills elaborated in the Evidence Guide, and within the scope as defined by the Range Statement
- Assessment of performance requirements in this unit should be undertaken in an actual workplace or in a realistically simulated environment
- Assessment should reinforce the integration of the key competencies and the common competencies for the particular AQF level
- The learner and trainer should have access to appropriate documentation and resources normally used in the workplace
- Resources for the assessment include:
 - access to SKOPE sheets developed for this unit to reinforce complete understanding in aid of achieving the most positive outcomes.
 - access to relevant Permaculture texts and audio-visual material.
 - access to a working permaculture site for practical study purposes.

Method of assessment

- While the knowledge can be tested in written and oral assignments, performance evidence needs to be collected in actual or realistic simulated situations. It also needs to be assessed on a number of occasions.
- This unit is best undertaken in a workplace or in a realistically simulated workplace situation.

And must include (verbal and /or written) to address essential knowledge as outlined in this unit

- Written evidence
- Verbal evidence
- Group interaction
- Recorded evidence
- In order to achieve consistency of performance, evidence should be collected over a set period of time which is sufficient to include dealings with an appropriate range and variety of situations
- Assessment if this unit will be undertaken by a registered training organisation
- Assessment of knowledge must be conducted through appropriate written/oral examination
- Practical assessment must occur:
 - ~ through appropriately realistically simulated activities at the RTO, and/or
 - ~ in an appropriate range of situations in the workplace
- The learner and trainer should have access to appropriate documentation and resources normally used in the workplace

Access and Equity Considerations

- All workers in this industry should be aware of access and equity issues in relation to their own area of work.
- All workers should develop their ability to work in a culturally diverse environment.

QLD124BUI05B

Select appropriate technology for a permaculture system

Unit Descriptor

This unit provides the skills and knowledge to select appropriate technologies for permaculture systems. It includes identification, research, evaluation, selection and communication of sustainable technology for permaculture applications.

Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills.

The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements

Application of the Unit

The selection of appropriate technology for a permaculture design is likely to be undertaken without supervision. It requires a broad range of permaculture skills and the application of underpinning knowledge with depth in some areas. Responsibility for the work of others may be involved.

ELEMENT

Elements describe the essential outcomes of a unit of competency.

PERFORMANCE CRITERIA

Performance criteria describe the required performance needed to demonstrate achievement of the element. Where ***bold italicised text*** is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

1 Investigate appropriate technology for permaculture systems

1.1 Review design ***needs and requirements*** for potential applications of ***appropriate technology***.

1.2 Identify relevant sources and locations of information on appropriate technology.

1.3 Determine required ***scale*** of appropriate technology.

1.4 Identify ***permaculture principles and practices*** relevant to appropriate technology.

2 Research appropriate technology for permaculture systems

2.1 ***Research*** potential appropriate technology options for the project.

2.2 Determine unique characteristics of different appropriate technology options.

2.3 Research applications of alternative technologies.

2.4 Research requirements for integrating new technology with existing ***permaculture systems***.

2.5 Determine capital cost of installation.

2.6 Determine ***training and maintenance*** required for

		operation of the different options.
3	Evaluate appropriate technology for permaculture systems	<p>3.1 Evaluate potential for integration of new appropriate technologies in the permaculture system design.</p> <p>3.2 Compare potential alternative technologies against cost and efficiency criteria.</p> <p>3.3 Evaluate risks and obstacles of potential appropriate technology options.</p>
4	Select appropriate technology for permaculture systems	<p>4.1 Select suitable appropriate technology for the design use.</p> <p>4.2 Determine availability of appropriate technology.</p> <p>4.3 Confirm cost and mode of delivery.</p>
5	Communicate appropriate technology for permaculture systems	<p>5.1 Report on research, evaluation and selection of appropriate technology.</p> <p>5.2 Communicate location and detail of selected appropriate technology option on the permaculture design using appropriate drafting and drawing techniques.</p> <p>5.3 Explain appropriate technology and reason for selection to client.</p>

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Essential knowledge:

- Permaculture principles and ethics
- Criteria for determining appropriateness of energy and resource conservation technologies
- Principles of passive solar design, embodied energy and carbon emission reduction
- Innovations in energy and resource conservation technologies
- Role of appropriate technology in energy descent planning and greenhouse gas emission reduction
- Types of appropriate technology systems commonly available and applied to the design of energy and resource conscious houses, farms, offices and community projects
- The benefits from combining a number of different appropriate technologies and the limitations of each different technology
- Design of systems integrating appropriate technologies.

Essential skills:

Ability to:

- Investigate appropriate technologies for permaculture systems
- Evaluate the permaculture systems capabilities in relation to the use of new technologies
- Evaluate suitability of new technology solutions to permaculture applications
- Communicate information and options using appropriate forms of visual, written and verbal communication

RANGE STATEMENT

The Range Statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

Needs and requirements may include:

- parameters of problem or specific need
- client preferences, such as cultural preferences
- resource implications
- cost implications
- engineering challenges such as slope or terrain

Appropriate technology may include:

- technologies involving solar, wind, wood, biomass and water driven equipment for generating power, performing pumping duties, heating hot water and biochar production
- alternative and resource conserving technologies such as rainwater collection, waste water treatment, composting toilets, cooking stoves, cob ovens, space heating and cooling, household appliances, pedal-powered appliances, enterprise plant and equipment
- building technology such as natural and resource conserving building materials and techniques including passive solar design strategies and features
- tools and implements employed in gardening and farming operations such as electric fencing, hand vs. power tools, shredders and mulching machines, use of animal power
- lifestyle choices and behavioural adjustments to conserve energy and resources to meet sustainability objectives
- smaller scale and lower cost solutions (for example maintaining and riding a bicycle, using a refillable pen, using a razor with replaceable blades, and substituting other non-disposable items where disposables are normally used)
- low energy devices
- ingenuity applied to complex problems to develop simple solutions (e.g. solar powered street lighting)

Scale may include:

- number of people/users of the technology
- domestic, commercial or community scale
- output requirements

Permaculture principles and practices may include:

- The main summaries of permaculture principles and ethics are found in Bill Mollison *Permaculture: A Designers Manual*, (1988); Bill Mollison and Reny Mia Slay *Introduction to Permaculture* (1991) and David Holmgren *Permaculture: Principles & Pathways Beyond Sustainability* (2002)

Research may include:

- internet searches
- viewing existing working systems
- asking others who have used the system
- articles in magazines and journals or other media reports
- listening to wisdom of the elders
- seeking out techniques perfected by other cultures

Permaculture systems may include:

- water systems
- energy systems
- cooking systems
- heating/cooling systems
- building/construction methods
- integrated plant and animal systems

Training and maintenance may include but is not limited to:

