

BCG98 GENERAL CONSTRUCTION TRAINING PACKAGE

Volume 2 - Building Surveying

The contents of this volume refer only to the Endorsed Components of BCG98 General Construction Training Package for Building Surveying. This volume can be used independent of other volumes of BCG98.

This volume contains introductory information and the units of competency BCGSV5001A to BCGSV5015A and BCGSV6001A to BCGSV6016A.

This volume includes the following information.

- Introduction to the General Construction Training Package Diploma and Advanced Diploma qualifications.
- Qualification framework for Building Surveying for:
BCG50103 – Diploma of Building Surveying
BCG60103 – Advanced Diploma of Building Surveying
- Customisation guidelines
- Assessment guidelines
- Units of competency BCGSV5001A to BCGSV5015A and BCGSV6001A to BCGSV6016A

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IMPORTANT

Notice on use of current version

Training Packages are not static documents. Changes are made periodically to reflect the latest industry practices.

Before commencing any form of training or assessment, you must ensure delivery is from the current version of the Training Package.

To ensure you are complying with this requirement:

- check the Print Version Number found just below the copyright statement on the imprint page of your current Training Package;
- access the ATP website (<http://www.atpl.net.au>) and check the latest Print Version Number, which is displayed in the sample of the Training Package;
- in cases where the Print Version Number is later than yours, the Print Version Modification History in the Training Package sample on the ATP website will indicate the changes that have been made.

The Modification History is also available on the website of the developer of the Training Package

The National Training Information Service (<http://www.ntis.gov.au>) also displays any changes in the Units of Competency and the packaging of qualifications

MODIFICATION HISTORY – ENDORSED MATERIALS			
Please refer to the National Training Information Service for the latest version of Units of Competency and Qualification information (http://www.ntis.gov.au).			
BCG98 General Construction Training Package			Sheet: 1 of 1
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Forms control: All endorsed training packages will have a version number displayed on the imprint page of every volume constituting that training package. Every training package will display an up-to-date copy of this modification history form, to be placed immediately after the contents page of the first volume of the training package. Comments on changes will only show sufficient detail to enable a user to identify the nature and location of the change. Changes to training packages will generally be batched at quarterly intervals. This modification history form will be included within any displayed sample of that training package and will constitute all detail available to identify changes.

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BCGSV5003A	Produce working drawings for residential buildings
BCGSV5004A	Apply legislation to urban development and building controls
BCGSV5005A	Apply footing and geomechanical design principles to domestic scale buildings
BCGSV5006A	Assess construction faults in residential buildings
BCGSV5007A	Undertake site surveys and set out procedures to building projects
BCGSV5008A	Apply building control legislation to building surveying
BCGSV5009A	Assess the impact of fire on building materials
BCGSV5010A	Interact with clients in a regulated environment
BCGSV5011A	Apply building codes and standards to residential buildings
BCGSV5012A	Assess timber framed designs for one and two storey buildings
BCGSV5013A	Apply principles of energy efficient design to buildings
BCGSV5014A	Apply building surveying procedures to residential buildings
BCGSV5015A	Assess structural requirements for domestic scale buildings
BCGSV6001A	Assess the construction of buildings up to 3 storeys
BCGSV6002A	Produce working drawings for buildings up to 3 storeys
BCGSV6003A	Assess construction faults in buildings up to 3 storeys
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BCGSV6012A	Facilitate community development consultation
BCGSV6013A	Co-ordinate asset refurbishment
BCGSV6014A	Manage and plan land use
BCGSV6015A	Analyse and present building surveying research information
BCGSV6016A	Apply building surveying procedures to buildings up to 3 storeys

What is a Training Package?

Introduction

Training Packages are a key feature of vocational education and training in Australia. They are part of the National Training Framework that aims to make training and regulatory arrangements simple, flexible and relevant to the needs of industry.

- **Training Packages are developed by industry for industry**

The Australian National Training Authority funds National Industry Training Advisory Bodies (ITABs) and Recognised Bodies to develop Training Packages. Extensive consultation occurs during development to ensure that the Training Package is relevant and useable. And before the completed Training Package is endorsed for use, the developer or ITAB must validate it and show that it has broad industry support.

- **Training Packages encourage flexibility in training**

Training may occur at the workplace, off the job, at a training organisation, during regular work, or through work experience, work placement or work simulation. Usually it involves a combination of these methods, depending on what suits the learner and the type of learning and particular vocational outcome.

- **Training Packages provide many pathways to competency**

Australians can achieve vocational competency in many ways. Training Packages acknowledge this by emphasising what the learner can do, not how or where they learned to do it. For example, some experienced workers might be able to demonstrate competency against the standards and gain a qualification without completing a formal training course.

Training Package Components

A Training Package comprises two components; *endorsed material* and *support materials*. The Australian National Training Authority's National Training Quality Council oversees the endorsed component.

Endorsed Materials

Endorsed components of a Training Package consist of three parts: Competency Standards, National Qualifications, and Assessment Guidelines. Each of these components is outlined below.

- 1 **Competency Standards** provide an industry benchmark for training and assessment. They specify the scope of knowledge and skills to be covered in the Training Package. They enable enterprises to accurately define particular roles within industry, and are a useful guide when designing job classifications, workplace appraisal, and skill development. They are the basis for designing vocational education and training courses and assessment approaches for delivery off the job by registered training providers.

Key Features

- Each Unit of Competency identifies a discrete workplace requirement.
 - Units incorporate the knowledge and skills that underpin competency. They encompass relevant values and attitudes, language, literacy and numeracy, and occupational health and safety requirements.
 - Key Competencies are identified at the unit or qualification level.
 - Units are flexible in how they can be applied, but they are sufficiently detailed to guide registered training organisations (RTOs) and assessors, and to provide consistent outcomes.
- 2 **National Qualifications** within the Australian Qualifications Framework (AQF) are awarded when a learner (who might be an employee) has been assessed as achieving a combination of Units of Competency that provides a meaningful outcome at an industry or enterprise level. Each qualification consists of a number of core and/or elective Units of Competency that industry representatives consider workers require to perform a particular job. Where an individual achieves one or more Units of Competency without completing a qualification, a Statement of Attainment is issued that recognises their achievement.

Key Features

- Each qualification (comprising specified Units of Competency) is aligned directly against the AQF.
 - The qualifications covered within a Training Package may range from Certificate I to Advanced Diploma, and will include the national title for each qualification.
 - New Apprenticeship pathways will be identified within the Training Package.
 - The Qualification will display the Nationally Recognised Training logo.
- 3 **A Statement of Attainment** is issued to individuals who have been assessed and deemed competent against a Unit of Competency. Statements of Attainment issued by one RTO must be recognised by other RTOs. Accrual of specified Statements of Attainment can eventually lead to a learner meeting all the requirements of a qualification.

Key Features

- Statements of Attainment will identify the Units of Competency for which the individual has been assessed and is deemed competent by the RTO.
- They will display the Nationally Recognised Training logo.
- They will identify the RTO.

- 4 Assessment Guidelines provide a framework for accurate, reliable and valid assessment of the applicable Competency Standards. They ensure that all assessments are thorough, consistent and valid. They provide important quality assurance in the issuing of qualifications.

Endorsed components of a Training Package may be complemented and supported by the development of optional learning strategies, assessment tools and professional development materials.

Support Materials

Support materials to be used in conjunction with Training Package can be produced by RTOs, private and commercial developers, DEST, State Training Authorities or through ANTA. They can consist of:

- **learning strategies** that assist training providers to design specific training programs that will help trainees attain the required competencies;
- **assessment materials** that can be used by assessors to gather sufficient evidence of competency to make reliable judgements about whether a person has met the required Competency Standard;
- **professional development** materials that provide information, hints and resources for trainers and assessors that will help them successfully implement the Training Package.

RTOs will usually develop their own supporting resources. They can also draw upon any other resources developed specifically to support the Training Package. Support materials that have passed successfully through ANTA's official 'Noting' process can use the official logo to indicate that they meet specified quality criteria. The logo is depicted here.



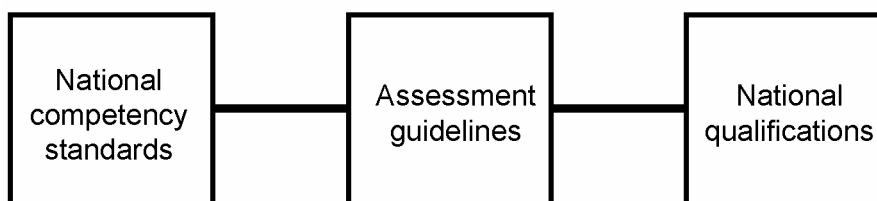
Noted support materials are listed on the National Training Information Service (NTIS), together with a detailed description and information on their availability and the type of product. NTIS can be located on <http://www.ntis.gov.au>.

Although the noting process has been adopted as a guide to quality-assured supporting resources, it is not compulsory for RTOs to submit their support resources to ANTA. They are at liberty to use whatever resources are available to them to meet the requirements of a qualification or a Unit of Competency.

General Information

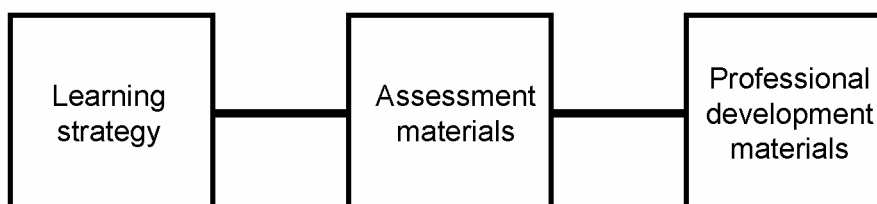
The components of an endorsed Training Package are illustrated in the following diagram.

Endorsed



Supporting resources are generally produced to directly relate to a single or multiple units of competency, industry sector, qualification or the total Training Package. They tend to fall into one or more of the categories illustrated below.

Supporting resources



Version Control

ANTA has a system for tracking changes across subsequent editions of Training Packages and their constituent components. Anyone using a Training Package should follow ANTA's recommended procedure for determining the currency of the information in their edition.

Training Package

Each Training Package has been assigned a unique five-character code, for example BCC98. The final two characters (the version identifier) represent the year the Training Package was initially endorsed. Units of Competency and qualifications originating in that Training Package will have their own longer codes, which will commence with the first three letters of the Training Package code (BCC in this example).

Units of Competency

Whereas the first three characters of the code assigned signify the Training Package, the last character will always be a letter representing the version identifier. The code for a Unit of Competency is assigned when the initial Training Package is endorsed, or when new sectors or new units are added to an existing endorsed Training Package. A typical code consists of up to 12 characters. These characters normally consist of a mixture of capital letters and numbers. A typical style of code may be BCC3012B. The first three characters are always letters and are the same letters used to code the original Training Package of which the unit was part. In the example, the code for the original Training Package commenced with BCC. The last letter (B) in the Unit of Competency code is the letter used for the version control. The 'B' indicates that this is the second endorsed version of the unit.

If one lot of changes has been incorporated since the unit was first endorsed, but without any change to the unit outcomes, the version identifier will be a 'B'. The different version identifier usually means that minor changes have been incorporated without affecting the overall unit outcome. Typically this would mean that wording has changed in the Range Statement or the Evidence Guide, providing clearer intent. The next batch of minor changes would result in a 'C', and so on throughout the life of the unit.

Any letters or numbers (this can be up to eight characters) between the first three characters and the version control letter are assigned by the developer of the unit and may relate to an industry sector, function or skill area. Where changes are incorporated that alter the unit outcome, a new code is assigned and changes are made to the unit title. Differences in the version identifier of Units of Competency on Statements of Attainment issued by RTOs are not significant, as outcomes of the unit have not changed significantly.

Qualifications

All qualifications are assigned a unique eight-character code. The last two characters (version identifier) are always numbers and represent the year in which the qualification was endorsed. In all instances, qualifications included and endorsed in the original Training Package have an identical version identifier to those of the originating Training Package. In cases where qualifications are added after the initial endorsement of the Training Package, they are assigned a version identifier denoting the year they were endorsed.

Review Date

On the title page and in the footer of each Training Package page there is reference to a review date. This date is determined at the time of endorsement of the Training Package and indicates when the Training Package is to be reviewed in the light of changing technologies, circumstances, industrial relations etc. The review date is not to be regarded as an expiry date as the Training Package and its components remain current until they are reviewed or replaced.

Building Surveying

This volume of the General Construction Training Package deals with qualifications related to Building Surveying. Building Surveyors inspect buildings to ensure compliance with laws and regulations and advises on building requirements.

The tasks undertaken by the Building Surveyors include:

- interpret building plans, building regulations and codes of practice.
- inspect building works in progress to ensure compliance with plans, specifications and regulations, and that proper techniques and materials are used.
- maintains records of building progress and departures from design drawings or specifications.
- assess building plans submitted for approval.
- inspect existing buildings to assess condition.
- give advice on building matters.

At present it is not necessary to be registered or licensed with appropriate authorities in every State and Territory to practice as a Building Surveyor. However, all States and Territories have agreed to introduce a licensing and registration system for Building Surveyors. This volume provides two qualifications that are required to gain nationally agreed registration/license at first two levels in Building Surveying.

Methodology used

The competency standards that are included in this Training Package (BCG03) were developed under the guidance of a Technical Advisory Group drawn from the Australian Building Codes Board, Australian Institute of Building Surveyors, Building Surveying practitioners and Registered Training Organisations.

These standards were packaged into qualifications against the AQF. The draft competency standards and their packaging into qualifications against the AQF were then validated at State and Territory level by the Australian Institute of Building Surveyors.

The Assessment Guidelines conform to ANTA's requirements for Training Package developers. Although the guidelines are similar to the endorsed component of the General Construction Training Package for Certificate I – Certificate III levels, they have been contextualised to meet the requirements of higher level qualifications from Certificate IV to Advanced Diploma.

A National Project Steering Committee was established to oversee the development of the qualifications from Certificate IV to Advanced Diploma levels. The committee included representatives at a national level from industry, employer associations, employee associations, enterprises, Registered Training Organisations and State/Territory Training Authorities.

Industry Consultation and Validation Process

The endorsed components of the Training Package were subjected to an extensive industry consultation and validation process. The validation of the endorsed component in each State and Territory was carried out by the Australian Institute of Building Surveyors through its Chapters at State and Territory level.

What is the Australian Qualifications Framework?

The Australian Qualifications Framework (AQF) is a national framework for all education and training qualifications in Australia. There are twelve qualifications in the AQF. Six of these are relevant to the Vocational Education and Training (VET) sector. The twelve qualifications are listed in the following table.

Schools sector	VET sector	Higher Education sector
Senior secondary certificate of education	Advanced diploma Diploma Certificate IV Certificate III Certificate II Certificate I	Doctoral degree Masters degree Graduate diploma Graduate certificate Bachelor degree Advanced diploma Diploma

This categorisation of qualifications into these three sectors is in some ways misleading. In practice it is not unusual for the Schools sector to be delivering Certificates 1 or higher, for the VET sector to deliver Graduate certificates, and for the Higher Education sector to be involved in delivery of Certificate IV.

The adoption of the AQF for all vocational education and training ensures national consistency for all trainees, students, employers and providers in the VET sector. It permits national recognition of competency based on endorsed Competency Standards. Competency is assessed in accordance with the endorsed Assessment Guidelines.

Statement of Attainment

Where competence has been achieved in accordance with the endorsed standards, but does not meet the requirements of a qualification, a Statement of Attainment can be issued for the competencies successfully achieved. These can be combined with any additional competencies achieved later. Together they will build towards the awarding of a qualification. RTOs must recognise the achievement of competencies recorded on a Statement of Attainment issued by another RTO.

AQF Level Descriptors

Certificate I

The worker will normally be engaged in a workplace in which they:

- demonstrate knowledge by recall in a narrow range of areas;
- demonstrate basic practical skills, such as the use of relevant tools;
- perform a sequence of routine tasks under clear direction;
- receive and pass on messages or information.

Certificate II

The worker will normally be engaged in a workplace in which they:

- demonstrate basic operational knowledge in a moderate range of areas;
- apply a defined range of skills;
- apply known solutions to a limited range of predictable problems;
- perform a range of tasks where choice between a limited range of options is required;
- assess and record information from varied sources;
- take limited responsibility for their own outputs in work and learning.

Certificate III

The worker will normally be engaged in a workplace in which they:

- demonstrate some relevant theoretical knowledge;
- apply a range of well-developed skills;
- apply known solutions to a variety of predictable problems;
- perform processes that require a range of well-developed skills where some discretion and judgement is required
- interpret available information using discretion and judgement;
- take responsibility for their own outputs in work and learning;
- take limited responsibility for the output of others.

Certificate IV

The worker will normally be engaged in a workplace in which they:

- demonstrate understanding of a broad knowledge base incorporating some theoretical concepts;
- apply solutions to a defined range of unpredictable problems;
- identify and apply skill and knowledge areas to a wide variety of contexts, in some cases in depth;
- identify, analyse and evaluate information from a variety of sources;
- take responsibility for their own outputs in relation to specified quality standards;
- take limited responsibility for the quantity and quality of the output of others.

Diploma

The worker will normally be engaged in a workplace in which they:

- demonstrate understanding of a broad knowledge base incorporating theoretical concepts, in some cases in substantial depth;
- analyse and plan approaches to technical problems or management requirements;
- transfer and apply theoretical concepts and/or technical or creative skills to a range of situations;
- evaluate information, using it in forecasting for planning or research purposes;
- take responsibility for their own outputs in relation to broad quantity and quality parameters;
- take some responsibility for the achievement of group outcomes.

Advanced Diploma

The worker will normally be engaged in a workplace in which they:

- demonstrate understanding of specialised knowledge with depth in some areas;
- analyse, diagnose, design and execute judgements across a broad range of technical or management functions;
- generate ideas through the analysis of information and concepts at an abstract level;
- demonstrate a command of wide-ranging, highly specialised technical, creative or conceptual skills;
- demonstrate accountability for personal outputs within broad parameters;
- demonstrate accountability for personal and group outcomes within broad parameters.

Qualifications Framework

Competency standards in the General Construction Training Package for Building Surveying have been packaged into two qualifications covering AQF levels V and VI. These qualifications are:

- BCG50103 – Diploma of Building Surveying
- BCG60103 – Advanced Diploma of Building Surveying

New Apprenticeships

The two qualifications included in this Training Package at Diploma and Advanced Diploma levels are suitable to be provided under New Apprenticeship pathways.

Prerequisites

A number of competency standards require that you have achieved a previous related standard before being assessed. These are known as prerequisites and are specified in the Evidence Guide of each competency standard.

There are no prerequisite qualifications before commencing training in either the Diploma or Advanced Diploma of Building Surveying as direct entry may be taken to either. However should direct entry be taken to the Advanced Diploma, the competencies at the Diploma level will also be required to be completed.

Literacy, Language and Numeracy Requirements

A significant number of units have Key Competencies at Level 3. This indicates a high level of LL&N (possibly aligning to level 5 of the National Reporting System)

RTO's should be aware that when unpacking the individual units, the LL&N demands of the unit are described within the unit itself and the Key Competencies. It remains the responsibility of the RTO to develop training programs and assessment methodologies to meet the needs of each student so as to ensure that they are able to participate in a competency based system.

Customisation Guidelines

These two qualifications have been developed to meet the uniform registration/licensing requirements that have been agreed to by the relevant State and Territory Authorities. Any changes to the standards or their packaging into qualifications have to be viewed cautiously to ensure any changes made will meet the uniform licensing requirements.

Therefore, customisation arrangements for competency standards and their packaging have been developed so that the original intent and the integrity of the standards are maintained to ensure that registration/licensing requirements are met.

Customisation of Competency Standards

National competency standards for the building and construction industry included in the Training Packages have been developed in such a way that flexibility required for different enterprises or industry users has been provided for in the range of variables. The individual enterprises or industry users may select what is relevant to them from the range of variables.

Evidence guides for competency standards with a broad range of variables indicate the minimum range to be selected to demonstrate competence in a Competency Standard. This provides flexibility for different users to select what is relevant to them from the range of variables and then demonstrate competence.

Customisation of the Elements, the Performance Criteria or the Evidence Guide of any unit is not permitted. However, customisation of Range of Variables is permitted as long as additional variables are added to enhance the variables indicated in the endorsed competency standard.

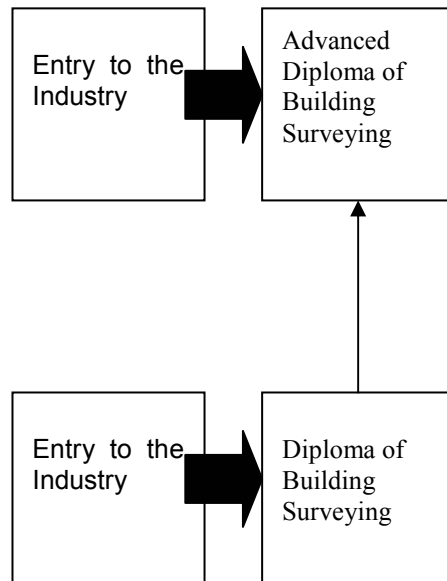
Customisation of Packaging of Competency Standards

In order to ensure that both qualifications meet the uniform registration/licensing arrangements in the States and Territories, all competency standards included in the qualifications are deemed mandatory.

Users of this Training Package must complete all mandatory units to be awarded a qualification. Anyone who does not achieve all the mandatory units will be provided with a Statement of Attainment for the competency standards they have achieved.

However, to provide flexibility mandatory units are divided in to two groups; mandatory building surveying units and mandatory cross-industry units. Mandatory building surveying units in both qualifications cannot be substituted. However, the cross-industry mandatory units can be substituted by equivalent units.

Pathways to building surveying qualifications



Title	DIPLOMA OF BUILDING SURVEYING
National Code	BCG50103
Qualification Requirements	<p>To be awarded this qualification the candidate must attain a successful assessment in a total of twenty-four (24) units.</p> <p>Assessment must be conducted in accordance with the Assessment Guidelines for the Building and Construction Industry.</p>
Qualification Rationale	<p>The level of the qualification is based on the group of competency units, which align with the performance characteristics, described for the Diploma. These include:</p> <p><i>The self-directed application of knowledge and skills, with substantial depth in some areas where judgement is required in planning and selecting appropriate equipment, services and techniques for self and others.</i></p> <p><i>Breadth, depth and complexity covering planning and initiation of alternative approaches to skills or knowledge applications across a broad range of technical and/or management requirements, evaluation and co-ordination.</i></p> <p><i>Applications involve participation in development of strategic initiatives, as well as personal responsibility and autonomy in performing complex technical operations or organising others. It may include participation in teams, including teams concerned with planning and evaluation functions. Group or team co-ordination may be involved.</i></p> <p><i>The degree of emphasis on breadth as against depth of knowledge and skills may vary between qualifications granted at this level.</i></p>

Competency Standards Relating to this Qualification**Mandatory Building Surveying Units. The following fifteen (15) units are required.**

BCGSV5001A	Assess the construction of domestic scale buildings
BCGSV5002A	Evaluate materials for construction of domestic scale buildings
BCGSV5003A	Produce working drawings for residential buildings
BCGSV5004A	Apply legislation to urban development and building controls
BCGSV5005A	Apply footing and geomechanical design principles to domestic scale buildings
BCGSV5006A	Assess construction faults in residential buildings
BCGSV5007A	Undertake site surveys and set out procedures to building projects
BCGSV5008A	Apply building control legislation to building surveying
BCGSV5009A	Assess the impact of fire on building materials
BCGSV5010A	Interact with clients in a regulated environment
BCGSV5011A	Apply building codes and standards to residential buildings
BCGSV5012A	Assess timber framed designs for one and two storey buildings
BCGSV5013A	Apply principles of energy efficient design to buildings
BCGSV5014A	Apply building surveying procedures to residential buildings
BCGSV5015A	Assess structural requirements for domestic scale buildings

Mandatory Cross-Industry Units. The following nine (9) units are required.

BSBADM506A	Manage business document design and development
BSBCMN406A	Maintain business technology
CHCCOM3A	Utilise specialist communication skills
CHCCOM4A	Develop, implement and promote effective communication
ICAITU128A	Operate a personal computer
ICAITU129A	Operate a word processing application
ICAITU130A	Operate a spreadsheet application
ICAITU131A	Operate a database application
ICAITU133A	Send and retrieve information over the internet using browsers and email

Title	ADVANCED DIPLOMA OF BUILDING SURVEYING
National Code	BCG60103
Qualification Requirements	<p>To be awarded this qualification the candidate must have satisfied the requirements for a Diploma in Building Surveying and attain further successful assessment in a total of nineteen (19) units.</p> <p>Assessment must be conducted in accordance with the Assessment Guidelines for the Building and Construction Industry.</p>
Qualification Rationale	<p>The level of the qualification is based on the group of competency units, which align with the performance characteristics described for the Advanced Diploma. These include:</p> <p><i>The application of a significant range of fundamental principles and complex techniques across a wide and often unpredictable variety of contexts in relation to either varied or highly specified functions. Contribution to the development of a broad plan, budget or strategy is involved and accountability and responsibility for self and others in achieving the outcomes is involved.</i></p> <p><i>Breadth, depth and complexity of involving analysis, diagnosis, design, planning, execution and evaluation across a broad range of technical and/or management functions including development of new criteria, applications, knowledge or procedures. Applications involve significant judgement in planning, design, technical or leadership/guidance functions related to products, services, operations or procedures.</i></p> <p><i>The degree of emphasis on breadth as against depth of knowledge and skills may vary between qualifications granted at this level.</i></p>

Competency Standards Relating to this Qualification**Mandatory Building Surveying Units. The following sixteen (16) units are required.**

BCGSV6001A	Assess the construction of buildings up to 3 storeys
BCGSV6002A	Produce working drawings for buildings up to 3 storeys
BCGSV6003A	Assess construction faults in buildings up to 3 storeys
BCGSV6004A	Apply footings and geomechanical design principles to buildings up to 3 storeys
BCGSV6005A	Evaluation of services layout and connection methods for residential and commercial buildings up to 3 storeys
BCGSV6006A	Evaluate the use of concrete for residential and commercial buildings up to 3 storeys
BCGSV6007A	Assess structural requirements for buildings up to 3 storeys
BCGSV6008A	Apply building codes and standards to buildings up to 3 storeys
BCGSV6009A	Implement performance based codes and risk management principles for buildings up to 3 storeys
BCGSV6010A	Apply fire technology to buildings up to 3 storeys
BCGSV6011A	Apply legal procedures to building surveying
BCGSV6012A	Facilitate community development consultation
BCGSV6013A	Co-ordinate asset refurbishment
BCGSV6014A	Manage and plan land use
BCGSV6015A	Analyse and present building surveying research information
BCGSV6016A	Apply building surveying procedures to buildings up to 3 storeys

Mandatory Cross-Industry Units. The following three (3) units are required.

BSX154L606	Manage human resources
LGAPLEM502A	Apply ecologically sustainable development principles to the built environment
LMFFT4010A	Identify and calculate production costs

Assessment Guidelines

Introduction

These Assessment Guidelines provide the endorsed framework for assessment of the Units of Competency that lead to Certificate IV to Advanced Diploma qualifications in the General Construction Training Package.

They are designed to ensure that assessment activities are consistent with the *Australian Recognition Framework Standards for Registered Training Organisations* and that the assessment processes and outcomes are valid, reliable, flexible and fair.

Assessments against the Competency Standards in this Training Package *must* be carried out in accordance with these endorsed guidelines.

The Assessment Guidelines comprise five key sections:

- assessment system overview
- assessor requirements
- designing assessment resources
- conducting assessment
- further sources.

Section 1 – Understanding Competency

1(a) Competency Standards

The broad concept of competency is related to realistic work practices, expressed as an outcome, and understandable to all people in the workplace as well as trainers and assessors. It is important that the meaning of competency is interpreted and understood in the same way by different users, and in different situations.

Competency comprises the specification of knowledge and skills relevant to an industry, and the application of that knowledge and skills to the standard of performance required in the workplace.

The Australian National Training Authority's definitions of competency encompass several features:

‘The concept of competency focuses on what is expected of an employee in the workplace rather than the learning process, and embodies the ability to transfer and apply skills and knowledge to new situations and environments.’

‘In competency standards the emphasis is on outcomes and on the application of skills and knowledge, not just specification.’

‘Competency standards are therefore concerned with what people are able to do (eg maintain and use networks), and also with the ability to do this in a range of contexts (eg maintain and use networks of suppliers, government agencies, etc).’

Each Unit of Competency comprises mandatory components including:

- Unit Code
- Unit Title
- Unit Descriptor
- Elements of Competency
- Performance Criteria
- Range of Variables
- Evidence Guide.

Unit Code

The Unit Code is a unique number given to each unit that will identify the national training package it belongs to.

Unit Title

The Unit Title is a succinct statement of the broad area of competency covered by the unit expressed in outcome terms.

Unit Descriptor

The Unit Descriptor should expand, as necessary, on the Title of the Unit to accurately and clearly reflect the complete purpose and intent of the Unit.

Elements of Competency

Elements of Competency are basic building blocks of the Unit. Elements describe, in outcome terms, significant functions and groups of tasks that a person in a particular area of work is able to perform.

Performance Criteria

Performance Criteria are evaluative statements that specify the work activities to the required level of performance. It is here that all the relevant tasks, roles, skills, and applied knowledge and understanding that demonstrate competent performance are specified.

Range of Variables

The Range of Variables statement contextualises the competency to provide a link to the required knowledge and organisational and technical requirements. They describe contextual variables that will be utilised or encountered when applying the competency in work situations.

Evidence Guide

The Evidence Guide specifies how the assessment of the Unit of Competency should be conducted in the workplace and/or training environment. The Guide provides reliable and succinct information about how the quality and level of performance could be determined. The evidence must relate directly to the Elements of Competency, Performance Criteria and Range of Variables.

1(b) The Evidence Guide

The Evidence Guide includes the following advice.

Critical aspects of evidence – Aspects of applying the competency that are essential to effective performance and must be verified in any assessment process.

Relationship with other units – Defines prerequisite units and any direct assessment relationships between different units to indicate where consecutive or concurrent assessment is advisable to ensure all aspects of competency, such as task management and contingency skills are captured.

Underpinning knowledge and skills – Essential knowledge and skills that a person needs to have and be able to apply effectively to perform work to the required standard in all likely situations.

Resource implications – Particular resources, infrastructure or conditions that are required to conduct valid and reliable assessment.

Context for assessment – Explanation of the environment under which assessment should take place.

Method for assessment – Explanation of the time frame and mode under which assessment should take place to cover all aspects of the unit and establish consistency of performance.

Key Competencies

Key Competencies must be identified in the national competency standard, either within each Unit of Competency or at the qualification level. There are seven Key Competencies that underpin successful activity in life and work as defined by the Mayer Committee. These competencies have three levels of performance that should be specified when identifying where they apply in industry competencies and are:

- Collecting, analysing and organising information.
- Communicating ideas and information.
- Planning and organising activities.
- Working with others in teams.
- Solving problems.
- Using mathematical ideas and techniques.
- Using technology.

Section 2 – Assessment System Overview

Benchmarks for Assessment

The Competency Standards in this Training Package are benchmarks for assessment and are the basis of the nationally recognised Australian Qualifications Framework (AQF), qualifications, and Statements of Attainment issued by Registered Training Organisations (RTOs).

Assessment within the National Training Framework is defined as the process of collecting evidence and making judgements about whether competency has been achieved. The purpose of assessment is to confirm whether an individual can perform to the standards expected in the workplace, as expressed in the Competency Standards in this Training Package.

When conducting assessments, assessors must ensure that they are familiar with the full text of the Unit(s) of Competency being assessed. In particular, they must ensure that the assessment arrangements:

- cover all elements of the Unit of Competency being assessed
- address the Range Statement in each relevant Unit of Competency
- address the four dimensions of competency: task skills, task management skills, contingency management skills and job/role environment skills
- are consistent with the Evidence Guide for each relevant Unit of Competency, as this specifies the context of assessment, the critical aspects of competency, the required underpinning knowledge and skills, and the identification of Key Competencies and their performance level. In some cases there will be reference to having access to real workplace conditions and infrastructure.

Australian Recognition Framework Assessment Requirements for RTOs

Assessment for national recognition purposes must meet the requirements of the Australian Recognition Framework (ARF). Assessment must be conducted by an RTO formally registered under *Australian Recognition Framework Standards for Registered Training Organisations* with the specific qualifications identified in the General Construction Training Package within its scope of registration. The RTO must meet the requirements of the relevant assessment standards in the *Australian Recognition Framework Standards for Registered Training Organisations* as set out below.

The RTO's assessments for national recognition, regardless of whether this is through a training and assessment pathway or an assessment-only pathway must:

- comply with these Assessment Guidelines
- lead to the issuing of a Statement of Attainment or qualification under the AQF when a person is assessed as competent against nationally endorsed Unit(s) of Competency in this Training Package
- be underpinned by an assessment process that complies with the principles of validity, reliability, fairness and flexibility
- provide for applicants to be informed of the context and purpose of the assessment and the assessment process

- focus on the application of knowledge and skill to the standard of performance required in the workplace and cover all aspects of workplace performance, including task skills, task management skills, contingency management skills and job/role environment skills
- involve the evaluation of sufficient evidence to enable professional judgements to be made about whether competency has been attained
- provide for feedback to the applicant about the outcomes of the assessment process and guidance on future options
- provide for reassessment on appeal
- be equitable for all groups or persons, taking account of cultural and linguistic needs.

Reasonable adjustments are to be made to ensure equity in assessment for people with disabilities. This means that wherever possible, 'reasonable' adjustments are to be made to meet the individual needs of a person with a disability. Adjustments are considered 'reasonable' if they do not impose an unjustifiable hardship on a training provider or employer. When assessing people with disabilities, assessors are encouraged to apply good practice assessment methods with sensitivity and flexibility.

The RTO's Recognition Process (Recognition of Prior Learning – RPL or Recognition of Current Competency - RCC) must be accessible to all applicants upon enrolment and must:

- be structured to minimise the time and cost to applicants
- provide adequate information and support to enable applicants to gather reliable evidence to support their claim for recognition of competencies currently held, regardless of how, when or where the learning occurred.

The RTO must ensure that, in developing, adapting or delivering training and assessment products and services:

- methods used to identify learning needs, and methods for designing training and assessment materials are documented
- language, literacy and numeracy requirements are consistent with the essential requirements for workplace performance specified in the relevant Units of Competency and that they develop the learning capacity of the individual
- the requirements of the Training Package are met
- core and elective units, as appropriate, are identified
- customisation meets the requirements specified in the Training Package.

The RTO must document its plans for delivery and assessment of each Training Package qualification and accredited course within the its scope of registration. These plans must ensure that:

- the delivery modes and training materials meet the needs of a diverse range of clients
- assessment strategies, including proposed validation processes, are developed in consultation with enterprises/industry, and that they are documented at the point of registration and on application for extension of scope

- where assessment or training is conducted in the workplace, the RTO negotiates the delivery and assessment plan with the employer and learners, works with the employer to integrate on-the-job and off-the-job training and assessment, and schedules workplace visits to monitor/review the training and assessment
- where a New Apprenticeship Training Contract is in place or being negotiated, individual Training Plans encompassing both off-the-job training and structured on-the-job training are developed, documented, implemented and monitored for each apprentice or trainee.

The RTO must validate its assessment strategies by:

- reviewing, comparing and evaluating the assessment processes, tools and evidence contributing to judgements made by a range of assessors against the same standards¹, at least annually
- documenting any action taken to improve the quality and consistency of assessment.

The RTO must have access to the staff, facilities, equipment, training and assessment materials necessary to provide the training and/or assessment within its scope of registration, and to accommodate client numbers and client needs (including off-campus and on-line delivery and assessment requirements).

RTOs may operate in partnership with other organisations (see below) but, in doing this, are still responsible for the quality of their services and service outcomes.

In order to deliver and/or assess Units of Competency or qualifications and issue nationally recognised qualifications under the AQF from the General Construction Training Package, RTOs must have the relevant qualifications from this Training Package within their scope of registration.

Mutual Recognition

Under the Australian Recognition Framework Standards for Registered Training Organisations, every RTO must recognise and accept Statements of Attainment and qualifications issued by any other RTO.

Partnership Arrangements

Under the ARF, RTOs may enter into partnerships with non-registered organisations, such as schools, industry organisations and enterprises, for delivery and assessment within the RTO's scope of registration.

Where this is done, the RTO must have a formal agreement with the organisation that provides the training and/or assessment under its name. The agreement must specify how all parties will discharge their responsibilities for ensuring the quality of the training and/or assessment conducted on its behalf, including the qualification requirements for delivery and assessment.

The RTO has full responsibility for the quality and outcomes of any training or assessment conducted on its behalf, and it must maintain a register of all such agreements.

¹ These may be internal processes with stakeholder involvement or external validations with other providers and/or stakeholders.

Recording Assessment Outcomes

The RTO that issues the AQF Qualification or Statement of Attainment is responsible for recording, storing, retrieval and accessibility of the assessment outcomes specified in *Australian Recognition Framework Standards for Registered Training Organisations*.

Reporting Assessment Outcomes

Statements of Attainment and qualifications issued under the AQF must comply with the relevant provisions in the current *Australian Qualifications Framework Implementation Handbook*.

AQF qualifications must be issued once the full requirements for a qualification, as specified in the Qualifications Framework of this Training Package, have been met. A Statement of Attainment is to be issued where the individual is assessed as competent against fewer Units of Competency than are required for a qualification and the individual has completed the relevant Training Program and / or assessment process. Qualifications and Statements of Attainment issued must comply with the format specified in the current *AQF Implementation Handbook*.

Quality Assurance Mechanisms

Under the provisions of the ARF, RTOs involved in the assessment of the Units of Competency and qualifications within this Training Package are required to establish and use quality assurance mechanisms in line with their registration requirements.

It is *recommended* that RTOs include the following procedures within a quality assurance framework:

- establishment of a standard procedure for the selection of assessors
- conduct of regular professional development for assessors
- ongoing recording, monitoring and review of the assessment process, including the assessment plan, assessment outcomes and participant feedback
- development of a comprehensive bank of resources for participants and assessors including:
 - information about the assessment process
 - assessment tools, where appropriate
 - standardised reporting and recording forms for participants, assessors, trainers and employers
 - guidelines for assessors on the preparation of the assessment plan, and conduct and review of the assessment process.

Licensing/Registration Requirements

In some States and Territories, Building Surveyors need to obtain accreditation/registration/license from the relevant State or Territory Authority to practice their profession. The relevant authorities in the States and Territories are indicated below.

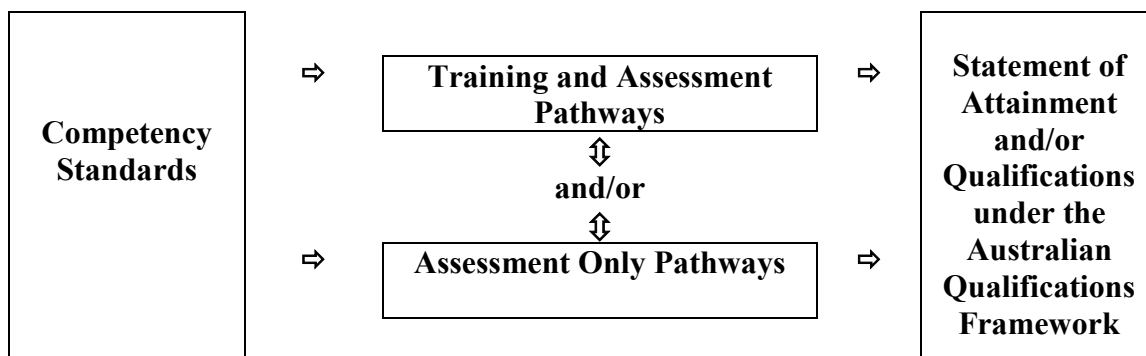
All States and Territories have agreed to introduce a system of accreditation/registration for Building Surveyors. In the States and Territories where there is no statutory requirement at present for accreditation/registration/licensing, the local chapter of the Australian Institute of Building Surveyors offer accreditation to those who request it.

In order to conduct assessments for statutory accreditation/registration/licensing purpose the assessors in addition to the requirements stated in Section 3, assessors need to be accredited with (or have the ability to be accredited) with the Australian Institute of Building Surveyors at Assistant Building Surveyor (ABS) or Building Surveyor (BS) level. It is highly recommended that RTOs check with the relevant Authority or the local chapter of the Australian Institute of Building Surveying to find out about the latest assessor accreditation arrangements before commencing assessment activities

New South Wales	-	Planning NSW www.planning.nsw.gov.au
Victoria	-	Building Control Commission PO Box 536E, Melbourne Vic 3000
Queensland	-	Building Services Authority www.bsa.qld.gov.au
Western Australia	-	There is no statutory requirement for accreditation at present.
South Australia	-	Planning SA requests that AIBS Chapter in SA accredits
Tasmania	-	The <i>Tasmanian Building Act 2000</i> requires building practitioners, including building surveyors, to be accredited.
Northern Territory	-	Building Practitioners Board NT GPO Box 1680, Darwin NT 0801
Australian Capital Territory	-	There is no statutory requirement for accreditation at present.

Assessment Pathways

This Training Package incorporates a number of assessment pathways that lead to the recognition of competencies and the issuing of a qualification or Statement of Attainment. These pathways are illustrated in the following diagram.



As indicated above, assessment under this Training Package leading to an AQF qualification or Statement of Attainment may follow a training and assessment pathway, an assessment only pathway, or a combination of the two. All assessments, by any pathway, *must* comply with the ARF assessment requirements for RTOs (see above). Each of these assessment pathways leads to full recognition under the AQF. The critical concern is that the candidate is competent, not how the competency was acquired. Each of the above pathways is detailed below.

