



# **BCG03 General Construction Training Package**

**Volume 4 of 5**

## **BCG03 General Construction Training Package**

The General Construction Training Package (BCG03) is comprised of five volumes. This division is necessitated by the size of the contents and the need to reduce costs to clients. Each volume contains common information together with the competency units essential for the particular sub-sectors

### **Volume 4 of 5 General Construction Training Package (Volume 4)**

This Training Package was endorsed by NTQC in November 2003.

## BCG03 - General Construction Training Package

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Published by:

First published: 9 January 2004

ISBN: 0 642 80465 6

Printed by:

AEShareNet Code: P

Print Version No: 4

Release Date: 08.12.2006

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## Version Modification History

The version details of this endorsed Training Package are in the table below. The latest information is at the top of the table.

Version	Release Date	Comments
4	08.12.2006	<u>Four additional qualifications</u> Certificate III in Low Rise Structural Framing BCG31706 Certificate II in Steel Fixing BCG20206 Certificate II in Concreting BCG20306 Certificate II in Stonemasonry BCG20406
3	24.10.06	<u>Two additional qualifications</u> Certificate III in Formwork/Falsework BCG31506 Certificate III Wall & Ceiling Lining (Plasterboard) BCG31606 <u>Twenty-eight additional units of competency:</u> BCGPB3001A Fix standard plasterboard wall sheets BCGPB3002A Fix standard plasterboard ceiling sheets BCGPB3003A Fix battens BCGPB3004A Fix wet area sheets BCGPB3005A Fix ceiling sheets to external protected areas BCGPB3006A Fix fibre cement board BCGPB3007A Apply levels of finish standards to planning and inspection of own work BCGPB3008A Mix plastering compounds BCGPB3009A Finish plasterboard joins by hand BCGPB3010A Hand sand plaster work BCGPB3011A Finish category 1 & 2 wet areas BCGPB3012A Cut and fix paper faced cornice BCGPB3013A Plan travel routes BCGPB3014A Install batt insulation products BCGPB3015A Set up, move and dismantle scaffolding up to 4 metres BCGPB3016A Install and finish columns BCGPB3017A Rectify faults in plaster applications BCGPB3018A Use vacuum/electric sanding equipment to finish plaster work BCGPB3019A Install PartiWall plaster products BCGPB3020A Match, mitre and install cast ornamental cornice BCGPB3021A Install and fix residential acoustic plaster

Version	Release Date	Comments
		<p>products</p> <p>BCGPB3022A Use mechanical jointing equipment to finish joints</p> <p>BCGPB3023A Load and unload plaster and plaster related products</p> <p>BCGPB3024A Use manual handling equipment to manoeuvre plaster products</p> <p>BCGPB3025A Store plasterboard/products</p> <p>BCGPB3026A Erect and maintain trestle and plank systems</p> <p>BCGPB3027A Inspect equipment for serviceability</p> <p>BCGCM1006A Work safely at heights</p>
2	24/08/2006	Release of new volume to provide Certificate 4-6 qualifications
1	05/08/2004	<p>Cat 1 change, Delete core unit BCGCO2004B Carry out concrete work from Certificate II in General Construction and Insert new core unit BCGCO2003B Carry out concreting to simple forms</p> <p>Current entry BCGWC2004B Install cast plaster and paper faced cornices be amended to read BCGWC3004B Install cast plaster and paper faced cornices.</p>
1	18/06/2004	Cat 1 change, Replace unit BCGCO2004 Carry out Concrete Work as a core unit in Certificate III in Carpentry with unit BCGCO2003 Carry out concreting to simple forms.
1	09/01/2004	Primary Release, based on revision of the BCG98 Package

**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.



# Qualifications Framework

## The Australian Qualifications Framework

### What is the Australian Qualifications Framework?

A brief overview of the Australian Qualifications Framework (AQF) follows. For a full explanation of the AQF see the *AQF Implementation Handbook, 3rd Edition 2002*. You can download it from the Australian Qualifications Advisory Board (AQFAB) website ([www.aqf.edu.au](http://www.aqf.edu.au)) or obtain a hard copy by contacting AQFAB on phone 03 9639 1606 or by emailing AQFAB on [aqfab@curriculum.edu.au](mailto:aqfab@curriculum.edu.au)

The AQF provides a comprehensive, nationally consistent framework for all qualifications in post-compulsory education and training in Australia. In the vocational education and training (VET) sector it assists national consistency for all trainees, learners, employers and providers by enabling national recognition of qualifications and Statements of Attainment.