- the need to address the unfamiliarity of different technologies
- training manuals or instruction books
- maintenance of systems such as cleaning and calibrating
- pre-start checks and shut-down protocols

Cost and efficiency criteria may include:

- cost/benefit analysis
- relative pros and cons of different options
- energy efficiency of different options
- effectiveness for the job of different options
- whole of life cycle of product
- embodied energy of product
- resource consumption (water, petrol, diesel)
- unit cost of replacement parts
- life of components
- repairability of product or system

Risks and obstacles may include:

- length of 'payback' period (for example a solar HWS service provides free hot water, but it may take 5 years of free hot water to cover the cost of the system installation. Water after that is truly heated for free.)
- new technologies may need more time and attention given to operation and maintenance
- inherent conservatism - people unwilling to adopt new technologies, even though they are proven successful
- cultural acceptability and taboos

Report may include but is not limited to:

- report to client
- organisation of notes for own records
- table of pros and cons for general information
- assessment task

Permaculture design may include:

- Permaculture plan
- concept design and supportive documentation
- construction detail drawings

Drafting and drawing techniques may include:

- plan drafting techniques
- diagrams drawn to scale with dimension detail
- architectural lettering and symbol conventions
- clear and legible instructions or specifications

Explain may include:

- written report
- verbal report
- plans, diagrams and construction detail drawings
- brochures
- expert opinions
- installers opinions
- websites or other electronic information
- specification tables
- reviews or articles from expert sources

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Course.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

- The assessee must provide evidence of specified essential knowledge as well as skills.
- Consistency of performance should be demonstrated over the required range of situations relevant to the workplace.
- Where for reasons of safety, safety space or access to equipment and resource, assessment takes place away from the workplace the assessment environment should represent realistic workplace conditions as closely as possible.

Context/s of Assessment and

- Competency is demonstrated by performance of all

specific resources

stated criteria, including paying particular attention to the critical aspects and the knowledge and skills elaborated in the Evidence Guide, and within the scope as defined by the Range Statement

- Assessment of performance requirements in this unit should be undertaken in an actual workplace or in a realistically simulated environment
- Assessment should reinforce the integration of the key competencies and the common competencies for the particular AQF level
- The learner and trainer should have access to appropriate documentation and resources normally used in the workplace
- Resources for the assessment include:
 - access to SKOPE sheets developed for this unit to reinforce complete understanding in aid of achieving the most positive outcomes.
 - access to relevant Permaculture texts and audio-visual material.
 - access to a working permaculture site for practical study purposes.

Method of assessment

- While the knowledge can be tested in written and oral assignments, performance evidence needs to be collected in actual or realistic simulated situations. It also needs to be assessed on a number of occasions.
- This unit is best undertaken in a workplace or in a realistically simulated workplace situation.

And must include (verbal and /or written) to address essential knowledge as outlined in this unit

- Written evidence
- Verbal evidence
- Group interaction
- Recorded evidence
- In order to achieve consistency of performance, evidence should be collected over a set period of time which is sufficient to include dealings with an appropriate range and variety of situations
- Assessment if this unit will be undertaken by a registered training organisation
- Assessment of knowledge must be conducted through appropriate written/oral examination
- Practical assessment must occur:
 - ~ through appropriately realistically simulated activities at the RTO, and/or
 - ~ in an appropriate range of situations in the workplace

***Access and Equity
Considerations***

- The learner and trainer should have access to appropriate documentation and resources normally used in the workplace
- All workers in this industry should be aware of access and equity issues in relation to their own area of work.
- All workers should develop their ability to work in a culturally diverse environment.

QLD124BIO06C

Identify and analyse bioregional characteristics and resources

Unit Descriptor

This unit provides the skills and knowledge to research, extract and provide information on bioregional characteristics and resources. It requires the ability to process a request for information on bioregional characteristics and resources, identify information sources, organise self and others, ensure information meets request, prepare and finalise reports.

For indigenous contexts, the delivery and assessment against this competency standard must comply with community protocols and guidelines and be supported by elders and custodians of country.

Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills.

The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements

Application of the Unit

The analysis of bioregional characteristics is likely to be undertaken without supervision. It requires a broad range of permaculture skills and the application of underpinning knowledge with depth in some areas. Responsibility for the work of others may be involved.

ELEMENT

Elements describe the essential outcomes of a unit of competency.

PERFORMANCE CRITERIA

Performance criteria describe the required performance needed to demonstrate achievement of the element. Where ***bold italicised text*** is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

- | | | |
|---|---|---|
| 1 | Identify sources of information on <i>bioregional characteristics and resources</i> | 1.1 Identify the need for bioregional analysis, or respond to request. |
| | | 1.2 Research relevant <i>sources</i> and locations of information about the bioregion. |
| | | 1.3 <i>Access</i> identified sources and information. |
| 2 | Organise self or others to extract information on bioregional characteristics and resources | 2.1 Locate and extract information relevant to the particular request. |
| | | 2.2 Co-ordinate and monitor team work to obtain required information. |

- | | | |
|---|----------------------------------|---|
| | | 2.3 Discuss resolutions to problems accessing information with designated person and implement where appropriate. |
| 3 | Ensure information meets request | 3.1 Assess information for its validity and reliability . |
| | | 3.2 Seek clarification and assistance from client group/individual where information is unclear or difficult to understand. |
| | | 3.3 Obtain additional information where available information is inadequate . |
| | | 3.4 Combine different types of information where appropriate, to provide a response to the request |
| 4 | Report on bioregional analysis | 4.1 Develop a report format , plan and structure. |
| | | 4.2 Compile report using clear and concise language, and edit as appropriate. |
| | | 4.3 Produce report in format required by client. |
| 5 | Finalise reporting process | 5.1 Arrange to review and sign off of report with designated person where required. |
| | | 5.2 Present report to community group or client. |
| | | 5.3 Make a record of report . |

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Essential knowledge:

- Permaculture principles and ethics
- Definition of a bioregion and key bioregional characteristics including environmental and social factors
- Relevant bioregional issues including transition initiatives, local food and water security, bioregional self reliance regarding other components of daily life from local sources as opposed to importing basic needs from long distances at a high cost to the environment
- Embodied energy including how to measure it and compare it with the energy output over the life of the item, and consideration of the waste disposal of an item as part of its energy "cost"
- Types of information sources
- Methods and means of accessing data
- Methods of presenting and formatting information
- Means of validating information

Essential skills:

Ability to:

- Identify information sources of information on bioregional characteristics and resources
- Organise self or others to extract information on bioregional characteristics and resources
- Ensure information meets request
- Employ appropriate media for report presentation
- Prepare report
- Finalise and present report

RANGE STATEMENT

The Range Statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

Bioregional characteristics and resources may include:

- A bioregion is a land and water territory whose limits are defined not by political boundaries, but by the geographical limits of human communities and ecological systems
- Typically a town or a segment of a city is at the main node of a bioregion, and this was the pattern of most settlement and economic development until the 20th century
- Water catchment is one of the key identifiers of the bioregion. The water catchment, storage, use/treatment of effluent and the water quality of rivers and creeks is essential to permaculture design
- The Ecological Vegetation Class (EVC) of the area or the population of endemic species, as well as the suitability of any other species to grow or breed in the area
- History, social make-up, land use and population information that go towards understanding an area
- bioregional resources include the human and social capital or culture of an area, its capacity to produce its own needs and supply surplus to others, and its resilience in responding to change or catastrophe
- the natural (biophysical), built, social and cultural elements of the area, including water supply and catchment management systems, transport systems, LETS and co-operatives, food supply systems, fuel and fibre supply systems
- data held by local councils, community groups, historical societies, individuals and organisations that adds value to a study of the bioregion

Sources of information may include:

- specialist (e.g. permaculture and related books)
- government reports
- relevant legislation
- Codes of Practice
- national and international protocols and charters
- statistics
- local knowledge
- original research
- media (television, video, audio)
- articles (academic, on-line, newspaper, journal)
- oral history
- community histories and stories
- letters
- internal correspondence
- libraries
- wisdom of the elders and custodians of country
- knowledge held by people of different ethnicity or cultural background

Access may include:

- hours of operation or opening of libraries/resource centres
- permission to access sensitive information
- legal barriers or requirements
- costs which may be incurred
- approaching community consultation in a sensitive way so as to gain access without offence
- taking the time to obtain quality information and fully understand it

Designated person may include:

- nominated representative of community group
- community Elder
- community representative
- interpreter
- supervisor
- manager
- colleague
- mentor
- relevant senior person

Validity and reliability may include:

- confirming that sources are reliable (especially internet sources)
- ensuring that information is valid for the requested analysis
- ensuring that information is accurate and not exaggerated or trivialised
- verifying parameters of data to ensure an accurate sample

Inadequate may include:

- incomplete
- inaccurate
- imprecise
- false or misleading
- insufficiently detailed
- off-topic
- outside of specifications for the request

Types of information may include:

- written information in different languages
- sound
- visual information
- photographs
- maps, charts and diagrams
- data in spreadsheets or tables
- samples or examples
- performances or data shows
- surveys
- interviews
- oral history
- comedy and theatre to carry content

Report format may include:

- written report or document
- video or DVD presentation
- interactive DVD
- PowerPoint presentation
- website content and links
- database
- graphs, maps and diagrams
- other visual or electronic media product

Edit may include:

- correcting for spelling, punctuation and grammatical errors
- checking for accuracy of information
- using language targeted to the audience
- confirming that information meets the requirements of the client
- maintaining consistency of presentation and formatting
- applying the required style guides
- avoiding unintended offences by sensitive consultation and following cultural guidelines

Record of report may include:

- report to client organisation to conclude job
- diary note
- video or recording of report presentation if appropriate or required
- public statement to put on record
- press release or advertisement if appropriate or required

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Course.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

- The assessee must provide evidence of specified essential knowledge as well as skills.
- Consistency of performance should be demonstrated over the required range of situations relevant to the workplace.
- Where for reasons of safety, safety space or access to equipment and resource, assessment takes place away from the workplace the assessment environment should represent realistic workplace conditions as closely as possible.

Context/s of Assessment and specific resources

- Competency is demonstrated by performance of all stated criteria, including paying particular attention to the critical aspects and the knowledge and skills elaborated in the Evidence Guide, and within the scope as defined by the Range Statement
- Assessment of performance requirements in this unit should be undertaken in an actual workplace or in a realistically simulated environment
- Assessment should reinforce the integration of the key competencies and the common competencies for the particular AQF level
- The learner and trainer should have access to appropriate documentation and resources normally used in the workplace
- Resources for the assessment include:
 - access to SKOPE sheets developed for this unit to reinforce complete understanding in aid of achieving the most positive outcomes.
 - access to relevant Permaculture texts and audio-visual material.
 - access to a working permaculture site for practical study purposes.

Method of assessment

- While the knowledge can be tested in written and oral assignments, performance evidence needs to be collected in actual or realistic simulated situations. It also needs to be assessed on a number of occasions.
- This unit is best undertaken in a workplace or in a

realistically simulated workplace situation.

And must include (verbal and /or written) to address essential knowledge as outlined in this unit

- Written evidence
- Verbal evidence
- Group interaction
- Recorded evidence
- In order to achieve consistency of performance, evidence should be collected over a set period of time which is sufficient to include dealings with an appropriate range and variety of situations
- Assessment if this unit will be undertaken by a registered training organisation
- Assessment of knowledge must be conducted through appropriate written/oral examination
- Practical assessment must occur:
 - ~ through appropriately realistically simulated activities at the RTO, and/or
 - ~ in an appropriate range of situations in the workplace
- The learner and trainer should have access to appropriate documentation and resources normally used in the workplace
- All workers in this industry should be aware of access and equity issues in relation to their own area of work.
- All workers should develop their ability to work in a culturally diverse environment.

Access and Equity Considerations

QLD124RES07B

Design harvesting and storage systems for permaculture products

Unit Descriptor

This unit provides the skills and knowledge to design harvesting and storage systems for products to meet year round supply of fresh and stored produce. It requires the ability to determine harvesting and storage system requirements, identify requirements for maintaining optimum condition of permaculture products and prepare harvesting and storage plan.

Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills.

The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements

Application of the Unit

The design of harvesting and storage systems is likely to be undertaken without supervision. It requires a broad range of permaculture skills and the application of underpinning knowledge with depth in some areas. Responsibility for the work of others may be involved.

ELEMENT

Elements describe the essential outcomes of a unit of competency.

PERFORMANCE CRITERIA

Performance criteria describe the required performance needed to demonstrate achievement of the element. Where ***bold italicised text*** is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

- 1 Determine harvesting and storage system requirements
- 2 Identify requirements for maintaining optimum condition of permaculture products
- 3 Prepare *harvesting and*

- 1.1 Define range and type of ***permaculture products*** to be ***harvested*** and ***stored*** and negotiate needs and budgets with client.
- 1.2 Determine ***seasonal requirements*** for products.
- 1.3 Define optimum harvesting, processing and storage techniques for the product.
- 1.4 Determine opportunities and constraints in respect to site location, cost and layout of ***storage facilities***.
- 2.1 Carry out research to determine ***maintenance requirements*** of products.
- 2.2 Define ***treatment*** requirements for products.
- 2.3 Determine appropriate ***preservation techniques*** and processes for products.
- 2.4 Define ***preparation*** requirements for storage of products.
- 3.1 Describe ***growing and harvesting schedule*** and quantities on the plan.

storage plan

- 3.2 Set out layout of storage area on the plan.
- 3.3 Note the requirements for treatment, preparation and preservation of products in the **harvest and storage plan**.
- 4 Complete plan for harvesting and storage system
 - 4.1 Evaluate **training needs** for the harvesting and storage system.
 - 4.2 Present the harvesting and storage system plan to client or team.