Training and Assessment Pathways

For most candidates assessment and training are integrated, with assessment evidence being collected progressively and feedback being provided to the candidate. The candidate may undertake a structured program of training and assessment while on the job, while off the job, or in a combination of on-the-job and off-the-job environments.

This pathway is particularly suited to individuals utilising ‘institutional’ and ‘structured on and off the job’ pathways to AQF qualifications in the General Construction industry. These pathways would help to ensure that people involved in acquiring competencies through this pathways are provided with a mix of formal training, structured workplace experience and formative assessment. Through this combination of training and assessment the candidate can acquire and demonstrate the practical skills and knowledge identified in the relevant Competency Standards.

Assessment Only Pathway

In some circumstances an assessment only (skills recognition) pathway will be warranted. The candidate provides current, quality evidence against the relevant Units of Competency, and the outcomes of the assessment process indicate that the candidate is competent and that structured training is not required.

This pathway can operate in both on-the-job and off-the-job environments. It is likely to be most appropriate for:

- individuals enrolling for qualifications who want recognition for prior learning or current competencies
- existing workers

- individuals with overseas qualifications
- recent migrants with established work histories
- people returning to the workplace
- people with disabilities or injuries requiring a change in career.

Individuals wishing to take this pathway present evidence that they possess the skills and knowledge identified in the relevant Competency Standards from the General Construction Training Package, and then a qualified assessor judges whether the person is competent. Summative approaches to assessment may be directed by the candidate (such as in the compilation of portfolios) or by the assessor (such as observation of workplace performance, requiring demonstrations of skills, and carrying out oral and written testing).

Combination of ‘Training and Assessment’ and ‘Assessment Only’ Pathways

Where candidates have gained competencies through work and life experience and gaps in their competency are identified, or where they require training in new areas, a combination of approaches may be appropriate.

In such situations, the candidate may undertake an initial assessment to determine their current competence using an ‘assessment only pathway’. Once current competence is identified, a structured training and assessment program may be established to ensure that the candidate acquires the required additional competencies. These would be achieved through a ‘training and assessment pathway’.

It is important to note that each of these assessment pathways leads to full recognition under the Australian Qualifications Framework. An individual's access to the assessment process should not be adversely affected by restrictions placed on the location or context of assessment beyond the requirements specified in this Training Package.

Recognition of Current Competency

The competencies in this Training Package may be attained in a number of ways:

- formal or informal training and education
- work experience
- general life experience and/or
- any combination of the above.

All assessment pathways must provide for the recognition of competencies previously attained. Competencies achieved and currently held by individuals can be formally assessed against the Units of Competency and qualifications in this Training Package, and should be recognised regardless of how, when or where they were achieved.

In assessing the competence of individual candidates, assessors must ensure that assessment processes take into account the skills and knowledge that candidates already possess. This can be done by conducting a pre-assessment where the candidate provides evidence of the skills and knowledge already possessed. In order for these skills and knowledge to be recognised, the assessor must be confident that the evidence indicates that the candidate is currently competent against the endorsed industry or enterprise competency standards. This evidence may take a variety of forms and might include:

- certification
- references from current and past employers
- testimonials from clients
- work samples.

The onus is on candidates to provide sufficient evidence to satisfy assessors that they currently hold the relevant competencies. In determining whether a candidate has presented sufficient evidence, the assessor must ensure that the evidence of prior learning is:

- authentic (the candidate's own work)
- valid (directly related to the current version of the relevant Units of Competency in the General Construction Training Package)
- reliable (shows that the candidate consistently meets the relevant Units of Competency in the General Construction Training Package)
- current (reflects the candidate's current capacity to perform the aspect of the work covered by the relevant Units of Competency in the General Construction Training Package)
- sufficient (covers the full range of elements in the relevant Unit of Competency and addresses the four dimensions of competency, namely task skills, task management skills, contingency management skills, and job/role environment skills).

A general process for recognising current competency is detailed in Appendix A of these Assessment Guidelines.

Review and Maintenance of the Assessment System

Construction Training Australia, the national industry training advisory body for the Building and Construction Industry, is responsible for the ongoing monitoring and review of these Assessment Guidelines. This process will be incorporated in the general review and maintenance of this Training Package. Any review will ensure that these Assessment Guidelines:

- continue to meet the requirements of the construction industry
- are consistent with the *Australian Recognition Framework Standards for Registered Training Organisations*
- promote confidence in the system and the assessment outcomes on the part of industry, employers, enterprises, unions, employees, trainees, assessors and trainers;
- ensure assessment processes and outcomes are valid, reliable, fair and flexible
- support RTOs in effectively carrying out their responsibilities.

Section 3 – Assessor Requirements

These Assessment Guidelines identify the mandatory minimum qualifications for those conducting assessments for the purposes of national recognition in the General Construction Industry. They also clarify how more than one person may contribute to the assessment process where one person does not hold all the required competencies.

Assessor Qualifications

There are *mandatory* requirements that must be met by individual assessors or collectively by the members of an assessment team or panel conducting assessments against the General Construction Training Package.

These are that assessors **must** have or must have demonstrated equivalent competencies for:

- the following Units of Competency from the Training Package for Assessment and Workplace Training:
 - BSZ401A - Plan Assessment
 - BSZ402A - Conduct Assessment
 - BSZ403A - Review Assessment, and
- the relevant vocational competencies against which the candidate is being assessed, at least to the level being assessed.

In addition to the above, it is recommended that assessors have comprehensive current knowledge of the industry and the job or role against which performance is being assessed.

Assessors should also have appropriate interpersonal and communication skills and knowledge of language, literacy and numeracy issues in the context of assessment. These skills, knowledge and attributes may be developed and demonstrated through:

- participation in professional development
- relevant work experience
- participation in professional/industry networks
- recent planning and review of assessment activities
- participation in assessment validation processes
- recent assessment and/or workplace training activities.

All assessors who are engaged in assessing against this Training Package must be:

- employed by an RTO, or
- acting under the registration of an RTO (for example, an assessor working in an enterprise that has a partnership arrangement with the RTO).

This Training Package provides a range of options for meeting these assessor requirements. Individual assessors, partnerships involving assessors and technical experts, and teams of assessors, can undertake assessments in a variety of workplace and institutional contexts. The options listed in the following chart shows how the requirement to use qualified assessors can be met.

OPTIONS	ASSESSORS, TECHNICAL EXPERTS AND WORKPLACE SUPERVISORS (Includes mandated requirements and recommended attributes)
Single assessor An individual assessor conducts the assessment	An assessor is required to: <ul style="list-style-type: none"> • hold formal recognition of competence in the relevant units in the Training Package for Assessment and Workplace Training • be deemed competent and, where possible, hold formal recognition of competence in the specific Units of Competency in this Training Package, at least to the level being assessed. In addition, it is recommended that the assessor is able to: <ul style="list-style-type: none"> • demonstrate current knowledge of the industry, industry practices, and the job or role against which performance is being assessed • demonstrate current knowledge and skill in assessing against this Training Package in a range of contexts • demonstrate the necessary interpersonal and communication skills required in the assessment process.
Partnership arrangement 1. An assessor works with a technical expert to conduct the assessment	Assessor is required to hold formal recognition of competence in the relevant units in the Training Package for Assessment and Workplace Training. In addition, it is recommended that the assessor is able to: <ul style="list-style-type: none"> • demonstrate current knowledge and skill in assessing against this Training Package in a range of contexts • demonstrate the interpersonal and communication skills required in the assessment process. A technical expert is required to be deemed competent and, where possible, hold formal recognition of competence in the specific Units of Competency from this Training Package, at least to the level being assessed. In addition, it is <i>recommended</i> that the Technical Expert is able to: <ul style="list-style-type: none"> • demonstrate current knowledge of the industry, industry practices, and the job or role against which performance is being assessed • communicate and liaise with the assessor throughout the assessment process.

<p>2. An assessor works with workplace supervisor in collecting evidence for valid assessment</p>	<p>An assessor is required to:</p> <ul style="list-style-type: none"> • hold formal recognition of competence in the relevant units from the Training Package for Assessment and Workplace Training • make the assessment decision. <p>In addition, it is <i>recommended</i> that the assessor is able to:</p> <ul style="list-style-type: none"> • demonstrate current knowledge and skill in assessing against this Training Package in a range of contexts • demonstrate the interpersonal and communication skills required in the assessment process • communicate and liaise, where appropriate, with the workplace supervisor throughout the assessment process. <p>A workplace supervisor is required to be deemed competent and, where possible, is to hold formal recognition of competence in the specific Units of Competency from this Training Package, at least to the level being assessed.</p> <p>In addition, it is <i>recommended</i> that the workplace supervisor is able to:</p> <ul style="list-style-type: none"> • demonstrate current knowledge of the industry, industry practices, and the job or role against which performance is being assessed • communicate and liaise, where appropriate, with the assessor throughout the assessment process • use agreed practices to gather and record evidence for the assessor to use in making a valid judgement on competency.
<p>Assessment team/panel</p> <p>A team working together to conduct the assessment</p>	<p>Members of an assessment team or panel that comprises assessment and industry experience and expertise works together in the collection of evidence and in making judgements about competency. The members of the team must include at least one person who:</p> <ul style="list-style-type: none"> • holds formal recognition of competence in the relevant units from the Training Package for Assessment and Workplace Training • is deemed competent and, where possible, holds formal recognition of competence in the specific Units of Competency from this Training Package, at least to the level being assessed. <p>In addition, it is <i>recommended</i> that members of the team/panel involved in the assessment are able to:</p> <ul style="list-style-type: none"> • demonstrate current knowledge of the industry, industry practices, and the job or role against which performance is being assessed • demonstrate current knowledge and skill in assessing against this Training Package in a range of contexts • demonstrate the interpersonal and communication skills required in the assessment process and liaise with other team/panel members throughout the assessment process.

Section 4 – Designing Assessment Resources

Assessment resources provide a means of collecting the evidence that assessors use in making judgements about whether candidates have achieved competencies. In some cases, assessors may use prepared assessment materials, such as those specifically developed to support this Training Package. Alternatively they may develop their own assessment materials to meet the needs of their clients.

If using prepared assessment materials, assessors should ensure that the materials are benchmarked, or mapped, against the current version of the relevant Unit[s] of Competency in this Training Package. This can be done by checking that the materials are listed on the National Training Information Service (<http://www.ntis.gov.au>). Materials on the list have been noted by the National Training Quality Council as meeting their quality criteria for Training Package support materials.

When developing their own assessment materials, assessors must ensure that:

- the materials are benchmarked against the selected Unit(s) of Competency in this Training Package
- the materials are validated to ensure that assessors can gather sufficient valid and reliable information to make assessment decisions against the Competency Standards
- the materials and processes meet the ARF Assessment Requirements for RTOs in Section 1 of this document.

Key references for assessors engaged in developing assessment materials are the:

- Training Package for Assessment and Workplace Training [BSZ98] and
- Develop Assessment Tools [BSZ507A].

There is no set format or process for the design, production or development of assessment materials. However further technical advice on the design of assessment materials may be found in two publications developed by DETYA in conjunction with the Australian National Training Authority through the Training Package Assessment Materials Project. These are:

- *Training Package Assessment Materials*
- *A guide to assessing higher order competencies.*

Designing assessment resources for use in assessing higher order competencies

Assessment of higher order competencies presents special challenges to assessors. Assessors need to be aware that the nature of evidence and the techniques for collecting evidence to confirm the competence of specialist personnel, team leaders, supervisors and managers are different from the approaches used at other AQF levels, such as oral questioning, observation of work activities and demonstration of specific skills.

Prior to developing assessment resources for use in assessing higher order competencies, assessors need to develop an accurate picture of the performance required to demonstrate competence. Assessors need to understand the intent of the Unit[s] of Competency by:

- analysing the information contained in each section of the Unit[s] of Competency
- relating performance requirements to actual job roles and work activities
- identifying the knowledge that underpins competent performance.

The design of assessment resources needs to ensure that all aspects of competency are covered including:

- task skills [application of knowledge, skills and attitudes in a range of familiar situations]
- task management skills [managing a variety of tasks simultaneously]
- contingency management skills [responding to problems, changes to plans work disruptions and dealing with emergencies]
- job/role environment skills [dealing with leadership responsibilities and expectations of the workplace].

Higher order competencies, such as those included in this Training Package, cover complex work activities that require advanced technical skills, significant underpinning knowledge and the capacity to predict, analyse, synthesise and evaluate. (Refer pages 10 and 11 for a description of the characteristics and features of work at AQF levels 4-6). It is often difficult for assessors to directly observe candidates performing work activities such as:

- generating designs and ideas
- managing projects
- analysing and solving problems
- resolving disputes
- leading teams
- developing long term plans.

In addition, other critical competencies, such as responding to emergencies, are even harder to assess because they occur rarely. As most candidates who work in high level roles are not closely supervised, there is also the question of who can know enough about what they do in order to assess them. The challenge for those assessing against the higher order competencies in this Training Package is to infer competence by collecting evidence in a cost-effective manner, from many sources, over an extended period of time.

Collecting evidence of higher order competence

Assessors normally place considerable emphasis on the ‘direct’ evidence, such as observation of candidates performing work activities, when making judgements about competence. They then use ‘indirect’ evidence such as questioning and work samples and ‘supplementary’ evidence, such as third party reports and workplace documents, to confirm their judgement.

However, given the limitations of direct evidence in the assessment of specialist personnel, team leaders, supervisors and managers, assessors need to place more emphasis on indirect and supplementary evidence when assessing higher order competencies.

In addition, assessors also need to appreciate that they may not be able to collect all of the evidence that is required to infer competence. In some cases, another ‘evidence collector’ such as a workplace supervisor may collect the evidence. However, it is more likely that the candidate will gather much of the evidence used in assessing higher order competencies. Therefore when designing assessment resources for use in assessing higher order competencies, assessors need to answer the following questions:

- What is competent performance?
- What evidence is required to infer competence?
- How will the evidence be collected?
- Who will collect the evidence?

The following chart provides examples of the ways in which both assessors and candidates can collect evidence for use in assessing higher order competencies.

Table 2: Sources of evidence for assessing high order competence

Evidence collected by the assessor		
Source of evidence	Explanation	Example
Practical demonstration in real or simulated context	<ul style="list-style-type: none"> • observation of real work or simulation by assessor or agreed third party 	<ul style="list-style-type: none"> • performing complex technical skill or using equipment • troubleshooting an equipment fault • presenting at a site meeting • inducting a new staff member
Third party reports	<ul style="list-style-type: none"> • confirmation of consistent performance over time and in a range of contexts • ability to meet Key Performance Indicators • confirmation of candidate's application of procedures 	<ul style="list-style-type: none"> • reports from: <ul style="list-style-type: none"> – supervisor – manager – customer / client – supplier – peers / colleague
Questioning/structured interview/written or oral tests	<ul style="list-style-type: none"> • confirm knowledge • clarification of ethics, values and attitudes • review of portfolio for relevance, authenticity and sufficiency • establish capacity to evaluate, analyse and synthesise information 	<ul style="list-style-type: none"> • interpreting and applying enterprise procedures eg OH&S • handling critical incident(s) • understanding business goals • knowledge of critical content • reflecting on personal and professional practice

Evidence collected by the candidate		
Source of evidence	Explanation	Example
Personal statement/resume	<ul style="list-style-type: none"> self assessment using relevant examples of performance 	<ul style="list-style-type: none"> work experience personal development activities nominated referees
Workplace documents	<ul style="list-style-type: none"> verified work outputs that are relevant and current 	<ul style="list-style-type: none"> job cards, rosters, shift records specifications for product or project minutes of meetings operational plans and budgets recommendations and reports explanations of procedures, manuals calculations, flow charts, project/site plans
Training records	<ul style="list-style-type: none"> training outcomes mapped to relevant units of competency 	<ul style="list-style-type: none"> workplace assessor award equipment supplier's certificate qualification or Statement of Attainment other training certificates regulatory certification
Case study	<ul style="list-style-type: none"> critical analysis of performance that is mapped to relevant units of competency 	<ul style="list-style-type: none"> design and implementation of new procedures illustration of ethical practice illustration of approach to solving complex human or technical workplace problems

Work project	<ul style="list-style-type: none"> • completion of a negotiated task to provide evidence of the capacity to analyse, synthesise, predict and evaluate 	<ul style="list-style-type: none"> • marketing strategy for new service or project • quality improvement to a process • technical specifications for product
Journal/diary entries	<ul style="list-style-type: none"> • record of work roles, tasks and responsibilities, contributions to team outputs, reflection on personal performance • reflective narrative 	<ul style="list-style-type: none"> • personal organisation and time management • operational planning, budgeting • analysis of critical incidents • reflection on personal performance and development
Testimonials/awards	<ul style="list-style-type: none"> • independent confirmation of personal performance 	<ul style="list-style-type: none"> • letters from customers/clients • company/industry awards for innovation, excellence, achievement • performance appraisal reports.

As indicated in table 2, there are a wide variety of approaches that assessors and candidates can use to gather evidence.

However three approaches that are used frequently to gather evidence of higher order competence are:

- portfolios
- structured interviews
- simulation.

The following descriptions provide a brief overview of each. More detailed information can be found in the resources provided at the back of these guidelines.

Portfolios

A portfolio contains diverse items of evidence collected by the candidate from different sources. These items could include: agendas, minutes, letters, products, memos, submissions, plans, policies, budgets, reports, charts, tickets, forms, surveys, printouts, diagrams, graphs. In other words a portfolio contains the typical workplace outputs of people in high level roles or performing high level functions. It is also common practice for the candidate to attach accounts of other relevant work achievements such as resumes, testimonials, and records of professional development. Candidates in senior job roles should also be able to provide written examples of reflection on their practice and performance such as: diaries, journals, and performance appraisals.

A portfolio has much to offer both candidates and assessors. It enables the candidate to be actively involved in their assessment by using knowledge of themselves and their work experience to assemble evidence over time. It offers the assessor a cost-effective means of reviewing evidence performed by the candidate that is not highly visible and does not lend itself to direct observation.

A collection of such documents and products will reflect a multiplicity of tasks performed by the candidate and may cover evidence of performance relating to a range of units of competency. Therefore it is important that the candidate indexes the portfolio and cross references all the items against the Units of Competency being assessed.

Structured interviews

Interviews provide excellent opportunities for the assessor to:

- discuss the evidence contained within a portfolio with the candidate
- assess attributes that underpin competency such as ethics, values, attitudes
- assess the candidate's understanding and application of essential knowledge.

Interviews need to be structured for the assessor to gain or confirm the evidence required to infer the candidate's competence. The assessor should plan the interview by structuring a series of questions. The questions may:

- invite the candidate to describe particular aspects of their work experiences
- explain specific procedures, policies, regulations, Codes of Practice and legislation
- explore issues, options and decisions
- confirm competencies related to the performance described
- investigate areas of uncertainty or ambiguity
- reflect on actions, future actions, attitudes, ethics and values

The assessor should consider the sequencing of the questions in a structured interview. This may involve moving from the simple to complex, concrete to abstract, known to unknown, closed to open ended questions.

Simulation

Simulation generally falls into three categories:

- hypotheticals – where assessors ask or present candidates a series of “what if ...?” questions as a way of determining a candidate's response to different situations
- case study exercises – where candidates consider a problem or scenario and produce a solution or response
- ‘virtual’ work environments – where the candidate is asked to respond to a situation or problem that is difficult to do in real work, for example a shutdown of equipment, evacuation of a site or dealing with a difficult client. Depending on the scale and resources required these types of simulations can be resource intensive and difficult to establish.

The challenge for assessors in all simulations is to design and document the scenario that is realistic in terms of the activities, resources, pressures and decision making required in a real work situation.

Section 5 – Conducting Assessments

The following chart describes the industry-preferred process for conducting assessments against the Competency Standards in the General Construction Training Package. This process applies to all assessments conducted for the purposes of national recognition in both institutional and workplace contexts.

Step 1	The assessor:
Establish the assessment context	<ul style="list-style-type: none">• establishes the context and purpose of the assessment• identifies the relevant Competency Standards, Assessment Guidelines and Qualification in the General Construction Training Package• identifies any NTQC noted support materials that have been developed to facilitate the assessment process• analyses the competency standards and identifies the evidence requirements• identifies potential evidence collection methods.
Step 2	The assessor meets with the candidate to:
Prepare the candidate	<ul style="list-style-type: none">• explain the context and purpose of the assessment and the assessment process• explain the Competency Standards to be assessed and the evidence to be collected• advise on self-assessment, including processes and criteria• outline the assessment procedure, the preparation the candidate should undertake and answer any questions• assess the needs of the candidate and, where applicable, negotiate reasonable adjustment for assessing people with disabilities without compromising the integrity of the competencies• seek feedback regarding the candidate's understanding of the Competency Standards, evidence requirements and assessment process• explains the different approaches to evidence collection ie: candidate and assessor gathered evidence.

Step 3**Plan and prepare the evidence gathering process****The assessor must:**

- confer with the candidate and establish an agreed plan for gathering sufficient quality evidence about the candidate's performance in order to make the assessment decision. This will identify:
 - the Units of Competency to be assessed
 - the evidence requirements
 - which evidence will be gathered by the assessor, the candidate and other evidence gatherers ie: workplace supervisor
- source or develop assessment materials to assist in the evidence gathering process
- organise equipment or resources required to support the evidence gathering process
- involve industry representatives in the development of plans for the validation of assessment.

Step 4**Collect the evidence and make the assessment decision****The assessor must:**

- establish and oversee the evidence gathering process to ensure its validity, reliability, fairness and flexibility
- collate appropriate evidence, that may be gathered by the assessor, the candidate or other agreed evidence gatherer, and assess this against the Elements, Performance Criteria, Range Statement and Evidence Guide in the relevant Units of Competency
- evaluate evidence in terms of the four dimensions of competency – task skills, task management skills, contingency management skills, and job/role environment skills
- incorporate allowable adjustments to the assessment procedure without compromising the integrity of the competencies
- evaluate the evidence in terms of validity, consistency, currency, equity, authenticity and sufficiency
- consult and work with the candidate, other evidence gatherers, assessment panel members or technical experts involved in the assessment process
- record details of evidence collected
- make a judgement about the candidate's competency based on the evidence and the relevant Unit(s) of Competency.

<p>Step 5</p> <p>Provide feedback on the assessment</p>	<p>The assessor must provide advice to the candidate about the outcomes of the assessment process. This includes providing the candidate with:</p> <ul style="list-style-type: none"> • clear and constructive feedback on the assessment decision • information on ways of overcoming any identified gaps in competency revealed by the assessment • the opportunity to discuss the assessment process and outcome • information on potential pathways • information on reassessment and the appeals process.
<p>Step 6</p> <p>Record and report the result</p>	<p>The assessor must:</p> <ul style="list-style-type: none"> • record the assessment outcome according to the policies and procedures of the RTO • maintain records of the assessment procedure, evidence collected and the outcome according to the policies and procedures of the RTO • maintain the confidentiality of the assessment outcome • organise the issuing of qualifications and/or Statements of Attainment according to the policies and procedures of the RTO.
<p>Step 7</p> <p>Review the assessment process</p>	<p>On completion of the assessment process, the assessor must:</p> <ul style="list-style-type: none"> • review the assessment process • report on the positive and negative features of the assessment to those responsible for the assessment procedures • if necessary, suggest to appropriate personnel in the RTO ways of improving the assessment procedures.
<p>Step 8</p> <p>Participate in the reassessment and appeals process</p>	<p>The assessor must:</p> <ul style="list-style-type: none"> • provide feedback and counsel the candidate, if required, regarding the assessment outcome or process, including guidance on further options • provide the candidate with information on the reassessment and appeals process • report any disputed assessment decision to the appropriate personnel in the RTO • participate in the reassessment or appeal according to the policies and procedures of the RTO.

In conducting assessments of higher level competencies in the General Construction Training Package assessors must ensure that:

- **Assessment judgements are based on quality evidence**

Candidates working at higher AQF levels in the General Construction industry are responsible for complex processes, the supervision of other staff and are required to make decisions that impact on the quality of products and services provided to the community, personal and public safety and the financial viability of enterprises. As such it is essential that assessment processes deliver valid and reliable outcomes.

Assessors need to consider the risk associated with making assessment decisions and to ensure that assessment decisions are based on quality evidence. In assessing the quality of evidence, assessors need to ensure that the evidence collected is:

- *valid* - Is the evidence relevant to the Units of Competence being assessed? Does it help the assessor to infer competence? Is the evidence necessary?
- *accurate* - Is the evidence free from error? What degree of uncertainty in the evidence can be tolerated?
- *consistent* - Is the evidence from one source compatible with evidence from other sources? Can any inconsistencies be explained? Does one piece of evidence disagree markedly with candidate's usual performance – should it be discounted?
- *sufficient* - Is there enough evidence to enable the assessor to confidently make a decision. If not, what additional evidence is required?
- *current* - Does the evidence describe recent performance? Has the value of the evidence been eroded over time?
- *authentic* - Can the assessor be sure that the evidence relates to the candidate and not someone else? Has the evidence been verified by a reliable third party?

- **Assessment focuses on work activities**

Workers generally use more than one Unit of Competency at a time when performing a particular role or completing a work activity. Therefore if the candidate's performance is assessed at a 'whole of job or task' level the outcomes are more realistic and meaningful and are likely to reduce the time and cost of assessment.

A whole of job or holistic approach to assessment involves the clustering of related Units of Competency to be assessed together.

- **Assessment processes address the underpinning knowledge required for competent performance in the workplace**

A substantial body of knowledge that requires considerable time for development often underpins high level competencies. This includes knowledge of:

- relevant legislation, Codes of Practice and regulations
- policies, procedures, work practices, techniques, equipment and materials
- faults and remedies

- scientific and mathematical principles and processes
- models, theories and approaches related to work and the management and operation of the workplace.

Assessors need to ensure that candidates possess the essential knowledge that underpins competence and are able to apply it in the performance of work activities.

There are a range of approaches that may be used for gathering evidence of underpinning knowledge. These include:

- questioning and structured interviews
- written and oral tests
- written and verbal reports
- problem solving exercises
- practical tasks that require application of specific underpinning knowledge
- simulations
- work related projects and reports.

- **Assessment processes are time and cost efficient**

Assessment processes must be time and cost efficient and not place an undue burden on candidates, assessors, employers and others in the workplace. The efficiency of the assessment process will be maximised when:

- assessment is viewed as a collaborative process in which the candidate is actively involved in assessment planning and the collection of evidence
- self assessment is viewed as a legitimate approach to evidence gathering
- a strategic approach is used in the collection and evaluation of evidence
- assessment processes are focused on work activities and Units of Competency are assessed in a holistic or integrated manner.

Appendix A: Recognition Process [RPL/RCC]

The following chart describes the industry-preferred process for recognising current competencies against the Competency Standards in the General Construction Training Package.

- | | |
|--|--|
| 1. Inform candidate | Candidate is provided with documents that:
describe the recognition process
outline the relevant Unit[s] of Competency from the General Construction Training Package
provide information regarding RTO policies and procedures
provide details of the assessor and dates and venue for assessment meetings. |
| 2. Plan assessment | Assessor and candidate meet to collaboratively plan the assessment process. Candidate is aware of :
Units of Competency to be assessed
the evidence requirements
the evidence to be collected by the candidate and/or the assessor
schedule of assessment meetings and dates to submit evidence. |
| 3. Review candidate collected evidence | Assessor reviews evidence collected and presented by the candidate. Evidence may be presented as a portfolio that includes:
relevant historical evidence eg: certificates, testimonials, work history
relevant current evidence eg: work samples, testimonials, reflective writing, third party reports. |
| 4. Evaluate evidence, and identify gaps in evidence | Assessor identifies any gaps in evidence presented by the candidate by mapping the evidence against the Units of Competency in the General Construction Training Package. |
| 5. Plan additional evidence required by assessor | Assessor and candidate plan for additional evidence to be collected, if required. This could include:
observation/demonstration of work activities
additional work samples
simulated activity
structured interview/questioning
third party reports [peers/colleagues, clients, supervisor/employer etc]
knowledge based test. |

- | | |
|--|---|
| <p>6. Judge all evidence and make assessment decision</p> | <p>Assessor must decide if appropriate quality evidence has been presented and if relevant additional evidence has been gathered to demonstrate competence against the relevant Unit[s] of Competency in the General Construction Training Package. The following rules of evidence must be applied:</p> <ul style="list-style-type: none"> validity sufficiency accuracy authenticity currency consistency. |
| <p>7. Discuss assessment decision with candidate including future options</p> | <p>Assessor and candidate discuss the outcomes of the recognition process including:</p> <ul style="list-style-type: none"> level of recognition obtained by the candidate strengths and weaknesses pathways including training, job rotation, additional experience, mentoring opportunities re-assessment and appeals processes. |
| <p>8. Record and report formal outcome following RTO procedures</p> | <p>Assessor completes relevant paperwork required for:</p> <ul style="list-style-type: none"> the purpose of issuing qualifications and Statements of Attainment auditing purposes. |

Appendix B – Contact Details

Contact details for the National Network of Building and Construction Industry Training Advisory Bodies are listed below:

State or Territory	Organisation	Contact Details
National/ Victoria	Construction Training Australia PO Box 576 Carlton South, VIC, 3053	Mr Ray Hutt Chief Executive Officer Tel. No: 03 9654 1333 Fax. No: 03 9654 1933 Email: info@nbcitc.com.au
New South Wales	Construction Industry Training Advisory Board (NSW) PO Box 1925 Hornsby Westfield NSW, 1635	Mr Douglas Greening Chief Executive Officer Tel No.: 02 9987 4027 Fax No.: 02 9987 4072 Email: douglasg@citab.com.au
Queensland	Construction Training Queensland PO Box 3294 West End, QLD, 4101	Mr Greg Shannon General Manager Tel. No.: 07 3846 8700 Fax No.: 07 3846 5067 Email: info@ctq.com.au
Northern Territory	Major Industries Training Advisory Board GPO Box 1610 Darwin, NT, 0801	Mr Gil Court Executive Director Tel No.: 08 8981 0077 Fax No.: 08 8941 7470 Email: mitac@mitac.org.au
Western Australia	Building and Construction Industry Training Council (Inc) PO Box 206 Leederville, WA, 6903	Ms Anna Blackwell Executive Director Tel. No.: 08 9481 1511 Fax No.: 08 9481 3303 Email: anna@bcitcwa.com.au
South Australia	Construction Industry Training Board (SA) 5 Greenhill Road Wayville, SA, 5034	Mr Douglas Strain Chief Executive Officer Tel. No.: 08 8172 9500 Fax No.: 08 8172 9501 Email: citb@citb.org.au

Tasmania	Tasmanian Building and Construction Industry Board PO Box 105 Sandy Bay, TAS, 7006	Mr Peter Coad Executive Director Tel. No.: 03 6223 7804 Fax No.: 03 6234 6327 Email: email@tbcitb.com.au
Australian Capital Territory	ACT Building and Construction Industry Training Council PO Box 882 Dickson, ACT, 2602	Mr Vince Ball Executive Officer Tel. No.: 02 6241 3977 Fax No.: 02 6241 3262 Email: vince.b@austarmetro.com.au

Appendix C – Assessment Resources

General Resources

The key resource Training Package for Assessment and Workplace Training *is available from:*

Business Services Training Australia
 Leve 7
 163 Eastern Road
 Suth Melbourne VIC 3205
 Telephone: (03) 9824 0866
 Fax: (03) 9824 0877
 Website: <http://www.nawtb.com.au>
<http://www.bsitab.org>

Australian Training Products Ltd
 Level 25
 150 Lonsdale Street
 Melbourne, VIC 3000
 PO Box 5347BB
 Melbourne 3001
 Telephone: (03) 9655 0600
 Fax: (03) 9639 4684
 Website: <http://www.atpl.net.au>
 E mail: sales@atpl.net.au

Specific Assessment Resources

Assessment instrument design

Hagar, P., Athanasou, J. and Gonczi, A., 1994, *Assessment Technical Manual*, Australian Government publishing Service, Canberra.

VETASSESS and Western Australian Department of Training and Employment, 2000, *Designing Tests – Guidelines for designing knowledge based tests for Training Packages*.

Vocational Education and Assessment Centre, 1997, *Designing Workplace Assessment Tools, A self-directed learning program*, NSW TAFE.

Manufacturing Learning Australia, 2000, *Assessment solutions*, Australian Training products, Melbourne.

Training Package Assessment Materials Project Products, 2001, DETYA

- *Assessing high level competencies*
- *Skills Recognition.*

Assessor training

Green, M., Moritz, R., Moyle, K. and Vale, K., 1997, *Key competencies professional development Package*, Department for Education and Children's Services, South Australia.

Australian Committee on Training Curriculum (ACTRAC), 1994, *Assessor training program – learning materials*, Australian Training products, Melbourne.

Australian Training Products Ltd, *Assessment and Workplace Training, Training Package – Toolbox*.

Victorian TAFE Association, 2000, *The professional development CD: A learning tool*, VTA, Melbourne.

Australian National Training Authority, *A Guide for Professional Development*.

Australian National Training Authority, *Facilitator Packs for Certificate IV in Assessment and Workplace Training*.

Australian National Training Authority, *Facilitator's Pack for Train Small Groups and Assessment*.

Australian National Training Authority, *Facilitator's Pack for Certificate IV (BSZ405A – BSZ408A)*.

Australian National Training Authority, *Learners Packs for Certificate IV in Assessment and Workplace Training*.

Australian National Training Authority, *Learner's Pack for Assessment (BSZ401A – BSZ403A)*.

Australian National Training Authority, *Learner's Pack for Certificate IV (BSZ401A – BSZ408A)*.

Australian National Training Authority, *Learner's Pack for Assessment with Assessment Competency Standards*.

Australian National Training Authority, *Learner's Pack for Certificate IV with Certificate IV Competency Standards*.

Australian National Training Authority and also the National Assessors and Workplace Trainers Body.

Training Package Assessment Materials Project Products, 2001, DETYA

- *Kit to support assessor training.*

Conducting assessments

Bloch, B. and Thomson, P., 1994, *Working towards best practice in assessment: A case study approach to some issues concerning competency-based assessment in the vocational education and training sector*, NCVER, Adelaide.

Docking, R., 1991, *An A–Z of assessment myths and assessment in the workplace, Competence assessment briefing series*, No. 4, Employment Department, Perth, Western Australia.

Hawke, Geof, 1996, *Integrating assessment of learning outcomes*, Assessment Centre for Vocational Education, Sydney.

Hawke, Geof, 1995, *Work-based learning: advice from literature*, Assessment Centre for Vocational Education, Sydney.

National Assessors and Workplace Trainers Body, *Putting it into practice* [Training Package Implementation Guide].

Parsloe, E., 1992, *Coaching, mentoring and assessing: A practical guide to developing competence*, Kogan Page, London.

Rumsey, David, 1993, "Practical issues in workplace assessment" in *National Assessment Research Forum: A forum for research into competency-based assessment*. [VEETAC Competency Based Training Working party Assessment Steering Group], NSW TAFE Commission, Sydney.

Rumsey, David, 1994, *Assessment practical guide*, Australian Government Publishing Service, Canberra.

Training Package Assessment Materials Project Products, 2001, DETYA

- *Skills Recognition*

Evidence gathering methods

Australian National Training Authority, 1998, *A new assessment tool*, ANTA, Melbourne.

Gonczi, A. (ed.), 1992, *Developing a competent workforce: adult learning strategies for vocational education and training*, TAFE National Centre for Research and Development, Adelaide.

Kearney, Paul, 1992, *Collaborative assessment techniques*, Artemis, Tasmania.

National Assessors and Workplace Trainers Body, *The evidence resource kit* – containing language, literacy and numeracy video and CD ROM –

National Assessors and Workplace Trainers Body, *The evidence workbooks*

Training Package Assessment Materials Project Products, 2001, DETYA

- *Assessing high level competencies*

- *Skills Recognition*
- *Assessment approaches in small workplaces.*

Assessment system design

National Centre for Vocational Education and Research, 1996, *Integrating assessment: removing the on the job/off the job gap*, Conference papers from 4-6 June, Western Australian Department of Training.

OTFE, 1998, *Demonstrating best practice in VET project – assessment systems and processes*, Victoria.

Toop, L., Gibb, J and Worsnop, P., *Assessment system designs*, Australian Government Publishing Service, Canberra.

Wilson, P., 1993, *Integrating workplace and training system assessments*, Testing Times Conference, NCVER, Sydney.

Managing assessment systems

Western Australia Department of Training and VETASSESS, 1998, *Kit for Skills Recognition Organisations*, WADTE, Perth.

Field, I., 1995, *Managing organisational learning*, Longman, Melbourne.

Recognition of Current Competency/ Recognition of Prior Learning

Recognition and Assessment Centre, 1994, *New place: Same Skills. A guide for people from non-English speaking backgrounds*, Office of Multicultural Affairs, DEET.

Recognition and Assessment Centre, *A Flexible Approach to Recognition Practices: RPL as a Framework*, Melbourne.

Recognition and Assessment Centre, PO Box 299, Somerton, Vic 3062, Telephone (03) 9254 3000.

Training Package Assessment Materials Project Products, 2001, DETYA

- *A guide to quality assuring assessment*
- *Assessment using partnership arrangements.*

Competency Standards and their Structure

What are Competency Standards?

The broad concept of competency is related to realistic work practices expressed as an outcome that can be understood by all people in the workplace as well as by trainers and assessors. It is important that the meaning of competency is interpreted and understood in the same way by different users, and in different situations.

Competency comprises specified knowledge and skills relevant to an industry, and the application of that knowledge and skills to the standard of performance required in the workplace.

ANTA's definition of competency encompasses several features.

‘The concept of competency focuses on what is expected of an employee in the workplace rather than the learning process, and embodies the ability to transfer and apply skills and knowledge to new situations and environments’.

An element of the Training Package is the Competency Standard, which is made up of a number of Units of Competency. Each Unit of Competency has a Title, Unit Descriptor, Elements, Performance Criteria, a Range Statement and an Evidence Guide.

Unit Title

The Unit Title is a succinct statement of the broad area of competency covered by the unit and is expressed in terms of the outcome.

Unit Descriptor

The Unit Descriptor expands, as necessary, on the title of the unit to accurately and clearly reflect the complete purpose and intent of the unit.

Elements of Competency

Elements of Competency are the basic building blocks of the unit. They describe, in terms of outcome, the significant functions and tasks that a person in a particular area of work is able to perform.

Performance Criteria

The Performance Criteria specify all the relevant tasks, roles, skills, and applied knowledge and understanding that demonstrate competent performance.

Range Statement

The Range Statement links the required knowledge and organisational and technical requirements to a context. It describes any contextual variables that will be used or encountered when applying the competency in work situations.

Evidence Guide

The Evidence Guide specifies the evidence required to demonstrate competency of the Unit of Competency. The actual assessment should be conducted in the workplace and/or training environment. The Evidence Guide provides reliable and succinct information about how the quality and level of performance could be determined. The evidence must relate directly to the Elements, Performance Criteria and Range Statement.

The Evidence Guide includes the following advice:

- Clear statements about the assessment process that direct the focus of the individual, the trainer and the assessor to the holistic nature of competency and the link to the Performance Criteria and underpinning knowledge. The Evidence Guide specifically indicates evidence demonstrating that the competent person can deal with unexpected contingencies beyond the usual routine.
- The Evidence Guide details the specific products, materials or outcomes that must be available to demonstrate competency. Other Units of Competency that can or should be jointly assessed are indicated. It also deals with any specific issues about the context of assessment; whether it must be assessed under particular workplace conditions and what conditions a valid simulated environment should meet. It may also include a specific statement of the resource implications, for example, access to particular equipment, infrastructure or situations.

The Evidence Guide may cover consistency in performance to indicate any requirement to demonstrate competency over time in a number of contexts and involving a range of evidence.

Key Competencies must be identified in the Competency Standard within each Unit of Competency, or at the qualification level. The Mayer Committee has defined seven Key Competencies underpinning successful activity in life and work. These are:

- collecting, analysing and organising information;
- communicating ideas and information;
- planning and organising activities;
- working with others in teams;
- solving problems;
- using mathematical ideas and techniques;
- using technology.

They have three levels of performance that should be specified when identifying where they apply in industry competencies.

Integration of the Key Competencies within Training Packages

The Key Competencies are general capabilities prepared by the Mayer Committee in *putting Education to Work: The Key Competencies report* (Mayer 1992). They were described in the Mayer report as being fundamental to the transfer and application of learning and were defined as a set of capabilities that enable people to transfer to the workplace knowledge and skills developed in classrooms and other learning situations.

ANTA has recognised the critical role of the Key Competencies in ensuring that the Australian work force is equipped with the skills necessary to effectively participate in current and emerging forms of work organisation. ANTA specifies that all Training Packages 'require the effective integration of key competencies'.

The seven Key Competencies identified in the Mayer (1992) report are described below.

1. Collecting, analysing and organising information

The capacity to locate, sift and sort information in order to select what is required and to present it in a useful way, and evaluate both the information itself and the sources and methods used to collect it.

2. Communicating ideas and information

The capacity to communicate effectively with others using the range of spoken, written, graphic and other non-verbal means of expression.

3. Planning and organising activities

The capacity to plan and organise one's own work activities, including making good use of time and resources, sorting out priorities and monitoring one's performance.

4. Working with others and in teams

The capacity to interact effectively with other people both on a one-to-one basis and in groups, including understanding and responding to the needs of a client and working effectively as a member of a team to achieve a shared goal.

5. Solving problems

The capacity to apply problem-solving strategies in purposeful ways, both in situations where the problem and the solution are clearly evident and in situations requiring creative thinking and a creative approach to achieve a desired outcome.

6. Using mathematical ideas and techniques

The capacity to use mathematical ideas, such as number and space, and techniques such as estimation and approximation, for practical purposes.

7. Using technology

The capacity to apply technology, combining the physical and sensory skills needed to operate equipment with the understanding of scientific and technological principles needed to explore and adapt systems.