Training Package qualifications in the VET sector must comply with the titles and guidelines of the AQF. Endorsed Training Packages provide a unique title for each AQF qualification which must always be reproduced accurately.

### Qualifications

Training Packages can incorporate the following eight AQF qualifications.

- Certificate I in ...
- Certificate II in ...
- Certificate III in ...
- Certificate IV in ...
- Diploma of ...
- Advanced Diploma of ...
- Vocational Graduate Certificate of ...
- Vocational Graduate Diploma of ...

On completion of the requirements defined in the Training Package, a Registered Training Organisation (RTO) may issue a nationally recognised AQF qualification. Issuance of AQF qualifications must comply with the advice provided in the *AQF Implementation Handbook* and the Australian Quality Training Framework *Standards for Registered Training Organisations*, particularly Standard 10.

### Statement of Attainment

Where an AQF qualification is partially achieved through the achievement of one or more endorsed units of competency, an RTO may issue a Statement of Attainment. Issuance of Statements of Attainment must comply with the advice provided in the *AQF Implementation Handbook* and the Australian Quality Training Framework *Standards for Registered Training Organisations*, particularly Standard 10.

Under the *Standards for Registered Training Organisations*, RTOs must recognise the achievement of competencies as recorded on a qualification or Statement of Attainment issued by other RTOs. Given this, recognised competencies can progressively build towards a full AQF qualification.

### AQF Guidelines and Learning Outcomes

The *AQF Implementation Handbook* provides a comprehensive guideline for each AQF qualification. A summary of the learning outcome characteristics and their distinguishing features for each VET related AQF qualification is provided below.

## Certificate I

### *Characteristics of Learning Outcomes*

Breadth, depth and complexity of knowledge and skills would prepare a person to perform a defined range of activities most of which may be routine and predictable.

Applications may include a variety of employment related skills including preparatory access and participation skills, broad-based induction skills and/or specific workplace skills. They may also include participation in a team or work group.

### *Distinguishing Features of Learning Outcomes*

Do the competencies enable an individual with this qualification to:

- 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 given clear direction
- receive and pass on messages/information.

## Certificate II

### *Characteristics of Learning Outcomes*

Breadth, depth and complexity of knowledge and skills would prepare a person to perform in a range of varied activities or knowledge application where there is a clearly defined range of contexts in which the choice of actions required is usually clear and there is limited complexity in the range of operations to be applied.

Performance of a prescribed range of functions involving known routines and procedures and some accountability for the quality of outcomes.

Applications may include some complex or non-routine activities involving individual responsibility or autonomy and/or collaboration with others as part of a group or team.

### *Distinguishing Features of Learning Outcomes*

Do the competencies enable an individual with this qualification to:

- 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 own outputs in work and learning.

## Certificate III

### *Characteristics of Learning Outcomes*

Breadth, depth and complexity of knowledge and competencies would cover selecting, adapting and transferring skills and knowledge to new environments and providing technical advice and some leadership in resolution of specified problems. This would be applied across a range of roles in a variety of contexts with some complexity in the extent and choice of options available.

Performance of a defined range of skilled operations, usually within a range of broader related activities involving known routines, methods and procedures, where some discretion and judgement is required in the selection of equipment, services or contingency measures

and within known time constraints.

Applications may involve some responsibility for others. Participation in teams including group or team co-ordination may be involved.

#### *Distinguishing Features of Learning Outcomes*

Do the competencies enable an individual with this qualification to:

- 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 own outputs in work and learning
- take limited responsibility for the output of others.

## **Certificate IV**

#### *Characteristics of Learning Outcomes*

Breadth, depth and complexity of knowledge and competencies would cover a broad range of varied activities or application in a wider variety of contexts most of which are complex and non-routine. Leadership and guidance are involved when organising activities of self and others as well as contributing to technical solutions of a non-routine or contingency nature.