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Essential knowledge:

- Products from a permaculture system commonly harvested and stored
- Design systems to meet year round supply of fresh and stored produce
- Growing requirements and crop regulation strategies
- Harvest and post-harvest factors influencing plant metabolism and quality
- Post-harvest treatment and preparation techniques
- Preservation methods and processes for products from a permaculture system
- Technologies used in crop processing, treatment, preservation and storage systems
- Design of storage areas
- Developing planting and harvesting schedules for products from a permaculture system
- Identifying training needs for harvest and storage workers
- Preparing plans and reports
- Food safety, health and hygiene requirements for preservation and storage of products for human consumption

Essential skills:

Ability to:

- Determine harvesting, post-harvest and storage system requirements
- Identify requirements for maintaining optimum condition of products from a permaculture system
- Prepare harvesting and storage plan
- Communicate harvesting and storage plan with clients and workers

RANGE STATEMENT

The Range Statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

Permaculture products may include:

- vegetables where the whole plant is harvested
- vegetables where part of the plant is harvested
- perennial plants where fruit/nuts are harvested
- forests where timber, fuel and fibre crops are selectively removed
- forests where a range of other medicinal and craft crops are harvested
- harvest from wild systems (e.g. fruit, nuts, fungi and seeds), where a clear abundance of product has been identified
- animal products such as eggs, feathers, hides, bone, milk and meat
- Products may also include those derived from insects (such as honey)
- fish (such as roe), and other organisms (such as fungi, algae and moss)

Harvested may include:

- mechanised or hand-operated
- take account of differing ripening dates of crops within the same area
- avoid damage to one crop while harvesting another
- avoid disturbing nesting birds, animal forage or insect activity which is part of the system
- practices to reduce product deterioration through metabolic stress, transpiration, mechanical injury and stress, and microbial damage
- post-harvest cleaning, washing and sorting facilities such as sinks, water supply, work bench
- temporary storage of product between harvest and preservation or processing
- OHS and safe work practices, personal protective equipment

Stored may include but is not limited to:

- cool rooms
- sheds
- mechanical processing into a finished product
- root cellars
- clamp storage
- tanks
- bins
- baskets
- drying rooms
- bags
- boxes/cartons
- milk churns
- other containers

Seasonal requirements may include:

- Harvests from managed systems may have an annual harvest season, or may be harvested less or more frequently.
- Harvests may be taken from wild systems, but only when there is excess over the system's own needs for sustainability.

Storage facilities may include:

- buildings such as sheds
- cupboards
- shelving and racks
- work benches
- store rooms
- pantry
- cool store
- cellar
- bins and containers

Maintenance requirements may include:

- optimum temperature, humidity, ventilation and light/dark levels for product storage system
- product harvest and temporary field storage conditions
- appropriate equipment and tools
- post-harvest processing and storage options
- post-harvest and processing structures and facilities
- food safety and enterprise standards

Treatment may include:

- certified organic standards to ensure that the product is safe to consume or handle
- other relevant enterprise standards for product treatment

Preservation techniques may include:

- drying and dehydrating
- bottling
- cheese-making
- extraction (honey, cold-pressed and distilled oils)
- culturing or fermenting
- preserving with vinegar, oil, brine, sugar, salt and other natural agents
- air exclusion (sealing with fats, wax, vacuum seal)
- cellaring and root-cellaring
- other processes that use minimal fossil fuel energy while maintaining the integrity of the harvested crop

Preparation may include:

- ensuring that storage areas are cleaned in accordance with enterprise requirements
- clearing an area for wood storage
- draft or rodent proofing an area
- making space
- installing racks
- setting up labelling or fastening points
- building or installing structures to hold products
- removing damaged or unwanted plant parts, trimming, cleaning, washing and grading fresh produce
- sterilising equipment and containers
- safety and hygiene procedures
- ensuring storage conditions meet product requirements such as temperature, humidity, light/dark

Growing and harvesting schedule may include:

- calendar or seasonal chart with planting times of crops
- selection of early, mid- and late season varieties to extend harvest
- number of plants and area to be planted
- crop regulation and maintenance program involving tipping, mounding, thinning, staking
- sequential planting and/or harvesting schedules
- climatic conditions for harvesting crop such as appropriate time of day
- tools and equipment
- work safety

Harvest and storage plan may include:

- flow chart of harvest, treatment, preservation and storage process
- harvest and post-harvest treatment timelines and schedules
- design or plans of processing and storage area
- design of processing technology or equipment such as solar food dryer
- lists of materials, tools, equipment and ingredients
- manuals and operating instructions for equipment
- recipes and instructions
- anticipated shelf-life of product
- labelling and recording systems
- OHS, food safety, hygiene and other relevant enterprise and work practices

Training needs may include:

- OHS and other relevant enterprise and work practices
- Food safety and hygiene standards
- appropriate clothing and personal protective equipment
- harvest and post-harvest handling, processing and storage practices
- food preserving techniques
- operation and maintenance of tools and equipment
- reporting, recording and labelling procedures

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Course.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

- The assessee must provide evidence of specified essential knowledge as well as skills.
- Consistency of performance should be demonstrated over the required range of situations relevant to the workplace.
- Where for reasons of safety, safety space or access to equipment and resource, assessment takes place away from the workplace the assessment environment should represent realistic workplace conditions as closely as possible.

Context/s of Assessment and specific resources

- Competency is demonstrated by performance of all stated criteria, including paying particular attention to

the critical aspects and the knowledge and skills elaborated in the Evidence Guide, and within the scope as defined by the Range Statement

- Assessment of performance requirements in this unit should be undertaken in an actual workplace or in a realistically simulated environment
- Assessment should reinforce the integration of the key competencies and the common competencies for the particular AQF level
- The learner and trainer should have access to appropriate documentation and resources normally used in the workplace
- Resources for the assessment include:
 - access to SKOPE sheets developed for this unit to reinforce complete understanding in aid of achieving the most positive outcomes.
 - access to relevant Permaculture texts and audio-visual material.
 - access to a working permaculture site for practical study purposes.

Method of assessment

- While the knowledge can be tested in written and oral assignments, performance evidence needs to be collected in actual or realistic simulated situations. It also needs to be assessed on a number of occasions.
- This unit is best undertaken in a workplace or in a realistically simulated workplace situation.