Key Competencies are essential for effective participation in the emerging patterns of work and work organisation. They focus on the capacity to apply knowledge and skills in an integrated way in work situations. Key Competencies are generic, in that they apply to work generally rather than to work in particular occupations or industries. (Mayer 1992, p. 5)

Levels of Performance

The Mayer committee (1992, p.13) established three levels of performance in each of the seven Key Competencies. These are stand-alone levels and **do not** correspond to levels in the Australian Qualifications Framework (AQF).

Performance Levels

- **Performance Level 1** describes the competence needed to undertake activities efficiently and with sufficient self-management to meet the explicit requirements of the activity, and to make judgements about the quality of outcome against established criteria.
- **Performance Level 2** describes the competence needed to manage activities requiring the selection, application and integration of a number of elements, and to select from established criteria to judge quality of process and outcome.
- **Performance Level 3** describes the competence needed to evaluate and reshape processes, to establish and use principles in order to determine appropriate ways of approaching activities, and to establish criteria for judging quality of process and outcome.

In simple terms:

- Level 1 is concerned with the level of competence needed to **undertake** tasks effectively;
- Level 2 with the ability to **manage** tasks; and
- Level 3 with concepts of **evaluating and reshaping** tasks.

Although the levels are designed and used within Competency Standards to indicate levels of complexity, the current definitions are problematic. The industry or workplace context is generally seen as far more indicative in determining the degree of difficulty of the application of the Key Competencies than the prescribed and abstracted performance levels above.

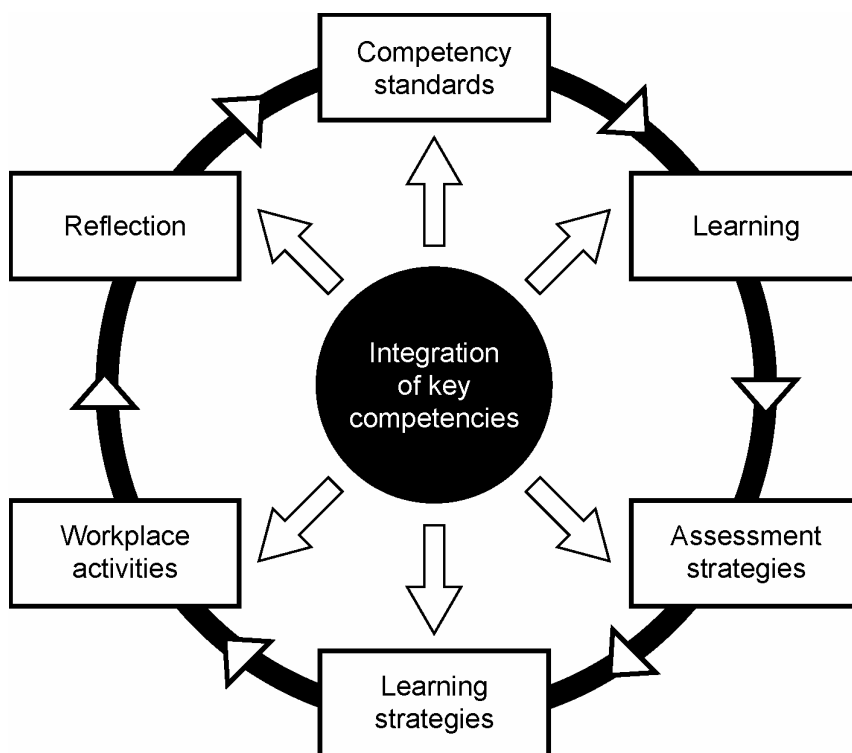
Where the Key Competencies are explicitly embedded within the Units of Competence, the level of performance for the group of Key Competencies involved will align to the AQF level for that unit. This will be more readily understood by those delivering training and/or assessment of the unit rather than the performance levels outlined in the units themselves.

Implications of Key Competencies for Vocational Education and Training

The skills identified by the Mayer committee describe capabilities commonly used as key selection criteria by employers. They underpin the ability of employees to adapt to technological, organisational, societal and functional change.

The Key Competencies need to be explicitly developed and applied in vocational education and training, both in delivery and assessment, in order to ensure that staff members have the flexibility and adaptability to respond effectively to current and future directions and challenges within Australian workplaces. This means that the Key Competencies cannot be considered as supplementary to vocational competence, they are integral to it. They are part of good learning and are essential to good practice. It is, therefore, critical that Training Package developers, training program developers, teachers and trainers deliberately incorporate the Key Competencies into the design, customisation, delivery and assessment of vocational education and training programs.

A deliberate effort is required to incorporate the Key Competencies explicitly into every stage of the training cycle, represented in figure 1, through Competency Standard and Training Package development, and through delivery, learning, assessment and reflection.



The text below is provided to developers for information and/or explanatory purposes and is not intended to be inserted in the published version of a Training Package.

Key Competencies – Current Approach

The current approach to representing Key Competencies in the Evidence Guide of Units of Competency has generally been the presentation of a table where the Key Competencies are listed together with an expected level of achievement. In some cases more specific references are made in the text of the Assessment Guidelines and/or the Evidence Guide. The approach of simply depicting a table of Key Competencies within the Evidence Guide does not do justice to the importance of integrating Key Competencies within Units of Competency. It also provides insufficient information for RTOs to make meaningful assessment of these competencies.

Following is an integrated approach to assessing Key Competencies within the context of a Unit of Competency.

Example

What processes should be applied to this Competency Standard?

A number of processes learnt throughout work and daily life are required in all jobs. Some of them are covered by the *Key Competencies*, although others may be added. The questions below highlight how these processes are applied in this Competency Standard. Following each question a number in brackets indicates the level to which the key competency needs to be demonstrated where 0 = not required, 1 = perform the process, 2 = perform and administer the process, and 3 = design, perform and administer process.

How can communication of ideas and information (1) be applied?

By discussing with the client, supervisor or colleagues the outcome of the plumbing job to be completed for the day.

How can information be collected, analysed and organised (1)?

By working according to enterprise guidelines. Information will have to be gathered about the task to be undertaken, and the job organised accordingly.

How are activities planned and organised (1)?

Carrying out the job requires organising the planning, selection and installation of plumbing materials while observing safety precautions.

How can team work (1) be applied?

By discussions with supervisor or colleagues on the job process, team work can be applied to the unit.

How can the use of mathematical ideas and techniques (1) be applied?

When the measurements are calculated and transferred, some basic mathematical techniques could be applied.

How can problem-solving skills (1) be applied?

During the planning, selection and installation of plumbing materials, problems may arise requiring innovative solutions.

How can the use of technology (0) be applied?

Use of technology is not required in this standard.

Building Surveying Competency Standards

Code	Title
BCGSV5001A	Assess the construction of domestic scale buildings
BCGSV5002A	Evaluate materials for construction of domestic scale buildings
BCGSV5003A	Produce working drawings for residential buildings
BCGSV5004A	Apply legislation to urban development and building controls
BCGSV5005A	Apply footing and geomechanical design principles to domestic scale buildings
BCGSV5006A	Assess construction faults in residential buildings
BCGSV5007A	Undertake site surveys and set out procedures to building projects
BCGSV5008A	Apply building control legislation to building surveying
BCGSV5009A	Assess the impact of fire on building materials
BCGSV5010A	Interact with clients in a regulated environment
BCGSV5011A	Apply building codes and standards to residential buildings
BCGSV5012A	Assess timber framed designs for one and two storey buildings
BCGSV5013A	Apply principles of energy efficient design to buildings
BCGSV5014A	Apply building surveying procedures to residential buildings
BCGSV5015A	Assess structural requirements for domestic scale buildings
BCGSV6001A	Assess the construction of buildings up to 3 storeys
BCGSV6002A	Produce working drawings for buildings up to 3 storeys
BCGSV6003A	Assess construction faults in buildings up to 3 storeys
BCGSV6004A	Apply footings and geomechanical design principles to buildings up to 3 storeys
BCGSV6005A	Evaluation of services layout and connection methods for residential and commercial buildings up to 3 storeys
BCGSV6006A	Evaluate the use of concrete for residential and commercial buildings up to 3 storeys
BCGSV6007A	Assess structural requirements for buildings up to 3 storeys
BCGSV6008A	Apply building codes and standards to buildings up to 3 storeys
BCGSV6009A	Implement performance based codes and risk management principles for buildings up to 3 storeys
BCGSV6010A	Apply fire technology to buildings up to 3 storeys
BCGSV6011A	Apply legal procedures to building surveying

Building Surveying Competency Standards (continued)

BCGSV6012A	Facilitate community development consultation
BCGSV6013A	Co-ordinate asset refurbishment
BCGSV6014A	Manage and plan land use
BCGSV6015A	Analyse and present building surveying research information
BCGSV6016A	Apply building surveying procedures to buildings up to 3 storeys

Imported Units

Code	Title
BSBADM506A	Manage business document design and development
BSBCMN406A	Maintain business technology
CHCCOM3A	Utilise specialist communication skills
CHCCOM4A	Develop, implement and promote effective communication
ICAITU128A	Operate a personal computer
ICAITU129A	Operate a word processing application
ICAITU130A	Operate a spreadsheet application
ICAITU131A	Operate a database application
ICAITU133A	Send and retrieve information over the internet using browsers and email
BSX154L606	Manage human resources
LGAPLEM502A	Apply ecologically sustainable development principles to the built environment
LMFFT4010A	Identify and calculate production costs

BCGSV5001A**Assess the construction of domestic scale buildings****Unit Descriptor**

This unit specifies the competency required to cover the construction of domestic scale buildings and those of a similar loading, construction and size such as small industrial, commercial or public buildings.

It includes evaluation and identification of appropriate construction methods, identification of required standards and services according to and with relevant legislation, design and maintenance specifications.

Element**Performance Criteria**

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| 1. Research for compliance with building and planning legislation | 1.1 Effects of planning and construction legislation are investigated, interpreted and communicated to others throughout design and construction of the building project

1.2 Planning and construction effects of the Building Code of Australia and construction requirements of the relevant Australian Standards are researched and documented

1.3 Effects of State/Territory, local government and service supply authorities legislation on design and construction are researched and documented

1.4 Methods of foundation assessment and classification are identified and evaluated |
| 2. Record all relevant planning and construction information | 2.1 Building planning and construction information is determined and recorded using appropriate industry terminology and symbols

2.2 All salient features of a site, sufficient for the preparation of design and construction documents are recorded on the plan

2.3 |
| 3. Investigate and evaluate a site for establishment, preparation and excavation requirements | 3.1 Salient features of a building site and methods of soil investigation, assessment and clarification are appraised and recorded on documents available to site services

3.2 Principles and practices of site establishment and different types and uses of builders' plant and equipment are identified and evaluated |

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|---|--|
| 4. Determine trade sequencing | <p>4.1 Trade sequencing appropriate to the different forms of residential construction are identified and evaluated</p> <p>4.2 Structural systems commonly used in domestic scale buildings are described and sketched</p> <p>4.3 Types and principles of construction relevant to the domestic design and construction are identified and evaluated according to relevant legislation, including Building Code of Australia (BCA), and construction standards and practices</p> |
| 5. Evaluate and apply cyclone resistant construction to buildings | <p>5.1 Cyclone category areas and code specification are defined</p> <p>5.2 Terrain categories and their application to cyclone design are defined</p> <p>5.3 Methods of 'tie down' construction are identified from BCA</p> <p>5.4 Applications of structural bracing principles are identified in specifications</p> <p>5.5 Alternative approaches of construction in cyclone areas are evaluated in accordance with BCA</p> |
| 6. Evaluate construction standards and practices | <p>6.1 Standards and practices for claddings, linings, finishes and coatings associated with domestic scale buildings are identified and evaluated</p> <p>6.2 Standards and practices of window, door and joinery fabrication and installation are identified and evaluated</p> <p>6.3 Basic principles and integration of building services into the building are identified and evaluated</p> <p>6.4 Structural principles of loads, forces, stresses and strains applied in the design and construction of single storey domestic scale buildings are identified and evaluated</p> <p>6.5 Types, principles, standards and practices for the installation of the services in single and two storey residential dwellings are identified and evaluated</p> <p>6.6 Types, principles, construction standards and practices of relative to domestic stair construction, balustrading and hand rails are identified and evaluated</p> |

Range Statement

The Range Statement provides advice to interpret the scope and context of this unit of competency allowing for differences between enterprises and workplaces. It relates to the unit as a whole and facilitates holistic assessment. The following variables may be present for this particular unit:

Unit scope

- Construction principles for domestic scale buildings are to include but not be limited to the evaluation and identification of construction methods, standards and services in compliance with relevant legislation, design specifications, maintenance specifications.
- Legislative requirements are limited to those relevant to domestic scale buildings (or those similar in characteristics in terms of loading, construction and size and may include small industrial, commercial and public buildings).
- Domestic scale building projects requiring applying principles of construction are to include but not be limited to provision of site access/facilities, work schedules, project milestones and the calculation and processing of application or inspection fees.
- Reporting systems in accordance with organisational, legislative and quality assurance procedures are to include desk based assessment and may include site-based assessment.
- Types, practices and standard construction may include but not be limited to:
 - Footing systems
 - Termite control
 - Structural floor systems
 - Structural wall systems
 - Structural roof systems
 - Openings (floors, walls, ceilings, roofs)
 - Damp proof courses
 - Membranes
 - Flashings
 - Sarking and insulations
 - Wall and floor cladding
 - Floor, wall and ceiling linings including; fire rated systems and acoustic system installations
 - Wet area floor detailing
 - Floor, wall and ceiling finishes and coatings
 - Timber and aluminium framed windows and doors
 - Mouldings
 - Cupboard joinery and finishes
 - Paving
 - Surface drainage
 - Roof water plumbing and drainage
 - Sewerage plumbing and drainage
 - Electricity
 - Gas
 - Telephone
 - Mechanical ventilation
 - Heating and cooling systems
 - Communication systems

Range Statement

Unit context

- Competency requires the demonstration of research, analysis, evaluation and reporting skills within the context of relevant legislation, the Building Code of Australia and Australian Standards.

Evidence Guide

The Evidence Guide identifies the critical aspects, knowledge and skills to be demonstrated to confirm competency for this unit. This is an integral part of the assessment of competency and should be read in conjunction with the Performance Criteria and Range Statement.

What critical aspects of evidence are required to demonstrate competency in this unit?

- Compliance with occupational health and safety regulations applicable to workplace operations
- Application of organisational management policies and procedures including quality assurance requirements where appropriate
- Application of the principles of construction, standards and services, design and maintenance specifications, the associated reporting of data, findings, recommendations and strategies for at least one (1) domestic scale building project or equivalent in compliance with relevant legislation
- Provision of reports to appropriate body/individual as determined by the project brief
- Application of strategic plans, workplace policies and procedures
- There are no specified relationships
- Holistic assessment should be applied where appropriate to form a complete work function.

Are there any other units which should be assessed with this unit or which relate directly to this unit?

What specific knowledge is required to achieve the performance criteria?

- Processes for the interpretation of reports, working drawings and specifications
- Nature of materials and effect of performance
- Authorities and powers of a building surveyor
- Relevant national, State/Territory legislation and local government policy and procedures
- Design and construction principles of buildings
- Terminology, definitions and hazard identification
- Codes of conduct and ethics
- Research methods
- Processes for the administration and preparation of documentation

Evidence Guide

What specific underpinning skills are required to achieve the performance criteria?

These include a number of processes that are learned throughout work and life, which are required in most jobs. Some of these are covered by the national key competencies, although others may be added. The questions below highlight how these processes are applied in this competency unit. The number in brackets indicates the level to which the key competency needs to be demonstrated where (1) working within set conditions and processes, (2) management or facilitation of conditions or processes are exercised, and (3) design and/or development of conditions or process are required.

How will the candidate apply the following key competency in this unit?

The candidate will need to:

Collect, analyse and organise information	Research, analyse, organise and understand the principles of construction for domestic scale buildings plus subsequent reporting procedures. Level 2
Communicate ideas and information	Communicate and negotiate ideas and information to enable confirmation of work requirements and legislation, translation of principles of construction for domestic scale buildings. Level 2
Plan and organise activities	Plan and organise activities including the planning of analytical processes, the stages of trade sequencing appropriate to different forms of project construction. Level 2
Work with others and in a team	Work with others and in a team by recognising dependencies and using co-operative approaches to optimise satisfaction and productivity. Level 2
Solve problems	Establish analytical processes, including diagnostic processes, which anticipate and allow for risks, cater for both direct and indirect evidence, avoid or minimise reworking and avoid wastage. Level 3
Use mathematical ideas and techniques	Use mathematical ideas and techniques to correctly complete measurements, calculate analytical requirements, establish realistic sample criteria, quantify, survey and present analytical results. Level 2
Use technology	Use workplace technology related to information gathering and analysis, diagnosis, information research, report writing, administration and management procedures. Level 2

Evidence Guide

In what context should assessment occur?

- 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 defined by the Range Statement.
- Assessment must take account of the endorsed assessment guidelines in the Construction Training Package.

What methods of assessment should apply?

- Assessment of this competency is most likely to be project related under real or simulated conditions and require portfolios or other forms of indirect evidence of process. Direct evidence may include certification of compliance on the final outcome or authorisation for commencement by a competent authority.
- Assessment must confirm the inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.
- Assessment should reinforce the integration of the key competencies.

What are the specific resource requirements for this unit?

- A situation, real or realistically simulated, requiring principles of construction to be applied to domestic scale buildings.
- The learner and trainer should have access to appropriate documentation and resources normally used in the workplace.

BCGSV5002A**Evaluate materials for construction of domestic scale buildings****Unit Descriptor**

This unit specifies the competency required to evaluate and select materials for domestic scale buildings.

This unit relates to a range of building materials including concrete, glass, timber, plastic and plasterboard in accordance with the Building Code of Australia (BCA).

Element**Performance Criteria**

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| 5. Analyse building materials | 1.5 Properties of materials are analysed and selected for performance |
| | 1.6 Quality standards and performance of materials are identified according to BCA |
| | 1.7 Methods of testing materials are recorded |
| | 1.8 Visual characteristics of materials are identified and recorded |
| | 1.9 Compatibility between materials and their performance are identified and documented |
| 6. Investigate suitability of materials for typical domestic scale buildings | 2.4 Samples of commonly used construction materials are identified and selected for investigation according to their purpose and standard work practices |
| | 2.5 Materials identified as structurally adequate are selected in accordance with BCA |
| | 2.6 Materials of a required fire resistance are selected in accordance with BCA |
| | 2.7 Materials based on cost effectiveness are selected in accordance with manufacturers' specifications |
| | 2.8 Alternative materials for a given application are selected according to BCA |

Range Statement

The Range Statement provides advice to interpret the scope and context of this unit of competency allowing for differences between enterprises and workplaces. It relates to the unit as a whole and facilitates holistic assessment. The following variables may be present for this particular unit:

Unit scope

- Evaluation and identification of construction materials are to include environmental considerations and adherence to legislative requirements for the Building Codes of Australia
- Adherence to legislative requirements is limited to domestic scale buildings (similar in characteristics to those of residential dwellings in terms of loading, construction and size and may include small industrial, commercial and public buildings)
- Domestic scale building projects requiring evaluation are to include but not be limited to provision of site access/facilities, work schedules and project milestones
- Domestic scale buildings are to include existing and proposed structures
- Standard specifications may include but not be limited to industry standard specifications and may be preliminary/outline specifications, developed specifications or detailed specifications (addressing specific components such as structural or other requirements)
- Reporting systems in accordance with organisational, legislative and quality assurance procedures are to include desk based assessment and may include site-based assessment
- Materials may include but not be limited to:
 - Masonry, metal, protective and fire rated protective coatings, timber, timber products, glass, plastic, concrete, admixtures, concrete products, pre-stressed structural concrete components, clay products, mortar for load bearing walls, plaster and plasterboard, adhesives and sealants and new relevant propriety materials
- Types of structures may include but not be limited to:
 - Residential structures with concrete skeleton and slabs
 - Residential structures with steel and metallic column and member construction
 - Residential structures with timber and other composite material construction
 - Residential structures constructed from non-metallic materials.

Unit context

- Competency requires the demonstration of research, analysis and evaluation for the choice and application of building materials and subsequent reporting skills within the context of relevant legislation, the Building Code of Australia and Australian Standards.

Evidence Guide

The Evidence Guide identifies the critical aspects, knowledge and skills to be demonstrated to confirm competency for this unit. This is an integral part of the assessment of competency and should be read in conjunction with the Performance Criteria and Range Statement.

What critical aspects of evidence are required to demonstrate competency in this unit?

- Compliance with occupational health and safety regulations applicable to workplace operations.
- Application of organisational management policies and procedures including quality assurance requirements where appropriate.
- Evaluation, choice and application of various building materials, their subsequent maintenance, the associated reporting of data, findings, recommendations and strategies for at least one (1) domestic scale building project or equivalent in compliance with relevant legislation.
- Provision of reports to appropriate body/individual as determined by the project brief.
- Application of strategic plans, workplace policies and procedures
- There are no specified relationships.
- Holistic assessment should be applied where appropriate to form a complete work function.

Are there any other units which should be assessed with this unit or which relate directly to this unit?

What specific knowledge is required to achieve the performance criteria?

- Processes for the interpretation of reports, working drawings and specifications.
- Nature of materials and effect of performance.
- Grading processes and grade markings used to categorise timber and timber products.
- Authorities and powers of a building surveyor.
- Relevant national, State/Territory legislation and local government policy and procedures.
- Environmental issues impacting on material selection.
- Structural and design principles for buildings.
- Behaviour of structural members undergoing stress, strain, compression, bending or combined actions.
- Terminology, definitions and hazard identification.
- Research methods.
- Processes for the administration and preparation of documentation.

Evidence Guide

What specific underpinning skills are required to achieve the performance criteria?

These include a number of processes that are learned throughout work and life, which are required in most jobs. Some of these are covered by the national key competencies, although others may be added. The questions below highlight how these processes are applied in this competency unit. The number in brackets indicates the level to which the key competency needs to be demonstrated where (1) working within set conditions and processes, (2) management or facilitation of conditions or processes are exercised, and (3) design and/or development of conditions or process are required.

How will the candidate apply the following key competency in this unit?

The candidate will need to:

Collect, analyse and organise information	Research, analyse, organise and understand the evaluation of materials for domestic scale buildings plus subsequent reporting procedures. Level 2
Communicate ideas and information	Communicate and negotiate ideas and information to enable confirmation of work requirements, legislation and translation of the evaluation of materials for domestic scale buildings. Level 2
Plan and organise activities	Plan and organise activities including the planning of analytical processes, the evaluation and selection of building materials for domestic scale buildings. Level 2
Work with others and in a team	Work with others and in a team by recognising dependencies and using co-operative approaches to optimise satisfaction and productivity. Level 2
Solve problems	Establish analytical processes, including diagnostic processes, which anticipate and allow for risks, cater for both direct and indirect evidence, avoid or minimise reworking and avoid wastage. Level 3
Use mathematical ideas and techniques	Use mathematical ideas and techniques to correctly complete measurements, calculate analytical requirements, establish realistic sample criteria, quantify, survey and present analytical results. Level 2
Use technology	Use workplace technology related to information gathering and analysis, diagnosis, information research, report writing, administration and management procedures. Level 2

Evidence Guide

In what context should assessment occur?

- 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 defined by the Range Statement.
- Assessment must take account of the endorsed assessment guidelines in the Construction Training Package.

What methods of assessment should apply?

- Assessment of this competency is most likely to be project related under real or simulated conditions and require portfolios or other forms of indirect evidence of process. Direct evidence may include certification of compliance on the final outcome or authorisation for commencement by a competent authority.
- Assessment must confirm the inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.
- Assessment should reinforce the integration of the key competencies.

What are the specific resource requirements for this unit?

- A situation, real or realistically simulated, requiring evaluation of materials to be applied to domestic scale buildings.
- The learner and trainer should have access to appropriate documentation and resources normally used in the workplace.

BCGSV5003A**Produce working drawings for residential buildings****Unit Descriptor**

This unit specifies the competency required to read and interpret plans/specifications and to undertake basic architectural drafting of conventional residential structures.

It includes the production of two and three dimensional drawings in accordance with standard industry drawing practice and to a level suitable for building permit approval.

Element**Performance Criteria**

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| 7. Use drawing instruments, equipment and materials to set out drawings | 1.10 Drawing instruments, equipment and materials are used to produce scaled line work, simple geometric shapes, lettering, numbering and the correct setting out of drawings |
| 8. Produce drawings at varying scales using architectural conventions for linework, lettering and symbols | 2.9 Linework is applied in a range of different types and media in accordance with standard industry drawing practice

2.10 Hand letter text is formed in a variety of formats

2.11 Different drawing scales are identified and used

2.12 Graphic symbols are identified and used

2.13 Orthographic projection in building drafting applications are drawn accurately to scale

2.14 Notations and dimensions are added to complete drawing |
| 9. Read and interpret plans and specifications for a single storey dwelling | 5. Inter-relationships between plans and specifications are identified and interpreted

5. Location and interpretation of key information is identified according to drawing and specifications |
| 10. Draw three dimensional sketches | 10.1 Annotated 3D sketches of various building components using parametric (eg isometric) or perspective techniques are produced to specifications |
| 11. Produce building permit approval drawings | 11.1 Building permit approval drawings including detailed specification notes for residential dwellings are completed to architectural conventions. |

Range Statement

Range Statement provides advice to interpret the scope and context of this unit of competency allowing for differences between enterprises and workplaces. It relates to the unit as a whole and facilitates holistic assessment. The following variables may be present for this particular unit:

Unit scope

- Input to the production of working drawings for residential buildings is to include but is not limited to:
 - Two (2) and three (3) dimensional drawings
 - Plan and specification interpretation
 - Single storey dwellings (elementary or conventional)
 - Building Codes of Australia class 1 and 10 buildings
 - Computer generated or paper based presentations
 - Site plans, floor plans, sections, elevations, projections, details, general notes, construction notes, area analysis, services, location or neighbouring buildings
- Production of building drawings may include but not be limited to:
 - Drawing protocols which include, symbols, lettering standards, standard units of measurement, paper size, scale, numbering, legends, abbreviations
 - Land surveyor plans, levels and contours, certificate of title to land, excavation cut and fill, retaining walls, banks and landscaping, sewerage connection and easements plan, stormwater connection and easements plan, general plumbing services plan, electrical connections plan, soil classification and tests, base structure – timber and masonry, wall construction, timber and masonry, internal and external wall claddings, roof construction, upper floor construction, chimney construction, composite construction (e.g. steel and timber), complex roof and wall shapes, flashings and box gutters, stairs, glazing including bay window construction, window and door schedules, insulation and sarking, cathedral ceilings, large span timber beams and connections (including glue laminated beams), joinery, conversion of plans and specifications to architectural/building detail
 - Application of Australian Standards which include:
 - AS 3700 – masonry
 - AS 1100 – architectural drawing and supplement
 - AS 2870 – residential slabs and footings
 - AS 1684 – residential timber framing

Unit context

- Competency requires the demonstration of two and three dimensional drawing skills and compliance within the context of relevant legislations, the Building Code of Australia and Australian Standards.

Evidence Guide

The Evidence Guide identifies the critical aspects, knowledge and skills to be demonstrated to confirm competency for this unit. This is an integral part of the assessment of competency and should be read in conjunction with the Performance Criteria and Range Statement.

What critical aspects of evidence are required to demonstrate competency in this unit?

- Compliance with occupational health and safety regulations applicable to workplace operations
- Application of organisational management policies and procedures including quality assurance requirements where applicable
- Production of two and three dimensional drawings for residential building projects, including at least one orthographic, one isometric and one perspective drawing
- Provision of drawings to appropriate body/individual as determined by the project brief
- Application of strategic plans, workplace policies and procedures
- There are no specified relationships
- Holistic assessment should be applied where appropriate to form a complete work function

Are there any other units which should be assessed with this unit or which relate directly to this unit?

What specific knowledge is required to achieve the performance criteria?

- Processes for the interpretation of reports, working drawings and specifications
- Drafting and drawing protocols
- Relevant national, State/Territory legislation and local government policy and procedures
- Structural, design and construction principles of buildings
- Terminology, definitions and fault identification
- Codes of conduct and ethics
- Research methods
- Processes for the administration and preparation of documentation

Evidence Guide

What specific underpinning skills are required to achieve the performance criteria?

These include a number of processes that are learned throughout work and life, which are required in most jobs. Some of these are covered by the national key competencies, although others may be added. The questions below highlight how these processes are applied in this competency unit. The number in brackets indicates the level to which the key competency needs to be demonstrated where (1) working within set conditions and processes, (2) management or facilitation of conditions or processes are exercised, and (3) design and/or development of conditions or process are required.

How will the candidate apply the following key competency in this unit?

The candidate will need to:

Collect, analyse and organise information	Research, analyse, organise and understand the application and production of working drawings for residential buildings. Level 3
Communicate ideas and information	Communicate and negotiate ideas and information to translate legislation enabling production of working drawings for residential buildings. Level 3
Plan and organise activities	Plan and organise activities including the planning of working drawings for residential buildings and analytical processes related to organisation of regulatory factors. Level 3
Work with others and in a team	Work with others and in a team by recognising dependencies and using co-operative approaches to optimise satisfaction and productivity. Level 2
Solve problems	Establish analytical processes, including diagnostic processes, which anticipate and allow for risks, cater for both direct and indirect evidence, avoid or minimise reworking and avoid wastage. Level 3
Use mathematical ideas and techniques	Use mathematical ideas and techniques to correctly complete measurements, calculate analytical requirements, scales and numbering systems, quantify, survey and present analytical results. Level 2
Use technology	Use workplace technology related to information gathering and analysis, diagnosis, information research, report writing, production of working drawings, administration and management procedures. Level 2

Evidence Guide

In what context should assessment occur?

- 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 defined by the Range Statement.
- Assessment must take account of the endorsed assessment guidelines in the Construction Training Package.

What methods of assessment should apply?

- Assessment of this competency is most likely to be project related under real or simulated conditions and require portfolios or other forms of indirect evidence of process. Direct evidence may include certification of compliance on the final outcome or authorisation for commencement by a competent authority.
- Assessment must confirm the inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.
- Assessment should reinforce the integration of the key competencies.

What are the specific resource requirements for this unit?

- A situation, real or realistically simulated, requiring working drawings for residential buildings.
- The learner and trainer should have access to appropriate documentation and resources normally used in the workplace.

BCGSV5004A

Apply legislation to urban development and building controls

Unit Descriptor

This unit specifies the competency required to research, interpret and apply appropriate land use and urban development to any conventional building project in compliance with relevant legislation and the Building Code of Australia (BCA).

Element

Performance Criteria

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| 12. Promote sustainable building and conservation practices in the community | <p>1.11 Environmental changes are determined due to land-use and building development according to the natural elements of specific localities</p> <p>1.12 Development of settlements and the evolution of urban structures for specific communities are researched, analysed and documented</p> <p>1.13 Constrains on building development sites are identified and reported according to the physical nature of environment</p> <p>1.14 Sustainable development and the benefits of conservation are recorded and promoted</p> <p>1.15 Controls on development are analysed and reported</p> |
| 13. Identify the legal requirements relating to building developments | <p>2.15 Components of land use and building legislation are identified and documented including the BCA as it applies to building developments.</p> <p>2.16 Legislation affecting forms of development, including environmental safeguards is identified and recorded</p> <p>2.17 Factors influencing safety of buildings and structures according to legislative requirements are identified and reported</p> <p>2.18 Aims and objectives of building and land-use legislation are interpreted</p> |
| 14. Determine individual and community responsibilities relating to approval applications for building and land-use developments | <p>5. Consent requirements for building and land-use approval are determined in accordance with legislative requirements</p> <p>5. Development applications are prepared in accordance with legislative requirements</p> <p>5. List of relevant authorities involved with project development is documented</p> <p>5. Development application notices and responses are identified and prepared in accordance with legislative requirements</p> <p>5. Appeal rights for individuals and community relating to building and land-use applications are identified and recorded in accordance with legislative requirements</p> |

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| 15. Interpret and apply building, land-use and related legislation | 15.1 Building and land-use legislation is applied to various classes of building in accordance with legislative requirements |
| | 15.2 Special provisions of legislation are researched, identified and recorded |
| | 15.3 Non-compliance with building, land-use and other related environmental legislation is identified and recorded |
| | 15.4 Heritage and Conservation legislation relating to building, land-use is researched, identified and recorded |
| | 15.5 Environmental health issues influencing building and land-use legislation are researched and documented |
| 16. Determine the legal responsibilities of builders and owners relative to building projects | 16.1 Responsibilities of owners/builders lodging building or land-use applications are determined in accordance with legislative requirements |
| | 16.2 Notices/orders issues with respect to applications and site safety signage requirements are identified and recorded in accordance with legislative requirements |
| | 16.3 Owner responsibility relating to construction of party walls is identified and recorded in accordance with legislative requirements |
| | 16.4 Owner responsibility relating to proposed work affecting adjoining land is identified and recorded in accordance with legislative requirements |
| 17. Apply special provisions of building and land-use legislation | 17.1 Land division requirements are identified and recorded in accordance with legislative requirements |
| | 17.2 Special requirements for major projects relating to preparation and assessment of environmental impact statements are recorded in accordance with legislative requirements |
| | 17.3 Referral to prescribed Government agencies/departments is identified and noted in accordance with legislative requirements |
| | 17.4 Land-use requirements applying to specific locations are identified and recorded in accordance with legislative requirements |
| | 17.5 Vehicle parking requirements applying to developments are identified and recorded in accordance with legislative requirements |

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| 18. Establish the system for dispute resolution | 18.1 Responsibilities of individuals under building and land-use legislation are identified and recorded in accordance with legislative requirements |
| | 18.2 Appeal rights provided for under building and land-use legislation are identified and recorded |
| | 18.3 Consequences for non-compliance with orders and notices are documented |

Range Statement

The Range Statement provides advice to interpret the scope and context of this unit of competency allowing for differences between enterprises and workplaces. It relates to the unit as a whole and facilitates holistic assessment. The following variables may be present for this particular unit:

Unit scope

- Legislation is limited to compliance with building and land-use legislation and the Building Code of Australia for the purposes of applying building controls and evaluating urban development procedures. It interrogates impacts of settlement, the physical environment and land use.
- Application of building and land use legislation may include but not be limited to:
 - Commercial environment – may be affected by rising, steady or falling markets.
 - Market indicators – perceptions of the area, type of client likely to be attracted to the market, current market in the area and absorption rates.
 - Property statistics, urban planning and local government data bases, demographic (socio-economic) data on populations in catchment areas, enterprise management reports, locality maps, cadastral maps, relevant local authority, environmental impact statements, notices/orders issued with respect to applications and site safety signage requirements.
- Reporting systems in accordance with organisational, legislative and quality assurance procedures are to include desk based assessment and may include site-based assessment.

Unit context

- Competency requires the application of legislation corresponding with urban development and building controls through research, analysis, evaluation and reporting skills in the determination of compliance within the context of relevant legislations, the Building Code of Australia and Australian Standards.

Evidence Guide

The Evidence Guide identifies the critical aspects, knowledge and skills to be demonstrated to confirm competency for this unit. This is an integral part of the assessment of competency and should be read in conjunction with the Performance Criteria and Range Statement.

What critical aspects of evidence are required to demonstrate competency in this unit?

- Compliance with occupational health and safety regulations applicable to workplace operations.
- Application of organisational management policies and procedures including quality assurance requirements where appropriate.
- Evaluation, reporting of data, findings, recommendations for and classification of at least one (1) conventional building development and in compliance with the applicable local government planning scheme for urban development and building control projects associated with relevant legislation and the BCA.
- Provision of reports to appropriate body/individual as determined by the project brief.
- Application of strategic plans, workplace policies and procedures
- There are no specified relationships.
- Holistic assessment should be applied where appropriate to form a complete work function.

Are there any other units which should be assessed with this unit or which relate directly to this unit?**What specific knowledge is required to achieve the performance criteria?**

- Processes for the interpretation of reports, working drawings and specifications.
- Authorities and powers of a building surveyor.
- Relevant national, State/Territory legislation and local government policy and procedures
- Urban zoning.
- Local market conditions
- Current home/commercial building development criteria.
- Land use management models and concepts.
- Control and appeal system.
- Socio-economic data.
- Terminology, definitions and hazard identification.
- Research methods.
- Processes for the administration and preparation of documentation.

Evidence Guide

What specific underpinning skills are required to achieve the performance criteria?

These include a number of processes that are learned throughout work and life, which are required in most jobs. Some of these are covered by the national key competencies, although others may be added. The questions below highlight how these processes are applied in this competency unit. The number in brackets indicates the level to which the key competency needs to be demonstrated where (1) working within set conditions and processes, (2) management or facilitation of conditions or processes are exercised, and (3) design and/or development of conditions or process are required.

How will the candidate apply the following key competency in this unit?

The candidate will need to:

Collect, analyse and organise information

Research, analyse, organise and understand the process for assessing compliance or urban development and building controls through the application of planning legislation plus subsequent reporting procedures.

Level 3

Communicate ideas and information

Communicate and negotiate ideas and information to enable application of planning legislation to urban development and building controls for translation of compliance issues on conventional developments.

Level 2

Plan and organise activities

Plan and organise activities including the planning of analytical processes, the assessment and strategies related to the determination of planning legislation compliance on urban development and building controls.

Level 2

Work with others and in a team

Work with others and in a team by recognising dependencies and using co-operative approaches to optimise satisfaction and productivity.

Level 2

Solve problems

Establish analytical processes, including diagnostic processes, which anticipate and allow for risks, cater for both direct and indirect evidence, avoid or minimise reworking and avoid wastage.

Level 2

Use mathematical ideas and techniques

Use mathematical ideas and techniques to correctly complete measurements, calculate analytical requirements, establish realistic sample criteria, quantify, survey and present analytical results.

Level 1

Use technology

Use workplace technology related to information gathering and analysis, diagnosis, information research, report writing, administration and management procedures.

Level 2

Evidence Guide

In what context should assessment occur?

- 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 defined by the Range Statement.
- Assessment must take account of the endorsed assessment guidelines in the Construction Training Package.

What methods of assessment should apply?

- Assessment of this competency is most likely to be project related under real or simulated conditions and require portfolios or other forms of indirect evidence of process. Direct evidence may include certification of compliance on the final outcome or authorisation for commencement by a competent authority.
- Assessment must confirm the inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.
- Assessment should reinforce the integration of the key competencies.

What are the specific resource requirements for this unit?

- A situation, real or realistically simulated, requiring application of planning legislation upon urban development and building controls.
- The learner and trainer should have access to appropriate documentation and resources normally used in the workplace.

BCGSV5005A

Apply footing and geomechanical design principles to domestic scale buildings

Unit Descriptor

This unit specifies the competency required to apply footing and geomechanical design principles to domestic scale buildings or those of a similar loading, construction and size such as small industrial, commercial or public buildings.

It includes the evaluation and distribution of soil types, identification of appropriate footing systems and maintenance requirements for foundation components of the project.

Element

Performance Criteria

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| 19. Evaluate geological formation of rocks and their subsequent weathering to form various soil types | <p>1.16 Formation of igneous, sedimentary and metamorphic rocks are identified and documented</p> <p>1.17 Mode of transportation, deposition and formation of sands, gravels and clays are identified and documented</p> |
| 20. Read and evaluate both topographical and geological maps | <p>2.19 Topographical and geological maps are interpreted without error</p> <p>2.20 Maps of both types are interpreted by drawing sections indicating features</p> <p>2.21 Retaining structures and systems suitable for various situations are identified</p> |
| 21. Identify soil types and their behaviour | <p>Cohesive and granular soils are identified from hand specimens without error</p> <p>Soil properties are identified and calculated with reference to standards, codes and industry literature</p> <p>Effects of depth on overburden and pore water pressure are estimated</p> |
| 22. Determine suitability of foundation soils to support various types of structures | <p>22.1 Meaning of total and differential settlement of a building is interpreted without error</p> <p>22.2 Factors influencing settlement and the ultimate bearing capacity of the ground are interpreted</p> <p>22.3 Total and net pressure on foundation soils due to the load of a structure are calculated</p> |

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| 23. Identify and apply the various methods and applications of soil testing | 5. Australian Standard laboratory testing of permeability, strength, consolidation and point load tests (for rocks) is identified and interpreted |
| | 5. Australian Standard for carryout out sub-soil investigations and in-situ testing is identified and interpreted |
| | 5. Soil testing methods are selected and applied or accessed through competent agencies |
| 24. Determine footing systems for the site conditions and building type | 24.1 Mechanism of soil shrinkage and swelling is interpreted |
| | 24.2 Site classified for the design and construction of a footing system for a single storey dwelling is in accordance with the Building Code of Australia (BCA) |
| | 24.3 Footing system for a domestic scale building is determined in accordance with BCA |
| 25. Site maintenance requirements necessary to minimise long term damage to the structure | 25.1 Influence of moisture content changes in clay soils is determined |
| | 25.2 Minimisation strategies for long term damage to a structure with respect to the soil conditions found on a particular site where active clays are located are recommended |

Range Statement

The Range Statement provides advice to interpret the scope and context of this unit of competency allowing for differences between enterprises and workplaces. It relates to the unit as a whole and facilitates holistic assessment. The following variables may be present for this particular unit:

Unit scope

- Application of footings and geomechanical principles are to include but not be limited to identification of the nature, composition, classification and distribution of soil type and include assessment of geomechanical and footing design for domestic scale buildings
- Adherence to legislative requirements is limited to domestic scale buildings (similar in characteristics to those of residential dwellings in terms of loading, construction and size and may include small industrial, commercial and public buildings)
- Soil types may include but not be limited to saturated granular soils, clay soils and rock
- Soil properties are to include but not be limited to bulk density, dry density, moisture content, void ratio, porosity and degree of saturation
- Maintenance requirements are to include but not be limited to the identification of surface water, ground water and tree root systems
- Foundation systems must be suitable for the site conditions and building type
- Standard specifications may include but not be limited to industry standard specifications and may be preliminary/outline specifications, developed specifications or detailed specifications (addressing specific components such as structural or other requirements)
- Reporting systems in accordance with organisational and legislative quality assurance procedures are to include desk based assessment and may include site-based assessment

Unit context

- Competency requires the demonstration of research, analysis, evaluation and reporting skills, in assessing the geomechanical and footing requirements of domestic scale buildings, within the context of relevant legislation, the Building Code of Australia and Australian Standards.

