



Australian Government

UEERE0066 Develop effective engineering strategies for energy reduction in buildings

Release: 1

UEERE0066 Develop effective engineering strategies for energy reduction in buildings

Modification History

Release 1. This is the first release of this unit of competency in the UEE Electrotechnology Training Package.

This unit replaces and is not equivalent to UEERE0012 Develop effective engineering strategies for energy reduction in buildings. Modifications include:

- Prerequisite removed
- Significant amendments made to Elements and Performance Criteria
- Range of conditions updated
- Updates to performance and knowledge evidence requirements and CVIG content developed.

Application

This unit involves the skills and knowledge required to develop effective engineering strategies for energy reduction in buildings.

It includes developing and documenting engineering strategies/methods to effectively reduce energy use in buildings. It also includes documenting and reporting engineering strategies for energy reduction in buildings.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Not applicable

Competency Field

Renewable Energy

Unit Sector

Electrotechnology

Elements and Performance Criteria

ELEMENTS

PERFORMANCE CRITERIA

Elements describe the essential Performance criteria describe the performance needed to

outcomes.

demonstrate achievement of the element.

1 Identify engineering energy strategies for a building

- 1.1** Work health and safety (WHS)/occupational health and safety (OHS) requirements and workplace procedures are identified and applied
- 1.2** Scope of engineering evaluation is determined from specifications of building, services, plant and machinery and in consultation with relevant person/s
- 1.3** Advice is sought from work supervisor to ensure work is coordinated effectively with relevant person/s
- 1.4** Tools, testing devices and materials needed to carry out work are obtained and checked for correct operation and safety
- 1.5** Industry regulations, legal obligations and job requirements are identified and applied to work in accordance with workplace procedures

2 Develop engineering strategies for energy reduction in a building

- 2.1** Inspection, tests and measurements are carried out in accordance with WHS/OHS requirements and workplace procedures
- 2.2** Energy use of building, services, plant and machinery is obtained and applied to the engineering evaluation process
- 2.3** Energy evaluation tests are set up in accordance with inspection and test methods and workplace procedures
- 2.4** Engineering strategies to reduce energy use without compromising occupancy standards are developed in accordance with energy management techniques and evaluation test results
- 2.5** Engineering evaluation is carried out without damage to systems, circuits, the surrounding environment or services using sustainable energy practices
- 2.6** Worksite is cleaned and made safe in accordance with workplace procedures
- 2.7** Results of energy use evaluation and recommended engineering strategies and their criterion for energy reduction are documented in accordance with workplace procedures

- 2.8** Engineering energy reduction report is completed and forwarded to relevant person/s

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

Range is restricted to essential operating conditions and any other variables essential to the work environment.

Non-essential conditions may be found in the UEE Electrotechnology Training Package Companion Volume Implementation Guide.

Developing engineering strategies for effective energy reduction must include at least the following:

- two different buildings.

Unit Mapping Information

This unit replaces and is not equivalent to UEERE0012 Develop effective engineering strategies for energy reduction in buildings.

Links

Companion Volume Implementation Guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b8a8f136-5421-4ce1-92e0-2b50341431b6>

Assessment Requirements for UEERE0066 Develop effective engineering strategies for energy reduction in buildings

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Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements, performance criteria and range of conditions on at least two occasions and include:

- applying relevant work health and safety (WHS)/occupational health and safety (OHS) requirements
- determining the extent of the evaluation
- setting up and conducting appropriate examinations and tests
- reporting evaluation including recommendation for improving energy efficiency
- developing sustainable engineering strategies for energy reduction in buildings
- documenting and reporting engineering strategies for effective energy reduction in buildings.

Knowledge Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements, performance criteria and range of conditions and include knowledge of the following. Additional advice and definitions for some items is provided in the UEE Training Package Companion Volume Implementation Guide (CVIG).

- climate and thermal comfort
- emerging technologies
- solar geometry and radiation
- heat transfer
- glazing systems
- insulation
- thermal mass
- comfort control strategies

- thermal performance of a building
- methods to predict dynamic performance
- use of simulation to predict performance
- energy rating schemes
- sustainable and safe building materials
- engineering principles
- relevant job safety assessments or risk mitigation processes
- relevant manufacturer specifications
- relevant WHS/OHS legislated requirements
- relevant workplace documentation
- relevant workplace policies and procedures
- sustainable energy principles and practices.

Assessment Conditions

Assessors must hold credentials specified within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must satisfy the Principles of Assessment and Rules of Evidence and all regulatory requirements included within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must occur in suitable workplace operational situations where it is appropriate to do so; where this is not appropriate, assessment must occur in simulated suitable workplace operational situations that replicate workplace conditions.

Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

Resources for assessment must include access to:

- a range of relevant exercises, case studies and/or other simulations
- relevant and appropriate materials, tools, facilities and equipment currently used in industry
- resources that reflect current industry practices in relation to developing strategies for effective energy reduction in buildings
- applicable documentation, including workplace procedures, equipment specifications, regulations, codes of practice and operation manuals.

Links

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