And must include (verbal and /or written) to address essential knowledge as outlined in this unit

- Written evidence
- Verbal evidence
- Group interaction
- Recorded evidence
- In order to achieve consistency of performance, evidence should be collected over a set period of time which is sufficient to include dealings with an appropriate range and variety of situations
- Assessment if this unit will be undertaken by a registered training organisation
- Assessment of knowledge must be conducted through appropriate written/oral examination
- Practical assessment must occur:
 - ~ through appropriately realistically simulated activities at the RTO, and/or
 - ~ in an appropriate range of situations in the workplace
- The learner and trainer should have access to

appropriate documentation and resources normally used in the workplace

Access and Equity Considerations

- All workers in this industry should be aware of access and equity issues in relation to their own area of work.
- All workers should develop their ability to work in a culturally diverse environment.

QLD124IPA08A

Implement and monitor animal health and welfare programs for a permaculture system

Unit Descriptor

This unit provides the skills and knowledge to implement and monitor animal health and welfare programs for a permaculture system. It requires the ability to provide information to the work group about animal welfare, facilitate the participation of others in complying with animal health and welfare guidelines, implement and monitor enterprise programs for animal care, deal with animal emergencies and maintain animal health records.

Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills.

The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements

Application of the Unit

The implementation of programs to monitor animal health and welfare is likely to be undertaken without supervision. It requires a broad range of permaculture skills and the application of underpinning knowledge with depth in some areas. Responsibility for the work of others may be involved.

ELEMENT

Elements describe the essential outcomes of a unit of competency.

PERFORMANCE CRITERIA

Performance criteria describe the required performance needed to demonstrate achievement of the element. Where ***bold italicised text*** is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

1 Provide information about animal care

- 1.1 Accurately and clearly explain relevant ***permaculture practices*** towards animal health and welfare to the ***client***.
- 1.2 Provide readily accessible information on animal care and maintenance and accurately and clearly explain this to the work group.
- 1.3 Regularly provide information about identified ***animal health and welfare requirements*** and accurately and clearly explain this to the work group.

2 Facilitate the participation of workers in animal care and maintenance

- 2.1 Implement and monitor ***enterprise work procedures*** for compliance on animal care and maintenance.
- 2.2 Describe clearly the procedures whereby workers report animal health and welfare ***hazards***, risks and action taken to control risks to the work group.
- 2.3 Resolve issues raised on animal health and welfare promptly or seek ***professional or specialist advice*** where required.

3 *Implement and monitor*

- 3.1 Identify and report existing and potential hazards to animal

enterprise animal health and welfare procedures	health and welfare so that effective remedial measures are implemented.
4 Implement workplace procedures for dealing with animal health and welfare <i>emergencies</i>	<p>3.2 Implement work procedures to ensure adequate resource allocation, control animal health and welfare risks and monitoring to ensure ongoing adherence and effectiveness of animal practices.</p> <p>4.1 Implemented workplace procedures for dealing with animal health and welfare emergencies where necessary to ensure that prompt and effective control action is taken.</p> <p>4.2 Report animal health and welfare emergencies in accordance with established enterprise work procedures.</p> <p>4.3 Implement measures to prevent recurrence and minimise risk of animal health and welfare emergencies.</p>
5 Implement and monitor enterprise procedures for providing animal health and welfare training	<p>5.1 Meet with relevant parties to accurately identify animal health and welfare induction and <i>training needs</i>.</p> <p>5.2 Establish strategies to address <i>environmental and natural resource management issues</i>.</p>
6 Implement and monitor enterprise procedures for maintaining animal health and welfare records	<p>6.1 Complete <i>animal health and welfare records</i> accurately and legibly in accordance with enterprise work procedures and <i>legislative requirements</i>.</p> <p>6.2 Identify potential hazards to animal health and welfare by using <i>aggregate information</i> from animal health and welfare records.</p>

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Essential knowledge:

- Permaculture principles, ethics and practices relating to integrated animal systems
- Animal health and welfare requirements, practices and procedures.
- Animal physiology.
- Relevant animal welfare legislation and codes of practice.
- Industry animal health requirements
- Enterprise policies, guidelines and standard operating procedures relating to animal health and welfare.

Essential skills:

Ability to:

- Provide information to the work group about animal health and welfare.
- Facilitate the participation of other workers in animal health and welfare compliance.
- Implement and monitor enterprise animal health and welfare procedures
- Implement workplace procedures for dealing with animal health and welfare emergencies
- Implement and monitor enterprise procedures? for providing animal health and welfare training
- Implement and monitor enterprise procedures for maintaining animal health and welfare records

RANGE STATEMENT

The Range Statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

Permaculture practices may include:

- minimising effort for maximum effect
- multiple uses for each element in the system
- more than one way of providing important functions
- re-using and valuing resources and energy
- encouraging productivity of the system
- seeing solutions not problems
- preventing waste and loss of resources from the system

Client may include:

- community organisations
- private landholders
- farmers
- 'lifestyle'/'hobby' farmers
- schools or other educational institutions

Animal health and welfare requirements may include:

- Maintenance of animal housing, enclosures and fencing, covering hygiene and welfare
- Ensuring availability of suitable forage, fodder and supplementary feedstuffs, and adjusting stocking rates, ranging and rotation schedules to suit
- Coordinating integration of animal ranging and maintenance with plant production systems (e.g. ranging in orchard to manure trees, reduce weeds, pests, eat windfall fruit, tractoring systems, compost manures and housing litter, maintain firebreaks)
- Researching, assessing, implementing and monitoring supplementary stock feed requirements, feeding quantities & schedules
- Researching and applying organic alternatives for treating stock in compliance with organic certification authorities, these may include herbal and homoeopathic treatments, mineral and vitamin supplements, permitted medications
- Developing appropriate handling procedures to reduce stress
- Harvesting, sourcing and handling useable products (e.g. milking, collecting eggs)
- Range areas to provide shade and shelter from climatic extremes through appropriate plantings including forage and fodder plants.
- Equipment including feeders and waterers, and back-up systems and alarms in case of equipment failure.
- Lighting
- Ventilation including fresh air, dust filters, humidity, and noxious gases.
- Temperature including cooling and heating, extreme weather conditions
- Protection from predators, vermin, fires and floods.
- Food with diet containing adequate nutrients
- Water including sufficient drinkable water to meet livestock requirements and monitoring water quality.
- Health and distress. Signs of ill-health in animals may include reduced food and water intake, reduced production, changes in the nature and level of their activity, abnormal condition or changed physical features. Evidence of behavioural changes may indicate ill-health or distress or both.
- Prevention of infectious disease and internal and external parasitism.
- Transport of growing and adult livestock
- Note that an appropriately designed integrated permaculture livestock area with good shelter and food sources can provide for many of the requirements listed above

Enterprise work procedures may include:

- Animal welfare standards
- product labels
- manufacturers specifications
- MSDS
- enterprise policies and procedures
- waste disposal, recycling and re-use
- reporting requirements
- appropriate work clothing and personal protective equipment
- OHS and workplace safety practices

Hazards may include but are not limited to:

- Biological hazards where contamination from other animals (e.g. mice, rats, cats), poor housing/transport conditions and dirty water affects animal health and food quality.
- Animal health hazards resulting from poor handling of animals, unhealthy or diseased animals, extreme weather conditions, poor loading and transport conditions, and time off feed.