Evidence Guide

The Evidence Guide identifies the critical aspects, knowledge and skills to be demonstrated to confirm competency for this unit. This is an integral part of the assessment of competency and should be read in conjunction with the Performance Criteria and Range Statement.

What critical aspects of evidence are required to demonstrate competency in this unit?

- Compliance with occupational health and safety regulations applicable to workplace operations.
- Application of organisational management policies and procedures including quality assurance requirements where applicable.
- Assessment of the footing requirements, for at least one (1) domestic scale building project or equivalent, which includes advice on positioning and sizing.
- Analysis and reporting of the soil types and properties for at least two (2) domestic scale building projects or equivalent.
- Provision of reports to appropriate body/individual as determined by the project brief.
- Application of strategic plans, workplace policies and procedures
- There are no specified relationships
- Holistic assessment should be applied where appropriate to form a complete work function.

Are there any other units which should be assessed with this unit or which relate directly to this unit?**What specific knowledge is required to achieve the performance criteria?**

- Nature of materials and effect of performance
- Processes for the interpretation of working drawings and specifications
- Geomechanical engineering principles
- Nature of soil mechanics and effect of performance in problem soils
- Relevant national, State/Territory legislation and local government policy and procedures
- Design principles and concepts for footings
- Structural design principles in buildings
- Behaviour of structural members undergoing stress, strain, compression, bending or combined actions
- Research methods
- Processes for the preparation of documentation

Evidence Guide

What specific underpinning skills are required to achieve the performance criteria?

These include a number of processes that are learned throughout work and life, which are required in most jobs. Some of these are covered by the national key competencies, although others may be added. The questions below highlight how these processes are applied in this competency unit. The number in brackets indicates the level to which the key competency needs to be demonstrated where (1) working within set conditions and processes, (2) management or facilitation of conditions or processes are exercised, and (3) design and/or development of conditions or process are required.

How will the candidate apply the following key competency in this unit?

The candidate will need to:

Collect, analyse and organise information	Research, analyse, organise and understand the footing and geomechanical requirements of domestic scale buildings. Level 3
Communicate ideas and information	Communicate and negotiate ideas and information to enable confirmation of work requirements and legislation translation of footing and geomechanical requirements for domestic scale buildings, the reporting of outcomes and the completion of regulatory determinations. Level 2
Plan and organise activities	Plan and organise activities including the planning of analytical processes, the establishment of evaluative criteria, the assessment of footing and geomechanical requirements and the impact of various forces upon them. Level 2
Work with others and in a team	Work with others and in a team by recognising dependencies and using co-operative approaches to optimise satisfaction and productivity. Level 3
Solve problems	Establish analytical processes, including diagnostic processes, which anticipate and allow for risks, cater for both direct and indirect evidence, avoid or minimise reworking and avoid wastage. Level 2
Use mathematical ideas and techniques	Use mathematical ideas and techniques to correctly complete measurements, calculate analytical requirements, establish realistic sample criteria, quantify, survey and present analytical results. Level 2
Use technology	Use workplace technology related to information gathering and analysis, diagnosis, information research, report writing, administration and management procedures. Level 2

Evidence Guide

In what context should assessment occur?

- 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 defined by the Range Statement.
- Assessment must take account of the endorsed assessment guidelines in the Construction Training Package.

What methods of assessment should apply?

- Assessment of this competency is most likely to be project related under real or simulated conditions and require portfolios or other forms of indirect evidence of process. Direct evidence may include certification of compliance on the final outcome or authorisation for commencement by a competent authority.
- Assessment must confirm the inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.
- Assessment should reinforce the integration of the key competencies.

What are the specific resource requirements for this unit?

- A situation, real or realistically simulated, requiring assessment of footing and geomechanical requirements for domestic scale buildings.
- The learner and trainer should have access to appropriate documentation and resources normally used in the workplace.

BCGSV5006A**Assess construction faults in residential buildings****Unit Descriptor**

This unit specifies the competency required to identify construction faults in residential buildings.

It includes the identification and evaluation of construction problems and determination of alternate methods in accordance with legislative requirements.

Element**Performance Criteria**

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| 26. Identify and analyse the construction faults arising on residential building sites | 1.18 Information is collected relating to the specific construction problem
1.19 Construction problem is identified relative to original specifications
1.20 Construction problem is communicated to appropriate personnel and documented in accordance with standard work practices
1.21 Problem solving techniques are used and typical faults and problems are identified and the action to rectify is deemed to be in accordance with the Building Code of Australia (BCA). |
| 27. Identify construction techniques/methods and materials | 2.22 Building terminology is used accurately in the communication of issues
2.23 Existing or designed construction problems are identified and evaluated from working drawings and specifications
2.24 Alternative methods/materials to meet construction aims and objectives are prepared to specification nominated in the BCA and Australian Standards
2.25 Detailed sketches of available alternative methods/materials available to meet the construction aims and objectives are prepared to specification |
| 28. Resolve construction faults using alternative construction methods | 5. Suitable construction methods from the available alternative solutions are evaluated and recommended to resolve the problem in accordance with the project aims and objectives and the BCA, relevant State or Territory Appendix and Australian Standard
5. Selected method is integrated into the project in order to resolve the construction problems in accordance with project aims
5. Evaluation of the available alternative forms of construction are carried out in accordance with project aims |
| 29. Resolve common on-site faults with building materials | 29.1 Commonly occurring on-site problems with building materials and their causes are evaluated
29.2 Corrective and preventative measures are identified and implemented |

Range Statement

The Range Statement provides advice to interpret the scope and context of this unit of competency allowing for differences between enterprises and workplaces. It relates to the unit as a whole and facilitates holistic assessment. The following variables may be present for this particular unit:

Unit scope

- Construction in residential buildings is to include but not be limited to the evaluation and identification of construction faults and the determination of alternate methods, standards and services in compliance with relevant legislation, design specifications, maintenance specifications and adherence to legislative requirements for Building Codes of Australia class 1 and 10 buildings.
- Residential building projects requiring assessment of faults are to include but not be limited to provision of site access/facilities, work schedules, project milestones and the calculation and processing of application or inspection fees.
- Building categories may include but not be limited to single storey and low-rise residential buildings.
- Forms of construction may include but not be limited to timber framed, steel framed, pole framed, autoclaved aerated concrete (AAC) and earth (mud brick and rammed earth).
- Construction faults may include but not be limited to refurbishing, restoration, renovation and installation.
- Notification of Australian standards may include but not be limited to:
 - AS 3660 protection of buildings from subterranean termites
 - AS 2870.1 residential slabs and footings
 - AS 3700 masonry
 - AS 1684 residential timber framed construction
 - AS 3600 concrete structures
 - AS 3623 domestic metal framing
 - AS 2627.1 thermal insulation of roof/ceilings and walls in dwellings
 - AS 2050 fixing of roof tiles
 - AS 2180 metal rainwater goods, selection and installation
 - AS 1288 installation of glass in buildings
 - AS 2208 safety glazing materials for use in buildings
 - AS 3740 waterproofing of wet areas in residential buildings
 - AS 3500 national plumbing code
 - AS 4349 inspection of buildings
- Reporting systems in accordance with organisational, legislative and quality assurance procedures are to include desk based assessment and may include site-based assessment.

Unit context

- Competency requires the demonstration of research, analysis, evaluation and reporting skills in the assessment of construction faults, determination of rectification and alternate building methods, within the context of relevant legislations, the Building Code of Australia and Australian Standards.

Evidence Guide

The Evidence Guide identifies the critical aspects, knowledge and skills to be demonstrated to confirm competency for this unit. This is an integral part of the assessment of competency and should be read in conjunction with the Performance Criteria and Range Statement.

What critical aspects of evidence are required to demonstrate competency in this unit?	<ul style="list-style-type: none"> • Compliance with occupational health and safety regulations applicable to workplace operations. • Application of organisational management policies and procedures including quality assurance requirements where appropriate. • Assessment of construction faults in residential buildings, determination of a rectification strategy and consideration of alternative construction methods, the associated reporting of data, findings, recommendations and strategies for at least one (1) residential building project or equivalent in compliance with relevant legislation. • Provision of reports to appropriate body/individual as determined by the project brief. • Application of strategic plans, workplace policies and procedures
Are there any other units which should be assessed with this unit or which relate directly to this unit?	<ul style="list-style-type: none"> • There are no specified relationships • Holistic assessment should be applied where appropriate to form a complete work function.
What specific knowledge is required to achieve the performance criteria?	<ul style="list-style-type: none"> • Processes for the interpretation of reports, working drawings and specifications. • Nature of materials and effect on performance. • Authorities and powers of a building surveyor. • Relevant national, State/Territory legislation and local government policy and procedures • Design and construction principles of buildings. • Terminology, definitions and hazard identification. • Codes of conduct and ethics. • Research methods. • Processes for the administration and preparation of documentation.

Evidence Guide

What specific underpinning skills are required to achieve the performance criteria?

These include a number of processes that are learned throughout work and life, which are required in most jobs. Some of these are covered by the national key competencies, although others may be added. The questions below highlight how these processes are applied in this competency unit. The number in brackets indicates the level to which the key competency needs to be demonstrated where (1) working within set conditions and processes, (2) management or facilitation of conditions or processes are exercised, and (3) design and/or development of conditions or process are required.

How will the candidate apply the following key competency in this unit?

The candidate will need to:

Collect, analyse and organise information	Research, analyse, organise and understand the process for assessing construction faults on residential buildings plus subsequent reporting procedures Level 3
Communicate ideas and information	Communicate and negotiate ideas and information to enable confirmation of work requirements and legislation translation of construction faults on residential buildings. Level 3
Plan and organise activities	Plan and organise activities including the planning of analytical processes, the assessment, rectification and alternate strategies related to the resolution of construction faults in residential buildings. Level 3
Work with others and in a team	Work with others and in a team by recognising dependencies and using co-operative approaches to optimise satisfaction and productivity. Level 3
Solve problems	Establish analytical processes, including diagnostic processes, which anticipate and allow for risks, cater for both direct and indirect evidence, avoid or minimise reworking and avoid wastage. Level 3
Use mathematical ideas and techniques	Use mathematical ideas and techniques to correctly complete measurements, calculate analytical requirements, establish realistic sample criteria, quantify, survey and present analytical results. Level 2
Use technology	Use workplace technology related to information gathering and analysis, diagnosis, information research, report writing, administration and management procedures. Level 2

Evidence Guide

In what context should assessment occur?

- 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 defined by the Range Statement.
- Assessment must take account of the endorsed assessment guidelines in the Construction Training Package.

What methods of assessment should apply?

- Assessment of this competency is most likely to be project related under real or simulated conditions and require portfolios or other forms of indirect evidence of process. Direct evidence may include certification of compliance on the final outcome or authorisation for commencement by a competent authority.
- Assessment must confirm the inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.
- Assessment should reinforce the integration of the key competencies.

What are the specific resource requirements for this unit?

- A situation, real or realistically simulated, requiring assessment of construction faults on residential buildings.
- The learner and trainer should have access to appropriate documentation and resources normally used in the workplace.

BCGSV5007A**Undertake site surveys and set out procedures for building projects****Unit Descriptor**

This unit specifies the competency required to undertake site surveys and set out procedures on civil and residential building projects.

It includes the use of basic measuring and levelling equipment, the recording and interpretation of data, the evaluation of and compliance with relevant legislation.

Element**Performance Criteria**

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| 30. Measure linear distances on site using building and basic surveying equipment | 1.22 Areas and volumes of regular shapes and figures are calculated |
| | 1.23 Distances are measured accurately independent of site characteristics and measurement methods |
| | 1.24 Distances are measured on building sites within a tolerance of 1mm error in 4.0m or (1:4000) without error |
| | 1.25 Overall distances are calculated from field data without error |
| | 1.26 Slope corrections are recorded accurately |
| 31. Carry out a closed level transverse procedure using the Rise and Fall recording method | 2.26 Levelling equipment is inspected for damage, wear and serviceability |
| | 2.27 Set-up steps are performed and instruments made ready for use without error |
| | 2.28 Instruments are checked for accuracy and adjusted (where possible) within 3 mm over 60 metres using the two peg test |
| | 2.29 Closed level traverse is completed with a minimum of 15 points, including an inverted reading, with a minimum of 5 change points all within a closing tolerance of 10 mm |
| | 2.30 Data of traverse is correctly recorded and extended including mathematical column checks by use of the Rise and Fall method |
| 32. Perform grid surveys for contour purposes | 5. Site identification is established and all survey pegs located without error |
| | 5. Grid distances are determined and grid is pegged correctly |
| | 5. All site detail which may effect the building operation is recorded without error |
| | 5. Reduced levels of all grid points are determined from a close performed onto the bench mark to within 10 mm, without error |
| | 5. Contour lines are plotted on the site plan at intervals appropriate to the site with longitudinal and cross sections pegged and measured as nominated within 100 mm. Sections are plotted to scale without error. |

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| 3. Perform grid surveys for contour purposes (continued) | 5. Grades of line are determined within a 0.5% tolerance and expressed as percentage, rise to run ratio, or degrees. |
| | 5. Cut and fill volumes of soil are calculated from site plan using contour lines for determining reduced levels (RLs) within 5% tolerance. |
| 4. Set out T-shaped or L-shaped buildings on a selected site with minimal profiles | 4.1 Site information is identified from Site Plan and dimensions checked on plan drawings without error |
| | 4.2 Site is identified and survey pegs measured to ensure correct identification occurred before pilot pegs are positioned within 50 mm of true location of the squared building dimensions |
| | 4.3 Profile pegs are set-up on site at a working distance from pilot pegs and parallel to pilot line, profile boards fixed to pegs and level within itself of 5 mm and 15 mm of each other |
| | 4.4 Set out profiles on steep slopes accurately |
| 5. Set up and use levelling devices to determine horizontal and vertical angles | 5.1 Basic tests on levelling devices' accuracy/adjustment are performed to manufacturers' specifications |
| | 5.2 Temporary adjustments to "set up" levelling devices are carried out to standard operating procedures |
| | 5.3 Levelling devices are used to determine (read) both horizontal and vertical angles to an accuracy of 20" |
| | 5.4 Levelling devices are used to set out horizontal angles to an accuracy of 20" |
| | 5.5 Site is set out to specifications using a typical levelling device and tape |
| 6. Identify levelling/surveying equipment suitability for large building projects | 6.1 Differences between the various types of specialised surveying equipment are researched and recorded |
| | 6.2 Equipment is used to control set out and vertical is identified |
| | 6.3 Basic differences in survey control and set out between frame and concrete multi-storey buildings is outlined |
| | 6.4 Carry out survey of each level for vertical accuracy of 10 mm using two levelling devices |
| 7. Compute coordinates, bearings and distances related to grids and general set out work on large building sites | 7.1 The angular relationship between different bearings (whole circle) is demonstrated and bearings from angles and fixed lines are determined |
| | 7.2 The bearing and distance between two sets of coordinates (north and east) are calculated |
| | 7.3 The coordinates of a point given the bearing and distance from a point with known coordinates are calculated |
| | 7.4 Offsets from a coordinated point given the bearing and distance from a point with known coordinates are determined |
| | 7.5 The information necessary to set out a structure, or part thereof, using a site plan with positions fixed by a mixture of bearings and distances, offsets and coordinates is calculated |

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| 8. Evaluate documents and plans incorporated in land titles | 8.1 The documents, which make up a land title, are listed and their relationship to each other outlined according to relevant government legislation |
| | 8.2 Different restrictions on the use of land title and restricted development are illustrated |
| | 8.3 Building covenants and the statutory bodies responsible are identified |
| | 8.4 Restrictions stated in legislation which regulate setbacks for residential buildings are identified and differentiated. |

Range Statement

The Range Statement provides advice to interpret the scope and context of this unit of competency allowing for differences between enterprises and workplaces. It relates to the unit as a whole and facilitates holistic assessment. The following variables may be present for this particular unit:

Unit scope

- Input to site surveying and setting out procedures for building projects is to include but not be limited to the use of basic measuring and levelling equipment, the recording and interpretation of data and the evaluation of any associated legislative restrictions. Equipment may include, but not be limited to pegs, laser instruments, theodolites, electronic measuring devices (EDM) and optical plummets.
- Building projects requiring site surveying and setting out are to include but not be limited to provision of site access/facilities, work schedules and project milestones.
- Site surveying and setting out procedures are to include but not be limited to civil and residential building development projects and may include commercial and industrial projects.
- Resources to facilitate undertaking of site surveys and setting out procedures may include but not be limited to human and financial.
- Reporting systems in accordance with organisational and legislative quality assurance procedures are to include desk based assessment and may include site-based assessment.

Unit context

- Competency requires the demonstration of research, analysis, evaluation and reporting skills within the context of relevant legislation, the Building Code of Australia and Australian Standards.

Evidence Guide

The Evidence Guide identifies the critical aspects, knowledge and skills to be demonstrated to confirm competency for this unit. This is an integral part of the assessment of competency and should be read in conjunction with the Performance Criteria and Range Statement.

What critical aspects of evidence are required to demonstrate competency in this unit?

- Compliance with occupational health and safety regulations applicable to workplace operations.
- Application of organisational management policies and procedures including quality assurance requirements where applicable.
- Application of site surveys and set out procedures to building projects, the associated reporting of data, findings, recommendations and strategies for at least one civil or residential building project or equivalent in compliance with relevant legislation.
- Provision of reports to appropriate body/individual as determined by the project brief.
- Application of strategic plans, workplace policies and procedures.
- There are no specified relationships.
- Holistic assessment should be applied where appropriate to form a complete work function.

Are there any other units which should be assessed with this unit or which relate directly to this unit?**What specific knowledge is required to achieve the performance criteria?**

- Specifications and capabilities of surveying and levelling equipment and their componentry.
- Processes for the interpretation of reports, working drawings and specifications.
- Level and grade checking to perform survey control to accuracy criteria.
- Relevant national, State/Territory legislation and local government policy and procedures.
- Structural, design and construction principles of buildings.
- Terminology, definitions and hazard identification.
- Codes of conduct and ethics.
- Research methods.
- Processes for the administration and preparation of documentation.

Evidence Guide

What specific underpinning skills are required to achieve the performance criteria?

These include a number of processes that are learned throughout work and life, which are required in most jobs. Some of these are covered by the national key competencies, although others may be added. The questions below highlight how these processes are applied in this competency unit. The number in brackets indicates the level to which the key competency needs to be demonstrated where (1) working within set conditions and processes, (2) management or facilitation of conditions or processes are exercised, and (3) design and/or development of conditions or process are required.

How will the candidate apply the following key competency in this unit?

The candidate will need to:

Collect, analyse and organise information	Research, analyse, organise and understand the application of site surveys and set out procedures plus subsequent reporting procedures. Level 2
Communicate ideas and information	Communicate and negotiate ideas and information to enable confirmation of work requirements and legislation, translation of site survey and set out procedure reports. Level 2
Plan and organise activities	Plan and organise activities including the planning of analytical processes, the establishment of evaluative criteria, the outcome of site surveys and set out procedures. Level 3
Work with others and in a team	Work with others and in a team by recognising dependencies and using co-operative approaches to optimise satisfaction and productivity. Level 2
Solve problems	Establish analytical processes, including diagnostic processes, which anticipate and allow for risks, cater for both direct and indirect evidence, avoid or minimise reworking and avoid wastage. Level 3
Use mathematical ideas and techniques	Use mathematical ideas and techniques to correctly complete measurements, calculate analytical requirements, establish realistic sample criteria, quantify, survey and present analytical results. Level 3
Use technology	Use workplace technology related to information gathering and analysis, diagnosis, information research, report writing, administration and management procedures. Level 2

Evidence Guide

In what context should assessment occur?

- 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 defined by the Range Statement.
- Assessment must take account of the endorsed assessment guidelines in the Construction Training Package.

What methods of assessment should apply?

- Assessment of this competency is most likely to be project related under real or simulated conditions and require portfolios or other forms of indirect evidence of process. Direct evidence may include certification of compliance on the final outcome or authorisation for commencement by a competent authority.
- Assessment must confirm the inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.
- Assessment should reinforce the integration of the key competencies.

What are the specific resource requirements for this unit?

- A situation, real or realistically simulated, requiring site survey and set out procedure provisions in conjunction with a building project.
- The learner and trainer should have access to appropriate documentation and resources normally used in the workplace.

BCGSV5008A**Apply building control legislation to building surveying****Unit Descriptor**

This unit specifies the competency required to research, interpret and apply building control legislation for use in building surveying activities relating to domestic scale buildings and structures.

It includes the evaluation of the Australian common law system and the various sources of law applicable to building surveying activities and the identification and application of the professional code of ethics required for the assessment and inspection of buildings.

Element**Performance Criteria**

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| 9. Analyse the Australian administrative legal system | 1.27 Differences between common law, statute law, delegated legislation and local government law are analysed and documented. |
| | 1.28 Civil law and examples of civil action relevant to building control are identified and analysed. |
| | 1.29 Administrative law relevant to building control is determined and interpreted. |
| 10. Evaluate administrative law applicable to building control activities | 2.31 Individual elements of judicial review legislation are evaluated and documented. |
| | 2.32 Natural justice is identified and evaluated as it relates to decision making through the building control process. |
| 11. Describe the procedures and benefits of enforcing the law | 5. Legislative benefits and examples from building control enforcement are investigated and documented. |
| | 5. Major regulatory enforcement strategies are identified and recorded. |
| | 5. Powers of entry are identified and analysed. |
| | 5. Warrants and the legal considerations in obtaining a warrant are identified and documented. |
| | 5. Types of evidence and the gathering of evidence for the purposes of investigating and proving a breach of legislation are identified and documented. |
| | 5. Offences are identified and the process for drafting and issuing a notice is evaluated and documented. |
| 12. Analyse the impact of other legislation on State and Territory building/development control legislation | 12.1 Implications of Commonwealth legislation on State and Territory building/development control legislation are examined and documented. |
| | 12.2 Implications of other State and Territory legislation on building/development control legislation is examined and documented. |

13. Analyse the professional code of conduct and ethics applicable to building control	13.1 Concepts regarding conflict of interest as specified by relevant legislation are identified and recorded.
	13.2 Concepts regarding duty of care as it relates to common law are evaluated and documented.
14. Analyse the concepts of liability and responsibility of building practitioners as detailed in legislation	14.1 Liability of building practitioners as specified by relevant legislation is evaluated and documented.
	14.2 Responsibilities and statutory duties of building practitioners as specified by relevant legislation evaluated and documented.

Range Statement

The Range Statement provides advice to interpret the scope and context of this unit of competency allowing for differences between enterprises and workplaces. It relates to the unit as a whole and facilitates holistic assessment. The following variables may be present for this particular unit:

Unit scope

- Input to the research, interpretation and analysis of building control legislation is to include but not be limited to domestic scale buildings and structures
- Investigation of laws is to include but not be limited to the Australian common law system, laws applicable to building surveying and the professional code of ethics required for the assessment and inspection of buildings.
- Types of evidence may include but not be limited to oral, documented, real, direct, secondary, hearsay and admissible and inadmissible evidence.
- Implications of Commonwealth legislation may include but not be limited to the Disability Discrimination Act.
- Implications of other State and Territory legislation may include but not be limited to environmental health, planning, occupational health and safety and local government by-laws.
- Reporting systems must be in accordance with organisational and legislative quality assurance procedures and may include desk and site based assessment.

Unit context

- Competency requires the demonstration of research, interpretation, analysis, evaluation and reporting skills within the context of common law, relevant legislation, the Building Code of Australia and Australian Standards.

Evidence Guide

The Evidence Guide identifies the critical aspects, knowledge and skills to be demonstrated to confirm competency for this unit. This is an integral part of the assessment of competency and should be read in conjunction with the Performance Criteria and Range Statement.

What critical aspects of evidence are required to demonstrate competency in this unit?	<ul style="list-style-type: none">• Compliance with occupational health and safety regulations applicable to workplace operations.• Application of organisational management policies and procedures including quality assurance requirements where applicable.• Performance of research, interpretation, analysis and reporting of findings for at least one (1) administrative law case relating to building control activities, at least one (1) Commonwealth legislation case impacting on building/development control legislation, at least one (1) other legislation case impacting on building/development control legislation, all in accordance with the professional code of conduct and ethics applicable to building control.• Provision of reports to appropriate body/individual as determined by the project brief.• Application of strategic plans, workplace policies and procedures.
Are there any other units which should be assessed with this unit or which relate directly to this unit?	<ul style="list-style-type: none">• There are no specified relationships• Holistic assessment should be applied where appropriate to form a complete work function.
What specific knowledge is required to achieve the performance criteria?	<ul style="list-style-type: none">• Building policy and legislation• Australian legal system• Relevant national, State/Territory legislation and local government policy and procedures• Codes of conduct and ethics• Research processes and strategies• Consultation methods including cultural considerations• Applications of law and legal principles in building surveying• Legal terminology, definitions, processes and procedures used in standard court operations• Processes for the administration and preparation of documentation

Evidence Guide

What specific underpinning skills are required to achieve the performance criteria?

These include a number of processes that are learned throughout work and life, which are required in most jobs. Some of these are covered by the national key competencies, although others may be added. The questions below highlight how these processes are applied in this competency unit. The number in brackets indicates the level to which the key competency needs to be demonstrated where (1) working within set conditions and processes, (2) management or facilitation of conditions or processes are exercised, and (3) design and/or development of conditions or process are required.

How will the candidate apply the following key competency in this unit?

The candidate will need to:

Collect, analyse and organise information	Research, analyse, evaluate, interpret and report information related to building control legislation and how it impacts on building surveyors.	Level 2
Communicate ideas and information	Communicate and negotiate ideas and information to enable interpretation of building control legislation and how other laws and legislation impact upon it.	Level 2
Plan and organise activities	Plan and organise activities including the planning of analytical processes, the establishment of research criteria and the interpretation of building control legislation in respect of common law and other impacting legislations.	Level 2
Work with others and in a team	Work with others and in a team by recognising dependencies and using co-operative approaches to optimise satisfaction and productivity.	Level 1
Solve problems	Establish analytical processes, including diagnostic processes, which anticipate and allow for risks, cater for both direct and indirect evidence, avoid or minimise reworking and avoid wastage.	Level 2
Use mathematical ideas and techniques	Use mathematical ideas and techniques to correctly complete measurements, calculate analytical requirements, establish realistic sample criteria, quantify, survey and present analytical results.	Level 1
Use technology	Use workplace technology related to information gathering and analysis, diagnosis, information research, report writing, administration and management procedures.	Level 2

Evidence Guide

In what context should assessment occur?

- 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 defined by the Range Statement.
- Assessment must take account of the endorsed assessment guidelines in the Construction Training Package.

What methods of assessment should apply?

- Assessment of this competency is most likely to be project related under real or simulated conditions and require portfolios or other forms of indirect evidence of process. Direct evidence may include certification of compliance on the final outcome or authorisation for commencement by a competent authority.
- Assessment must confirm the inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.
- Assessment should reinforce the integration of the key competencies.

What are the specific resource requirements for this unit?

- A situation, real or realistically simulated, requiring research analysis, evaluation, interpretation and reporting of building control legislation activities relating to building projects.
- The learner and trainer should have access to appropriate documentation and resources normally used in the workplace.

BCGSV5009A**Assess the impact of fire on building materials****Unit Descriptor**

This unit specifies the competency required to assess the impact of fire on building materials.

It includes the research, analysis and reporting of testing conducted on a range of building materials and structures in differing circumstances to determine combustion, flammability, heat transfer, burning conditions, building material behaviour, fire loads of buildings and fire resistance.

Element**Performance Criteria**

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| 15. Research combustion process as it relates to different materials | 1.30 Processes and flame characteristics of combustion of solids, liquids and gases are identified and recorded

1.31 Factors contributing to combustion are identified and recorded

1.32 Endothermic and exothermic processes are researched and recorded

1.33 Heat of combustion fuels are calculated without error

1.34 Factors contributing to propagating of flame front are analysed and recorded |
| 16. Analyse the flammability on the different states of matter | 2.33 Flammability in terms of the fire triangle and fire tetrahedron theories is analysed and recorded

2.34 Flammability of matter in physical states is examined and recorded

2.35 Flammability in terms of upper and lower flammability limits is identified and recorded

2.36 Factors contributing to the explosiveness of dusts are identified and recorded |
| 17. Identify conditions of burning at the fire point | 5. Limiting Adiabatic Flame Temperature (LAFT) values are interpreted accurately

5. Process of extinguishment related to the combustion process is analysed and recorded |

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| 18. Record mechanisms of heat transfer during fire growth, development and spread | 18.1 Heat transfer factors in fire situations are identified and recorded |
| | 18.2 Processes of self-induced heating are analysed and recorded |
| | 18.3 Behaviour of fires in partially and fully enclosed compartments are observed and recorded |
| | 18.4 Amount of smoke produced from a fire is calculated |
| 19. Record the behaviour of building materials subjected to extreme levels of heat | 19.1 Building materials are evaluated for fire safety and recorded |
| | 19.2 Effect of fire on structural and non-structural elements are identified and recorded |
| | 19.3 Effect of fire on plastic and textile materials is identified and recorded |
| 20. Devise the fire load of a building and describe the effect on the Building Code of Australia (BCA) classification and compartmentation | 20.1 Effect of the building occupancy on the potential fire load is calculated |
| | 20.2 Factors that may increase the severity of a fire are researched and recorded |
| | 20.3 Fire load, fire severity and general burning behaviour of materials are researched and recorded |
| 21. Report the requirements of fire resistance of materials, building elements and forms of construction | 21.1 Fire resistance levels of materials, building elements and forms of construction are researched and recorded |
| | 21.2 Early fire hazard indices are applied to the BCA requirements |
| | 21.3 Australian Standards relating to fire testing of building materials and forms of construction are researched and recorded. |

Range Statement

The Range Statement provides advice to interpret the scope and context of this unit of competency allowing for differences between enterprises and workplaces. It relates to the unit as a whole and facilitates holistic assessment. The following variables may be present for this particular unit:

Unit scope

- Input to the research and analysis process is to include but not be limited to written records and historical data, material data sheets, reports, definitions and test outcomes.
- Materials are to include but not be limited to timber, plastic and fabric building materials and structures and may include other types of fire load forming building materials.
- Conditions are to include but not be limited to combustion of materials, flammability circumstances, heat transfer characteristics, point of fire burning conditions, behaviour of building materials subject to extreme heat, fire loads of buildings and fire resistance of materials.
- Reporting systems must be in accordance with organisational and legislative quality assurance procedures and may include desk and site based assessment.

Unit context

- Competency requires the demonstration of research, analysis, evaluation and reporting skills within the context of relevant legislation, the Building Code of Australia and Australian Standards.

Evidence Guide

The Evidence Guide identifies the critical aspects, knowledge and skills to be demonstrated to confirm competency for this unit. This is an integral part of the assessment of competency and should be read in conjunction with the Performance Criteria and Range Statement.

What critical aspects of evidence are required to demonstrate competency in this unit?

- Compliance with occupational health and safety regulations applicable to workplace operations.
- Application of organisational management policies and procedures including quality assurance requirements where applicable.
- Performance of fire research, analysis, identification and reporting of findings for at least one (1) fire assessment or equivalent including at least three (3) different materials.
- Application and assessment of applicable fire safe suitable building materials for at least one (1) building project.
- Provision of reports to appropriate body/individual as determined by the project brief.
- Application of strategic plans, workplace policies and procedures
- There are no specified relationships
- Holistic assessment should be applied where appropriate to form a complete work function.

Are there any other units which should be assessed with this unit or which relate directly to this unit?**What specific knowledge is required to achieve the performance criteria?**

- Principles of combustion and flammability
- Characteristics of endothermic and exothermic processes
- Extinguishment principles
- Relevant national, State/Territory legislation and local government policy and procedures
- LAFT Values (Limiting Adiabatic Flame Temperature)
- Codes of conduct and ethics
- Research methods
- Processes for the preparation of documentation.

Evidence Guide

What specific underpinning skills are required to achieve the performance criteria?

These include a number of processes that are learned throughout work and life, which are required in most jobs. Some of these are covered by the national key competencies, although others may be added. The questions below highlight how these processes are applied in this competency unit. The number in brackets indicates the level to which the key competency needs to be demonstrated where (1) working within set conditions and processes, (2) management or facilitation of conditions or processes are exercised, and (3) design and/or development of conditions or process are required.

How will the candidate apply the following key competency in this unit?

The candidate will need to:

Collect, analyse and organise information	Research, analyse, organise and understand test information related to the impact of fire on building materials.	Level 3
Communicate ideas and information	Communicate and negotiate ideas and information to enable confirmation of work requirements and legislation, translation of fire impact on building materials, the reporting of outcomes and the completion of regulatory determinations.	Level 2
Plan and organise activities	Plan and organise activities including the planning of analytical processes, the establishment of evaluative criteria, the assessment of materials and the impact of fire upon them.	Level 2
Work with others and in a team	Work with others and in a team by recognising dependencies and using co-operative approaches to optimise satisfaction and productivity.	Level 2
Solve problems	Establish analytical processes, including diagnostic processes, which anticipate and allow for risks, cater for both direct and indirect evidence, avoid or minimise reworking and avoid wastage.	Level 2
Use mathematical ideas and techniques	Use mathematical ideas and techniques to correctly complete measurements, calculate analytical requirements, establish realistic sample criteria, quantify, survey and present analytical results.	Level 2
Use technology	Use workplace technology related to information gathering and analysis, diagnosis, information research, report writing, administration and management procedures.	Level 2

Evidence Guide

In what context should assessment occur?

- 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 defined by the Range Statement.
- Assessment must take account of the endorsed assessment guidelines in the Construction Training Package.

What methods of assessment should apply?

- Assessment of this competency is most likely to be project related under real or simulated conditions and require portfolios or other forms of indirect evidence of process. Direct evidence may include certification of compliance on the final outcome or authorisation for commencement by a competent authority.
- Assessment must confirm the inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.
- Assessment should reinforce the integration of the key competencies.

What are the specific resource requirements for this unit?

- A situation, real or realistically simulated, requiring fire impact test data on a range of materials.
- The learner and trainer should have access to appropriate documentation and resources normally used in the workplace.

BCGSV5010A**Interact with clients in a regulated environment****Unit Descriptor**

This unit specifies the competency required to initiate and undertake consultation with individuals and groups in regard to building surveying practices.

It includes the identification and implementation of appropriate interaction models according to community demographics, cultural considerations, social stratification, analysis and evaluation of data to enable informed decision-making, and the presentation of findings to clients and other appropriate stakeholders.

Element**Performance Criteria**

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| 22. Devise interaction strategies | 1.1 Interested and affected individuals and/or parties are identified
1.2 A range of interaction strategies are identified, assessed for suitability and selected
1.3 Resources required to conduct interaction are determined
1.4 Regulations are reviewed to ensure strategies meet all criteria |
| 23. Assess demographic, cultural, social and psychological considerations | 2.1 Needs of disadvantaged individuals and groups are identified and incorporated
2.2 Cultural, social and psychological factors are considered and incorporated
2.3 Urban, demographic, technological, political and economic effects are considered and incorporated
2.4 Collective community behaviour is assessed |
| 24. Communicate legislative requirements to individuals and/or groups | 3.1 Information is prepared which is clear, accurate and appropriate to the needs of the parties involved
3.2 All parties involved are informed of the applicable legislations
3.3 Information is provided to affected parties at an appropriate time and place
3.4 Interaction is undertaken in an orderly manner to ensure all viewpoints are canvassed |
| 25. Record, analyse and report results | 25.1 Responses are assessed and checked against the project brief
25.2 Appropriate suggestions for improvement are incorporated within the project brief
25.3 An accurate report is prepared including recommendations for approval
25.4 Overall effectiveness of the interaction is reviewed and evaluated with action taken where required |

Range Statement

The Range Statement provides advice to interpret the scope and context of this unit of competency allowing for differences between enterprises and workplaces. It relates to the unit as a whole and facilitates holistic assessment. The following variables may be present for this particular unit:

Unit scope

- Input to the interaction process is to include but not be limited to written records and historical data, anecdotal information, interviews, meetings with clients and key stakeholders.
- Interested parties are to include but not be limited to individuals and special interest groups, existing community groups, government agencies and may include others such as private sector businesses, social groups and emergency services.
- Demographics include age, gender, ethnicity, individual and group profiles and social stratification.
- Resources to facilitate the consultation process may include but not be limited to human and financial.
- Interaction strategies may include but not be limited to client meetings, surveys, home and site visits and meetings of relevant stakeholders.
- Presentation of information may include but not be limited to models, graphics, videos, handouts, display plans, software presentations and computer simulations

Unit context

- Competency requires the demonstration of social theory, awareness of diverse cultures, stratification, inequality, the family, economic order, political order social change and interaction, deviance, collective behaviour, urbanisation, technology and the environment. It also requires communication, negotiation and evaluation skills within the context of relevant legislation, the Building Code of Australia and Australian Standards.

Evidence Guide

The Evidence Guide identifies the critical aspects, knowledge and skills to be demonstrated to confirm competency for this unit. This is an integral part of the assessment of competency and should be read in conjunction with the Performance Criteria and Range Statement.

What critical aspects of evidence are required to demonstrate competency in this unit?	<ul style="list-style-type: none"> • Compliance with occupational health and safety regulations applicable to workplace operations. • Application of organisational management policies and procedures including quality assurance requirements where applicable. • Performance of a management role in the identification and implementation of at least one (1) client negotiation and consultation process or equivalent. • Provision of reports to appropriate body/individual as determined by the project brief. • Application of strategic plans, workplace policies and procedures
Are there any other units which should be assessed with this unit or which relate directly to this unit?	<ul style="list-style-type: none"> • There are no specified relationships • Holistic assessment should be applied where appropriate to form a complete work function
What specific knowledge is required to achieve the performance criteria?	<ul style="list-style-type: none"> • Local factors affecting communities and/or individuals • Relevant national, State/Territory legislation and local government policy and procedures • Strategies for consultation • Codes of conduct and ethics • Research methods • Effects of social stratification on society • Effects of social change • Effects of technological change • Effects of urbanisation • Psychological theories

Evidence Guide

What specific underpinning skills are required to achieve the performance criteria?

These include a number of processes that are learned throughout work and life, which are required in most jobs. Some of these are covered by the national key competencies, although others may be added. The questions below highlight how these processes are applied in this competency unit. The number in brackets indicates the level to which the key competency needs to be demonstrated where (1) working within set conditions and processes, (2) management or facilitation of conditions or processes are exercised, and (3) design and/or development of conditions or process are required.

How will the candidate apply the following key competency in this unit?

The candidate will need to:

Collect, analyse and organise information	Research, organise and understand information related to contemporary client interaction and consultation procedures, including social, cultural and psychological considerations. Level 3
Communicate ideas and information	Communicate and negotiate ideas and information to enable confirmation of work requirements and legislation, co-ordination of client interaction and input, other workers and customers, the reporting of outcomes and the completion of regulatory determinations. Level 3
Plan and organise activities	Plan and organise activities including the planning of analytical processes, the establishment of evaluative criteria, the preparation and layout of worksites, how clients and stakeholders will be engaged. Level 2
Work with others and in a team	Work with others and in a team by recognising dependencies and using co-operative approaches to optimise satisfaction and productivity. Level 3
Solve problems	Establish analytical processes, including diagnostic processes, which anticipate and allow for risks, cater for both direct and indirect evidence, avoid or minimise reworking and avoid wastage. Level 3
Use mathematical ideas and techniques	Use mathematical ideas and techniques to correctly complete measurements, calculate analytical requirements, utilise realistic sample criteria, quantify, survey and present analytical results. Level 1

Evidence Guide

Use technology

Use workplace technology related to information gathering and analysis, diagnosis, information research, report writing, administration and management procedures.

Level 2

In what context should assessment occur?

- 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 defined by the Range Statement.
- Assessment must take account of the endorsed assessment guidelines in the Construction Training Package.

What methods of assessment should apply?

- Assessment of this competency is most likely to be project related under real or simulated conditions and require portfolios or other forms of indirect evidence of process. Direct evidence may include certification of compliance on the final outcome or authorisation for commencement by a competent authority or client.
- Assessment must confirm the inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.
- Assessment should reinforce the integration of the key competencies.

What are the specific resource requirements for this unit?

- A situation, real or realistically simulated, requiring a client interaction process.
- The learner and trainer should have access to appropriate documentation and resources normally used in the workplace.
- Access to appropriate information on social, cultural and psychological considerations.

BCGSV5011A

Apply building codes and standards to residential buildings

Unit Descriptor

This unit specifies the competency required to ensure the building process complies with the Building Code of Australia and relevant Australian Standards.

The unit applies to residential buildings. It includes the evaluation and interpretation of building requirements, classification of buildings according to the Building Code of Australia (BCA) criteria and strategies for compliance.

