



Australian Government

Department of Education, Employment and Workplace Relations

AHCDES501A Design sustainable landscapes

Release: 1

AHCDES501A Design sustainable landscapes

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit covers the process of designing sustainable landscapes and defines the standard required to: assess a land area for sustainable land use and threats to sustainability; protect water resources, riparian zones and vegetation in a development area; prepare a detailed plan or design, specifications and where appropriate a proposal or quotation for sustainable land improvement; design for the health and sustainability of soils and plants; outline an integrated approach to land and water management; conduct a sustainability audit.
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Application of the Unit

Application of the unit	This unit applies to the design for improvement of long-term ecological sustainability of landscapes, land under production, land areas in business use, natural resource areas and recreational amenity spaces essential for long-term economic and cultural viability.
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Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.
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Elements and Performance Criteria Pre-Content

Not Applicable

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA

ELEMENT	PERFORMANCE CRITERIA
1. Assess requirements for sustainable land use	1.1.Client is consulted to establish a brief for the design. 1.2.Legislative and regulatory requirements are researched, identified and documented in the improvement plan. 1.3.Specific requirements for sustainability are identified from the brief, business plan and management plan or policy documentation. 1.4.The land area is assessed for biophysical factors, biodiversity, historical and cultural attributes, services, site modifications and threats to sustainability. 1.5.Environmental implications of the planned works are identified and, if necessary, reported to relevant personnel for further research and recommendations.
2. Prepare an integrated design to improve land use	2.1.Concept plan for improvement is developed that reflects client preferences and requirements and takes into account heritage issues, site factors and any identified environmental requirements and presented to the client/land owner for discussion and approval. 2.2.Other professionals are consulted to assist in research and planning of works in areas of technical expertise, energy efficiency and use, current technologies and legislative and enterprise requirements. 2.3.Design considerations for products, materials and finishes are efficient, low risk and cyclic and are confirmed available from local sources. 2.4.Resources, products, equipment and machinery required for the works are evaluated for their impact on the sustainable use of the site. 2.5.Plants and soils are selected for their integrated roles for the designed outcomes in the specific site conditions, system of irrigation and environmental parameters. 2.6.Environmental conditions are reviewed for a functional analysis of the site and the planned design. 2.7.Detailed plan or design, specifications and quotation are prepared and are presented to the client/land owner for acceptance.
3. Plan the implementation into the design	3.1.Staged implementation and development are outlined with appropriate access for future works. 3.2.Timelines for development are incorporated taking

ELEMENT	PERFORMANCE CRITERIA
	into account the needs of the implementation plan and principles of sustainability. 3.3. Schedules for planting and post-planting care are determined in accordance with the requirements of the plant species and cultivars, site conditions, and any other planning requirements. 3.4. Protection of water resources, riparian zones, specified trees and existing vegetation are integrated into the design plan. 3.5. Chemical, non-chemical, amelioration application and waste disposal procedures and processes are reviewed to select designs of minimal environmental consequence and minimise potential contamination of soils and ground water. 3.6. Implementation outline is reviewed for integration of approach to land and water management.
4. Audit the implementation for sustainability of use	4.1. All work materials, waste and debris from site works have low risk and energy efficient disposal methods. 4.2. Soil and ground water quality are sampled and tested and recommendations implemented. 4.3. Soil conservation measures and erosion sediment controls are confirmed. 4.4. Protection measures for specified trees, protected fauna and areas and objects of cultural significance are verified. 4.5. Biodiversity, heritage and cultural attributes, soil and water quality are maintained or improved. 4.6. Client is informed and provided with a report according to the brief or contractual requirements.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- implement sustainable practices
- identify and select an extensive range of plants, shrubs and trees
- identify and select an extensive range of soils and growing media

REQUIRED SKILLS AND KNOWLEDGE

- select plants and soils for their integrated functional roles
- research, interpret and apply appropriate legislation and regulations
- use a range of graphic techniques for illustrating landscape design components
- perform a land area assessment
- conduct soil and water quality tests
- design plans for sustainable improvement
- interpret specifications and plans
- assess landscape sites
- identify hazards and assess risk
- conduct a sustainability audit
- use literacy skills to fulfil job roles as required by the organisation. The level of skill may range from reading and understanding documentation to completion of written reports
- use oral communication skills/language competence to fulfil the job role as specified by the organisation including questioning, active listening, asking for clarification, negotiating solutions and responding to a range of views
- use numeracy skills to estimate, calculate and record complex workplace measures
- use interpersonal skills to work with others and relate to people from a range of cultural, social and religious backgrounds and with a range of physical and mental abilities.

Required knowledge

- specific requirements for sustainability
- sustainable land and water use principles and practices applicable in the region
- types, properties and characteristics of a wide range of soils and growing media
- identification and selection of an extensive range of soils, growing media, plants, shrubs and trees
- ethnobotany, plant physiology, taxonomy and nomenclature
- surface hydrology
- assessment techniques
- irrigation practices
- environmental controls and codes of practice applicable to the business and to the improvement works
- relevant legislation and regulations relating to soil and water degradation issues and construction
- specific legislation and regulations for landscape design and development
- relevant Occupational Health and Safety (OHS) legislation and regulations.

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

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

The evidence required to demonstrate competency in this unit must be relevant to workplace operations and satisfy holistically all of the requirements of the performance criteria and required skills and knowledge and include achievement of the following:

- assess a land area for sustainable land use and threats to sustainability
- protect water resources, riparian zones and vegetation in a development area
- prepare a detailed plan or design, specifications and where appropriate a proposal or quotation for sustainable land improvement
- design for the health and sustainability of soils and plants
- outline an integrated approach to land and water management
- conduct a sustainability audit.

Context of and specific resources for assessment

Competency requires the application of work practices under work conditions. Selection and use of resources for some worksites may differ due to the regional or enterprise circumstances.

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole.

Conservation measures to improve sustainability may include:

- the range of biophysical features and environmental factors relating to a particular site or land area and covers:
 - landscape installations
 - revegetation

RANGE STATEMENT

	• land rehabilitation • land development • erosion sediment controls • contouring • stabilisation • water retention • drainage • water flow • preparation of grassed waterways • matching irrigation inputs with soil water holding capacity • raising soil organic matter levels and absorption of atmospheric carbon.
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Unit Sector(s)

Unit sector	Design
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Co-requisite units

Co-requisite units	

Competency field

Competency field	
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