Professional or specialist advice may include:

- veterinarian advice
- animal handler advices
- horse breaker or other behavioural specialist
- public health specialist
- RSPCA
- wildlife protection services

Implement and monitor may include but is not limited to:

- Supervision of the application of animal health and welfare principles
- compliance with relevant legislation and codes of practice in each state
- regular inspections
- training records
- records including the duties and responsibilities of all parties

Emergencies may include:

- injury
- disease
- failure of feeding or watering systems
- poisoning
- tick fever
- birthing difficulties
- escapement from housing or enclosures
- predator attack
- natural disasters such as bushfire, flooding, severe storm, other extreme weather event

Training needs may include:

- on and off-the-job training
- enterprise work practices and OHS
- emergency procedures and reporting
- carry out animal care, maintenance and treatment
- animal health and welfare
- animal handling
- operation and maintenance of tools, equipment and infrastructure
- recording and reporting systems

Environmental and natural resource management issues may include:

- Care and maintenance of animals in a permaculture system should contribute to the improved health, diversity and productivity of the site and the surrounding environment.
- Potential negative environmental impacts that need to be foreseen and prevented include
- escaping animals damaging vegetation and stream banks
- feral potential of escaped animals
- uncontrolled disposal or leakage of manures and other animal 'wastes'
- unsafe use and disposal of veterinary chemicals and any consequent residual chemicals, for example, in excreta
- compaction or overgrazing due to inappropriate stocking rates or stock rotation

Animal health and welfare records may include:

- farm livestock records
- daily harvest/yield records (eggs, milk)
- feeding schedules and rosters
- rotation schedules and successional grazing regimes
- work reports
- accident and emergency reports
- entries into data base or other management software

Legislative requirements may include:

- compliance with council ordinances
- planning approval
- licence from government agency
- animal welfare legislation
- workplace legislation & awards

Aggregate information may include:

- farm livestock records
- worker records and reports
- emergency reports
- animal morbidity
- enterprise work procedures and practices
- seasonal factors
- questioning client and/or workers
- observations from inspecting animal systems and operational practices

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Course.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

- The assessee must provide evidence of specified essential knowledge as well as skills.
- Consistency of performance should be demonstrated over the required range of situations relevant to the workplace.
- Where for reasons of safety, safety space or access to equipment and resource, assessment takes place away from the workplace the assessment environment should represent realistic workplace conditions as closely as possible.

Context/s of Assessment and specific resources

- Competency is demonstrated by performance of all stated criteria, including paying particular attention to the critical aspects and the knowledge and skills elaborated in the Evidence Guide, and within the scope as defined by the Range Statement
- Assessment of performance requirements in this unit should be undertaken in an actual workplace or in a realistically simulated environment
- Assessment should reinforce the integration of the key competencies and the common competencies for the particular AQF level
- The learner and trainer should have access to appropriate documentation and resources normally used in the workplace
- Resources for the assessment include:
 - access to SKOPE sheets developed for this unit to reinforce complete understanding in aid of achieving the most positive outcomes.
 - access to relevant Permaculture texts and audio-visual material.
 - access to a working permaculture site for practical study purposes.

Method of assessment

- While the knowledge can be tested in written and oral assignments, performance evidence needs to be collected in actual or realistic simulated situations. It also needs to be assessed on a number of occasions.

- This unit is best undertaken in a workplace or in a realistically simulated workplace situation.

And must include (verbal and /or written) to address essential knowledge as outlined in this unit

- Written evidence
- Verbal evidence
- Group interaction
- Recorded evidence
- In order to achieve consistency of performance, evidence should be collected over a set period of time which is sufficient to include dealings with an appropriate range and variety of situations
- Assessment if this unit will be undertaken by a registered training organisation
- Assessment of knowledge must be conducted through appropriate written/oral examination
- Practical assessment must occur:
 - ~ through appropriately realistically simulated activities at the RTO, and/or
 - ~ in an appropriate range of situations in the workplace
- The learner and trainer should have access to appropriate documentation and resources normally used in the workplace
- All workers in this industry should be aware of access and equity issues in relation to their own area of work.
- All workers should develop their ability to work in a culturally diverse environment.

Access and Equity Considerations

QLD124RES09B

Manage a permaculture seed bank

Unit Descriptor

This unit provides the skills and knowledge to manage a permaculture seed bank. It requires the ability to plan seed collection, implement seed collection and maintain a seed collection in storage. Managing a permaculture seed bank requires knowledge of plant biology, handling and extraction of seed, treatment and documentation, collecting ethics, protocols and legislative parameters and storage techniques.

Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills.

The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements

Application of the Unit

The management of a permaculture seed bank is likely to be undertaken without supervision. It requires a broad range of permaculture skills and the application of underpinning knowledge with depth in some areas. Responsibility for the work of others may be involved.

ELEMENT

Elements describe the essential outcomes of a unit of competency.

1 Plan *seed* collection for a *permaculture seed bank*

2 Implement seed collection program

PERFORMANCE CRITERIA

Performance criteria describe the required performance needed to demonstrate achievement of the element. Where ***bold italicised text*** is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

1.1 Analyse requirements for seed collecting, and interpret for required ***seed characteristics*** and implementation issues.

1.2 Identify opportunities for seed collection from field observation and liaison with other specialists in this field.

1.3 Identify and mark on a plan suitable areas and plants for seed collection for later reference.

1.4 Select ***method of seed collection*** in accordance with the geography of the local area, size and type of plants, available resources and enterprise guidelines.

1.5 Determine and document quantity, cost and ***provenances*** to be collected.

1.6 Liaise with ***relevant authorities*** or owners and seek approvals where required.

2.1 Co-ordinate and schedule people, materials and equipment required according to ***seed collection program***.

2.2 Identify and obtain any ***permits*** and/or approvals required for the seed collection.

2.3 Complete clearly and accurately the ***documentation*** identifying the seed in accordance with ***enterprise work***

- requirements.**
- 3 Maintain a seed collection
- 3.1 Check to ensure that the quantity, cost and provenances collected accord with requirements.
 - 3.2 Check and monitor regularly the **health of seed** collected and take **remedial action** where required.
 - 3.3 Control pests and conditions detrimental to seed health to optimise **seed viability**.
 - 3.4 **Dispose** of seeds that are non-viable due to age or pest attack according to enterprise work procedures.
 - 3.5 Supply **true to type** and **appropriately labelled** seed to others.
 - 3.6 **Record** up to date details of seeds held in **storage**.