Element

Performance Criteria

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| 26. Analyse the purpose and basic intent of the BCA | 1.35 Objectives of the BCA and the purpose of the respective components are evaluated and documented |
| | 1.36 “Deemed to satisfy” concept for construction to meet BCA requirements is evaluated and documented |
| 27. Locate and interpret code/standard requirements that are applicable to particular projects | 2.37 Clauses from the BCA that apply to particular projects are identified and documented |
| | 2.38 Prescriptive requirements of relevant BCA clauses are determined |
| | 2.39 Requirements of Australian Standards referenced in the BCA are identified and documented |
| | 2.40 Special requirements that may be applicable to specific areas are identified and documented |
| 28. Classify buildings | 5. Nature of a building having regard to use and arrangement is determined |
| | 5. BCA criteria are applied to determine the defined classification |
| | 5. BCA requirements are interpreted for multiple classifications |
| 29. Apply solutions to construction problems for compliance with the BCA | 29.1 Criteria to ensure construction methods comply with the intent of the BCA are determined |
| | 29.2 Alternative approaches to construction problems that comply with the requirements of the BCA are reported |
| | 29.3 Assessment methods used to determine whether a building solution complies with performance requirements or Deemed-to-Satisfy (DTS) provision of the BCA are analysed and applied |

29.4 Assessment methods are confirmed and identified as appropriate to meet the DTS provisions of BCA

Range Statement

The Range Statement provides advice to interpret the scope and context of this unit of competency allowing for differences between enterprises and workplaces. It relates to the unit as a whole and facilitates holistic assessment. The following variables may be present for this particular unit:

Unit scope

- Construction in residential buildings is to include but not be limited to compliance with relevant legislation, design specifications, maintenance specifications, relevant Australian Standards and evaluation, interpretation and adherence to legislative requirements for Building Codes of Australia class 1 and 10 buildings
- Building categories may include but not be limited to single storey and low-rise residential buildings
- Residential building projects requiring review of compliance issues are to include but not be limited to provision of site access/facilities, work schedules, project milestones and the calculation and processing of application or inspection fees
- Standard specifications may include but not be limited to industry standard specifications and may be preliminary/outline specifications, developed specifications or detailed specifications (addressing specific components such as structural or other requirements)
- Building surveying procedures are to include but not be limited to mechanical, structural and electrical and may include other services
- Reporting systems in accordance with organisational, legislative and quality assurance procedures are to include desk based assessment and may include site-based assessment

Unit context

- Competency requires the demonstration of research, analysis, evaluation and reporting skills in the determination of compliance within the context of relevant legislation, the Building Code of Australia and Australian Standards.

Evidence Guide

The Evidence Guide identifies the critical aspects, knowledge and skills to be demonstrated to confirm competency for this unit. This is an integral part of the assessment of competency and should be read in conjunction with the Performance Criteria and Range Statement.

What critical aspects of evidence are required to demonstrate competency in this unit?

- Compliance with occupational health and safety regulations applicable to workplace operations.
- Application of organisational management policies and procedures including quality assurance requirements where appropriate.
- Classification of construction in residential buildings through the evaluation and interpretation of compliance with the BCA, the associated reporting of data, findings, recommendations and strategies for at least one (1) residential building project or equivalent in compliance with relevant legislation.
- Provision of reports to appropriate body/individual as determined by the project brief.
- Application of strategic plans, workplace policies and procedures

Are there any other units which should be assessed with this unit or which relate directly to this unit?

- There are no specified relationships.
- Holistic assessment should be applied where appropriate to form a complete work function.

What specific knowledge is required to achieve the performance criteria?

- Processes for the interpretation of reports, working drawings and specifications.
- Nature of materials and effect on performance.
- Authorities and powers of a building surveyor.
- Relevant national, State/Territory legislation and local government policy and procedures.
- Design, construction and structural principles of buildings.
- Building Code of Australia and primary referenced Australian Standards.
- Criteria for class 1 and 10 buildings.
- Deemed To Satisfy (DTS) provisions.
- Behaviour of structural members undergoing stress, strain, compression, bending or combined actions.
- Terminology, definitions and hazard identification.
- Codes of conduct and ethics.
- Research methods.
- Processes for the administration and preparation of documentation.

Evidence Guide

What specific underpinning skills are required to achieve the performance criteria?

These include a number of processes that are learned throughout work and life, which are required in most jobs. Some of these are covered by the national key competencies, although others may be added. The questions below highlight how these processes are applied in this competency unit. The number in brackets indicates the level to which the key competency needs to be demonstrated where (1) working within set conditions and processes, (2) management or facilitation of conditions or processes are exercised, and (3) design and/or development of conditions or process are required.

How will the candidate apply the following key competency in this unit?

The candidate will need to:

Collect, analyse and organise information	Research, analyse, organise and understand the process for assessing compliance on residential buildings plus subsequent reporting procedures.	Level 3
Communicate ideas and information	Communicate and negotiate ideas and information to enable confirmation of work requirements and legislation translation of compliance issues in residential buildings.	Level 3
Plan and organise activities	Plan and organise activities including the planning of analytical processes, the assessment of strategies related to the determination and resolution of compliance issues in residential buildings.	Level 3
Work with others and in a team	Work with others and in a team by recognising dependencies and using co-operative approaches to optimise satisfaction and productivity.	Level 2
Solve problems	Establish analytical processes, including diagnostic processes, which anticipate and allow for risks, cater for both direct and indirect evidence, avoid or minimise reworking and avoid wastage.	Level 3
Use mathematical ideas and techniques	Use mathematical ideas and techniques to correctly complete measurements, calculate analytical requirements, establish realistic sample criteria, quantify, survey and present analytical results.	Level 3
Use technology	Use workplace technology related to information gathering and analysis, diagnosis, information research, report writing, administration and management procedures.	Level 2

Evidence Guide

In what context should assessment occur?

- 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 defined by the Range Statement.
- Assessment must take account of the endorsed assessment guidelines in the Construction Training Package.

What methods of assessment should apply?

- Assessment of this competency is most likely to be project related under real or simulated conditions and require portfolios or other forms of indirect evidence of process. Direct evidence may include certification of compliance on the final outcome or authorisation for commencement by a competent authority.
- Assessment must confirm the inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.
- Assessment should reinforce the integration of the key competencies.

What are the specific resource requirements for this unit?

- A situation, real or realistically simulated, requiring application of building codes and standards to residential buildings.
- The learner and trainer should have access to appropriate documentation and resources normally used in the workplace.

BCGSV5012A**Assess timber framed designs for one and two storey buildings****Unit Descriptor**

This unit specifies the competency required to select structural members for a timber framed domestic building up to and including two (2) storeys.

It includes the evaluation of plans and specifications, selection of structural members for ceiling and roof framing, timber wall frames, timber stumps, floor bearers and joists. It requires compliance with all relevant legislation, Australian Standards and the Building Code of Australia.

Element**Performance Criteria**

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| 30. Assess plans and specifications for size, span and spacing of structural members required in ceiling and roof framing | 1.37 Access is obtained to all relevant plans, specifications and documentation |
| | 1.38 Specified timber species and stress grading is identified |
| | 1.39 True length of common rafter and overhand and economical size of common rafter is determined to support specified roof structure and covering |
| | 1.40 Maximum span of common rafter is determined |
| | 1.41 Position, location and direction of struts and strutting beams to support roof and ceiling loads are determined and documented |
| | 1.42 Method of support at hip and valley rafters is determined and documented |
| | 1.43 Location, direction and span of ceiling joists and hanging beams to support specified roof design is determined and documented |
| | 1.44 Nominated member sizes, spans, spacings and locations are listed, documented and checked for accuracy against plans and specifications |
| 31. Assess plans and specifications for permanent wind bracing requirements for nominated design gust wind speeds | 2.41 Access is obtained to all relevant plans, specifications and documentation |
| | 2.42 Location and category of building site is identified against design gust wind speed calculations |
| | 2.43 Wind directions are selected and noted on plans |
| | 2.44 Type and number of bracing units for each wind direction is selected |
| | 2.45 Bracing details and description is documented based upon calculations |

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| 32. Assess plans and specifications for size, span and spacings of structural members for timber wall frames/s | <ul style="list-style-type: none"> 5. Access is obtained to all relevant plans, specifications and documentation 5. Specified timber species and stress grading is identified 5. 'Roof load width' for walls supporting ceiling and roof structures for a specified roof covering is determined 5. Economical size for common wall studs is determined 5. Size of top and bottom wall plates is determined according to load bearing conditions 5. Size of studs at side window and door opening is determined 5. Size of lintels to nominated openings is determined 5. Size of timber posts and beams supporting over hands is determined 5. Nominated member sizes, spans, spacings and locations are identified, listed, documented and checked against plans and specifications for accuracy |
| 33. Assess plans and specifications for size, span and spacing of structural members for timber stumps, floor bearers and joists | <ul style="list-style-type: none"> 33.1 Access is obtained to all relevant plans, specifications and documentation 33.2 Specified timber species and stress grading is identified 33.3 Economical size for floor bearer and joist to suit maximum spans and spacings is determined 33.4 Size of timber stumps and footing type and size required to support structural members is determined 33.5 Size for timber trimmers, working and trimming joists for stair opening to suit maximum spans and spacings is determined 33.6 Location, direction and span of bearers and joists to support specified structure is determined 33.7 Nominated member sizes, spans, spacings, direction and bracings are identified, listed, documented and checked for accuracy against plans and specifications |

Range Statement

The Range Statement provides advice to interpret the scope and context of this unit of competency allowing for differences between enterprises and workplaces. It relates to the unit as a whole and facilitates holistic assessment. The following variables may be present for this particular unit:

Unit scope

- Assessment of timber framed designs is to include but not be limited to the evaluation and identification of structural members, used in ceiling and roof framing, timber wall framing, timber stumping, floor bearer and joist installing, and be suitable for the building design in compliance with relevant legislation, design specifications, maintenance specifications and adherence to legislative requirements for the Building Code of Australia.
- Building categories may include but not be limited to all timber framed domestic scale buildings up to and including two (2) storeys.
- Timber frame designed building projects requiring structural member assessment are to include but not be limited to provision of site access/facilities, work schedules, project milestones and the calculation and processing of application or inspection fees.
- Assessment of timber-framed designs is to include the identification and recording/reporting of faults, in accordance with workplace providers, in verbal or written format.
- Timber framed designs may include but not be limited to:-
 - Roof framing:
 - Skillion, gable, hip and valley and cathedral.
 - Floor framing:
 - Loose set single storey timber structures, two storey suspended upper floor level construction.
 - Wall framing:
 - Sizes, bracing locations and tie downs.
 - Overhang framing:
 - Soffits and eaves, attached carport, attached veranda, and attached patio.
- Reporting systems in accordance with organisational, legislative and quality assurance procedures are to include desk based assessment and may include site-based assessment.

Unit context

- Competency requires the demonstration of research, analysis, evaluation and reporting skills in the assessment of timber framed designs, selection of structural members, the identification and rectification of faults. Competency must be demonstrated within the context of relevant legislation, the Building Code of Australia and Australian Standards.

Evidence Guide

The Evidence Guide identifies the critical aspects, knowledge and skills to be demonstrated to confirm competency for this unit. This is an integral part of the assessment of competency and should be read in conjunction with the Performance Criteria and Range Statement.

What critical aspects of evidence are required to demonstrate competency in this unit?	<ul style="list-style-type: none"> • Compliance with occupational health and safety regulations applicable to workplace operations. • Application of organisational management policies and procedures including quality assurance requirements where appropriate. • Assessment of timber framed designs, evaluation of plans and specifications and identification of faults. The selection of structural members for roofs, ceilings, walls, floors and stumps relating to performance and the associated reporting of data, findings, recommendations and rectification strategies for at least one (1) building project of up to two (2) storeys or equivalent in compliance with relevant legislation. • Provision of reports to appropriate body/individual as determined by the project brief. • Application of strategic plans, workplace policies and procedures.
Are there any other units which should be assessed with this unit or which relate directly to this unit?	<ul style="list-style-type: none"> • This unit should be co-assessed with BCG5006, BCG5001 and BCG5039. • Holistic assessment should be applied where appropriate to form a complete work function.

Evidence Guide

What specific knowledge is required to achieve the performance criteria?

- Processes for the interpretation of reports, working drawings and specifications.
- Nature of timber and effect that physiology and pests have on timber, which affect its performance.
- Grading processes and grade markings used to categorise timber and timber products.
- Behaviour of structural members undergoing stress, strain, compression, bending or combined actions.
- Authorities and powers of a building surveyor.
- Relevant national, State/Territory legislation and local government policy and procedures
- Structural, design and construction principles of buildings including the application of timber in buildings.
- Processes for the application of wind force, raking forces, bracing and tie down systems.
- Manufactured timber framing systems.
- Terminology, definitions and hazard identification.
- Codes of conduct and ethics.
- Research methods.
- Processes for the administration and preparation of documentation.

Evidence Guide

What specific underpinning skills are required to achieve the performance criteria?

These include a number of processes that are learned throughout work and life, which are required in most jobs. Some of these are covered by the national key competencies, although others may be added. The questions below highlight how these processes are applied in this competency unit. The number in brackets indicates the level to which the key competency needs to be demonstrated where (1) working within set conditions and processes, (2) management or facilitation of conditions or processes are exercised, and (3) design and/or development of conditions or process are required.

How will the candidate apply the following key competency in this unit?

The candidate will need to:

Collect, analyse and organise information	Research, analyse, organise and understand the process for assessing timber-framed designs on buildings up to two (2) storeys plus subsequent reporting procedures.	Level 2
Communicate ideas and information	Communicate and negotiate ideas and information to enable confirmation of work requirements and legislation, translation of timber framed design assessment and faults on buildings up to two (2) storeys.	Level 2
Plan and organise activities	Plan and organise activities including the planning of analytical processes, the evaluation of plans and specifications in the assessment of timber frame designed buildings of up to two (2) storeys.	Level 2
Work with others and in a team	Work with others and in a team by recognising dependencies and using co-operative approaches to optimise satisfaction and productivity.	Level 1
Solve problems	Establish analytical processes, including diagnostic processes, which anticipate and allow for risks, cater for both direct and indirect evidence, avoid or minimise reworking and avoid wastage.	Level 3
Use mathematical ideas and techniques	Use mathematical ideas and techniques to correctly complete measurements, calculate analytical requirements, establish realistic sample criteria, quantify, survey and present analytical results.	Level 2
Use technology	Use workplace technology related to information gathering and analysis, diagnosis, information research, report writing, administration and management procedures.	Level 2

Evidence Guide

In what context should assessment occur?

- 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 defined by the Range Statement.
- Assessment must take account of the endorsed assessment guidelines in the Construction Training Package.

What methods of assessment should apply?

- Assessment of this competency is most likely to be project related under real or simulated conditions and require portfolios or other forms of indirect evidence of process. Direct evidence may include certification of compliance on the final outcome or authorisation for commencement by a competent authority.
- Assessment must confirm the inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.
- Assessment should reinforce the integration of the key competencies.

What are the specific resource requirements for this unit?

- A situation, real or realistically simulated, requiring assessment of timber framed designs for one and two storey buildings.
- The learner and trainer should have access to appropriate documentation and resources normally used in the workplace.

BCGSV5013A

Apply principles of energy efficient design to buildings

Unit Descriptor

This unit specifies the competency required to apply energy efficient design to buildings.

It includes the evaluation of building designs to establish suitable forms of construction and the identification of appropriate energy consumption practices for incorporation into design briefs.

Element

Performance Criteria

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| 34. Identify the significance of the Macro and Micro climates in the construction process | 1.45 | Climate zones and their characteristics are identified and recorded |
| | 1.46 | Methods for establishing characteristics of specific climate are established and documented |
| | 1.47 | Construction materials and methods suited to specific climates are determined |
| 35. Assess design criteria for energy efficient construction | 2.46 | Characteristics and location specific requirements to establish a design are identified and listed |
| | 2.47 | Appropriate form of construction according to established specifications is selected and documented |
| | 2.48 | Prevailing hot and cool wind directions are identified and recorded |
| | 2.49 | Sun path for the location is identified and documented |
| | 2.50 | Building orientation is established and documented |
| 36. Assess building designs | 5. | Accommodation within the building is assessed and recorded |
| | 5. | Effective zoning within the building is established |
| | 5. | Floor plan is sketched and recorded |
| | 5. | Suitability of design in relation to cross ventilation and shadow lines is determined and recorded |
| | 5. | Impacts of energy efficiency design principles are identified and recorded for architectural and services design in accordance with State and Territory legislation including the Building Code of Australia (BCA) |

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| 37. Identify that energy consumption practices are incorporated into design briefs | 37.1 Energy appliances of the building and their consumption are established and recorded |
| | 37.2 Recommended best practice to conserve energy is identified and documented in energy audits |
| | 37.3 Selection and use of energy efficient fittings and services are determined and utilised in design brief |
| | 37.4 Energy budget principles for building fabric and services are identified and applied in accordance with standard industry practice |

Range Statement

The Range Statement provides advice to interpret the scope and context of this unit of competency allowing for differences between enterprises and workplaces. It relates to the unit as a whole and facilitates holistic assessment. The following variables may be present for this particular unit:

Unit scope

- Energy efficient design principles are to include but not be limited to the evaluation of building designs for the purposes of applying appropriate construction methods to reduce energy consumption.
- Design projects requiring review of energy efficiencies are to include but not be limited to provision of site access/facilities, work schedules, project milestones and the calculation and processing of application or inspection fees.
- Energy efficiency aspects may include but not be limited to:
 - Climate conditions – climate zones in Australia specified in BCA and the microclimates associated with a specific area.
 - Star rating systems – Building Energy Rating Scheme (BERS) computer model, National Housing Energy Rating Scheme (NatHERS) computer model, First Rate computer model.
 - Energy consumption – low energy lighting, solar hot water systems, star rated appliances, window coverings and glazing, utilities and showerhead restriction fittings.
 - Energy efficient construction – materials used, method of application, construction methods, efficient design briefs, location, geography and topography of site.
 - Best practice to conserve energy – building location and orientation, appliance usage, choice and product performance, living practices that maximise benefit and legislation pertinent to conserving energy.
 - Application and assessment of BCA performance based solutions.
- Reporting systems in accordance with organisational, legislative and quality assurance procedures are to include desk based assessment and may include site-based assessment.

Unit context

- Competency requires the application of design principles to maximise energy efficiency in buildings through research, analysis, evaluation and reporting skills in the determination of compliance within the context of relevant legislations, the Building Code of Australia and Australian Standards.

Evidence Guide

The Evidence Guide identifies the critical aspects, knowledge and skills to be demonstrated to confirm competency for this unit. This is an integral part of the assessment of competency and should be read in conjunction with the Performance Criteria and Range Statement.

What critical aspects of evidence are required to demonstrate competency in this unit?	<ul style="list-style-type: none">• Compliance with occupational health and safety regulations applicable to workplace operations.• Application of organisational management policies and procedures including quality assurance requirements where appropriate.• Evaluation, reporting of data, findings, recommendations and strategies for the implementation of energy efficient design principles for at least one (1) building development project and in compliance with the applicable local government authority, relevant legislation and the BCA.• Provision of reports to appropriate body/individual as determined by the project brief.• Application of strategic plans, workplace policies and procedures
Are there any other units which should be assessed with this unit or which relate directly to this unit?	<ul style="list-style-type: none">• There are no specified relationships.• Holistic assessment should be applied where appropriate to form a complete work function.
What specific knowledge is required to achieve the performance criteria?	<ul style="list-style-type: none">• Processes for the interpretation of reports, working drawings and specifications.• Authorities and powers of a building surveyor.• Relevant national, State/Territory legislation and local government policy and procedures.• Effects of fossil fuels on the atmosphere.• Green house gas emissions.• The impacts of National Greenhouse Strategy and Kyoto Protocol on construction.• Impact of construction process on the atmosphere• Nature of materials and effect on performance.• Site topography.• 'R' values (overall thermal resistance) for construction material.• Macro and microclimates.• Energy consumption relative to construction processes.• Ozone depletion theories.

**What specific knowledge is required to achieve the performance criteria?
(continued)**

- Services design concepts.
- Terminology, definitions and hazard identification.
- Research methods.
- Processes for the administration and preparation of documentation.

Evidence Guide

What specific underpinning skills are required to achieve the performance criteria?

These include a number of processes that are learned throughout work and life, which are required in most jobs. Some of these are covered by the national key competencies, although others may be added. The questions below highlight how these processes are applied in this competency unit. The number in brackets indicates the level to which the key competency needs to be demonstrated where (1) working within set conditions and processes, (2) management or facilitation of conditions or processes are exercised, and (3) design and/or development of conditions or process are required.

How will the candidate apply the following key competency in this unit?

The candidate will need to:

Collect, analyse and organise information

Research, analyse, organise and understand the process for applying design principles for energy efficient design in buildings plus subsequent reporting procedures.

Level 3

Communicate ideas and information

Communicate and negotiate ideas and information to enable application of design principles and for translation of energy efficient concepts in buildings.

Level 2

Plan and organise activities

Plan and organise activities including the planning of analytical processes, the assessment and strategies related to the determination of energy efficient building designs.

Level 2

Work with others and in a team

Work with others and in a team by recognising dependencies and using co-operative approaches to optimise satisfaction and productivity.

Level 2

Solve problems

Establish analytical processes, including diagnostic processes, which anticipate and allow for risks, cater for both direct and indirect evidence, avoid or minimise reworking and avoid wastage.

Level 3

Evidence Guide

Use mathematical ideas and techniques

Use mathematical ideas and techniques to correctly complete measurements, calculate analytical requirements, establish realistic sample criteria, quantify, survey and present analytical results.

Level 3

Use technology

Use workplace technology related to information gathering and analysis, diagnosis, information research, report writing, administration and management procedures.

Level 2

In what context should assessment occur?

- 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 defined by the Range Statement.
- Assessment must take account of the endorsed assessment guidelines in the Construction Training Package.

What methods of assessment should apply?

- Assessment of this competency is most likely to be project related under real or simulated conditions and require portfolios or other forms of indirect evidence of process. Direct evidence may include certification of compliance on the final outcome or authorisation for commencement by a competent authority.
- Assessment must confirm the inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.
- Assessment should reinforce the integration of the key competencies.

What are the specific resource requirements for this unit?

- A situation, real or realistically simulated, requiring application of energy efficient design principles to buildings.
- The learner and trainer should have access to appropriate documentation and resources normally used in the workplace.

BCGSV5014A **Apply building surveying procedures to residential buildings**

Unit Descriptor

This unit specifies the competency required to assess residential buildings for compliance with building legislation.

It includes the evaluation and interpretation of plans, progressive inspection of building work, preparation of reports and compliance with legislative requirements.

Element

Performance Criteria

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| 38. Evaluate documents submitted with an application for building approval | <p>1.48 Plans, specifications and structural drawings for residential buildings are evaluated for compliance to building application process</p> <p>1.49 Application/proposal is evaluated against legislative requirements</p> <p>1.50 Components of the application requiring referral to other agencies/departments are identified and forwarded</p> <p>1.51 Common faults with application are identified, noted and reported to relevant parties</p> <p>1.52 Notice of decision, approval, conditional approval or refusal is drafted and processed according to workplace procedures</p> |
| 39. Carry out inspections at various stages of building work | <p>2.51 Compliance of building work is checked according to schedule or at discretion and reports prepared promptly for the appropriate parties</p> <p>2.52 Written notices for non-complying work with a full explanation and any remedial action specified are prepared and processed according to workplace procedures</p> <p>2.53 Follow up inspections are conducted at a suitable time to check rectified work without disruption building progress</p> <p>2.54 Meetings are conducted with the stakeholders, taking notes, minutes and responding as required</p> |
| 40. Prepare reports on various building types | <p>5. Analyses of residential buildings are prepared and advised</p> <p>5. Suitability of existing buildings are inspected and reported prior to purchase for proposed use and requirements</p> <p>5. Existing buildings are inspected for safety and reports completed</p> <p>5. Outcome of construction work prior to occupancy is inspected and reported on</p> |

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| 41. Determine the compliance of building services with respect to building legislation | 41.1 Compliance of building services with building legislation is inspected and reported on prior to occupancy |
| | 41.2 Legislative requirements are interpreted and applied |
| | 41.3 Common faults with building services are identified, researched and processed according to workplace procedures. |

Range Statement

The Range Statement provides advice to interpret the scope and context of this unit of competency allowing for differences between enterprises and workplaces. It relates to the unit as a whole and facilitates holistic assessment. The following variables may be present for this particular unit:

Unit scope

- Input to the application of building surveying procedures to residential buildings is to include but not be limited to the evaluation and interpretation of plans, progressive inspection of building work, preparation of reports and adherence to legislative requirements for Building Codes of Australia class 1 and 10 buildings.
- Residential building projects requiring building surveying are to include but not be limited to provision of site access/facilities, work schedules, project milestones and the processing of applications.
- Building surveying procedures are to include but not be limited to mechanical, structural and electrical and may include other services.
- Resources to facilitate undertaking of building surveying procedures may include but not be limited to human and financial.
- Reporting systems in accordance with organisational and legislative quality assurance procedures are to include desk based assessment and may include site-based assessment.

Unit context

- Competency requires the demonstration of research, analysis, evaluation and reporting skills within the context of relevant legislation, the Building Code of Australia and Australian Standards.

Evidence Guide

The Evidence Guide identifies the critical aspects, knowledge and skills to be demonstrated to confirm competency for this unit. This is an integral part of the assessment of competency and should be read in conjunction with the Performance Criteria and Range Statement.

What critical aspects of evidence are required to demonstrate competency in this unit?	<ul style="list-style-type: none"> • Compliance with occupational health and safety regulations applicable to workplace operations. • Application of organisational management policies and procedures including quality assurance requirements where applicable. • Application of building surveying procedures, the production of an accurate proposal outlining status of approval, compliance with regulations, determination of safety procedures and the laws abided with, findings, recommendations and strategies for at least one (1) residential building project or equivalent. • Provision of reports to appropriate body/individual as determined by the project brief and according to workplace procedures. • Application of strategic plans, workplace policies and procedures.
Are there any other units which should be assessed with this unit or which relate directly to this unit?	<ul style="list-style-type: none"> • There are no specified relationships • Holistic assessment should be applied where appropriate to form a complete work function.
What specific knowledge is required to achieve the performance criteria?	<ul style="list-style-type: none"> • Processes for the interpretation of reports, working drawings and specifications. • Behaviour of structural members undergoing stress, strain, compression or bending. • Nature of materials and effect of performance. • Grading processes and grade markings used to categorise timber and timber products. • Authorities and powers of a building surveyor. • Relevant national, State/Territory legislation, and local government policy and procedures. • Structural, design and construction principles of buildings. • Terminology, definitions and hazard identification. • Codes of conduct and ethics. • Research methods. • Processes for the administration and preparation of documentation.

Evidence Guide

What specific underpinning skills are required to achieve the performance criteria?

These include a number of processes that are learned throughout work and life, which are required in most jobs. Some of these are covered by the national key competencies, although others may be added. The questions below highlight how these processes are applied in this competency unit. The number in brackets indicates the level to which the key competency needs to be demonstrated where (1) working within set conditions and processes, (2) management or facilitation of conditions or processes are exercised, and (3) design and/or development of conditions or process are required.

How will the candidate apply the following key competency in this unit?

The candidate will need to:

Collect, analyse and organise information	Research, analyse, organise and understand the application of building surveying for residential buildings plus subsequent reporting procedures. Level 2
Communicate ideas and information	Communicate and negotiate ideas and information to enable confirmation of work requirements, legislation and translation of building surveying inspection reports. Level 3
Plan and organise activities	Plan and organise activities including the planning of analytical processes, the establishment of evaluative criteria, the application of building surveying procedures and their impact on residential buildings. Level 3
Work with others and in a team	Work with others and in a team by recognising dependencies and using co-operative approaches to optimise satisfaction and productivity. Level 3
Solve problems	Establish analytical processes, including diagnostic processes, which anticipate and allow for risks, cater for both direct and indirect evidence, avoid or minimise reworking and avoid wastage. Level 3
Use mathematical ideas and techniques	Use mathematical ideas and techniques to correctly complete measurements, calculate analytical requirements, establish realistic sample criteria, quantify, survey and present analytical results. Level 2
Use technology	Use workplace technology related to information gathering and analysis, diagnosis, information research, report writing, administration and management procedures. Level 2

Evidence Guide

In what context should assessment occur?

- 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 defined by the Range Statement.
- Assessment must take account of the endorsed assessment guidelines in the Construction Training Package.

What methods of assessment should apply?

- Assessment of this competency is most likely to be project related under real or simulated conditions and require portfolios or other forms of indirect evidence of process. Direct evidence may include certification of compliance on the final outcome or authorisation for commencement by a competent authority.
- Assessment must confirm the inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.
- Assessment should reinforce the integration of the key competencies.

What are the specific resource requirements for this unit?

- A situation, real or realistically simulated, requiring building surveying procedures to be applied to residential buildings.
- The learner and trainer should have access to appropriate documentation and resources normally used in the workplace.

BCGSV5015A**Assess structural requirements for domestic scale buildings****Unit Descriptor**

This unit specifies the competency required to assess the structural requirements of domestic scale buildings and those of a similar loading, construction and size such as small industrial, commercial or public buildings.

It includes the application of design concepts to the selection, positioning and sizing of all structural members and materials that form a building structure.

Element**Performance Criteria**

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|---|---|
| 42. Identify structural requirements and loads commonly used in structural design | 1.53 Structural requirements relating to equilibrium, stability, strength, functionality, economy and aesthetics are determined |
| | 1.54 Different types of loading and loading methods and the effect on structures are identified and documented in accordance with Building Code of Australia (BCA), relevant Australian Standards, suppliers technical data and empirical methods |
| 43. Analyse the effects of force and moments on structural elements | 2.55 Force, moments and equilibrium of force and the effects on structures are identified and recorded |
| | 2.56 Equilibrium of forces for coplanar systems in consideration of stability is identified and compared for performance |
| 44. Analyse properties and behaviour of structural materials | 5. Effect of force on materials in tension, compression, stress, strain and elasticity is identified and recorded |
| | 5. Structural properties and performances are differentiated for common materials and recorded |
| 45. Identify section properties of structural elements and their effect on structural performance | 45.1 Cross sectional geometry and common structural shapes are identified |
| | 45.2 Section properties and the relationship between first, second area moments, section modules and gyration and deflection of beams are identified and compared for performance |
| | 45.3 Section properties values for I, Z and R (moment of inertia, section modulus and radius) for common sections are determined using tables or standard formulae and compared for performance |

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| 46. Compare the performance and properties of spanning elements | 46.1 | Structural considerations of loaded spanning elements for bending moments; shear forces; deflection, torsion are determined and compared for performance |
| | 46.2 | Bending behaviour and performance of loaded support beams of various types, shapes, spans and loads are determined and compared for performance |
| | 46.3 | Effect that connections have upon the structural performance of beams are identified and compared for performance |
| | 46.4 | Principles of slab behaviour in relation to spans and stress distribution are identified and compared for performance |
| 47. Determine performance criteria for columns | 47.1 | Effect of Slenderness Ratio that changes in length, cross-sections, connections and materials will have on the strength of a column are determined and compared for performance |
| | 47.2 | Eccentric and axial load affect on the strength of column section and materials are determined and compared for performance |
| 48. Identify factors affecting design of connections between structural elements | 48.1 | Transmission of forces between structural elements are determined and compared for performance |
| | 48.2 | Methods of distributing stresses in connections between structural elements are determined and compared for performance |
| 49. Outline how loads of various types occur and impinge on a building structure | 49.1 | Differences between types of loading including Dead load, Live load, Wind load, Earthquake load, Other load causing actions are determined and compared for performance |
| | 49.2 | Dead and live loads using BCA and relevant Australian Standards are determined |
| | 49.3 | Indication of direction of wind pressures on the various surfaces of buildings specified in BCA and relevant Australian Standards are determined |

Range Statement

The Range Statement provides advice to interpret the scope and context of this unit of competency allowing for differences between enterprises and workplaces. It relates to the unit as a whole and facilitates holistic assessment. The following variables may be present for this particular unit:

Unit scope

- Input to the assessment of structural requirements is to include but not be limited to analysis of engineering drawings, evaluation of site physicality and identification of safe structural practices, it may require actual site visits
- Adherence to legislative requirements is limited to domestic scale buildings (similar in characteristics to those of residential dwellings in terms of loading, construction and size and may include small industrial, commercial and public buildings)
- Analysis is to include but not be limited to:
 - base unit mass, density, velocity, acceleration, force and stress
 - forces for coplanar non-current force systems
 - forces associated with levers identified by direction and value
 - force on materials in tension, compression, stress, strain and elasticity
 - structural properties differentiated for common materials
 - cross sectional geometry and common structural shapes
 - second area moments and deflection of beams
 - 'i' (moment of inertia) values
 - symmetrically loaded simply supported situations for; bending moments; shear forces; deflection and torsion
 - deflections for symmetrically loaded simply supported timber beams of various shapes, spans and loads
 - restraints for use with beams
 - wind forces and wind velocity for bracing
 - minimum bracing requirements
 - column changes in length, cross-sectional, restraints, material and eccentricity
 - simple roof truss transmission force
 - tension and compression stresses of roof members
 - removal of trusses
 - load differences including: dead load, live load, wind load and earthquake load
 - directions of wind pressure loads
- Standard specifications may include but not be limited to industry standard specifications and may be preliminary/outline specifications, developed specifications or detailed specifications (addressing specific components such as structural or other requirements)
- Reporting systems in accordance with organisational and legislative quality assurance procedures are to include desk based assessment and may include site-based assessment

Range Statement

Unit context

- Competency requires the demonstration of research, design, analysis, evaluation and reporting skills, in assessing the structural elements of domestic scale buildings, within the context of relevant legislation, the Building Code of Australia and Australian Standards

Evidence Guide

The Evidence Guide identifies the critical aspects, knowledge and skills to be demonstrated to confirm competency for this unit. This is an integral part of the assessment of competency and should be read in conjunction with the Performance Criteria and Range Statement.

What critical aspects of evidence are required to demonstrate competency in this unit?

- Compliance with occupational health and safety regulations applicable to workplace operations
- Application of organisational management policies and procedures including quality assurance requirements where applicable
- Assessment, identification and reporting of findings for the design, positioning and sizing of structural members of at least one (1) domestic scale building project or equivalent.
- Provision of reports to appropriate body/individual as determined by the project brief
- Application of strategic plans, workplace policies and procedures

Are there any other units which should be assessed with this unit or which relate directly to this unit?

- There are no specified relationships
- Holistic assessment should be applied where appropriate to form a complete work function

What specific knowledge is required to achieve the performance criteria?

- Nature of materials and effect of performance
- Processes for the interpretation of working drawings and specifications
- Grading processes and grade markings used to categorise timber and timber products
- Relevant national, State/Territory legislation and local government policy and procedures
- Structural and design principles for buildings
- Behaviour of structural members undergoing stress, strain, compression, bending or combined actions
- Codes of conduct and ethics
- Research methods
- Processes for the preparation of documentation

Evidence Guide

What specific underpinning skills are required to achieve the performance criteria?

These include a number of processes that are learned throughout work and life, which are required in most jobs. Some of these are covered by the national key competencies, although others may be added. The questions below highlight how these processes are applied in this competency unit. The number in brackets indicates the level to which the key competency needs to be demonstrated where (1) working within set conditions and processes, (2) management or facilitation of conditions or processes are exercised, and (3) design and/or development of conditions or process are required.

How will the candidate apply the following key competency in this unit?

The candidate will need to:

Collect, analyse and organise information	Research, analyse, organise and understand the structural requirements of domestic scale buildings. Level 3
Communicate ideas and information	Communicate and negotiate ideas and information to enable confirmation of work requirements and legislation, translation of structural requirements from engineering drawings, the reporting of outcomes and the completion of regulatory determinations. Level 2
Plan and organise activities	Plan and organise activities including the planning of analytical processes, the establishment of evaluative criteria, the assessment of structural requirements and the impact of various forces upon them. Level 2
Work with others and in a team	Work with others and in a team by recognising dependencies and using co-operative approaches to optimise satisfaction and productivity. Level 2
Solve problems	Establish analytical processes, including diagnostic processes, which anticipate and allow for risks, cater for both direct and indirect evidence, avoid or minimise reworking and avoid wastage. Level 3
Use mathematical ideas and techniques	Use mathematical ideas and techniques to correctly complete measurements, calculate analytical requirements, establish realistic sample criteria, quantify, survey and present analytical results. Level 2
Use technology	Use workplace technology related to information gathering and analysis, diagnosis, information research, report writing, administration and management procedures. Level 2

Evidence Guide

In what context should assessment occur?

- 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 defined by the Range Statement.
- Assessment must take account of the endorsed assessment guidelines in the Construction Training Package.

What methods of assessment should apply?

- Assessment of this competency is most likely to be project related under real or simulated conditions and require portfolios or other forms of indirect evidence of process. Direct evidence may include certification of compliance on the final outcome or authorisation for commencement by a competent authority.
- Assessment must confirm the inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.
- Assessment should reinforce the integration of the key competencies.

What are the specific resource requirements for this unit?

- A situation, real or realistically simulated, requiring assessment of structural requirements for domestic scale buildings.
- The learner and trainer should have access to appropriate documentation and resources normally used in the workplace.

BCGSV6001A**Assess the construction of buildings up to three (3) storeys****Unit Descriptor**

This unit specifies the competency required to assess the construction of buildings of up to three (3) storeys and a maximum floor area of 2000m².

It includes evaluation and identification of appropriate construction methods and the identification of required standards and services according to relevant legislation, design and maintenance specifications.

Element**Performance Criteria**

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|---|--|
| 50. Prepare comprehensive checklist schedule to investigate, plan and set up sites | 1.55 Relevant factors for project scheduling, investigation, planning and site establishment are analysed and determined

1.56 Capabilities of builder's plant and equipment for single and multi-building projects are identified and documented

1.57 Authorities requirements and procedures to connect temporary services are identified and documented

1.58 OH&S requirements for site amenities/services and emergency safety procedures are established and documented |
| 51. Research and comply with relevant State/Territory legislation and Local Government requirements | 2.57 Effects of relevant State/Territory building and planning legislation and Local Government planning and building requirements are investigated, interpreted and communicated to others throughout design and construction of the specified building project

2.58 Planning and construction effects of the Building Code of Australia (BCA) and the construction requirements of the various relevant Australian Standard are researched and documented

2.59 Effects of State/Territory, Local Government and Service Supply Authorities regulations on the design and construction are researched and documented

2.60 Environmental issues and controls relating to the construction site are evaluated and recorded |

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|--|---|
| 52. Investigate and evaluate building site establishment | 52.1 Available site services and records of the salient features of a building site are appraised and recorded |
| | 52.2 Soil engineer assessment of foundations, test bore results and sketches of footing systems used suited to various foundation designs, selection and behaviour in wet, dry and earthquake conditions are interpreted |
| | 52.3 Types, principles, construction practices of shoring, underpinning, rock anchors used in rock and soil foundations, de-watering, ground stabilisation, footing systems, basements, tanking and retaining wall construction are identified, documented and sketched |
| | 52.4 Principles and practices of site establishment and different types and uses of builders' plant and equipment are identified and evaluated |
| | 52.5 Demolition procedures, standards and safety requirements for site preparation, including marking locations of services, provision of site access and general site clearing are identified and evaluated as appropriate |
| 53. Determine stages and sequencing practices for structural systems | 53.1 States and sequencing appropriate to the different forms of project construction are identified and described |
| | 53.2 Structural systems commonly used in different forms of project construction are identified and described |
| | 53.3 Types, principles, relevant regulations including BCA, construction standards and practices are identified in accordance with relevant design and construction of structural systems |
| | 53.4 Sub-structure of different forms of project construction from the foundation up to ground level are detailed and documented |
| | 53.5 Options available for fenestration design based on bracing design are investigated and described |
| | 53.6 Tilt up construction process, application, standards and practices are identified and described in accordance with relevant design and construction of structural systems |
| | 53.7 Drawings of service core layouts are prepared in accordance with relevant design and construction of structural systems |
| | 53.8 The purposes for dimensional coordination and its benefits to the planning and construction of buildings are evaluated |
| | 53.9 Shop drawings used for the manufacturing of various structural systems most commonly used are reviewed |

54.	Determine requirements for scaffolding systems	54.1	Various scaffolding systems are identified and selected in accordance with relevant legislation and Australian Standards
55.	Select suitable methods for rubbish removal from building sites	55.1	Rubbish removal methods suitable for a specified medium/high rise building in accordance with relevant legislation and Australian Standards are identified and selected
56.	Select suitable cranes and other modes of material handling	56.1	Correct and safe methods of material handling systems are identified and selected in accordance with relevant legislation and Australian Standards
57.	Identify and apply of earthquake resistant construction to building	57.1	Major building elements designed to resist earthquakes are defined
		57.2	Major structural concepts used to resist earthquakes are identified
		57.3	Sketch application of structural and cladding details to resist earthquakes using appropriate drawing protocol
		57.4	Factors effecting material selection and installation are nominated
58.	Evaluate construction standards and practices	58.1	Types, construction standards and practices for the installation/application used for claddings, linings, finishes and coatings are identified and evaluated
		58.2	Detail drawings of the various types of cladding systems and their fixings are prepared in accordance with relevant design specifications
		58.3	Suitability of various partition systems for use in office landscaping/ layouts are evaluated and deemed appropriate to the function of the office
		58.4	Preparation of drawings of typical office layouts and selection criteria with specific emphasis on materials choice and functional office design are investigated and deemed appropriate
		58.5	Types, principles, construction standards and practices of window, door and joinery fabrication and installation are identified and evaluated in accordance with relevant design and construction of structural systems
		58.6	Basic principles and integration of building services into the building are identified and evaluated in accordance with standard practices and the supply authority legislation
		58.7	Structural principles of loads, forces, stresses and strains applied to the structural footings, load-bearing walls, beams, columns, concrete floor slabs, ties, braces, arches, roof frames including trusses and the use of these principles are identified
		58.8	Types, standards and practices for the installation of the services are identified and described in accordance with different forms of project construction

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|---|---|
| 59. Plan for continuing maintenance on a construction project | 59.1 Design principles required for consideration to accommodate/facilitate ongoing maintenance are identified and documented |
| | 59.2 Key services areas of a building project requiring ongoing maintenance are nominated and described |
| | 59.3 Approaches for entering into maintenance agreements for the provision of subsequent services are identified and documented |
| | 59.4 Responsibilities of the various parties involved in a building project during the construction, defects liability and service life periods are identified and documented |

Range Statement

The Range Statement provides advice to interpret the scope and context of this unit of competency allowing for differences between enterprises and workplaces. It relates to the unit as a whole and facilitates holistic assessment. The following variables may be present for this particular unit:

Unit scope

- Construction principles for buildings are to include but not be limited to the evaluation and identification of construction methods, standards and services in compliance with relevant legislation, design specifications, maintenance specifications and adherence to legislative requirements for Building Code7 of Australia class 2 to 9 buildings
- Buildings are limited to three (3) storeys and a maximum floor area not exceeding 2000m²
- Building projects requiring applying principles of construction are to include but not be limited to provision of site access/facilities, work schedules, project milestones and the calculation and processing of application or inspection fees
- Reporting systems in accordance with organisational, legislative and quality assurance procedures are to include desk based assessment and may include site-based assessment
- Types, practices and standard construction may include but not be limited to:
 - Footing systems:
 - Shoring, underpinning, grouted anchors, mechanical anchors, de-watering, ground stabilisation, tanking and basement construction, retaining walls, car park construction, pad and pedestal footings, pier and beam (bored piers and driven piles), piles and cap, grillage.

