



Australian Government

CPCSUS5002 Develop action plans to retrofit existing buildings for energy efficiency

Release: 2

CPCSUS5002 Develop action plans to retrofit existing buildings for energy efficiency

Modification History

Release 2 Updated reference to general construction induction training program.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and equivalent to CPCSUS5002A Develop action plans to retrofit existing buildings for energy efficiency. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the skills and knowledge required to develop plans to improve the energy efficiency of an existing building. It includes researching appropriate products, materials and systems and engaging with clients and stakeholders when retrofitting a building.

The unit of competency applies to building designers, tradespeople and building project managers involved in the design or development of retrofits for energy efficiency.

This unit of competency applies to those who apply skills and knowledge to identify, analyse and evaluate approaches to sometimes unpredictable problems.

Completion of the general construction induction training program specified by the model Code of Practice for Construction Work is required for any person who is to carry out construction work. Achievement of *CPCWHS1001 Prepare to work safely in the construction industry* meets this requirement.

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

Pre-requisite Unit

Nil.

Unit Sector

Sustainability

Elements and Performance Criteria

Elements describe the Performance criteria describe what needs to be done to

essential outcomes.

demonstrate achievement of the element.

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| 1 Plan retrofit processes. | 1.1 Discuss client's use of the building and specific expectations of energy efficient retrofit priorities and incorporate into planning. |
| | 1.2 Initiate energy assessment or review report from a prior assessment and discuss with key stakeholders to determine energy conservation measures. |
| | 1.3 Provide a client with an overview of recommended processes and information relevant to generating an energy efficient retrofit. |
| 2 Evaluate opportunities to improve energy conservation and efficiency of an existing building. | 2.1 Review and evaluate recommendations from energy efficiency assessor for input into the retrofit action plan. |
| | 2.2 Identify limitations and obstacles involved in the energy efficiency upgrade of a building and develop appropriate solutions. |
| | 2.3 Identify and manage risks of retrofitting an existing building for improved energy efficiency, including possible installation of mechanical ventilation systems. |
| | 2.4 Develop and cost strategies that provide a measurable increase in the operational energy efficiency of an existing building. |
| | 2.5 Assess structural adequacy of the existing building to determine appropriateness of retrofit solutions for energy efficiency. |
| 3 Research and select energy efficient materials, products and systems. | 3.1 Research materials, products and systems specifications for appropriateness to the energy efficiency for the existing building. |
| | 3.2 Source literature and consult with manufacturer representatives to identify installation and operational specifications. |
| | 3.3 Check compliance requirements for selecting and installing materials, products and systems. |
| | 3.4 Assess thermal and acoustic insulation of the building to determine energy efficiency rating. |

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| | 3.5 | Determine quality of insulation and installation to improve insulating properties of the building. |
| 4 | Finalise a retrofit action plan. | |
| | 4.1 | Develop final a retrofit action plan to comply with organisational procedures. |
| | 4.2 | Explain projected benefits of undertaking each of the proposed retrofit measures to a client. |
| | 4.3 | Obtain client sign-off and finalise documentation of the agreed plan. |

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- numeracy skills to:
 - calculate areas, volume and mass to determine dimensions and plan design
 - convert data into measurable and comparable information
- problem-solving skills to:
 - recognise and overcome design and structural construction problems
- technology skills to:
 - use communication tools and devices to communicate and collaborate effectively with others
 - use equipment and programs to access and extract information and develop relevant documentation.

Unit Mapping Information

Supersedes and is equivalent to CPCSUS5002A Develop action plans to retrofit existing buildings for energy efficiency.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCSUS5002 Develop action plans to retrofit existing buildings for energy efficiency

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Performance Evidence

To demonstrate competency, a candidate must meet the elements and performance criteria of this unit by developing an action plan to retrofit and improve the energy efficiency of an existing residential or commercial building up to a maximum of three storeys.

In doing this, the candidate must:

- determine class, type, condition and use of a building
- produce energy efficiency comparison of an existing building and retrofitted building
- produce costing, timelines and products and materials for the retrofit project
- source applications for permits and service connections
- identify limitations and obstacles to retrofit and determine solutions
- develop a process for project risk management.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- building science principles and their application to the retrofitting of existing buildings for improved energy efficiency
- environmental and sustainability legislation, requirements, policies, standards and guidelines:
 - environmental protection
 - biodiversity conservation
- national, state and territory and local government building codes and standards
- the National Construction Code (NCC)
- organisational policies and procedures, quality systems and best practice approaches
- addressing retrofitting expectations and benefits:
 - improved levels of comfort for the occupants

- increased air changes per hour to improve indoor air quality
- increased durability of the building
- potential for improved return on investment
- reduction in and prevention of mould
- reduction in heating and cooling costs
- fire resistance and resistance from bushfire attack
- risks of retrofitting:
 - budget constraints
 - condition of existing building
 - local council planning provisions
 - land overlays and requirements relating to neighbourhood character
 - orientation of the existing building
 - original design and construction of existing building
 - position of existing services to the building
 - presence of protected vegetation adjacent to existing building
 - protection of existing building under heritage listing
 - proximity of other buildings or structures
 - sealing the building envelope:
 - air pressure differentials
 - combustion
 - moisture and mould
 - poor indoor air quality
- properties, characteristics and limitations of selected building materials and components
- processes, procedure and techniques of:
 - energy assessment to develop energy efficient strategies
 - calculating using measurements and formulas
- retrofitting strategies:
 - light fittings
 - smart technology or motion sensors
 - insulation
 - sealing building envelope
 - solar photovoltaic systems
 - energy sources
- sustainability principles and concepts
- workplace safety:
 - hierarchy of control
 - hazardous manual tasks
 - working at heights
- project plans, specifications and working drawings
- general construction terminology.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment can be undertaken in the workplace or in a simulated workplace environment.

A simulated environment is one that realistically replicates workplace conditions, materials and equipment, interactions with others and workplace irregularities, and which meets industry standards for safety and environmental practices.

Candidates must have access to:

- current and appropriate environmental and sustainability legislation, requirements, policies, standards and guidelines
- government building and environmental requirements, codes and standards
- project plans, specifications and material manufacturer's specifications
- technology, applications and software systems for researching, extracting, analysing and presenting information, interpreting data and developing documents and reports to facilitate the development of an action plan to retrofit an existing building for energy efficiency.

Links

Companion volumes to this training package are available at the VETNet website -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>