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Essential knowledge:

- Flowering biology of the target species
- Biological signs which indicate that the seed crop is ready to be collected
- Handling the collected material after collection
- Extraction of the seed from the collected material
- Handling of the seed crop after picking
- Treatment and documentation of the extracted seed
- Collection methods
- Occupational health and safety guidelines, procedures, and principles, including manual handling
- Collecting ethics, protocols and legislative parameters
- Storage techniques.

Essential skills:

Ability to:

- Plan seed collection
- Implement seed collection
- Maintain a seed collection

RANGE STATEMENT

The Range Statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

Seed may include:

- Vegetable
- fruit
- timber
- oil-plants
- herbs
- native and exotic plants
- local provenance species
- seed from other plants that can provide products or benefit in a permaculture system

Permaculture seed bank may include:

- community seed banks and networks
- private seed collections
- organic food production enterprises such as market gardens
- community supported agriculture seed sources
- community garden and city farm seed banks
- supply of vegetative propagation for perennial plants
- heritage and non-hybrid seed distributors
- heritage and non-hybrid seed producers
- permaculture plant and seed nurseries
- community seed swaps

Seed characteristics may include:

- provenance
- potential growth characteristics
- optimum time to collect
- viability

Method of seed collection may include:

- hand-picking seeds or seed capsules
- harvesting whole plant
- collecting and ripening fruit
- collecting after felling
- using ladders
- climbing
- shaking
- high-powered rifles (licensed operators only)
- elevated platforms

- Provenances** may include:
- location and growing conditions of parent plant
 - sub-catchment identification of seed from endemic native plant populations
 - species and/or varieties adapted to local conditions
- Relevant authorities** may include:
- lessee or occupant of property
 - indigenous custodian or organisation
 - local government
 - forestry, national parks authorities
 - other government departments
- Seed collection program** may include:
- seasonal collection program
 - one-off collection of a specific species
 - ongoing seed collection over two or more seasons
 - community education program
 - coordinating and motivating members of community seed banks and seasonal seed swaps
 - wild harvest program
- Permits** may include:
- limits on quantity allowed for collection
 - limits on time period for collection
 - particular use or destination for seed
 - indigenous plant regulatory conditions
- Documentation** may include:
- information on provenance
 - botanical name: genus, species, variety
 - common names
 - family
 - identity of collector
 - date collected
 - weight of seed collected
 - viability test results
 - organic certification of grower
- Enterprise work requirements** may include:
- codes of practice
 - client requirements
 - procedures based on sound permaculture principles and practices
 - seed collection techniques
 - seed storage and handling techniques
 - seed labelling conventions
 - enterprise standard operating procedures (SOP)
 - specifications
 - routine maintenance schedules
 - work notes
 - product labels
 - Materials Safety Data Sheets (MSDS)
 - waste disposal
 - recycling and re-use guidelines
 - OHS practices

- Health of seed** may include:
- maintaining correct light and air exclusion
 - maintaining stable temperature in correct range
 - maintaining correct humidity levels
 - ensuring no mould or fungal growth
 - ensuring no insect or pest damage
- Remedial action** may include:
- dispose of mould or pest damaged seed stocks according to enterprise guidelines
 - check and replace dehumidifying agents
 - ensure containers are airtight and properly closed or secured
 - use more appropriate containers
 - eliminate opportunities for pests to access seed
 - control pest populations (traps, organic deterrents and organic pesticides)
- Seed viability** may include:
- the percentage of seeds that will germinate under normal growing conditions, usually determined by a viability test planting
 - the period of time in storage that seeds will normally retain the ability to germinate (several months to several years depending on the species)
- Disposal** may include:
- composting
 - use as mulch
 - animal feed
 - combustion/burning
- True to type** must include:
- seed will produce a plant the same as its predecessor/parent
 - parent plants were not subject to risk of cross-pollination with another variety
 - accurate identification and naming of the parent plant and seed
- Appropriately labelled** may include:
- family, genus, species, variety and/or cultivar
 - common names
 - date harvested or use by date
 - germination viability rate
 - quantity (by weight or number of seeds)
 - provenance/grower
 - seed distributor's name and contact details
 - growing instructions such as recommended season and spacing
 - brief plant description

Records may include:

- card file
- data base
- garden or farm diary
- stock recording system
- seed savers newsletter
- plans and maps

Storage may include:

- bags or envelopes
- appropriate containers
- cool, dry location
- dehumidifying agents (silica gel, wood ash)
- oxygen exclusion techniques
- freezer or refrigerator
- pest deterrent mechanisms
- light exclusion mechanisms
- labelling and record location mechanisms

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Course.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

- The assessee must provide evidence of specified essential knowledge as well as skills.
- Consistency of performance should be demonstrated over the required range of situations relevant to the workplace.
- Where for reasons of safety, safety space or access to equipment and resource, assessment takes place away from the workplace the assessment environment should represent realistic workplace conditions as closely as possible.

Context/s of Assessment and specific resources

- Competency is demonstrated by performance of all stated criteria, including paying particular attention to the critical aspects and the knowledge and skills elaborated in the Evidence Guide, and within the scope as defined by the Range Statement
- Assessment of performance requirements in this unit should be undertaken in an actual workplace or in a realistically simulated environment
- Assessment should reinforce the integration of the key competencies and the common competencies for the particular AQF level

- The learner and trainer should have access to appropriate documentation and resources normally used in the workplace
- Resources for the assessment include:
 - access to SKOPE sheets developed for this unit to reinforce complete understanding in aid of achieving the most positive outcomes.
 - access to relevant Permaculture texts and audio-visual material.
 - access to a working permaculture site for practical study purposes.

Method of assessment

- While the knowledge can be tested in written and oral assignments, performance evidence needs to be collected in actual or realistic simulated situations. It also needs to be assessed on a number of occasions.
- This unit is best undertaken in a workplace or in a realistically simulated workplace situation.

And must include (verbal and /or written) to address essential knowledge as outlined in this unit

- Written evidence
- Verbal evidence
- Group interaction
- Recorded evidence
- In order to achieve consistency of performance, evidence should be collected over a set period of time which is sufficient to include dealings with an appropriate range and variety of situations
- Assessment if this unit will be undertaken by a registered training organisation
- Assessment of knowledge must be conducted through appropriate written/oral examination
- Practical assessment must occur:
 - ~ through appropriately realistically simulated activities at the RTO, and/or
 - ~ in an appropriate range of situations in the workplace
- The learner and trainer should have access to appropriate documentation and resources normally used in the workplace

Access and Equity Considerations

- All workers in this industry should be aware of access and equity issues in relation to their own area of work.
- All workers should develop their ability to work in a culturally diverse environment.