Unit scope (continued)

- Termite control:
 - Mechanical and chemical, it may include other control systems.
- Structural Systems:
 - Structural floor systems, structural wall systems, structural roof systems.
- Service core construction:
 - Slip formwork, jump formwork, demountable formwork, openings (floors, walls, ceilings, roofs), damp proof courses, membranes, flashings, sarking and insulations, wall and floor cladding.
- Dimensional co-ordination:
 - General principles of controlling dimensions, component dimensions, joints and tolerances between control joints and construction joints (vertical and horizontal).
- Cladding systems:
 - Insitu concrete (i.e. off-the-form, textured), brickwork and blockwork, precast concrete (load bearing, non load bearing, permanent formwork), curtain wall, glass, coated steel, aluminium, stainless steel, bronze, fibre reinforced cement, glass reinforced polyester resin (grp), plastics, sandwich panels, metal and epoxy resin laminates, veneer facings (sandstone, granite, marble, plastics, tiles and mosaics, brick).
- Paving for pedestrians and vehicular traffic.
- Structural openings:
 - Timber and aluminium framed windows and doors, fire doors, vehicle access doors, door types for internal and external use, fenestration design based on bracing design, rigid frame and core, braced frame and core, tube structure, diagonal bracing superimposed over frame or tube structure.
- Structural fit-out systems and fixings:
 - Mouldings, cupboard joinery and finishes, floor, wall and ceiling linings, wet area floor detailing, floor, wall and ceiling finishes and coatings.
- Services:
 - Surface drainage, roof water plumbing and drainage, sewerage/septic or similar systems of plumbing and drainage, electricity, gas, telephone, mechanical ventilation, fire services including fire hydrants, fire hose reels, sprinklers and similar systems, smoke control systems, heating and cooling systems, communication systems.

Unit Scope (continued)

- Plant and Equipment:
 - Shovels and buckets, back hoes, skimmers and scrapers, crane and grab, rock breakers, pumps/submersible pumps, well points, cranes, hoists, generators, temporary lighting systems, hoardings, gantries and similar overhead protection systems, scaffolding, temporary support systems, concrete pumps, concrete kipples/skip
- Characteristics, uses, maintenance and selection of materials may include but not be limited to manufacture, testing, installation, alternate uses, cost effectiveness, environmental safety, recycling, new technologies, scaffolding systems, rubbish removal, dangerous materials, transport problems/restrictions (including hoardings, gantries, barriers, site shed locations), cranes and hoists, new materials – evaluation and assessment.

Unit context

- Competency requires the demonstration of research, analysis, evaluation and reporting skills within the context of relevant legislation, the Building Code of Australia and Australian Standards.

Factors for Project Scheduling

- Relevant factors for project scheduling, investigation, planning and site establishment are analysed and determined including site investigation and planning, site establishment, temporary builders' site services, builders' construction plant and equipment and contractual arrangements relevant to State/Territory building control legislation

Evidence Guide

The Evidence Guide identifies the critical aspects, knowledge and skills to be demonstrated to confirm competency for this unit. This is an integral part of the assessment of competency and should be read in conjunction with the Performance Criteria and Range Statement.

What critical aspects of evidence are required to demonstrate competency in this unit?

- Compliance with occupational health and safety regulations applicable to workplace operations.
- Application of organisational management policies and procedures including quality assurance requirements where appropriate.
- Application of the principles of construction, standards and services, design and maintenance specifications, correct terminology, the associated reporting of data, findings, recommendations and strategies for at least one (1) commercial, industrial or residential building project or equivalent in compliance with relevant legislation.
- Provision of reports to appropriate body/individual as determined by the project brief.
- Application of strategic plans, workplace policies and procedures

Evidence Guide

Are there any other units which should be assessed with this unit or which relate directly to this unit?

- There are no specified relationships.
- Holistic assessment should be applied where appropriate to form a complete work function.

What specific knowledge is required to achieve the performance criteria?

- Processes for the interpretation of reports, working drawings and specifications.
- Nature of materials and effect of performance.
- Authorities and powers of a building surveyor.
- Relevant national, State/Territory legislation and local government policy and procedures
- Design and construction principles of buildings.
- Terminology, definitions and hazard identification.
- Codes of conduct and ethics.
- Research methods.
- Processes for the administration and preparation of documentation.

What specific underpinning skills are required to achieve the performance criteria?

These include a number of processes that are learned throughout work and life, which are required in most jobs. Some of these are covered by the national key competencies, although others may be added. The questions below highlight how these processes are applied in this competency unit. The number in brackets indicates the level to which the key competency needs to be demonstrated where (1) working within set conditions and processes, (2) management or facilitation of conditions or processes are exercised, and (3) design and/or development of conditions or process are required.

How will the candidate apply the following key competency in this unit?

The candidate will need to:

Collect, analyse and organise information

Research, analyse, organise and understand the principles of construction for commercial and residential buildings plus subsequent reporting procedures

Level 3

Communicate ideas and information

Communicate and negotiate ideas and information to enable confirmation of work requirements, legislation and translation of principles of construction for commercial and residential buildings.

Level 3

Evidence Guide

Plan and organise activities

Plan and organise activities including the planning of analytical processes, the stages and trade sequencing appropriate to different forms of project construction.

Level 3

Work with others and in a team

Work with others and in a team by recognising dependencies and using co-operative approaches to optimise satisfaction and productivity.

Level 3

Solve problems

Establish analytical processes, including diagnostic processes, which anticipate and allow for risks, cater for both direct and indirect evidence, avoid or minimise reworking and avoid wastage.

Level 3

Use mathematical ideas and techniques

Use mathematical ideas and techniques to correctly complete measurements, calculate analytical requirements, establish realistic sample criteria, quantify, survey and present analytical results.

Level 2

Use technology

Use workplace technology related to information gathering and analysis, diagnosis, information research, report writing, administration and management procedures.

Level 2

In what context should assessment occur?

- 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 defined by the Range Statement.
- Assessment must take account of the endorsed assessment guidelines in the Construction Training Package.

What methods of assessment should apply?

- Assessment of this competency is most likely to be project related under real or simulated conditions and require portfolios or other forms of indirect evidence of process. Direct evidence may include certification of compliance on the final outcome or authorisation for commencement by a competent authority.
- Assessment must confirm the inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.
- Assessment should reinforce the integration of the key competencies.

What are the specific resource requirements for this unit?

- A situation, real or realistically simulated, requiring principles of construction to be applied to buildings.
- The learner and trainer should have access to appropriate documentation and resources normally used in the workplace.

BCGSV6002A**Produce working drawings for buildings up to 3 storeys****Unit Descriptor**

This unit specifies the competency required to read and interpret plans/specifications and to undertake architectural drafting of buildings up to three (3) storeys and a maximum floor area not exceeding 2000m².

It includes the production of two and three-dimensional drawings in accordance with standard industry drawing practice and to a level suitable for building permit approval.

Element**Performance Criteria**

- | | |
|---|---|
| 1. Read and interpret plans and specifications | 1.59 Inter-relationships between plans and specifications are identified and interpreted |
| | 1.60 Location and interpretation of key information is identified according to drawing and specifications |
| | 1.61 Key information is located and identified |
| | 1.62 Drawing responses are identified in accordance with relevant Australian Standards |
| | 1.63 The application of all documentation is identified and interpreted |
| 2. Produce draft working drawings | 2.61 The requirements and criteria for draft working drawings are identified and interpreted |
| | 2.62 Draft working drawings with annotated construction details are completed in accordance with Building Code of Australia (BCA), relevant State or Territory Legislation and Australian Standards |
| 3. Produce a set of working drawings for a factory and office complex | 5. The requirement and criteria for working drawings are identified and interpreted |
| | 5. Working drawings are based on research and are in accordance with relevant legislation including the BCA and Australian standards |
| | 5. Building drawings include detailed specifications and are completed to architectural conventions and demonstrate consideration of creativity and innovation |
| | 5. Documentation is compiled to satisfy approval requirements |

Range Statement

The Range Statement provides advice to interpret the scope and context of this unit of competency allowing for differences between enterprises and workplaces. It relates to the unit as a whole and facilitates holistic assessment. The following variables may be present for this particular unit:

Unit scope

- Input to the production of working drawings for buildings is to include but is not limited to:
 - Two (2) and three (3) dimensional drawings
 - Plan and specification interpretation
 - Up to three (3) storey buildings not exceeding a floor area of 2000m²
 - Building Code of Australia class 2 to 9 buildings
 - Computer generated or paper based presentations
 - Site plans, floor plans, sections, elevations, projections, details, general notes, construction notes, area analysis, services, location or neighbouring buildings
- Production of building drawings may include but not be limited to:
 - A research journal comprising a record of the site visits, photographs, three (3) dimensional sketches and sections in accordance with project aims
 - Drawing protocols which include, symbols, lettering standards, standard units of measurement, paper size, scale, numbering, legends, abbreviations
 - Land surveyor plans, levels and contours, certificate of title to land, excavation cut and fill, retaining walls, banks and landscaping, sewerage connection and easements plan, stormwater connection and easements plan, general plumbing services plan, electrical connections plan, soil classification and tests, base structure – timber and masonry, wall construction, timber and masonry, internal and external wall claddings, roof construction, upper floor construction, composite construction (e.g. steel and timber), complex roof and wall shapes, flashings and box gutters, stairs, glazing including window and door schedules, insulation and sarking, large span timber beams and connections (including glue laminated beams), joinery, conversion of plans and specifications to architectural/building detail
- Application of Australian Standards which include:
 - AS 3700 – masonry
 - AS 1100 – architectural drawing and supplement
 - AS 1720 – timber structures
 - AS 3600 – concrete structures
 - AS 4100 – steel structures

Range Statement

- | | |
|---------------------------------|---|
| Plans and specifications | <ul style="list-style-type: none">Plans and specifications are to include structural engineering drawings, soil tests, shop drawings (steel fabrication), survey plans and levels plan for temporary structures and works |
| Draft working drawings | <ul style="list-style-type: none">Draft working drawings are to include building plans, details, sections and three-dimensional sketches relating to main components of construction, finishes and specification notes to a standard suitable for building approval |
| Unit context | <ul style="list-style-type: none">Competency requires the demonstration of two and three dimensional drawing skills and compliance within the context of relevant legislations, the Building Code of Australia and Australian Standards. |

Evidence Guide

The Evidence Guide identifies the critical aspects, knowledge and skills to be demonstrated to confirm competency for this unit. This is an integral part of the assessment of competency and should be read in conjunction with the Performance Criteria and Range Statement.

What critical aspects of evidence are required to demonstrate competency in this unit?

- Compliance with occupational health and safety regulations applicable to workplace operations.
- Application of organisational management policies and procedures including quality assurance requirements where applicable.
- Production of two and three dimensional drawings for buildings up to three (3) storey and not exceeding a maximum floor area of 2000m², including at least one orthographic, one isometric and one perspective drawing.
- Provision of drawings to appropriate body/individual as determined by the project brief.
- Application of strategic plans, workplace policies and procedures.
- There are no specified relationships.
- Holistic assessment should be applied where appropriate to form a complete work function.

Are there any other units which should be assessed with this unit or which relate directly to this unit?

Evidence Guide

What specific knowledge is required to achieve the performance criteria?

- Processes for the interpretation of reports, working drawings and specifications.
- Drafting and drawing protocols.
- Relevant national, State/Territory legislation and local government policy and procedures
- Structural, design and construction principles of buildings.
- Terminology, definitions and fault identification.
- Research methods.
- Processes for the administration and preparation of documentation.
-

What specific underpinning skills are required to achieve the performance criteria?

These include a number of processes that are learned throughout work and life, which are required in most jobs. Some of these are covered by the national key competencies, although others may be added. The questions below highlight how these processes are applied in this competency unit. The number in brackets indicates the level to which the key competency needs to be demonstrated where (1) working within set conditions and processes, (2) management or facilitation of conditions or processes are exercised, and (3) design and/or development of conditions or process are required.

How will the candidate apply the following key competency in this unit?

The candidate will need to:

Collect, analyse and organise information

Research, analyse, organise and understand the application and production of working drawings for buildings.

Level 3

Communicate ideas and information

Communicate and negotiate ideas and information to translate legislation enabling production of working drawings for buildings.

Level 3

Plan and organise activities

Plan and organise activities including the planning of working drawings for buildings and analytical processes related to organisation of regulatory factors.

Level 3

Work with others and in a team

Work with others and in a team by recognising dependencies and using co-operative approaches to optimise satisfaction and productivity.

Level 2

Evidence Guide

Solve problems

Establish analytical processes, including diagnostic processes, which anticipate and allow for risks, cater for both direct and indirect evidence, avoid or minimise reworking and avoid wastage.

Level 3

Use mathematical ideas and techniques

Use mathematical ideas and techniques to correctly complete measurements, calculate analytical requirements, scales and numbering systems, quantify, survey and present analytical results.

Level 2

Use technology

Use workplace technology related to information gathering and analysis, diagnosis, information research, report writing, production of working drawings, administration and management procedures.

Level 2

In what context should assessment occur?

- 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 defined by the Range Statement.
- Assessment must take account of the endorsed assessment guidelines in the Construction Training Package.

What methods of assessment should apply?

- Assessment of this competency is most likely to be project related under real or simulated conditions and require portfolios or other forms of indirect evidence of process. Direct evidence may include certification of compliance on the final outcome or authorisation for commencement by a competent authority.
- Assessment must confirm the inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.
- Assessment should reinforce the integration of the key competencies.

What are the specific resource requirements for this unit?

- A situation, real or realistically simulated, requiring production of working drawings for buildings.
- The learner and trainer should have access to appropriate documentation and resources normally used in the workplace.

BCGSV6003A**Assess construction faults in buildings up to 3 storeys****Unit Descriptor**

This unit specifies the competency required to identify construction faults in buildings up to three (3) storeys and not exceeding a maximum floor area of 2000m².

It includes the identification and evaluation of construction problems and determination of alternate methods in accordance with legislative requirements.

Element**Performance Criteria**

- | | |
|--|---|
| 60. Identify and analyse the construction faults on building sites up to 3 storeys | 1.64 Information is collected relating to the specific construction problem |
| | 1.65 Construction problem is identified relative to original specifications |
| | 1.66 Construction problem is communicated to appropriate personnel and documented in accordance with standard work practices |
| | 1.67 Problem solving techniques are used and typical faults and problems are identified and the action to rectify is deemed to be in accordance with the Building Code of Australia (BCA) |
| 61. Identify construction techniques/methods and materials nominated relevant legislation in the BCA and Australian Standard | 2.63 Building terminology is used accurately in the communication of issues |
| | 2.64 Working drawings and specifications and identifying existing or designed construction problems are evaluated |
| | 2.65 Alternative methods/materials to meet construction aims and objectives are prepared to specification nominated in relevant legislation in the BCA and Australian Standard |
| | 2.66 Detailed sketches of available alternative methods/materials available to meet the construction aims and objectives are prepared to specification |
| 62. Resolve construction faults in construction techniques/methods | 5. Project working drawings and specifications, identifying existing or designed construction problems are evaluated |
| | 5. Report identifying the available alternative methods/materials available to meet the construction aims and objectives is prepared to specification |
| | 5. Detailed sketches of available alternative methods/materials available to meet the construction aims and objectives are prepared to specification |

- | | |
|--|--|
| 63. Resolve construction faults using alternative construction methods | 63.1 Suitable methods from the available alternative solutions are evaluated and recommended to resolve the problem in accordance with the project aims and objectives |
| | 63.2 Selected methods are to be integrated into the project in order to resolve the construction problems in accordance with project aims |
| | 63.3 Evaluation of the available alternative forms of construction are carried out in accordance with project aims |
| 64. Resolve common on-site faults with building materials | 64.1 Commonly occurring on-site problems with building materials and their causes are evaluated |
| | 64.2 Corrective and preventative measures are identified and implemented |

Range Statement

The Range Statement provides advice to interpret the scope and context of this unit of competency allowing for differences between enterprises and workplaces. It relates to the unit as a whole and facilitates holistic assessment. The following variables may be present for this particular unit:

Unit scope

- Building construction is to include but not be limited to the evaluation and identification of construction faults and the determination of alternate methods, standards and services in compliance with relevant legislation, design specifications, maintenance specifications and adherence to legislative requirements for Building Codes of Australia class 2 to 9 buildings.
- Building categories may include but not be limited to residential, industrial and commercial medium rise buildings and wide span buildings limited to three (3) storeys and a maximum floor area not exceeding 2000m².
- Building projects requiring assessment of faults are to include but not be limited to provision of site access/facilities, work schedules, project milestones and the calculation and processing of application or inspection fees.
- Forms of construction may include but not be limited to timber framed, steel framed, concrete, masonry and AAC
- Construction faults may include but not be limited to refurbishing, restoration, renovation and installation.
- Application of Australian Standards may include but not be limited to:
 - AS 3660 protection of buildings from subterranean termites
 - AS 3700 masonry
 - AS 1684 residential timber framed construction
 - AS 3600 concrete structures
 - AS 2050 fixing of roof tiles
 - AS 2180 metal rainwater goods, selection and installation
 - AS 1288 installation of glass in buildings
 - AS 2208 safety glazing materials for use in buildings
 - AS 3740 waterproofing of wet areas in residential buildings
 - AS 3500 national plumbing
 - AS 4349 inspection of buildings
- Reporting systems in accordance with organisational, legislative and quality assurance procedures are to include desk based assessment and may include site-based assessment.

Range Statement

Unit context

- Competency requires the demonstration of research, analysis, evaluation and reporting skills in the assessment of construction faults, determination of rectification and alternate building methods, within the context of relevant legislations, the Building Code of Australia and Australian Standards.

Evidence Guide

The Evidence Guide identifies the critical aspects, knowledge and skills to be demonstrated to confirm competency for this unit. This is an integral part of the assessment of competency and should be read in conjunction with the Performance Criteria and Range Statement.

What critical aspects of evidence are required to demonstrate competency in this unit?

- Compliance with occupational health and safety regulations applicable to workplace operations.
- Application of organisational management policies and procedures including quality assurance requirements where appropriate.
- Assessment of construction faults in buildings, determination of a rectification strategy and consideration of alternative construction methods, the associated reporting of data, findings, recommendations and strategies for at least one (1) residential building project and one (1) commercial building project or equivalent in compliance with relevant legislation.
- Provision of reports to appropriate body/individual as determined by the project brief.
- Application of strategic plans, workplace policies and procedures
- There are no specified relationships.
- Holistic assessment should be applied where appropriate to form a complete work function.

Are there any other units which should be assessed with this unit or which relate directly to this unit?

Evidence Guide

What specific knowledge is required to achieve the performance criteria?

- Processes for the interpretation of reports, working drawings and specifications.
- Nature of materials and effect on performance.
- Authorities and powers of a building surveyor.
- Relevant national, State/Territory legislation and local government policy and procedures
- Design and construction principles of buildings.
- Terminology, definitions and hazard identification.
- Research methods.
- Processes for the administration and preparation of documentation.

Evidence Guide

What specific underpinning skills are required to achieve the performance criteria?

These include a number of processes that are learned throughout work and life, which are required in most jobs. Some of these are covered by the national key competencies, although others may be added. The questions below highlight how these processes are applied in this competency unit. The number in brackets indicates the level to which the key competency needs to be demonstrated where (1) working within set conditions and processes, (2) management or facilitation of conditions or processes are exercised, and (3) design and/or development of conditions or process are required.

How will the candidate apply the following key competency in this unit?

The candidate will need to:

Collect, analyse and organise information

Research, analyse, organise and understand the process of assessing construction faults on residential and commercial buildings plus subsequent reporting procedures

Level 3

Communicate ideas and information

Communicate and negotiate ideas and information to enable confirmation of work requirements and legislation, translation of construction faults on residential and commercial buildings.

Level 3

Plan and organise activities

Plan and organise activities including the planning of analytical processes, the assessment, rectification and alternate strategies related to the resolution of construction faults in residential and commercial buildings.

Level 3

Evidence Guide

Work with others and in a team

Work with others and in a team by recognising dependencies and using co-operative approaches to optimise satisfaction and productivity.

Level 3

Solve problems

Establish analytical processes, including diagnostic processes, which anticipate and allow for risks, cater for both direct and indirect evidence, avoid or minimise reworking and avoid wastage.

Level 3

Use mathematical ideas and techniques

Use mathematical ideas and techniques to correctly complete measurements, calculate analytical requirements, establish realistic sample criteria, quantify, survey and present analytical results.

Level 2

Use technology

Use workplace technology related to information gathering and analysis, diagnosis, information research, report writing, administration and management procedures.

Level 2

In what context should assessment occur?

- 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 defined by the Range Statement.
- Assessment must take account of the endorsed assessment guidelines in the Construction Training Package.

What methods of assessment should apply?

- Assessment of this competency is most likely to be project related under real or simulated conditions and require portfolios or other forms of indirect evidence of process. Direct evidence may include certification of compliance on the final outcome or authorisation for commencement by a competent authority.
- Assessment must confirm the inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.
- Assessment should reinforce the integration of the key competencies.

What are the specific resource requirements for this unit?

- A situation, real or realistically simulated, requiring assessment of construction faults on residential and commercial buildings.
- The learner and trainer should have access to appropriate documentation and resources normally used in the workplace.

BCGSV6004A

Apply footing and geomechanical design principles to buildings up to 3 storeys

Unit Descriptor

This unit specifies the competency required to apply footing and geomechanical design principles to buildings up to three (3) storeys and not exceeding a maximum floor area of 2000m².

It includes the identification, classification, calculated positioning and sizing of all structural footing that form foundation components of the project.

Element

Performance Criteria

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|--|---|
| 65. Evaluation of slope instability | <p>1.68 Soil and rock strength on slope instability is evaluated and recorded</p> <p>1.69 Modes and mechanics of slope instability are researched and documented</p> <p>1.70 Methods to stabilise slopes are researched and documented</p> |
| 66. Analyse retaining wall requirements according to the structure | <p>2.67 Retaining structures and systems suitable for various situations are identified</p> <p>2.68 Active and passive earth pressure and water pressure applicable to various retaining structures is determined</p> <p>2.69 Earth pressures on a gravity retaining wall are determined and analysed according to the required structure for stability</p> |
| 67. Determine footing design requirements according to situation | <p>5. Net safe bearing pressure for a footing on a clay soil is calculated without error</p> <p>5. Allowable bearing pressures for footings on granular soil from in-site penetration test results are calculated without error</p> <p>5. Long term consolidation effects for footings on clay soils is analysed and recorded</p> <p>5. Behaviour of footings on soils under earthquake conditions is researched and documented</p> |
| 68. Determine requirements for compaction of soil fill | <p>68.1 Maximum dry density/moisture content relationship for a soil is analysed and recorded</p> <p>68.2 Techniques for compaction control and performance of compaction plant are identified and documented</p> |

BCGSV6004A APPLY FOOTING AND GEOMECHANICAL DESIGN PRINCIPLES TO BUILDINGS UP TO 3 STOREYS

Range Statement

The Range Statement provides advice to interpret the scope and context of this unit of competency allowing for differences between enterprises and workplaces. It relates to the unit as a whole and facilitates holistic assessment. The following variables may be present for this particular unit:

Unit scope

- Application of footings and geomechanical principles are to include but not be limited to identification of the nature, composition, classification and distribution of soil type and include assessment of geomechanical and footing design for residential and commercial buildings.
- Adherence to legislative requirements is limited to buildings up to three (3) storeys and not exceeding a maximum floor area of 2000m². Adhering to legislative requirements for Building Code of Australia (BCA) relates to class 2 and 9 buildings.
- Soil types may include but not be limited to saturated granular soils, clay soils and rock.
- Soil properties are to include but not be limited to bulk density, dry density, moisture content, void ratio, porosity and degree of saturation.
- Maintenance requirements are to include but not be limited to the identification of surface water, ground water and tree root systems.
- Foundation systems must be suitable for the site conditions and building type.
- Standard specifications may include but not be limited to industry standard specifications and may be preliminary/outline specifications, developed specifications or detailed specifications (addressing specific components such as structural or other requirements).
- Reporting systems in accordance with organisational and legislative quality assurance procedures are to include desk based assessment and may include site-based assessment.

Unit context

- Competency requires the demonstration of research, design, analysis, evaluation and reporting skills, in assessing the geomechanical and footing requirements of residential and commercial buildings, within the context of relevant legislation, the Building Code of Australia and Australian Standards.

Evidence Guide

The Evidence Guide identifies the critical aspects, knowledge and skills to be demonstrated to confirm competency for this unit. This is an integral part of the assessment of competency and should be read in conjunction with the Performance Criteria and Range Statement.

What critical aspects of evidence are required to demonstrate competency in this unit?	<ul style="list-style-type: none"> • Compliance with occupational health and safety regulations applicable to workplace operations. • Application of organisational management policies and procedures including quality assurance requirements where applicable. • Assessment of the footing requirements, for at least one (1) commercial building project or equivalent, which includes advice on positioning and sizing. • Analysis and reporting of the soil types and properties for at least two (2) building projects or equivalent. • Provision of reports to appropriate body/individual as determined by the project brief. • Application of strategic plans, workplace policies and procedures
Are there any other units which should be assessed with this unit or which relate directly to this unit?	<ul style="list-style-type: none"> • There are no specified relationships. • Holistic assessment should be applied where appropriate to form a complete work function.
What specific knowledge is required to achieve the performance criteria?	<ul style="list-style-type: none"> • Nature of materials and effect of performance. • Processes for the interpretation of working drawings and specifications. • Geomechanical engineering principles. • Nature of soil mechanics and effect of performance in problem soils. • Relevant national, State/Territory legislation and local government policy and procedures • Design principles and concepts for footings. • Structural design principles in buildings. • Behaviour of structural members undergoing stress, strain, compression, bending or combined actions. • Research methods. • Processes for the preparation of documentation.

BCGSV6004A APPLY FOOTING AND GEOMECHANICAL DESIGN PRINCIPLES TO BUILDINGS UP TO 3 STOREYS

Evidence Guide

What specific underpinning skills are required to achieve the performance criteria?

These include a number of processes that are learned throughout work and life, which are required in most jobs. Some of these are covered by the national key competencies, although others may be added. The questions below highlight how these processes are applied in this competency unit. The number in brackets indicates the level to which the key competency needs to be demonstrated where (1) working within set conditions and processes, (2) management or facilitation of conditions or processes are exercised, and (3) design and/or development of conditions or process are required.

How will the candidate apply the following key competency in this unit?

The candidate will need to:

Collect, analyse and organise information	Research, analyse, organise and understand the footing and geomechanical requirements of buildings. Level 3
Communicate ideas and information	Communicate and negotiate ideas and information to enable confirmation of work requirements and legislation, translation of footing and geomechanical requirements for buildings, the reporting of outcomes and the completion of regulatory determinations. Level 2
Plan and organise activities	Plan and organise activities including the planning of analytical processes, the establishment of evaluative criteria, the assessment of footing and geomechanical requirements and the impact of various forces upon them. Level 3
Work with others and in a team	Work with others and in a team by recognising dependencies and using co-operative approaches to optimise satisfaction and productivity. Level 2
Solve problems	Establish analytical processes, including diagnostic processes, which anticipate and allow for risks, cater for both direct and indirect evidence, avoid or minimise reworking and avoid wastage. Level 3
Use mathematical ideas and techniques	Use mathematical ideas and techniques to correctly complete measurements, calculate analytical requirements, establish realistic sample criteria, quantify, survey and present analytical results. Level 2

Use technology

Use workplace technology related to information gathering and analysis, diagnosis, information research, report writing, administration and management procedures.

Level 2

BCGSV6004A APPLY FOOTING AND GEOMECHANICAL DESIGN

PRINCIPLES TO BUILDINGS UP TO 3 STOREYS

Evidence Guide

In what context should assessment occur?

- 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 defined by the Range Statement.
- Assessment must take account of the endorsed assessment guidelines in the Construction Training Package.

What methods of assessment should apply?

- Assessment of this competency is most likely to be project related under real or simulated conditions and require portfolios or other forms of indirect evidence of process. Direct evidence may include certification of compliance on the final outcome or authorisation for commencement by a competent authority.
- Assessment must confirm the inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.
- Assessment should reinforce the integration of the key competencies.

What are the specific resource requirements for this unit?

- A situation, real or realistically simulated, requiring assessment of footing and geomechanical requirements for buildings.
- The learner and trainer should have access to appropriate documentation and resources normally used in the workplace.

BCGSV6005A

Evaluate services layout and connection methods for residential and commercial buildings up to 3 storeys

Unit Descriptor

This unit specifies the competency required to evaluate the layout of services and connection methods for residential and commercial buildings up to three (3) storeys and not exceeding a maximum floor area of 2000m².

It includes the evaluation of cold and hot water supply, sewerage layout, electric and electronic installation requirements, smoke and fire preventative systems. It requires compliance with relevant legislation, Australian Standards and the Building Code of Australia (BCA).

Element

Performance Criteria

- | | |
|--|---|
| 69. Evaluate layouts of water supply for general and fire fighting use | <p>1.71 Water supply, connection and layout is identified, evaluated and recorded for a building connected to a town supply or a tank storage supply in accordance with BCA, relevant legislation and Australian Standards</p> <p>1.72 Installation of water services supplying fire hydrants, fire hose reels and fire sprinkler systems are identified, evaluated and recorded in accordance with BCA, relevant legislation and Australian Standards</p> <p>1.73 Interconnection of water tanks for fire services is emulated in the intent of non-return to original tanks and the results evaluated</p> |
| 70. Evaluate sewerage and drainage disposal methods and their layouts | <p>2.70 Sewerage connection and layout is identified, evaluated and recorded in accordance with the BCA, relevant legislation and Australian Standards</p> <p>2.71 Connection methods of main drains to local authority sewers for open ground and within buildings taking up the whole site are identified, evaluated and recorded</p> <p>2.72 Disposal of sewerage from fixtures situated below the level of the local authority sewer for both domestic and commercial buildings are evaluated in accordance with BCA, relevant legislation and Australian Standards</p> <p>2.73 Methods for disposing of storm water drainage systems are evaluated and documented in accordance with the BCA, relevant legislation and Australian Standards</p> <p>2.74 Design and installation of storm water drainage systems are evaluated and documented in accordance with BCA, relevant legislation and Australian Standards</p> |

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| 71. Evaluate commonly used methods for smoke hazard management, mechanical ventilation and air-conditioning and methods of air filtration and its layout | <p>5. Terms used in mechanical ventilation are clearly recorded stating how ventilation, volume, velocity and content may be controlled</p> <p>5. Methods of mechanical ventilation, air distribution and smoke hazard management are identified, evaluated and recorded in accordance with BCA, relevant legislation and Australian Standards</p> <p>5. Air conditioning and mechanical ventilation and basic elements air conditioning are identified, evaluated and documented, including the function of air conditioning and applications for various types of occupancy in buildings</p> |
| 72. Evaluate hot water systems and factors affecting selection | <p>72.1 Hot water systems are identified and evaluated according to design factors, types of system, height of installation, area to be serviced, number of outlets and energy sources available</p> <p>72.2 Operating principles of various types of hot water systems are evaluated and documented</p> |
| 73. Identify natural lighting for varying situations and evaluate suitable lighting fixtures for a range of operations | <p>73.1 Natural lighting and general aims of design are identified in accordance with authorities and governing regulation requirements</p> <p>73.2 Artificial lighting and types of light sources are compared to recommended service luminance for various service situations in accordance with BCA, relevant legislation and Australian Standards</p> |
| 74. Evaluate fire fighting and fire detection services | <p>74.1 Authorities involved in plan perusal and site inspection for the various building classifications and their roles and functions are identified</p> <p>74.2 Requirements for sprinkler systems, fire hydrants and fire hoses for the various building classifications are identified and evaluated in accordance with BCA, relevant legislation and Australian Standards</p> <p>74.3 Fire detection and alarm systems are identified and evaluated in accordance with BCA, relevant legislation and Australian Standards</p> |

- | | |
|---|--|
| 75. Determine the requirements for general electrical and electronic service installation | 75.1 Electrical supply authorities and the relevant legislation are identified and recorded |
| | 75.2 Procedure for electrical supply and connection to site are documented |
| | 75.3 Electrical design and provision for services and electronic cabling are identified, evaluated and recorded |
| | 75.4 Design and installation of emergency warning systems, emergency lighting and exit signage systems are evaluated and recorded in accordance with the BCA and relevant Australian Standards |
| 76. Evaluate methods for vertical transportation and layout | 76.1 Methods of vertical transportation are identified, evaluated, recorded and sketched in accordance with BCA, relevant legislation and Australian Standards. |

Range Statement

The Range Statement provides advice to interpret the scope and context of this unit of competency allowing for differences between enterprises and workplaces. It relates to the unit as a whole and facilitates holistic assessment. The following variables may be present for this particular unit:

Unit scope

- Application of evaluative and corrective methods for services layout are to include but not be limited to hot and cold water supply, sewerage layout, smoke hazard management, ventilation and air conditioning, electric and electronic installations, natural lighting options, vertical transportation, smoke and fire preventative systems for residential and commercial buildings.
- Adherence to legislative requirements is limited to residential and commercial buildings up to three (3) storeys and not exceeding a maximum floor area of 2000m². Adherence to legislative requirements for BCA relates to class 2 and 9 buildings.
- Residential and commercial building projects requiring evaluation of services layout are to include but not be limited to provision of site access/facilities, work schedules, project milestones and the processing of applications.

Unit scope (continued)

- Services may include but not be limited to:-
 - Water supply:
 - Town supply, tank storage supply relative to the public water supply and reservoir heights, single and two stage pumping for multi-function and single function connected services.
 - Fire fighting services:
 - Sprinkler systems (BCA – Deemed To Satisfy [DTS] provisions), fire hydrants, fire hose reels and fire extinguishers, installation of fire stopping and fire collars, fire and smoke detection and alarm systems (BCA – DTS provisions).
 - Sewerage connection:
 - A local authority sewerage drainage system, septic or bio-chemical treatment unit, graded or vertical discharge pipes, inspection shafts and ORGs (Overflow Relief Gullies).
 - Mechanical ventilation, air-conditioning and air filtration:
 - Warm water and cooling towers, smoke control and exhaust systems, fire dampers, installation of fire stopping, fume discharge systems, air intake systems, air distribution including mechanical ventilation requirements for enclosed car parks, air conditioning applications, air filtration including air filters, ducting and main filter types.
 - Hot water systems:
 - Type of system, height of installation, area to be serviced, type of occupancy, number of outlets and energy sources available.
 - Lighting systems:
 - Natural and artificial lighting, emergency and exit signage systems, terms including - control of glare, reflections, brightness, locations for installation, intensity, lifespan and installation of fire stopping.
 - General electric and electronic service systems:
 - Electrical supply authorities connection to site and distribution facilities (switch room and sub-stations), type of service (emergency power and alternative power sources), categories of cabling; data, telecommunications, lift controls, power supplies, telecommunications connection to site and distribution facilities, layout of equipment for telephones, computers, lift controls and power supplies, service system safeguards, service systems access for maintenance, repair and extension, emergency lighting and exit signage systems, emergency warning and intercommunication systems, fire stopping.

Range Statement

Unit Scope (continued):

- Vertical transportation systems:
 - Lifts, escalators, hoists and pedestrian movers.
- Specialised services:
 - Hospitals, laboratories and smart buildings.
- Storm Water:
 - Design, installation and disposal, connection to local government water drains, use of soakage pits and on-site water detection systems, size, location and construction requirements for eaves and box gutters, downpipes and unground/concealed piping.
- Reporting systems in accordance with organisational and legislative quality assurance procedures are to include desk based assessment and may include site-based assessment.

Unit context

- Competency requires the demonstration of research, design, analysis, evaluation and reporting skills. In assessing the services layout and connection methods for residential and commercial buildings. Competency must be demonstrated within the context of relevant legislation, the Building Code of Australia and Australian Standards.

Evidence Guide

The Evidence Guide identifies the critical aspects, knowledge and skills to be demonstrated to confirm competency for this unit. This is an integral part of the assessment of competency and should be read in conjunction with the Performance Criteria and Range Statement.

What critical aspects of evidence are required to demonstrate competency in this unit?

- Compliance with occupational health and safety regulations applicable to workplace operations.
- Application of organisational management policies and procedures including quality assurance requirements where applicable.
- Evaluation of the services layout, connection methods and rectification actions for at least one (1) residential and (1) commercial building project or equivalent, which includes advice on hot and cold water supply, sewerage layout, electrical and electronic installation lighting systems, vertical transportation requirements and smoke and fire detection and prevention systems.
- Provision of reports to appropriate body/individual as determined by the project brief.
- Application of strategic plans, workplace policies and procedures

Evidence Guide

Are there any other units which should be assessed with this unit or which relate directly to this unit?

- There are no specified relationships.
- Holistic assessment should be applied where appropriate to form a complete work function.

What specific knowledge is required to achieve the performance criteria?

- Nature of materials and effect of performance.
- Processes for the interpretation of working drawings and specifications.
- Relevant national, State/Territory legislation and local government policy and procedures
- Design concepts and principles in relation to service installations.
- General services installation terminology, definitions, installation methods and hazards.
- Terminology with reference to items and services that may be used in plumbing, sewerage and drainage systems.
- Terminology and methods of roof construction used for daylight transmission.
- Terminology and methods used in artificial lighting.
- Terminology with reference to vertical transportation.
- Research methods.
- Processes for the preparation of documentation.

Evidence Guide

What specific underpinning skills are required to achieve the performance criteria?

These include a number of processes that are learned throughout work and life, which are required in most jobs. Some of these are covered by the national key competencies, although others may be added. The questions below highlight how these processes are applied in this competency unit. The number in brackets indicates the level to which the key competency needs to be demonstrated where (1) working within set conditions and processes, (2) management or facilitation of conditions or processes are exercised, and (3) design and/or development of conditions or process are required.

How will the candidate apply the following key competency in this unit?

The candidate will need to:

Collect, analyse and organise information

Research, analyse, organise and understand the service layout and connection method requirements of residential and commercial buildings.

Level 3

Communicate ideas and information

Communicate and negotiate ideas and information to enable confirmation of work requirements and legislation, translation of service layout and connection method requirements for residential and commercial buildings, the reporting of outcomes and the completion of regulatory determinations.

Level 3

Plan and organise activities

Plan and organise activities including the planning of analytical processes, the establishment of evaluative criteria, the assessment of service layout and connection method requirements and the impact of various forces upon them.

Level 3

Work with others and in a team

Work with others and in a team by recognising dependencies and using co-operative approaches to optimise satisfaction and productivity.

Level 2

Solve problems

Establish analytical processes, including diagnostic processes, which anticipate and allow for risks, cater for both direct and indirect evidence, avoid or minimise reworking and avoid wastage.

Level 3

Use mathematical ideas and techniques

Use mathematical ideas and techniques to correctly complete measurements, calculate analytical requirements, establish realistic sample criteria, quantify, survey and present analytical results.

Level 2

Use technology

Use workplace technology related to information gathering and analysis, diagnosis, information research, report writing, administration and management procedures.

Level 2

Evidence Guide

In what context should assessment occur?

- 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 defined by the Range Statement.
- Assessment must take account of the endorsed assessment guidelines in the Construction Training Package.

What methods of assessment should apply?

- Assessment of this competency is most likely to be project related under real or simulated conditions and require portfolios or other forms of indirect evidence of process. Direct evidence may include certification of compliance on the final outcome or authorisation for commencement by a competent authority.
- Assessment must confirm the inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.
- Assessment should reinforce the integration of the key competencies.

What are the specific resource requirements for this unit?

- A situation, real or realistically simulated, requiring assessment of service layout and connection method requirements for residential and commercial buildings.
- The learner and trainer should have access to appropriate documentation and resources normally used in the workplace.

BCGSV6006A

Evaluate the use of concrete for residential and commercial buildings up to three (3) storeys

Unit Descriptor

- This unit specifies the competency required to evaluate and select concrete for commercial and residential buildings of up to three (3) storeys and a maximum floor area of 2000m².
- This unit relates primarily to the selection, maintenance and repair of concrete as a fundamental building material in accordance with the Building Code of Australia (BCA).

Element

Performance Criteria

- | | |
|--|---|
| 77. Analyse the properties, characteristics, constituents and mix design of concrete | <p>1.74 Plastic concrete properties are stated and documented</p> <p>1.75 Hardened concrete properties are stated and described</p> <p>1.76 Types of hydraulic cement are listed</p> <p>1.77 Properties and uses of cements are listed and described</p> <p>1.78 Hydration process is recorded</p> <p>1.79 Sources of aggregate are listed and properties of each are recorded</p> <p>1.80 Effects of impurities are recorded</p> <p>1.81 Manufacture and testing of concrete is identified and recorded in accordance with the appropriate Australian Standards</p> |
| 78. Assess the requirements for concrete handling, placement, compaction, finishing and curing methods | <p>2.75 Effects of site access on the selection and distribution methods listed are documented</p> <p>2.76 Methods of distribution of concrete are listed and recorded</p> <p>2.77 Correct placement methods for level slabs, sloping slabs and vertical walls are recorded</p> <p>2.78 Reasons and effects of compaction on both plastic and hardened concrete are identified and listed</p> <p>2.79 Immersion, surface and form vibration are compared and recorded</p> <p>2.80 Causes of surface defects during concrete placement and compaction are identified and recorded</p> <p>2.81 Finishing process and surface treatments to slab concrete are compared and documented</p> <p>2.82 Type curing methods and detrimental effects of poor or no curing are identified and recorded</p> |

- | | |
|--|--|
| 79. Identify concrete faults and repair methods | 5. Live and dormant cracks are identified and reported
5. Repair methods for cracked concrete are established and reported
5. Causes of concrete cancer are identified and recorded
5. Repair methods for concrete cancer are established and reported
5. Diagnosis of faults in concrete are identified and recorded |
| 80. Assess the effect of fire on concrete | 80.1 Detrimental effects of fire/heat on reinforced concrete are documented
80.2 Properties of concrete as an insulator to steel are documented
80.3 Fire test results are used to determine behavioural performance of concrete in fire
80.4 Methods of fire protection to concrete elements are recorded
80.5 Methods of repair to fire damaged concrete are identified and reported |
| 81. Identify the environmental issues and new technologies which affect concrete | 81.1 Environmental impact on the use of concrete in buildings relating to sustainability and supply of materials, cost, life cycle of concrete, thermal mass of concrete and recycling is documented
81.2 New technologies in concrete are recorded
81.3 Performance characteristics of concrete in fire resistance construction are identified and documented in accordance with acceptable standards of practice |
| 82. Determine the cost effectiveness and environmental issues when dealing with recycled materials | 82.1 Cost effectiveness of using recycled materials and related environmental considerations are identified and selected in accordance with acceptable standards of practice |

Range Statement

The Range Statement provides advice to interpret the scope and context of this unit of competency allowing for differences between enterprises and workplaces. It relates to the unit as a whole and facilitates holistic assessment. The following variables may be present for this particular unit:

Unit scope

- Evaluation and identification of construction materials are to include environmental considerations and adherence to legislative requirements for the Building Code of Australia class 2 to 9 buildings.
- Commercial and residential buildings are limited to three (3) storeys and a maximum floor area not exceeding 2000m².
- Commercial and residential building projects requiring evaluation are to include but not be limited to provision of site access/facilities, work schedules and project milestones.
- Standard specifications may include but not be limited to industry standard specifications and may be preliminary/outline specifications, developed specifications or detailed specifications (addressing specific components such as structural or other requirements).
- Reporting systems in accordance with organisational, legislative and quality assurance procedures are to include desk based assessment and may include site-based assessment.
- Concrete types, properties and characteristics may include but not be limited to:
 - Admixtures - air entraining agents, set controlling types, water reducing types and water reducing/set controlling types.
 - Mix design - selected applications using statistics, aggregate grading and first principles.
 - Reinforced concrete design - principles of reinforced concrete utilising steel, wire and fibres.
 - Effects of weather - windy, hot and cold.
 - Building types – concrete skeleton and slabs, slab on ground floor, concrete column or wall ten (10) metres high and bridge/pier construction.
 - Curing methods – impermeable membrane curing, continuously wetting concrete and accelerated curing.

Unit context

- Competency requires the demonstration of research, analysis and evaluation as the basis for the selection and application of building materials within the context of relevant legislation, the Building Code of Australia and Australian Standards

Evidence Guide

The Evidence Guide identifies the critical aspects, knowledge and skills to be demonstrated to confirm competency for this unit. This is an integral part of the assessment of competency and should be read in conjunction with the Performance Criteria and Range Statement.

What critical aspects of evidence are required to demonstrate competency in this unit?

- Compliance with occupational health and safety regulations applicable to workplace operations.
- Application of organisational management policies and procedures including quality assurance requirements where appropriate.
- Evaluate the choice and application of concrete, its subsequent maintenance, the associated reporting of data, findings, recommendations and strategies for at least one (1) commercial and one (1) residential building project or equivalent in compliance with relevant legislation.
- Provision of reports to appropriate body/individual as determined by the project brief.
- Application of strategic plans, workplace policies and procedures

Are there any other units which should be assessed with this unit or which relate directly to this unit?

- There are no specified relationships.
- Holistic assessment should be applied where appropriate to form a complete work function.

What specific knowledge is required to achieve the performance criteria?

- Processes for the interpretation of reports, working drawings and specifications.
- Nature of materials and effect of performance.
- Grading processes and grade markings used to categorise timber and timber products.
- Authorities and powers of a building surveyor.
- Relevant national, State/Territory legislation and local government policy and procedures
- Structural and design principles for buildings.
- Behaviour of structural members undergoing stress, strain, compression, bending or combined actions.
- Terminology, definitions and hazard identification.
- Research methods.
- Processes for the administration and preparation of documentation.

Evidence Guide

What specific underpinning skills are required to achieve the performance criteria?

These include a number of processes that are learned throughout work and life, which are required in most jobs. Some of these are covered by the national key competencies, although others may be added. The questions below highlight how these processes are applied in this competency unit. The number in brackets indicates the level to which the key competency needs to be demonstrated where (1) working within set conditions and processes, (2) management or facilitation of conditions or processes are exercised, and (3) design and/or development of conditions or process are required.

How will the candidate apply the following key competency in this unit?

The candidate will need to:

Collect, analyse and organise information	Research, analyse, organise and understand the evaluation of materials for commercial and residential buildings plus subsequent reporting procedures. Level 3
Communicate ideas and information	Communicate and negotiate ideas and information to enable confirmation of work requirements, legislation and translation of the evaluation of materials for commercial and residential buildings. Level 3
Plan and organise activities	Plan and organise activities including the planning of analytical processes, the evaluation and selection of building materials for commercial and residential buildings. Level 3
Work with others and in a team	Work with others and in a team by recognising dependencies and using co-operative approaches to optimise satisfaction and productivity. Level 3
Solve problems	Establish analytical processes, including diagnostic processes, which anticipate and allow for risks, cater for both direct and indirect evidence, avoid or minimise reworking and avoid wastage. Level 3
Use mathematical ideas and techniques	Use mathematical ideas and techniques to correctly complete measurements, calculate analytical requirements, establish realistic sample criteria, quantify, survey and present analytical results. Level 2
Use technology	Use workplace technology related to information gathering and analysis, diagnosis, information research, report writing, administration and management procedures. Level 2

Evidence Guide

In what context should assessment occur?

- 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 defined by the Range Statement.
- Assessment must take account of the endorsed assessment guidelines in the Construction Training Package.

What methods of assessment should apply?

- Assessment of this competency is most likely to be project related under real or simulated conditions and require portfolios or other forms of indirect evidence of process. Direct evidence may include certification of compliance on the final outcome or authorisation for commencement by a competent authority.
- Assessment must confirm the inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.
- Assessment should reinforce the integration of the key competencies.

What are the specific resource requirements for this unit?

- A situation, real or realistically simulated, requiring evaluation of materials to be applied to commercial and residential buildings.
- The learner and trainer should have access to appropriate documentation and resources normally used in the workplace.

BCGSV6007A**Assess structural requirements for buildings up to 3 storeys****Unit Descriptor**

This unit specifies the competency required to assess the structural requirements of buildings up to three (3) storeys and with a maximum floor area not exceeding 2000m².

It includes the application of design concepts to the selection, positioning and sizing of all structural members and materials that form a building structure.

Element**Performance Criteria**

- | | |
|---|--|
| 83. Identify structural requirements and loads commonly used in structural design | 1.82 Structural requirements relating to equilibrium, stability, strength, functionality, economy and aesthetics are determined |
| | 1.83 Different types of loading and loading methods and the affect on structures are identified and documented in accordance with Building Code of Australia (BCA), relevant Australian Standards, suppliers' technical data and empirical methods |
| 84. Analyse the effects of force and moments on structural elements | 2.83 Force, moments and equilibrium of force and the affects on structures are identified and recorded |
| | 2.84 Equilibrium of forces for coplanar systems in consideration of stability is identified and compared for performance |
| 85. Analyse properties and behaviour of structural materials | 5. Effect of force on materials in tension, compression, stress, strain and elasticity is identified and recorded |
| | 5. Structural properties and performances are differentiated for common materials and recorded |
| 86. Identify section properties of structural elements and their effect on structural performance | 86.1 Cross sectional geometry and common structural shapes are identified |
| | 86.2 Section properties and the relationship between first, second area moments, section models and gyration and deflection of beams are identified and compared for performance |
| | 86.3 Section properties values for I, Z and R for common sections are determined using tables or standard formulae and compared for performance |

87. Compare the performance and properties of spanning elements	87.1	Structural considerations of loaded spanning elements for bending moments, shear forces, deflection and torsion are determined and compared for performance
	87.2	Bending behaviour and performance of loaded support beams of various types, shapes, spans and loads are determined and compared for performance
	87.3	Effect that connections have upon the structural performance of beams are identified and compared for performance
	87.4	Principles of slab behaviour in relation to spans and stress distribution are identified and compared for performance
88. Compare performance criteria for columns	88.1	Effect of Slenderness Ratio that changes in length, cross-sections, connections and materials will have on the strength of a column are determined and compared for performance
	88.2	Eccentric and axial load affect on the strength of column section and materials are determined and compared for performance
89. Compare methods of stress distribution in connections between structural elements	89.1	Transmission of forces between structural elements are identified and interpreted
	89.2	Methods of distributing stresses in connections between structural elements are identified and compared for performance
90. Determine how loads of various types occur and impinge on a building structure	90.1	Differences between types of loading including Dead load, Live load, Wind load, Earthquake load, Other load causing actions are determined and compared for performance
	90.2	Dead loads using BCA and relevant Australian Standards are determined
	90.3	Indication of direction of wind pressures on the various surfaces of buildings specified in BCA and relevant Australian Standards are determined
91. Evaluate the design of high performance structural elements	91.1	The factors that determine the form of long span structural elements including bending movement, deflection, and shear forces are researched, considered and evaluated
	91.2	Performance in high performance structural elements including trusses, laminated beams, fire resistance, connections, castellated beams, prestressed beams and slabs and waffle slabs is identified and evaluated
	91.3	Use of steel to reinforce concrete is investigated, evaluated and the outcomes or results recorded

Range Statement

The Range Statement provides advice to interpret the scope and context of this unit of competency allowing for differences between enterprises and workplaces. It relates to the unit as a whole and facilitates holistic assessment. The following variables may be present for this particular unit:

Unit scope

- Input to the assessment of structural requirements is to include but not be limited to analysis of engineering drawings, evaluation of site physicality and identification of safe structural practices, it may require actual site visits.
- Adherence to legislative requirements for Building Code of Australia class 2 to 9 buildings is limited to three (3) storey buildings and not exceeding a maximum floor area of 2000m².
- Types of loads may include but not be limited to static, dynamic, dead, snow, earthquake, thermal and settlement loads.
- Standard specifications may include but not be limited to industry standard specifications and may be preliminary/outline specifications, developed specifications or detailed specifications (addressing specific components such as structural or other requirements).
- Reporting systems in accordance with organisational and legislative quality assurance procedures are to include desk based assessment and may include site-based assessment.
- Use of steel to reinforce concrete including location of steel in relation of tensile stress, location of steel in relation to shear stress, eccentric loading, carry over movements, compression reinforcement, bond stress and development length and reinforcement ratio is identified and recorded

Unit context

- Competency requires the demonstration of research, analysis, evaluation and reporting skills, in assessing the structural elements and load capacities of three (3) storey buildings, within the context of relevant legislation, the Building Code of Australia and Australian Standards.

Evidence Guide

The Evidence Guide identifies the critical aspects, knowledge and skills to be demonstrated to confirm competency for this unit. This is an integral part of the assessment of competency and should be read in conjunction with the Performance Criteria and Range Statement.

What critical aspects of evidence are required to demonstrate competency in this unit?

- Compliance with occupational health and safety regulations applicable to workplace operations.
- Application of organisational management policies and procedures including quality assurance requirements where applicable.
- Assessment, identification and reporting of findings for the design, positioning and sizing of structural members of at least one (1) three (3) storey building project or equivalent.
- Provision of reports to appropriate body/individual as determined by the project brief.
- Application of design principles relating to performance of structural members
- Application of strategic plans, workplace policies and procedures

Are there any other units which should be assessed with this unit or which relate directly to this unit?

- There are no specified relationships.
- Holistic assessment should be applied where appropriate to form a complete work function.

What specific knowledge is required to achieve the performance criteria?

- Nature of materials and effect of performance.
- Processes for the interpretation of working drawings and specifications.
- Grading processes and grade markings used to categorise timber and timber products.
- Relevant national, State/Territory legislation and local government policy and procedures
- Structural and design principles for buildings.
- Behaviour of structural members undergoing stress, strain, compression, bending or combined actions.
- Research methods.
- Processes for the preparation of documentation.

Evidence Guide

What specific underpinning skills are required to achieve the performance criteria?

These include a number of processes that are learned throughout work and life, which are required in most jobs. Some of these are covered by the national key competencies, although others may be added. The questions below highlight how these processes are applied in this competency unit. The number in brackets indicates the level to which the key competency needs to be demonstrated where (1) working within set conditions and processes, (2) management or facilitation of conditions or processes are exercised, and (3) design and/or development of conditions or process are required.

How will the candidate apply the following key competency in this unit?

The candidate will need to:

Collect, analyse and organise information	Research, analyse, organise and understand the structural requirements of three (3) storey buildings. Level 3
Communicate ideas and information	Communicate and negotiate ideas and information to enable confirmation of work requirements and legislation, translation of structural requirements from engineering drawings, the reporting of outcomes and the completion of regulatory determinations. Level 3
Plan and organise activities	Plan and organise activities including the planning of analytical processes, the establishment of evaluative criteria, the assessment of structural requirements and the impact of various forces upon them. Level 3
Work with others and in a team	Work with others and in a team by recognising dependencies and using co-operative approaches to optimise satisfaction and productivity. Level 2
Solve problems	Establish analytical processes, including diagnostic processes, which anticipate and allow for risks, cater for both direct and indirect evidence, avoid or minimise reworking and avoid wastage. Level 3
Use mathematical ideas and techniques	Use mathematical ideas and techniques to correctly complete measurements, calculate analytical requirements, establish realistic sample criteria, quantify, survey and present analytical results. Level 2
Use technology	Use workplace technology related to information gathering and analysis, diagnosis, information research, report writing, administration and management procedures. Level 2

Evidence Guide

In what context should assessment occur?

- 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 defined by the Range Statement.
- Assessment must take account of the endorsed assessment guidelines in the Construction Training Package.

What methods of assessment should apply?

- Assessment of this competency is most likely to be project related under real or simulated conditions and require portfolios or other forms of indirect evidence of process. Direct evidence may include certification of compliance on the final outcome or authorisation for commencement by a competent authority.
- Assessment must confirm the inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.
- Assessment should reinforce the integration of the key competencies.

What are the specific resource requirements for this unit?

- A situation, real or realistically simulated, requiring assessment of structural requirements for three (3) storey buildings.
- The learner and trainer should have access to appropriate documentation and resources normally used in the workplace.

BCGSV6008A

Apply building codes and standards to buildings up to 3 storeys

Unit Descriptor

This unit specifies the competency required to ensure the building process complies with the Building Code of Australia (BCA) and relevant Australian Standards.

This unit applies specifically to buildings up to three (3) storeys and not exceeding a maximum floor area of 2000m². It includes the evaluation and interpretation of building requirements, classification of buildings according to the Building Code of Australia criteria and identification of various strategies for compliance.

Element

Performance Criteria

92. Analyse the purpose and basic intent of the BCA

- 1.84 Objectives of the BCA are stated
- 1.85 Conditions of the BCA and the purpose of the respective components are evaluated and documented
- 1.86 “Deemed to Satisfy” concept for construction to meet BCA requirements is evaluated and documented

93. Locate and interpret code/standard requirements that are applicable to particular projects

- 2.85 Clauses from the BCA that apply to particular projects are identified and recorded
- 2.86 Prescriptive requirements of relevant BCA clauses are determined
- 2.87 Standards that are referenced in the BCA are identified and recorded
- 2.88 Special requirements that may be applicable to specific areas are identified and recorded

94. Classify buildings

- 5. Nature of a building having regard to use and arrangement is determined
- 5. BCA criteria are applied to determine the defined classification
- 5. BCA requirements are interpreted for multiple classifications

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| 95. Apply solutions to construction problems for compliance with the BCA | 95.1 Criteria that will ensure construction methods comply with the BCA are determined |
| | 95.2 Alternative approaches to a construction problem that will comply with the requirements of the BCA are reported |
| | 95.3 Assessment methods used to determine whether a building solution complies with Performance Requirements or Deemed-to-Satisfy (DTS) provision of the BCA are analysed and applied |
| | 95.4 BCA assessment methods are identified as appropriate to meet the DTS provisions of BCA. |

Range Statement

The Range Statement provides advice to interpret the scope and context of this unit of competency allowing for differences between enterprises and workplaces. It relates to the unit as a whole and facilitates holistic assessment. The following variables may be present for this particular unit:

Unit scope

- Construction in residential and commercial buildings is to include but not be limited to compliance with relevant legislation, design specifications, maintenance specifications, relevant Australian Standards and evaluation, interpretation and adherence to legislative requirements for Building Codes of Australia class 2 to 9 buildings.
- Building categories may include but not be limited to residential, commercial and industrial medium rise buildings and wide span buildings limited to three (3) storeys and a maximum floor area not exceeding 2000m².
- Building projects requiring review of compliance issues are to include but not be limited to provision of site access/facilities, work schedules, project milestones and the processing of applications.
- Standard specifications may include but not be limited to industry standard specifications and may be preliminary/outline specifications, developed specifications or detailed specifications (addressing specific components such as structural or other requirements).
- Building surveying procedures are to include but not be limited to mechanical, structural and electrical and may include other services.
- Reporting systems in accordance with organisational, legislative and quality assurance procedures are to include desk based assessment and may include site-based assessment.

Unit context

- Competency requires the demonstration of research, analysis, evaluation and reporting skills in the determination of compliance within the context of the relevant legislation, the Building Code of Australia and Australian Standards.

Evidence Guide

The Evidence Guide identifies the critical aspects, knowledge and skills to be demonstrated to confirm competency for this unit. This is an integral part of the assessment of competency and should be read in conjunction with the Performance Criteria and Range Statement.

What critical aspects of evidence are required to demonstrate competency in this unit?

- Compliance with occupational health and safety regulations applicable to workplace operations.
- Application of organisational management policies and procedures including quality assurance requirements where appropriate.
- Classification of building construction through the evaluation and interpretation of compliance with the BCA, the associated reporting of data, findings, recommendations and strategies for at least one (1) residential building project and one (1) commercial building project or equivalent in compliance with relevant legislation.
- Provision of reports to appropriate body/individual as determined by the project brief.
- Application of strategic plans, workplace policies and procedures

Are there any other units which should be assessed with this unit or which relate directly to this unit?

- There are no specified relationships.
- Holistic assessment should be applied where appropriate to form a complete work function.

What specific knowledge is required to achieve the performance criteria?

- Processes for the interpretation of reports, working drawings and specifications.
- Nature of materials and effect on performance.
- Authorities and powers of a building surveyor.
- Relevant national, State/Territory legislation and local government policy and procedures
- Design, construction and structural principles of buildings.
- Building Codes of Australia and primary referenced Australian Standards.
- Criteria for class 2 to 9 buildings and Guide to BCA.
- Deemed To Satisfy (DTS) provisions.
- Behaviour of structural members undergoing stress, strain, compression, bending or combined actions.
- Terminology, definitions and hazard identification.
- Codes of conduct and ethics.
- Research methods.
- Processes for the administration and preparation of documentation.

Evidence Guide

What specific underpinning skills are required to achieve the performance criteria?

These include a number of processes that are learned throughout work and life, which are required in most jobs. Some of these are covered by the national key competencies, although others may be added. The questions below highlight how these processes are applied in this competency unit. The number in brackets indicates the level to which the key competency needs to be demonstrated where (1) working within set conditions and processes, (2) management or facilitation of conditions or processes are exercised, and (3) design and/or development of conditions or process are required.

How will the candidate apply the following key competency in this unit?

The candidate will need to:

Collect, analyse and organise information	Research, analyse, organise and understand the process for assessing compliance on buildings plus subsequent reporting procedures. Level 3
Communicate ideas and information	Communicate and negotiate ideas and information to enable confirmation of work requirements, legislation and translation of compliance issues in buildings. Level 3
Plan and organise activities	Plan and organise activities including the planning of analytical processes, the establishment of evaluative criteria, the assessment of strategies related to the determination and resolution of compliance issues in buildings. Level 3
Work with others and in a team	Work with others and in a team by recognising dependencies and using co-operative approaches to optimise satisfaction and productivity. Level 2
Solve problems	Establish analytical processes, including diagnostic processes, which anticipate and allow for risks, cater for both direct and indirect evidence, avoid or minimise reworking and avoid wastage. Level 3
Use mathematical ideas and techniques	Use mathematical ideas and techniques to correctly complete measurements, calculate analytical requirements, establish realistic sample criteria, quantify, survey and present analytical results. Level 2
Use technology	Use workplace technology related to information gathering and analysis, diagnosis, information research, report writing, administration and management procedures. Level 2

Evidence Guide

In what context should assessment occur?

- 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 defined by the Range Statement.
- Assessment must take account of the endorsed assessment guidelines in the Construction Training Package.

What methods of assessment should apply?

- Assessment of this competency is most likely to be project related under real or simulated conditions and require portfolios or other forms of indirect evidence of process. Direct evidence may include certification of compliance on the final outcome or authorisation for commencement by a competent authority.
- Assessment must confirm the inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.
- Assessment should reinforce the integration of the key competencies.

What are the specific resource requirements for this unit?

- A situation, real or realistically simulated, requiring application of building codes and standards to buildings.
- The learner and trainer should have access to appropriate documentation and resources normally used in the workplace.

BCGSV6009A

Implement performance based codes and risk management principles for buildings up to 3 storeys

Unit Descriptor

This unit specifies the competency required to implement performance based codes, risk assessment and risk management principles to commercial and residential buildings up to three storeys and not exceeding a maximum floor area of 2000m².

Element

Performance Criteria

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| 96. Evaluate performance based designs | <p>1.87 Role of regulation of buildings and the built environment within society are identified and applied</p> <p>1.88 Societal goals related to the construction and use of buildings are interpreted</p> <p>1.89 BCA hierarchy and the role of Objectives, Functional Statements and Performance Requirements are identified and recorded</p> <p>1.90 Differences between public policy and professional judgement are identified and recorded</p> |
| 97. Apply the performance-based Building Code of Australia (BCA) | <p>2.89 Various assessment methods contained in the BCA and their application are identified and applied</p> <p>2.90 Methodologies for determining correct performance requirements to be satisfied are demonstrated</p> <p>2.91 Processes for involving relevant parties in the decision making process are determined</p> <p>2.92 Fire Safety Engineering Brief (FSEB) process is identified and applied</p> <p>2.93 Assessment report for a performance-based solution is prepared</p> <p>2.94 Importance of documentation and record keeping for performance-based solutions are identified and applied</p> <p>2.95 Impacts of a performance-based solution on building maintenance and alterations are identified and reported</p> |

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| 98. Evaluate risk assessment | <ul style="list-style-type: none"> 5. Methods of determining and assessing risks are identified and applied 5. Consequences of various forms of risk are identified and reported 5. Basic probabilistic analysis including use of event trees are applied in accordance with risk assessment principles 5. Statistics used in risk assessment practices are interpreted 5. Research data sources for risk assessment and management are identified and applied |
| 99. Evaluate fire safety engineering | <ul style="list-style-type: none"> 99.1 Potential fire hazards and causes of fire are identified and reported 99.2 Fire loads and fire growth characteristics are identified and interpreted 99.3 Research data sources for fire safety engineering are identified and interpreted 99.4 Principles of fire detection, suppression and extinguishment are applied 99.5 Tenability limits and effects and toxicity of smoke on building occupants are identified and listed in accordance with fire engineering principles 99.6 Human behaviour and movement principles are identified and applied 99.7 Fire brigade activities and intervention principles are recorded 99.8 Research material, statistics and probabilistic analysis used in fire safety engineering are applied 99.9 Compute software applications used in fire safety engineering are identified and their limitations of use assessed |

Range Statement

The Range Statement provides advice to interpret the scope and context of this unit of competency allowing for differences between enterprises and workplaces. It relates to the unit as a whole and facilitates holistic assessment. The following variables may be present for this particular unit:

Unit scope

- Performance based codes, risk assessment and risk management principles are to include but not be limited to the evaluation of buildings, new and proposed, for the purposes of highlighting potential risks and managing those risks through introduction of alternate solutions in compliance with the Building Code of Australia.
- Building projects requiring assessment and management of risk are to include but not be limited to provision of site access/facilities, work schedules, project milestones and the calculation and processing of application or inspection fees.
- Buildings are limited to three (3) storeys and a maximum floor area not exceeding 2000m², complying with the Building Code of Australia class 2 to 9 buildings.
- Standard specifications may include but not be limited to industry standard specifications and may be preliminary/outline specifications, developed specifications or detailed specifications (addressing specific components such as structural or other requirements).
- Reporting systems in accordance with organisational, legislative and quality assurance procedures are to include desk based assessment and may include site-based assessment.

Unit context

- Competency requires the application of performance based codes, risk assessment and risk management strategies to minimise building non-compliance and the possibility of risk to human life. Competency must demonstrate research, analysis, evaluation and appropriate reporting in the determination of compliance within the context of relevant legislation, the Building Code of Australia and Australian Standards.

Evidence Guide

The Evidence Guide identifies the critical aspects, knowledge and skills to be demonstrated to confirm competency for this unit. This is an integral part of the assessment of competency and should be read in conjunction with the Performance Criteria and Range Statement.

What critical aspects of evidence are required to demonstrate competency in this unit?

- Compliance with occupational health and safety regulations applicable to workplace operations.
- Application of organisational management policies and procedures including quality assurance requirements where appropriate.
- Evaluation, reporting of data, findings, and recommendations for the implementation of risk management strategies as a result of risk assessment and application of performance based codes for at least one (1) building development project up to three (3) storeys, and in compliance with the applicable local government authority, relevant legislation and the BCA.
- Provision of reports to appropriate body/individual as determined by the project brief.
- Application of strategic plans, workplace policies and procedures

Are there any other units which should be assessed with this unit or which relate directly to this unit?

- There are no specified relationships.
- Holistic assessment should be applied where appropriate to form a complete work function.

What specific knowledge is required to achieve the performance criteria?

- Processes for the interpretation of reports, working drawings and specifications.
- Authorities and powers of a building surveyor.
- Relevant national, State/Territory legislation and local government policy and procedures
- Problem identification, formulation and solutions.
- Fire safety engineering guidelines.
- Building fire safety.
- Deemed To Satisfy (DTS) provisions.
- Terminology, definitions and hazard identification.
- Codes of conduct and ethics.
- Research methods.
- Processes for the administration and preparation of documentation.

Evidence Guide

What specific underpinning skills are required to achieve the performance criteria?

These include a number of processes that are learned throughout work and life, which are required in most jobs. Some of these are covered by the national key competencies, although others may be added. The questions below highlight how these processes are applied in this competency unit. The number in brackets indicates the level to which the key competency needs to be demonstrated where (1) working within set conditions and processes, (2) management or facilitation of conditions or processes are exercised, and (3) design and/or development of conditions or process are required.

How will the candidate apply the following key competency in this unit?

The candidate will need to:

Collect, analyse and organise information	Research, analyse, organise and understand the process applying performance based codes, assessment and management of risk has on buildings plus subsequent reporting procedures.	Level 3
Communicate ideas and information	Communicate and negotiate ideas and information to enable application of performance based codes, risk assessment and risk management to buildings and for translation of outcomes and alternate methods.	Level 3
Plan and organise activities	Plan and organise activities including the planning of analytical processes, the implementation of performance based codes and risk strategies upon buildings.	Level 3
Work with others and in a team	Work with others and in a team by recognising dependencies and using co-operative approaches to optimise satisfaction and productivity.	Level 3
Solve problems	Establish analytical processes, including diagnostic processes, which anticipate and allow for risks, cater for both direct and indirect evidence, avoid or minimise reworking and avoid wastage.	Level 3
Use mathematical ideas and techniques	Use mathematical ideas and techniques to correctly complete measurements, calculate analytical requirements, establish realistic sample criteria, quantify, survey and present analytical results.	Level 2
Use technology	Use workplace technology related to information gathering and analysis, diagnosis, information research, report writing, administration and management procedures.	Level 2

Evidence Guide

In what context should
assessment occur?

- 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 defined by the Range Statement.
- Assessment must take account of the endorsed assessment guidelines in the Construction Training Package.

**What methods of assessment
should apply?**

- Assessment of this competency is most likely to be project related under real or simulated conditions and require portfolios or other forms of indirect evidence of process. Direct evidence may include certification of compliance on the final outcome or authorisation for commencement by a competent authority.
- Assessment must confirm the inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.
- Assessment should reinforce the integration of the key competencies.

What are the specific resource
requirements for this unit?

- A situation, real or realistically simulated, requiring application of performance-based codes, risk assessment and risk management principles to buildings.
- The learner and trainer should have access to appropriate documentation and resources normally used in the workplace.

BCGSV6010A

Apply fire technology to buildings up to 3 storeys

Unit Descriptor

This unit specifies the competency required to evaluate smoke detection, fire prevention, protection and control systems for buildings up to three storeys and not exceeding a maximum floor area of 2000m².

It includes evaluation of fire fighting equipment in buildings, integration of active and passive fire protection systems, and the determination of sprinkler and drencher requirements according to the Building Code of Australia (BCA), relevant legislation and Australian Standards.

Element

Performance Criteria

100. Evaluate smoke control in buildings

- 1.91 Psychological effects of smoke on people exposed to building fires are researched
- 1.92 Mechanisms of smoke movement in building are identified and recorded
- 1.93 Smoke control systems identified to meet the requirements for buildings are documented in accordance with legislative requirements
- 1.94 Application of computer packaged smoke control systems are analysed and reported

101. Analyse passive fire protection systems for buildings

- 2.96 Compartmentation purposes are reported
- 2.97 Separation requirements for buildings from other buildings and structures are identified and recorded
- 2.98 Requirements for escape from buildings are documented according to BCA requirements

102. Determine suitability of fire detection systems for buildings

- 5. A range of devices for active fire protection, such as alarms and detectors, are identified and selected for purpose use
- 5. Acts and building regulations that govern the installation of active fire protection systems are identified and recorded
- 5. Requirements for fire detection systems in buildings are identified and selected
- 5. Requirements for fire detection systems for buildings that present unusual fire hazards are identified and documented
- 5. Agencies responsible for maintenance of fire safety systems in buildings are identified and listed according to State/Territory legislation

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| 103. Determine the requirements for various fire fighting equipment in buildings | 103.1 Legislation that governs the installation of fire fighting equipment is identified and documented |
| | 103.2 Extinguishing mediums used by fire fighting agencies and their applications are identified and recorded |
| | 103.3 Properties of extinguishment for the various mediums are identified and documented |
| 104. Check and identify fire alarms | 104.1 Various alarm systems and their operating conditions are identified and documented |
| | 104.2 Various forms of detection and suppression systems are identified in accordance with BCA and relevant AS standards and assessed for compliance |
| | 104.3 Components and their function in the operation of a sprinkler system are checked for pertinence in accordance with BCA and relevant AS standards |
| 105. Determine the requirements for sprinklers and drenchers in buildings | 105.1 Functions of sprinkler and drencher systems are recorded |
| | 105.2 Sources of water supply to a sprinkler system are identified and documented in accordance with BCA |
| | 105.3 Components and their function in the operation of a sprinkler system are interpreted |
| 106. Integrated active fire protection systems with passive fire protection are evaluated to ensure a safe and economical building | 106.1 Active and passive fire protection systems are identified and selected |
| | 106.2 Building examination is carried out to determine the effectiveness of the active and passive fire protection systems according to BCA. |

Range Statement

The Range Statement provides advice to interpret the scope and context of this unit of competency allowing for differences between enterprises and workplaces. It relates to the unit as a whole and facilitates holistic assessment. The following variables may be present for this particular unit:

Unit scope

- Application of fire technology is to include but not be limited to new and proposed buildings, for the purposes of highlighting fire technology requirements and solutions in compliance with the Building Code of Australia.
- Building projects requiring assessment of fire technology systems are to include but not be limited to provision of site access/facilities, work schedules, project milestones and the calculation and processing of application or inspection fees.
- Buildings are limited to three (3) storeys and a maximum floor area not exceeding 2000m², complying with the Building Code of Australia class 2 to 9 buildings.
- Fire technology may include but not be limited to:
 - Smoke detection systems
 - Fire prevention systems
 - Protection and control systems
 - Fire fighting equipment
 - Active and passive fire protection systems
 - Sprinkler systems
 - Drencher systems
- Standard specifications may include but not be limited to industry standard specifications and may be preliminary/outline specifications, developed specifications or detailed specifications (addressing specific components such as structural, mechanical and electrical requirements).
- Reporting systems in accordance with organisational, legislative and quality assurance procedures are to include desk based assessment and may include site-based assessment.

Unit context

- Competency requires the application of fire technology strategies to minimise building non-compliance and the possibility of risk to human life through research, analysis, evaluation and reporting skills in the determination of compliance within the context of relevant legislations, the Building Code of Australia and Australian Standards.

Evidence Guide

The Evidence Guide identifies the critical aspects, knowledge and skills to be demonstrated to confirm competency for this unit. This is an integral part of the assessment of competency and should be read in conjunction with the Performance Criteria and Range Statement.

What critical aspects of evidence are required to demonstrate competency in this unit?

- Compliance with occupational health and safety regulations applicable to workplace operations.
- Application of organisational management policies and procedures including quality assurance requirements where appropriate.
- Evaluation, reporting of data, findings, and recommendations for the implementation of fire technology strategies for at least one (1) building development project up to three (3) storeys, including smoke detection systems, fire prevention systems, protection and control systems, fire fighting equipment, active and passive fire protection systems, sprinkler systems and drencher systems, with respect to compliance with the applicable local government authority, relevant legislation and the BCA.
- Provision of reports to appropriate body/individual as determined by the project brief.
- Application of strategic plans, workplace policies and procedures
- There are no specified relationships.
- Holistic assessment should be applied where appropriate to form a complete work function.

Are there any other units which should be assessed with this unit or which relate directly to this unit?**What specific knowledge is required to achieve the performance criteria?**

- Processes for the interpretation of reports, working drawings and specifications.
- Authorities and powers of a building surveyor.
- Relevant national, State/Territory legislation and local government policy and procedures
- Problem identification, formulation and solutions.
- National Fire Protection Association (NFPA) specifications.
- Factory Mutual Performance Board specifications.
- Fire safety engineering guidelines.
- Fire technology principles in buildings.
- Terminology, definitions and hazard identification.
- Research methods.
- Processes for the administration and preparation of documentation.

Evidence Guide

What specific underpinning skills are required to achieve the performance criteria?

These include a number of processes that are learned throughout work and life, which are required in most jobs. Some of these are covered by the national key competencies, although others may be added. The questions below highlight how these processes are applied in this competency unit. The number in brackets indicates the level to which the key competency needs to be demonstrated where (1) working within set conditions and processes, (2) management or facilitation of conditions or processes are exercised, and (3) design and/or development of conditions or process are required.

How will the candidate apply the following key competency in this unit?

The candidate will need to:

Collect, analyse and organise information	Research, analyse, organise and design the process of applying fire technology to buildings plus subsequent reporting procedure. Level 3
Communicate ideas and information	Communicate and negotiate ideas and information to enable application of fire technology to buildings and for translation of outcomes and solutions. Level 3
Plan and organise activities	Plan and organise activities including the planning of analytical processes, the design and implementation of fire technology systems to buildings. Level 3
Work with others and in a team	Work with others and in a team by recognising dependencies and using co-operative approaches to optimise satisfaction and productivity. Level 2
Solve problems	Establish analytical processes, including diagnostic processes, which anticipate and allow for risks, cater for both direct and indirect evidence, avoid or minimise reworking and avoid wastage. Level 3
Use mathematical ideas and techniques	Use mathematical ideas and techniques to correctly complete measurements, calculate analytical requirements, establish realistic sample criteria, quantify, survey and present analytical results. Level 2
Use technology	Use workplace technology related to information gathering and analysis, diagnosis, information research, report writing, administration and management procedures. Level 2

Evidence Guide

In what context should assessment occur?

- 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 defined by the Range Statement.
- Assessment must take account of the endorsed assessment guidelines in the Construction Training Package.

What methods of assessment should apply?

- Assessment of this competency is most likely to be project related under real or simulated conditions and require portfolios or other forms of indirect evidence of process. Direct evidence may include certification of compliance on the final outcome or authorisation for commencement by a competent authority.
- Assessment must confirm the inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.
- Assessment should reinforce the integration of the key competencies.

What are the specific resource requirements for this unit?

- A situation, real or realistically simulated, requiring application of fire technology systems to buildings.
- The learner and trainer should have access to appropriate documentation and resources normally used in the workplace.

BCGSV6010A

Apply fire technology to buildings up to 3 storeys

Unit Descriptor

This unit specifies the competency required to evaluate smoke detection, fire prevention, protection and control systems for buildings up to three storeys and not exceeding a maximum floor area of 2000m².

It includes evaluation of fire fighting equipment in buildings, integration of active and passive fire protection systems, and the determination of sprinkler and drencher requirements according to the Building Code of Australia (BCA), relevant legislation and Australian Standards.

Element

Performance Criteria

107. Evaluate smoke control in buildings

- 1.95 Psychological effects of smoke on people exposed to building fires are researched
- 1.96 Mechanisms of smoke movement in building are identified and recorded
- 1.97 Smoke control systems identified to meet the requirements for buildings are documented in accordance with legislative requirements
- 1.98 Application of computer packaged smoke control systems are analysed and reported

108. Analyse passive fire protection systems for buildings

- 2.99 Compartmentation purposes are reported
- 2.100 Separation requirements for buildings from other buildings and structures are identified and recorded
- 2.101 Requirements for escape from buildings are documented according to BCA requirements

109. Determine suitability of fire detection systems for buildings

- 5. A range of devices for active fire protection, such as alarms and detectors, are identified and selected for purpose use
- 5. Acts and building regulations that govern the installation of active fire protection systems are identified and recorded
- 5. Requirements for fire detection systems in buildings are identified and selected
- 5. Requirements for fire detection systems for buildings that present unusual fire hazards are identified and documented
- 5. Agencies responsible for maintenance of fire safety systems in buildings are identified and listed according to State/Territory legislation

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| 110. Determine the requirements for various fire fighting equipment in buildings | 110.1 Legislation that governs the installation of fire fighting equipment is identified and documented |
| | 110.2 Extinguishing mediums used by fire fighting agencies and their applications are identified and recorded |
| | 110.3 Properties of extinguishment for the various mediums are identified and documented |
| 111. Check and identify fire alarms | 111.1 Various alarm systems and their operating conditions are identified and documented |
| | 111.2 Various forms of detection and suppression systems are identified in accordance with BCA and relevant AS standards and assessed for compliance |
| | 111.3 Components and their function in the operation of a sprinkler system are checked for pertinence in accordance with BCA and relevant AS standards |
| 112. Determine the requirements for sprinklers and drenchers in buildings | 112.1 Functions of sprinkler and drencher systems are recorded |
| | 112.2 Sources of water supply to a sprinkler system are identified and documented in accordance with BCA |
| | 112.3 Components and their function in the operation of a sprinkler system are interpreted |
| 113. Integrated active fire protection systems with passive fire protection are evaluated to ensure a safe and economical building | 113.1 Active and passive fire protection systems are identified and selected |
| | 113.2 Building examination is carried out to determine the effectiveness of the active and passive fire protection systems according to BCA. |

Range Statement

The Range Statement provides advice to interpret the scope and context of this unit of competency allowing for differences between enterprises and workplaces. It relates to the unit as a whole and facilitates holistic assessment. The following variables may be present for this particular unit:

Unit scope

- Application of fire technology is to include but not be limited to new and proposed buildings, for the purposes of highlighting fire technology requirements and solutions in compliance with the Building Code of Australia.
- Building projects requiring assessment of fire technology systems are to include but not be limited to provision of site access/facilities, work schedules, project milestones and the calculation and processing of application or inspection fees.
- Buildings are limited to three (3) storeys and a maximum floor area not exceeding 2000m², complying with the Building Code of Australia class 2 to 9 buildings.
- Fire technology may include but not be limited to:
 - Smoke detection systems
 - Fire prevention systems
 - Protection and control systems
 - Fire fighting equipment
 - Active and passive fire protection systems
 - Sprinkler systems
 - Drencher systems
- Standard specifications may include but not be limited to industry standard specifications and may be preliminary/outline specifications, developed specifications or detailed specifications (addressing specific components such as structural, mechanical and electrical requirements).
- Reporting systems in accordance with organisational, legislative and quality assurance procedures are to include desk based assessment and may include site-based assessment.

Unit context

- Competency requires the application of fire technology strategies to minimise building non-compliance and the possibility of risk to human life through research, analysis, evaluation and reporting skills in the determination of compliance within the context of relevant legislations, the Building Code of Australia and Australian Standards.

Evidence Guide

The Evidence Guide identifies the critical aspects, knowledge and skills to be demonstrated to confirm competency for this unit. This is an integral part of the assessment of competency and should be read in conjunction with the Performance Criteria and Range Statement.