QLD124COM10C

Recommend approaches for sustainable community and bioregional development

Unit Descriptor

This unit provides the skills and knowledge to recommend approaches for sustainable community and bioregional development. It requires the ability to identify the potential for sustainable community and bioregional development, develop processes to consult and to communicate with stakeholders. Recommending approaches for sustainable community development requires knowledge of principles governing sustainable community and bioregional development, sources of relevant materials and verbal information, and cultural protocols and perspectives.

Note: For indigenous contexts, the delivery and assessment against this competency standard must comply with community protocols and guidelines and be supported by elders and custodians of country.

Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills.

The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements

Application of the Unit

Recommending approaches for sustainable community and bioregional development is likely to be undertaken without supervision. It requires a broad range of permaculture skills and the application of underpinning knowledge with depth in some areas. Responsibility for the work of others may be involved.

ELEMENT

Elements describe the essential outcomes of a unit of competency.

1 Identify potential for sustainable community and bioregional development

2 Develop *processes* to consult stakeholders

PERFORMANCE CRITERIA

Performance criteria describe the required performance needed to demonstrate achievement of the element. Where ***bold italicised text*** is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

1.1 Broadly scope ***opportunities and constraints*** for ***sustainable community and bioregional development***.

1.2 Identify potential involvement of individual and group ***stakeholders***.

1.3 ***Source information*** on the community and bioregion.

2.1 Identify ***cultural protocols*** to ensure contacts with individuals/communities are successful.

2.2 Identify ***key people*** who may influence relationships.

2.3 Formulate steps to develop and maintain contacts with

- community groups.
- 2.4 Develop processes that are inclusive of an equitable involvement of various **sections of the community** and their perspectives.
- 2.5 **Adjust processes and communication modes** for culturally diverse groups.
- 3 **Communicate** potential and support for sustainable community and bioregional development
- 3.1 Consult with community groups and/or individuals in development of options for sustainable community and bioregional development.
- 3.2 Discuss and evaluate options in consultation with community according to **agreed parameters**.
- 3.3 Develop preferred option and communicate its implications to community stakeholders.
- 3.4 Facilitate links between individuals and community groups to ensure good community relationships and development of the program.

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Essential knowledge:

- Principles governing sustainable community and bioregional development
- Sources of relevant materials and verbal information.
- Cultural protocols and perspectives.
- Relevant legislation and guidelines.
- Principles of equal opportunity and affirmative action.
- Community governance, financial systems, legal and health systems
- Current relationships between culturally diverse groups in the area.
- Understanding of the role of various sections of the community in historical and relationship terms.

Essential skills:

Ability to:

- Apply flexible communication procedures.
- Identify and modify procedures and processes.
- Adjust written materials to audience.
- Be flexible in the application of program guidelines and policy.
- Manage conflict

RANGE STATEMENT

The Range Statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

Opportunities and constraints may include:

- geophysical and natural resources
- local skills-base
- willingness of community to participate
- level of resistance to change
- potential for cooperation and/or conflict
- financial and budgetary constraints
- existing and potential grants, funding and rebates
- socio-economic factors
- social and demographic factors
- demographic and cultural trends
- opportunity for developing partnerships
- historical factors
- factors impacting on energy, food and water security
- government policies and legislation

Sustainable community and bioregional development may include:

- local food security initiatives
- community gardens and city farms
- climate action and energy descent initiatives
- transition towns programs
- community education and outreach
- local economy and trade including complementary currencies
- sustainable enterprise and business development
- social wellbeing and welfare services
- renewable energy production
- landcare and environment programs
- sustainable agriculture and land use
- sustainable forestry and reforestation
- catchment and water resources management
- sustainable development and housing
- waste reduction and recycling

Stakeholders may include:

- community organisations
- community gardens
- permaculture groups
- transition groups
- landcare and environment groups
- landowners
- local residents
- local business community
- local markets, fairs and events
- local government
- other government agencies

Source information may include:

- From personal knowledge
- government statistics
- information on region and cultures held in libraries and other locations
- people with established knowledge
- Internet
- local councils
- community groups
- government departments
- media (television, video, audio)
- articles (academic, on-line, newspaper, journal)
- oral history
- community histories and stories
- relevant legislation
- Codes of Practice
- local knowledge
- original research
- national and international protocols and charters

Processes may include:

- meetings
- group discussions
- interviews
- public forums
- participatory consultation
- questionnaires
- surveys

Cultural protocols may include:

- beliefs, religion & taboos
- world views (mythological, political, social, biological)
- acceptable modes of communication/language
- body language
- concepts of family and community
- community leadership
- relationships between community members, ages and sexes
- acceptable modes of dress

Key people may include:

- people with specialist knowledge
- community leaders
- elders
- religious figures
- business people
- peer leaders
- reporter/editor of community paper
- school and TAFE teachers
- social and health workers
- respected members of the community including artists, musicians, sports people
- people in local government
- people holding public office

Sections of the community may include:

- community organisations and programs
- special interest groups
- business community
- migrants
- indigenous peoples
- women (including affirmative action)
- men
- children
- elderly
- disadvantaged people

Approach to some of these groups includes legislative requirements but exceeds these to demonstrate equity principles

Adjust processes and communications modes may include:

- use of restricted vocabulary according to listeners English language skills
- use of culturally appropriate body language in conjunction with spoken language
- modified sentence structures in spoken language
- use of diagrams, pictures and plain English for indigenous and other groups
- communication with people who have disabilities
- use of translators and multilingual program materials
- avoiding unintended offences by sensitive consultation and following cultural guidelines

Communicate may include:

- verbal communication
- audio-visual presentations
- video and audio recordings
- articles
- reports
- program documents and guidelines
- brochures and posters
- information booklets
- program materials
- educational materials
- advertising
- newsletters
- photos and slide shows
- drawings, cartoons, illustrations
- email
- letters
- web sites and forums
- media articles, interviews and community announcements

Agreed parameters may include:

- program/enterprise guidelines
- the strategic plan
- project aims and objectives
- program guidelines
- consultation brief
- meeting protocols
- established timelines
- budget
- desired outcomes and benchmarks

EVIDENCE GUIDE

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Critical aspects for assessment and evidence required to demonstrate competency in this unit

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Method of assessment

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- Assessment if this unit will be undertaken by a registered training organisation
- Assessment of knowledge must be conducted through appropriate written/oral examination
- Practical assessment must occur:
 - ~ through appropriately realistically simulated activities at the RTO, and/or

~ in an appropriate range of situations in the workplace

- The learner and trainer should have access to appropriate documentation and resources normally used in the workplace

Access and Equity Considerations

- All workers in this industry should be aware of access and equity issues in relation to their own area of work.
- All workers should develop their ability to work in a culturally diverse environment.