What critical aspects of evidence are required to demonstrate competency in this unit?	<ul style="list-style-type: none">• Compliance with occupational health and safety regulations applicable to workplace operations.• Application of organisational management policies and procedures including quality assurance requirements where appropriate.• Evaluation, reporting of data, findings, and recommendations for the implementation of fire technology strategies for at least one (1) building development project up to three (3) storeys, including smoke detection systems, fire prevention systems, protection and control systems, fire fighting equipment, active and passive fire protection systems, sprinkler systems and drencher systems, with respect to compliance with the applicable local government authority, relevant legislation and the BCA.• Provision of reports to appropriate body/individual as determined by the project brief.• Application of strategic plans, workplace policies and procedures
Are there any other units which should be assessed with this unit or which relate directly to this unit?	<ul style="list-style-type: none">• There are no specified relationships.• Holistic assessment should be applied where appropriate to form a complete work function.
What specific knowledge is required to achieve the performance criteria?	<ul style="list-style-type: none">• Processes for the interpretation of reports, working drawings and specifications.• Authorities and powers of a building surveyor.• Relevant national, State/Territory legislation and local government policy and procedures• Problem identification, formulation and solutions.• National Fire Protection Association (NFPA) specifications.• Factory Mutual Performance Board specifications.• Fire safety engineering guidelines.• Fire technology principles in buildings.• Terminology, definitions and hazard identification.• Research methods.• Processes for the administration and preparation of documentation.

Evidence Guide

What specific underpinning skills are required to achieve the performance criteria?

These include a number of processes that are learned throughout work and life, which are required in most jobs. Some of these are covered by the national key competencies, although others may be added. The questions below highlight how these processes are applied in this competency unit. The number in brackets indicates the level to which the key competency needs to be demonstrated where (1) working within set conditions and processes, (2) management or facilitation of conditions or processes are exercised, and (3) design and/or development of conditions or process are required.

How will the candidate apply the following key competency in this unit?

The candidate will need to:

Collect, analyse and organise information	Research, analyse, organise and design the process of applying fire technology to buildings plus subsequent reporting procedure. Level 3
Communicate ideas and information	Communicate and negotiate ideas and information to enable application of fire technology to buildings and for translation of outcomes and solutions. Level 3
Plan and organise activities	Plan and organise activities including the planning of analytical processes, the design and implementation of fire technology systems to buildings. Level 3
Work with others and in a team	Work with others and in a team by recognising dependencies and using co-operative approaches to optimise satisfaction and productivity. Level 2
Solve problems	Establish analytical processes, including diagnostic processes, which anticipate and allow for risks, cater for both direct and indirect evidence, avoid or minimise reworking and avoid wastage. Level 3
Use mathematical ideas and techniques	Use mathematical ideas and techniques to correctly complete measurements, calculate analytical requirements, establish realistic sample criteria, quantify, survey and present analytical results. Level 2
Use technology	Use workplace technology related to information gathering and analysis, diagnosis, information research, report writing, administration and management procedures. Level 2

Evidence Guide

In what context should assessment occur?

- 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 defined by the Range Statement.
- Assessment must take account of the endorsed assessment guidelines in the Construction Training Package.

What methods of assessment should apply?

- Assessment of this competency is most likely to be project related under real or simulated conditions and require portfolios or other forms of indirect evidence of process. Direct evidence may include certification of compliance on the final outcome or authorisation for commencement by a competent authority.
- Assessment must confirm the inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.
- Assessment should reinforce the integration of the key competencies.

What are the specific resource requirements for this unit?

- A situation, real or realistically simulated, requiring application of fire technology systems to buildings.
- The learner and trainer should have access to appropriate documentation and resources normally used in the workplace.

BCGSV6011A

Apply legal procedures to building surveying

Unit Descriptor

This unit specifies the competency required to advise on building control activities in a court of law and present evidence in accordance with rules of evidence for civil and criminal trials.

It includes the identification and application of the rules of statutory interpretation as they relate to building control legislation.

Element

Performance Criteria

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|---|---|
| <p>114. Distinguish between common law, judicial precedent and legislation</p> | <p>1.99 Common law in the Australian legal system is analysed and documented.</p> <p>1.100 Binding and persuasive precedent is analysed and interpreted.</p> <p>1.101 Relationship between common law and statute law is analysed and documented.</p> <p>1.102 Delegated legislation and the authorities' allocated specific powers are documented.</p> <p>1.103 Legal practice of reading case law and law up-dates are appraised and noted.</p> |
| <p>115. Identify and interpret the court hierarchy and the civil/criminal jurisdictions of each court</p> | <p>2.102 Civil/criminal court hierarchy is analysed and documented.</p> <p>2.103 Details of the civil/criminal jurisdiction of each court are analysed and documented.</p> <p>2.104 System of civil/criminal appeals identified and documented.</p> <p>2.105 Jurisdiction the coroner's court has in regulatory practice and its role in legislative reform is identified and documented.</p> <p>2.106 Role of legal personnel in the court system is identified and documented.</p> |
| <p>116. Identify and interpret court room procedures</p> | <p>5. Court examination procedures are identified and documented.</p> <p>5. Role of a judge and jury in a civil/criminal trial and eligibility to attend for jury service is identified and documented.</p> <p>5. Format of a prosecution brief is identified and documented.</p> <p>5. Appropriate manner of entering into and departing from the courts/tribunals is adhered to.</p> <p>5. Appropriate manner of addressing the courts/tribunals is adhered to.</p> <p>5. Relevant legal language is applied.</p> |

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| 117. Identify the types of offences and defences within criminal law | 117.1 Presumption of innocence in a criminal case and the burden of proof is analysed and documented. |
| | 117.2 General principles of criminal liability are determined. |
| | 117.3 Differences between summary and indictable offences are analysed and documented. |
| | 117.4 Types of defences are analysed and documented. |
| 118. Detail types of evidence admissible in a civil and criminal trial | 118.1 Types of evidence are analysed and documented. |
| | 118.2 Differences between types of evidence in a court of law are defined and outlined. |
| | 118.3 Evidence rules are identified and documented. |
| 119. Identify the rules of statutory interpretation | 119.1 Acts of parliament and subordinate legislation as a source of law are analysed and documented. |
| | 119.2 Extrinsic and intrinsic material as they relate to Commonwealth/State/Territory interpretation acts are identified and documented. |
| | 119.3 Syntactical presumptions are analysed and documented. |
| | 119.4 General approaches to statutory interpretation are identified and analysed. |

Range Statement

The Range Statement provides advice to interpret the scope and context of this unit of competency allowing for differences between enterprises and workplaces. It relates to the unit as a whole and facilitates holistic assessment. The following variables may be present for this particular unit:

Unit scope

- Types of courts must include civil and criminal jurisdictions.
- Laws may include but not be limited to common law, judicial precedent and legislation.
- Syntactical presumptions may include but not be limited to ejusdem generis and noscitur a sociis.
- Statutory interpretation may include but not be limited to the golden rule, the literal rule and the mischief rule.
- Input to the research, interpretation and analysis of building control legislation is to include but not be limited to commercial, industrial and residential buildings and structures.
- Investigation of laws is to include but not be limited to the Australian common law system, laws applicable to building surveying and the professional code of ethics required for the assessment and inspection of buildings.
- Types of evidence may include but not be limited to oral, documented, real, direct, secondary, hearsay and admissible and inadmissible evidence.
- Implications of Commonwealth legislation may include but not be limited to the Disability Discrimination Act.
- Implications of other State and Territory legislation may include but not be limited to environmental health, planning, occupational health and safety and local government by-laws.
- Reporting systems must be in accordance with organisational and legislative quality assurance procedures and may include desk and site based assessment.

Unit context

- Competency requires the demonstration of research, interpretation, analysis, evaluation, courtroom etiquette and procedures within the context of common law, relevant legislation, the Building Code of Australia and Australian Standards.

Evidence Guide

The Evidence Guide identifies the critical aspects, knowledge and skills to be demonstrated to confirm competency for this unit. This is an integral part of the assessment of competency and should be read in conjunction with the Performance Criteria and Range Statement.

What critical aspects of evidence are required to demonstrate competency in this unit?

- Compliance with occupational health and safety regulations applicable to workplace operations.
- Application of organisational management policies and procedures including quality assurance requirements where applicable.
- Performance of research, interpretation, analysis together with attendance and involvement in at least one (1) civil law case and at least one (1) criminal law case impacting on building control legislation all in accordance with the professional code of conduct and ethics applicable to building control.
- Provision of reports to appropriate body/individual as determined by the project brief.
- Application of strategic plans, workplace policies and procedures.

Are there any other units which should be assessed with this unit or which relate directly to this unit?

- There are no specified relationships
- Holistic assessment should be applied where appropriate to form a complete work function.

What specific knowledge is required to achieve the performance criteria?

- Building policy and legislation
- Australian legal system
- Relevant national, State/Territory legislation and local government policy and procedures
- Codes of conduct and ethics
- Research processes and strategies
- Applications of law and legal principles in building surveying
- Legal terminology, definitions, processes and procedures used in standard court operations
- Processes for the administration and preparation of documentation

Evidence Guide

What specific underpinning skills are required to achieve the performance criteria?

These include a number of processes that are learned throughout work and life, which are required in most jobs. Some of these are covered by the national key competencies, although others may be added. The questions below highlight how these processes are applied in this competency unit. The number in brackets indicates the level to which the key competency needs to be demonstrated where (1) working within set conditions and processes, (2) management or facilitation of conditions or processes are exercised, and (3) design and/or development of conditions or process are required.

How will the candidate apply the following key competency in this unit?

The candidate will need to:

Collect, analyse and organise information

Research, analyse, evaluate, interpret and report information related to building control legislation and how it impacts on building surveyors for attendance and involvement in a civil or criminal law case.

Level 2

Communicate ideas and information

Communicate and negotiate ideas and information to enable interpretation of building control legislation and how other laws and legislation impact upon it for the purposes of attendance and involvement in a civil or criminal law case.

Level 2

Plan and organise activities

Plan and organise activities including the planning of analytical processes, the establishment of research criteria and the interpretation of building control legislation in respect of common law and other impacting legislations together with attendance and involvement in a civil or criminal law case.

Level 2

Work with others and in a team

Work with others and in a team by recognising dependencies and using co-operative approaches to optimise satisfaction and productivity.

Level 2

Solve problems

Establish analytical processes, including diagnostic processes, which anticipate and allow for risks, cater for both direct and indirect evidence, avoid or minimise reworking and avoid wastage.

Level 2

Use mathematical ideas and techniques

Use mathematical ideas and techniques to correctly complete measurements, calculate analytical requirements, establish realistic sample criteria, quantify, survey and present analytical results.

Level 1

Use technology

Use workplace technology related to information gathering and analysis, diagnosis, information research, report writing, administration and management procedures.

Level 2

Evidence Guide

In what context should assessment occur?

- 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 defined by the Range Statement.
- Assessment must take account of the endorsed assessment guidelines in the Construction Training Package.

What methods of assessment should apply?

- Assessment of this competency is most likely to be project related under real or simulated conditions and require portfolios or other forms of indirect evidence of process. Direct evidence may include certification of compliance on the final outcome or authorisation for commencement by a competent authority.
- Assessment must confirm the inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.
- Assessment should reinforce the integration of the key competencies.

What are the specific resource requirements for this unit?

- A situation, real or realistically simulated, requiring research analysis, evaluation, interpretation and reporting together with attendance and involvement in a civil or criminal law case relating to building control legislation activities for building projects.
- The learner and trainer should have access to appropriate documentation and resources normally used in the workplace.

BCGSV6012A**Facilitate community development consultation****Unit Descriptor**

This unit specifies the competency required to initiate and undertake community consultation to facilitate supported community development.

It includes the identification and implementation of appropriate consultation models according to community demographics, analysis and evaluation of data to enable informed decision-making, and the presentation of findings to appropriate stakeholders.

Element**Performance Criteria**

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| 120. Devise strategies and models of consultation | 1.104 Range of community consultation theories and models of practice are identified and assessed for suitability |
| | 1.105 Community development issues are considered when consulting with communities |
| | 1.106 Consultation strategy is selected enabling interactions between building surveyors and community group/s involved in community issues to occur |
| 121. Facilitate community consultations | 2.107 Strategies to identify key interest group/s in a community are identified and devised |
| | 2.108 Interest group/s involved in consultation are briefed on process |
| | 2.109 Community resources to develop and facilitate consultation are assessed for suitability |
| | 2.110 Clear, accurate information is prepared and distributed to interest group/s involved in consultation process |
| 122. Record analyse and report on outcome of consultations | 5. Responses are validated against design criteria specified in community goals |
| | 5. Responses are grouped/collated into categories to facilitate |
| | 5. Responses are formatted for decision making process to proceed |
| | 5. Summary of responses and adopted recommendations are recorded and forwarded to interest group/s |
| | 5. Accurate reports on community consultation process are prepared, including recommendations to enable informed decisions to be made |
| | 5. Overall effectiveness of consultation strategy is reviewed, evaluated and actioned by Building Surveyor |

Range Statement

The Range Statement provides advice to interpret the scope and context of this unit of competency allowing for differences between enterprises and workplaces. It relates to the unit as a whole and facilitates holistic assessment. The following variables may be present for this particular unit:

Unit scope

- Input to the consultation process is to include but not be limited to written records and historical data, anecdotal information, interviews, meetings with key stakeholders.
- Interested parties are to include but not be limited to individuals and special interest groups, existing community groups, government agencies and may include others such as private sector businesses and emergency services.
- Resources to facilitate the consultation process may include but not be limited to human and financial.
- Consultation strategies may include but not be limited to public meetings, surveys, door-to-door visits, and meetings of peak bodies.
- Presentation of information may include but not be limited to models, graphics, videos, handouts, display plans, software presentations and computer simulations.

Unit context

- Competency requires the demonstration of communication, negotiation and evaluation skills within the context of relevant legislation, the Building Code of Australia and Australian Standards.

Evidence Guide

The Evidence Guide identifies the critical aspects, knowledge and skills to be demonstrated to confirm competency for this unit. This is an integral part of the assessment of competency and should be read in conjunction with the Performance Criteria and Range Statement.

What critical aspects of evidence are required to demonstrate competency in this unit?

- Compliance with occupational health and safety regulations applicable to workplace operations.
- Application of organisational management policies and procedures including quality assurance requirements where applicable.
- Performance of a leadership role in the identification and implementation of at least one significant community development consultation process or equivalent.
- Provision of reports to appropriate body/individual as determined by the project brief.
- Application of strategic plans, workplace policies and procedures.
- There are no specified relationships.
- Holistic assessment should be applied where appropriate to form a complete work function.

Are there any other units which should be assessed with this unit or which relate directly to this unit?**What specific knowledge is required to achieve the performance criteria?**

- Local factors affecting community development and consultation processes.
- Relevant national, State/Territory legislation and local government policy and procedures
- Strategies for consultation.
- Codes of conduct and ethics.
- Research methods.
- Processes for the preparation of documentation.

Evidence Guide

What specific underpinning skills are required to achieve the performance criteria?

These include a number of processes that are learned throughout work and life, which are required in most jobs. Some of these are covered by the national key competencies, although others may be added. The questions below highlight how these processes are applied in this competency unit. The number in brackets indicates the level to which the key competency needs to be demonstrated where (1) working within set conditions and processes, (2) management or facilitation of conditions or processes are exercised, and (3) design and/or development of conditions or process are required.

How will the candidate apply the following key competency in this unit?

The candidate will need to:

Collect, analyse and organise information

Research, organise and understand information related to contemporary community development and consultation procedures.

Level 3

Communicate ideas and information

Communicate and negotiate ideas and information to enable confirmation of work requirements and legislation, co-ordination of community awareness and input, other workers and customers, the reporting of outcomes and the completion of regulatory determinations.

Level 3

Plan and organise activities

Plan and organise activities including the planning of analytical processes, the establishment of evaluative criteria, the preparation and layout of worksites and how stakeholders will be engaged.

Level 3

Work with others and in a team

Work with others and in a team by recognising dependencies and using co-operative approaches to optimise satisfaction and productivity.

Level 3

Solve problems

Establish analytical processes, including diagnostic processes, which anticipate and allow for risks, cater for both direct and indirect evidence, avoid or minimise reworking and avoid wastage.

Level 3

Use mathematical ideas and techniques

Use mathematical ideas and techniques to correctly complete measurements, calculate analytical requirements, establish realistic sample criteria, quantify, survey and present analytical results.

Level 2

Use technology

Use workplace technology related to information gathering and analysis, diagnosis, information research, report writing, administration and management procedures.

Level 2

Evidence Guide

In what context should assessment occur?

- 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 defined by the Range Statement.
- Assessment must take account of the endorsed assessment guidelines in the Construction Training Package.

What methods of assessment should apply?

- Assessment of this competency is most likely to be project related under real or simulated conditions and require portfolios or other forms of indirect evidence of process. Direct evidence may include certification of compliance on the final outcome or authorisation for commencement by a competent authority.
- Assessment must confirm the inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.
- Assessment should reinforce the integration of the key competencies.

What are the specific resource requirements for this unit?

- A situation, real or realistically simulated, requiring a client interaction process.
- The learner and trainer should have access to appropriate documentation and resources normally used in the workplace.

BCGSV6013A**Co-ordinate asset refurbishment****Unit Descriptor**

This unit specifies the competency required to undertake standard refurbishment of buildings.

It includes the evaluation of property/premises to establish the scope of work, the preparation of inspection reports and the engagement and co-ordination of sub-contractors to carry out defined tasks.

Element**Performance Criteria**

123. Establish refurbishment and/or inspection requirements

- 1.107 Existing property inspection reports, where available, are used to advise client of the cost benefits associated with property refurbishment
- 1.108 Inspection method and criteria are consistent with the purpose of the inspection, client requirements and building type
- 1.109 Relevant documentation is obtained and reviewed to clarify inspection requirements
- 1.110 Inspections are arranged to minimise disruption to building users
- 1.111 Access arrangements are confirmed prior to entry and where appropriate, agreement to intrusive inspection is secured

124. Evaluate and report inspection outcomes

- 2.111 Inspection report is prepared in a timely manner, is clear, concise, accurate and in an appropriate format and style consistent with statutory requirements
- 2.112 Inspection outcomes are advised promptly to nominated parties and accurately recorded according to workplace procedures
- 2.113 Processes involved in reaching objectives are evaluated for quality, added value and contribution to further refurbishment management opportunities

125. Implement services contract/s

- 5. Team input consistent with achieving project objectives is coordinated through the enterprise to the satisfaction of subcontractors and the client
- 5. Performance in relation to timelines and budgets is regularly monitored
- 5. Necessary variations or adjustments are negotiated with subcontractors and the client and agreed outcomes documented
- 5. Refurbishments are completed according to plan within budget and time constraints to client and statutory requirements
- 5. Reports and administrative procedures are completed to client specifications

Range Statement

The Range Statement provides advice to interpret the scope and context of this unit of competency allowing for differences between enterprises and workplaces. It relates to the unit as a whole and facilitates holistic assessment. The following variables may be present for this particular unit:

Unit scope

- Input to the asset refurbishment process is to include but not be limited to evaluation and inspection of properties/premises, reporting of inspection outcomes and implementation of service contracts with sub-contractors
- Asset refurbishment is to include but not be limited to lease property requiring the services of sub-contractors or assessment of a property/premise in determining the scope of work required for refurbishment
- Asset refurbishment is to include but not be limited to commercial property/premises and may include residential property/premises
- Resources to facilitate undertaking asset refurbishment may include but not be limited to human and financial
- Reporting systems in accordance with organisational and legislative quality assurance procedures are to include desk based assessment and may include site-based assessment

Unit context

- Competency requires the demonstration of research, analysis, evaluation and reporting skills within the context of relevant legislation, the Building Code of Australia and Australian Standards.

Evidence Guide

The Evidence Guide identifies the critical aspects, knowledge and skills to be demonstrated to confirm competency for this unit. This is an integral part of the assessment of competency and should be read in conjunction with the Performance Criteria and Range Statement.

What critical aspects of evidence are required to demonstrate competency in this unit?

- Compliance with occupational health and safety regulations applicable to workplace operations.
- Application of organisational management policies and procedures including quality assurance requirements where applicable.
- Assessment of a building to determine refurbishment requirements, the associated reporting of findings and engagement of sub-contractors for the refurbishment of at least one building or equivalent.
- Provision of reports to appropriate body/individual as determined by the project brief.
- Application of strategic plans, workplace policies and procedures

Are there any other units which should be assessed with this unit or which relate directly to this unit?

- There are no specified relationships
- Holistic assessment should be applied where appropriate to form a complete work function.

What specific knowledge is required to achieve the performance criteria?

- Procedures to establish asset refurbishment of commercial buildings.
- Processes for the interpretation of working drawings and specifications.
- Processes for the interpretation of status/inspection reports, dilapidation reports and refurbishment evaluation processes.
- Relevant national, State/Territory legislation and local government policy and procedures
- Structural, design and construction principles of buildings.
- Hazard category identification.
- Codes of conduct and ethics.
- Research methods.
- Administration and preparation of documentation.

Evidence Guide

What specific underpinning skills are required to achieve the performance criteria?

These include a number of processes that are learned throughout work and life, which are required in most jobs. Some of these are covered by the national key competencies, although others may be added. The questions below highlight how these processes are applied in this competency unit. The number in brackets indicates the level to which the key competency needs to be demonstrated where (1) working within set conditions and processes, (2) management or facilitation of conditions or processes are exercised, and (3) design and/or development of conditions or process are required.

How will the candidate apply the following key competency in this unit?

The candidate will need to:

Collect, analyse and organise information	Research, analyse, organise and understand the inspection, assessment and reporting processes associated with asset refurbishment. Level 2
Communicate ideas and information	Communicate and negotiate ideas and information to enable confirmation of work requirements and legislation, translation of asset refurbishment inspection reports and engagement of sub-contractors, the reporting of outcomes and the completion of regulatory determinations. Level 2
Plan and organise activities	Plan and organise activities including the planning of analytical processes, the establishment of evaluative criteria, the assessment of refurbishment requirements and the appropriate engagement/co-ordination of sub-contractors. Level 3
Work with others and in a team	Work with others and in a team by recognising dependencies and using co-operative approaches to optimise satisfaction and productivity. Level 2
Solve problems	Establish analytical processes, including diagnostic processes, which anticipate and allow for risks, cater for both direct and indirect evidence, avoid or minimise reworking and avoid wastage. Level 2
Use mathematical ideas and techniques	Use mathematical ideas and techniques to correctly complete measurements, calculate analytical requirements, establish realistic sample criteria, quantify, survey and present analytical results. Level 2

Use technology

Use workplace technology related to information gathering and analysis, diagnosis, information research, report writing, administration and management procedures.

Level 1

Evidence Guide

In what context should assessment occur?

- 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 defined by the Range Statement.
- Assessment must take account of the endorsed assessment guidelines in the Construction Training Package.

What methods of assessment should apply?

- Assessment of this competency is most likely to be project related under real or simulated conditions and require portfolios or other forms of indirect evidence of process. Direct evidence may include certification of compliance on the final outcome or authorisation for commencement by a competent authority.
- Assessment must confirm the inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.
- Assessment should reinforce the integration of the key competencies.

What are the specific resource requirements for this unit?

- A situation, real or realistically simulated, requiring asset refurbishment and engaging of sub-contractors.
- The learner and trainer should have access to appropriate documentation and resources normally used in the workplace.

BCGSV6014A**Manage and plan land use****Unit Descriptor**

This unit specifies the competency required to plan and manage the use of land in a regulated building environment.

It includes the evaluation of relevant legislation and application of land management practices and planning concepts required in conventional building developments.

Element**Performance Criteria**

126. Evaluate legislation pertaining to land use planning

1.112 Statutes and common law impacting upon land use management are researched and analysed

1.113 Appeals procedures under present legislation are interpreted

127. Plan land development and control processes

2.114 Formal planning and approval process is identified through legislation

2.115 Document appeals procedure identified through legislation

2.116 Legal requirements governing the introduction of planning schemes are identified and interpreted

2.117 Public consultation measures available under legislation are defined and planned

128. Evaluate the effects of transport and infrastructure on land use management decisions

5. Specific site requirements for transportation, infrastructure systems and design effects on land use management practices are evaluated and reported

5. Historical urban development assessments of the impact of transport requirements on land use patterns are researched and reported

129. Apply spatial organisation factors to the land development process

129.1 The scale and scope of the land development is determined through the land development process

129.2 Factors determining positioning of buildings on lots are identified

129.3 Provision of adequate space in a development is justified through spatial organisation factors

129.4 Streetscapes construction as part of the development process is identified and established

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|---|----|--|
| 130. Determine strategies for the use of land | .1 | Scope of land use in relation to principles of land use management is evaluated |
| | .2 | Extent of existing constraints influencing decision making process of land management is identified |
| | .3 | Criteria for prioritising land use area is established according to sustainable development principles |
| | .4 | Rural land special consideration in land use management process is established according to sustainable development principles |
| | .5 | Strategies for effective land use management are identified through review of management models |

Range Statement

The Range Statement provides advice to interpret the scope and context of this unit of competency allowing for differences between enterprises and workplaces. It relates to the unit as a whole and facilitates holistic assessment. The following variables may be present for this particular unit:

Unit scope

- Input to the planning and management of land use is to include but not be limited to evaluation of land and inspection for the purposes of future planned development projects and the reporting of inspection outcomes.
- Land use planning and management is to include but not be limited to topographical issues such as flood liability, bushfire prone areas and the impact of local land legislation.
- Planning and management of land use is to include but not be limited to commercial, industrial and urban land and may include rural and bush land.
- Resources to facilitate the planning and management of land may include but not be limited to human and financial.
- Reporting systems in accordance with organisational and legislative quality assurance procedures are to include desk based assessment and may include site-based assessment

Unit context

- Competency requires the demonstration of research, analysis, evaluation and reporting skills within the context of relevant legislation, the Building Code of Australia and Australian Standards.

Evidence Guide

The Evidence Guide identifies the critical aspects, knowledge and skills to be demonstrated to confirm competency for this unit. This is an integral part of the assessment of competency and should be read in conjunction with the Performance Criteria and Range Statement.

What critical aspects of evidence are required to demonstrate competency in this unit?

- Compliance with occupational health and safety regulations applicable to workplace operations.
- Application of organisational management policies and procedures including quality assurance requirements where applicable.
- Planning and assessment of land to determine use management requirements, the associated reporting of findings, recommendations and strategies for at least one industrial or commercial land parcel or equivalent.
- Provision of reports to appropriate body/individual as determined by the project brief.
- Application of strategic plans, workplace policies and procedures
- There are no specified relationships.
- Holistic assessment should be applied where appropriate to form a complete work function.

Are there any other units which should be assessed with this unit or which relate directly to this unit?

- Urban zoning procedures.
- Processes for the interpretation of inspection reports, working drawings and specifications.
- Legal control and appeal system.
- Relevant national, State/Territory legislation and local government policy and procedures.
- Local market conditions and availability of residential/commercial building development areas.
- Processes for the interpretation of socio-economic data.
- Land use management models and concepts.
- Codes of conduct and ethics.
- Research methods.
- Processes for the administration and preparation of documentation.

What specific knowledge is required to achieve the performance criteria?

Evidence Guide

What specific underpinning skills are required to achieve the performance criteria?

These include a number of processes that are learned throughout work and life, which are required in most jobs. Some of these are covered by the national key competencies, although others may be added. The questions below highlight how these processes are applied in this competency unit. The number in brackets indicates the level to which the key competency needs to be demonstrated where (1) working within set conditions and processes, (2) management or facilitation of conditions or processes are exercised, and (3) design and/or development of conditions or process are required.

How will the candidate apply the following key competency in this unit?

The candidate will need to:

Collect, analyse and organise information	Research, analyse, organise and understand the inspection, assessment and reporting of land use planning and management. Level 3
Communicate ideas and information	Communicate and negotiate ideas and information to enable confirmation of work requirements and legislation, translation of land planning and management reports. Level 2
Plan and organise activities	Plan and organise activities including the planning of analytical processes, the establishment of evaluative criteria, the assessment of land use requirements and the appropriate planning and management of the land. Level 2
Work with others and in a team	Work with others and in a team by recognising dependencies and using co-operative approaches to optimise satisfaction and productivity. Level 2
Solve problems	Establish analytical processes, including diagnostic processes, which anticipate and allow for risks, cater for both direct and indirect evidence, avoid or minimise reworking and avoid wastage. Level 2
Use mathematical ideas and techniques	Use mathematical ideas and techniques to correctly complete measurements, calculate analytical requirements, establish realistic sample criteria, quantify, survey and present analytical results. Level 2
Use technology	Use workplace technology related to information gathering and analysis, diagnosis, information research, report writing, administration and management procedures. Level 2

Evidence Guide

In what context should assessment occur?

- 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 defined by the Range Statement.
- Assessment must take account of the endorsed assessment guidelines in the Construction Training Package.

What methods of assessment should apply?

- Assessment of this competency is most likely to be project related under real or simulated conditions and require portfolios or other forms of indirect evidence of process. Direct evidence may include certification of compliance on the final outcome or authorisation for commencement by a competent authority.
- Assessment must confirm the inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.
- Assessment should reinforce the integration of the key competencies.

What are the specific resource requirements for this unit?

- A situation, real or realistically simulated, requiring planning and management of land use.
- The learner and trainer should have access to appropriate documentation and resources normally used in the workplace.

BCGSV6015A**Analyse and present building surveying research information****Unit Descriptor**

This unit specifies the competency required to gather, organise and present building surveying information using available systems.

It includes the design, execution and documentation of research for a building surveying project.

Element**Performance Criteria**

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| 131. Prepare a research plan | 1.114 The views and interests of stakeholders are reflected in the research methodology and it is compatible with ethical considerations |
| | 1.115 The research methodology is selected in accordance with the needs, purposes and resources to maximise credibility of research outcomes |
| | 1.116 Research strategies are selected and used which are appropriate to the client group, the information being researched, the resources available and the outcomes sought |
| | 1.117 Strategies for validating research outcomes are incorporated within the research plan |
| 132. Implement research strategies | 2.118 Resources needed to conduct research are determined and allocated |
| | 2.119 All relevant information is collected in a timely manner and recorded and stored to ensure validity, confidentiality and security |
| | 2.120 A representative range of people and groups with an interest in the issues identified are consulted to ensure validity of outcomes |
| | 2.121 Consultation is undertaken according to the agreed practices and protocol of own and other agencies in accordance with organisational practices and protocols |
| | 2.122 Consideration of cultural sensitivities and ethical issues is embedded in all consultation |
| 133. Organise and analyse information | 5. Information is organised in an analytical format suitable for the purpose of the research |
| | 5. Patterns and explanations developed are derived from the data to ensure validity and reliability |
| 134. Report the findings | 134.1 Details of the research findings are documented |
| | 134.2 Opportunities are provided for the validation of the research findings |
| | 134.3 The results of the research are reported and made available to all relevant stakeholders in the appropriate document format |

Range Statement

The Range Statement provides advice to interpret the scope and context of this unit of competency allowing for differences between enterprises and workplaces. It relates to the unit as a whole and facilitates holistic assessment. The following variables may be present for this particular unit:

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| Unit scope | <ul style="list-style-type: none">• Input to the research and analysis process is to include but not be limited to written records and historical data, material data sheets, reports, consultation and definitions. Research may include but not be limited to design and construction of buildings, building policy and legislation, fire engineering, geomechanics, performance evaluation, environmental planning and design and heritage preservation.• Reporting systems must be in accordance with organisational and legislative quality assurance procedures and may include desk and site based assessment. |
| Unit context | <ul style="list-style-type: none">• Competency requires the demonstration of research, analysis, evaluation and reporting skills within the context of relevant legislation, the Building Code of Australia and Australian Standards. |

Evidence Guide

The Evidence Guide identifies the critical aspects, knowledge and skills to be demonstrated to confirm competency for this unit. This is an integral part of the assessment of competency and should be read in conjunction with the Performance Criteria and Range Statement.

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| What critical aspects of evidence are required to demonstrate competency in this unit? | <ul style="list-style-type: none">• Compliance with occupational health and safety regulations applicable to workplace operations.• Application of organisational management policies and procedures including quality assurance requirements where applicable.• Performance of research design, analysis, consultation and reporting of findings for at least one (1) major building project in accordance with standard research practices.• Provision of reports to appropriate body/individual as determined by the project brief.• Application of strategic plans, workplace policies and procedures. |
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Evidence Guide

Are there any other units which should be assessed with this unit or which relate directly to this unit?

- There are no specified relationships
- Holistic assessment should be applied where appropriate to form a complete work function.

What specific knowledge is required to achieve the performance criteria?

- Design and construction of buildings
- Building policy and legislation
- Fire engineering
- Geomechanics
- Performance measures
- Environmental planning and design
- Heritage preservation
- Relevant national, State/Territory legislation and local government policy and procedures
- Codes of conduct and ethics
- Research processes and strategies
- Consultation methods including cultural considerations
- Information systems, manual and electronic
- Processes for the administration and preparation of documentation.

Evidence Guide

What specific underpinning skills are required to achieve the performance criteria?

These include a number of processes that are learned throughout work and life, which are required in most jobs. Some of these are covered by the national key competencies, although others may be added. The questions below highlight how these processes are applied in this competency unit. The number in brackets indicates the level to which the key competency needs to be demonstrated where (1) working within set conditions and processes, (2) management or facilitation of conditions or processes are exercised, and (3) design and/or development of conditions or process are required.

How will the candidate apply the following key competency in this unit?

The candidate will need to:

Collect, analyse and organise information	Research, analyse, evaluate and report information related to the building projects. Level 3
Communicate ideas and information	Communicate and negotiate ideas and information to enable confirmation of work requirements and legislation. Level 3
Plan and organise activities	Plan and organise activities including the planning of analytical processes, the establishment of evaluative criteria, the assessment of building requirements and the issuance of reports. Level 3
Work with others and in a team	Work with others and in a team by recognising dependencies and using co-operative approaches to optimise satisfaction and productivity. Level 3
Solve problems	Establish analytical processes, including diagnostic processes, which anticipate and allow for risks, cater for both direct and indirect evidence, avoid or minimise reworking and avoid wastage. Level 3
Use mathematical ideas and techniques	Use mathematical ideas and techniques to correctly complete measurements, calculate analytical requirements, establish realistic sample criteria, quantify, survey and present analytical results. Level 3
Use technology	Use workplace technology related to information gathering and analysis, diagnosis, information research, report writing, administration and management procedures. Level 2

Evidence Guide

In what context should assessment occur?

- 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 defined by the Range Statement.
- Assessment must take account of the endorsed assessment guidelines in the Construction Training Package.

What methods of assessment should apply?

- Assessment of this competency is most likely to be project related under real or simulated conditions and require portfolios or other forms of indirect evidence of process. Direct evidence may include certification of compliance on the final outcome or authorisation for commencement by a competent authority.
- Assessment must confirm the inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.
- Assessment should reinforce the integration of the key competencies.

What are the specific resource requirements for this unit?

- A situation, real or realistically simulated, requiring research design, analysis, evaluation and reporting for a building project.
- The learner and trainer should have access to appropriate documentation and resources normally used in the workplace.

BCGSV6016A

Apply building surveying procedures to buildings up to three (3) storeys

Unit Descriptor

This unit specifies the competency required to assess medium rise building projects of up to three (3) storeys and a maximum floor area of 2000m² for compliance with building and land use requirements.

It includes the evaluation and interpretation of plans, progressive inspection of building work, preparation of reports and compliance with legislative requirements.

Element

Performance Criteria

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| 135. Evaluate documents submitted with an application for building and land use | <p>1.118 Plans, specifications and structural drawings for commercial and medium rise residential buildings are evaluated for compliance to building application process</p> <p>1.119 Application/proposal is evaluated against legislative requirements</p> <p>1.120 Components of the application requiring referral to other agencies/departments are identified and forwarded</p> <p>1.121 Common faults with application are identified, noted and reported to relevant parties</p> <p>1.122 Notice of decision, approval, conditional approval or refusal is drafted and processed according to workplace procedures</p> |
| 136. Determine the compliance of a new building with the approved plans, relevant legislation and standards during its construction | <p>2.123 Approved plans are interpreted and critical components intended for inspection and compliance are identified</p> <p>2.124 Critical components are identified onsite and inspected for compliance with approved documentation</p> <p>2.125 On-site problems and suggested rectification methods to achieve compliance are reported in writing according to workplace procedures</p> <p>2.126 Rectified work is checked and formally reported to the relevant authorities contacted or referred to, confirm compliance with any other statutory requirements</p> <p>2.127 Installed services in buildings are identified for compliance</p> |

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| 137. Compile a report on an existing building of not more than 3 storeys and with a floor area not exceeding 2000 m ² for compliance with relevant legislation | 5. Classification of an existing building is determined |
| | 5. Requirements of a particular class of building are determined and an inspection report is compiled for breach of requirements of the building |
| | 5. Possible effects to the public of the breach are determined |
| | 5. Inconsistent elements and the extent of rectification required for compliance is compiled in the report |
| | 5. Local and State/Territory Government Legislative requirements for any upgrade works are identified and reported |

Range Statement

The Range Statement provides advice to interpret the scope and context of this unit of competency allowing for differences between enterprises and workplaces. It relates to the unit as a whole and facilitates holistic assessment. The following variables may be present for this particular unit:

Unit scope

- Input to the application of building surveying procedures to commercial and residential medium rise buildings is to include but not be limited to the evaluation and interpretation of plans, progressive inspection of building work, preparation of reports and adherence to legislative requirements for Building Code of Australia class 2 to 9 buildings.
- Commercial, industrial and residential medium rise buildings are limited to three (3) storeys and a maximum floor area not exceeding 2000m².
- Medium rise building projects requiring building surveying are to include but not be limited to provision of site access/facilities, work schedules, project milestones and the processing of applications.
- Building surveying procedures are to include but not be limited to construction, mechanical, structural and electrical and may include other services.
- Resources to facilitate undertaking of building surveying procedures may include but not be limited to human and financial.
- Reporting systems in accordance with organisational and legislative quality assurance procedures are to include desk based assessment and may include site-based assessment.

Unit context

- Competency requires the demonstration of research, analysis, evaluation and reporting skills within the context of relevant legislations, the Building Code of Australia and Australian Standards.

Evidence Guide

The Evidence Guide identifies the critical aspects, knowledge and skills to be demonstrated to confirm competency for this unit. This is an integral part of the assessment of competency and should be read in conjunction with the Performance Criteria and Range Statement.

What critical aspects of evidence are required to demonstrate competency in this unit?

- Compliance with occupational health and safety regulations applicable to workplace operations.
- Application of organisational management policies and procedures including quality assurance requirements where applicable.
- Application of building surveying procedures, the associated reporting of data, findings, recommendations and strategies for at least one (1) commercial or medium rise residential building project or equivalent.
- Production of an accurate proposal outlining status of approval, compliance with regulations, determination of safety procedures for one (1) commercial, industrial or medium rise residential building project.
- Provision of reports to appropriate body/individual as determined by the project brief and according to workplace procedures.
- Application of strategic plans, workplace policies and procedures.

Are there any other units which should be assessed with this unit or which relate directly to this unit?

- There are no specified relationships.
- Holistic assessment should be applied where appropriate to form a complete work function.

What specific knowledge is required to achieve the performance criteria?

- Processes for the interpretation of reports, working drawings and specifications.
- Behaviour of structural members undergoing stress, strain, compression or bending.
- Nature of materials and effect of performance.
- Grading processes and grade markings used to categorise timber and timber products.
- Authorities and powers of a building surveyor.
- Relevant national, State/Territory legislation and local government policy and procedures
- Structural, design and construction principles of buildings.
- Terminology, definitions and hazard identification.
- Codes of conduct and ethics.
- Research methods.
- Processes for the administration and preparation of documentation.

Evidence Guide

What specific underpinning skills are required to achieve the performance criteria?

These include a number of processes that are learned throughout work and life, which are required in most jobs. Some of these are covered by the national key competencies, although others may be added. The questions below highlight how these processes are applied in this competency unit. The number in brackets indicates the level to which the key competency needs to be demonstrated where (1) working within set conditions and processes, (2) management or facilitation of conditions or processes are exercised, and (3) design and/or development of conditions or process are required.

How will the candidate apply the following key competency in this unit?

The candidate will need to:

Collect, analyse and organise information	Research, analyse, organise and understand the application of building and surveying for commercial and medium rise residential buildings plus subsequent reporting procedures. Level 3
Communicate ideas and information	Communicate and negotiate ideas and information to enable confirmation of work requirements, legislation and translation of building surveying inspection reports. Level 3
Plan and organise activities	Plan and organise activities including the planning of analytical processes, the establishment of evaluative criteria, the application of building surveying procedures and their impact on commercial and medium rise residential buildings. Level 3
Work with others and in a team	Work with others and in a team by recognising dependencies and using co-operative approaches to optimise satisfaction and productivity. Level 3
Solve problems	Establish analytical processes, including diagnostic processes, which anticipate and allow for risks, cater for both direct and indirect evidence, avoid or minimise reworking and avoid wastage. Level 3
Use mathematical ideas and techniques	Use mathematical ideas and techniques to correctly complete measurements, calculate requirements, establish realistic sample criteria, quantify, survey and present analytical results. Level 2
Use technology	Use workplace technology related to information gathering and analysis, diagnosis, information research, report writing, administration and management procedures. Level 2

Evidence Guide

In what context should assessment occur?

- 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 defined by the Range Statement.
- Assessment must take account of the endorsed assessment guidelines in the Construction Training Package.

What methods of assessment should apply?

- Assessment of this competency is most likely to be project related under real or simulated conditions and require portfolios or other forms of indirect evidence of process. Direct evidence may include certification of compliance on the final outcome or authorisation for commencement by a competent authority.
- Assessment must confirm the inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.
- Assessment should reinforce the integration of the key competencies.

What are the specific resource requirements for this unit?

- A situation, real or realistically simulated, requiring building surveying procedures to be applied to medium rise buildings.
- The learner and trainer should have access to appropriate documentation and resources normally used in the workplace.