Performance of a broad range of skilled applications including the requirement to evaluate and analyse current practices, develop new criteria and procedures for performing current practices and provision of some leadership and guidance to others in the application and planning of the skills. Applications involve responsibility for, and limited organisation of, others.

#### *Distinguishing Features of Learning Outcomes*

Do the competencies enable an individual with this qualification to:

- 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, with depth in some areas
- identify, analyse and evaluate information from a variety of sources
- take responsibility for own outputs in relation to specified quality standards
- take limited responsibility for the quantity and quality of the output of others.

## **Diploma**

#### *Characteristics of Learning Outcomes*

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.

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.

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.

The degree of emphasis on breadth as against depth of knowledge and skills may vary between qualifications granted at this level.

#### *Distinguishing Features of Learning Outcomes*

Do the competencies or learning outcomes enable an individual with this qualification to:

- demonstrate understanding of a broad knowledge base incorporating theoretical concepts, with substantial depth in some areas
- 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 to forecast for planning or research purposes
- take responsibility for own outputs in relation to broad quantity and quality parameters
- take some responsibility for the achievement of group outcomes.

## **Advanced Diploma**

#### *Characteristics of Learning Outcomes*

Breadth, depth and complexity involving analysis, design, planning, execution and evaluation across a range of technical and/or management functions including development of new criteria or applications or knowledge or procedures.

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 specific 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.

Applications involve significant judgement in planning, design, technical or leadership/guidance functions related to products, services, operations or procedures.

The degree of emphasis on breadth as against depth of knowledge and skills may vary between qualifications granted at this level.

#### *Distinguishing Features of Learning Outcomes*

Do the competencies or learning outcomes enable an individual with this qualification to:

- 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.

## **Vocational Graduate Certificate**

#### *Characteristics of competencies or learning outcomes*

- The self-directed development and achievement of broad and specialised areas of knowledge and skills, building on prior knowledge and skills.

- Substantial breadth and complexity involving the initiation, analysis, design, planning, execution and evaluation of technical and management functions in highly varied and highly specialised contexts.
- Applications involve making significant, high-level, independent judgements in major broad or planning, design, operational, technical and management functions in highly varied and specialised contexts. They may include responsibility and broad ranging accountability for the structure, management and output of the work or functions of others.
- The degree of emphasis on breadth, as opposed to depth, of knowledge and skills may vary between qualifications granted at this level.

#### *Distinguishing features of learning outcomes*

- Demonstrate the self-directed development and achievement of broad and specialised areas of knowledge and skills, building on prior knowledge and skills.
- Initiate, analyse, design, plan, execute and evaluate major broad or technical and management functions in highly varied and highly specialised contexts.
- Generate and evaluate 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 in complex contexts.
- Demonstrate responsibility and broad-ranging accountability for the structure, management and output of the work or functions of others.

## **Vocational Graduate Diploma**

#### *Characteristics of competencies or learning outcomes*

- The self-directed development and achievement of broad and specialised areas of knowledge and skills, building on prior knowledge and skills.
- Substantial breadth, depth and complexity involving the initiation, analysis, design, planning, execution and evaluation of major functions, both broad and highly specialised, in highly varied and highly specialised contexts.
- Further specialisation within a systematic and coherent body of knowledge.
- Applications involve making high-level, fully independent, complex judgements in broad planning, design, operational, technical and management functions in highly varied and highly specialised contexts. They may include full responsibility and accountability for all aspects of work and functions of others, including planning, budgeting and strategy development.
- The degree of emphasis on breadth, as opposed to depth, of knowledge and skills may vary between qualifications granted at this level.























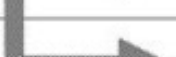






















#### *Distinguishing features of learning outcomes*

- Demonstrate the self-directed development and achievement of broad and highly specialised areas of knowledge and skills, building on prior knowledge and skills.
- Initiate, analyse, design, plan, execute and evaluate major functions, both broad and within highly varied and highly specialised contexts.
- Generate and evaluate complex ideas through the analysis of information and concepts at an abstract level.
- Demonstrate an expert command of wide-ranging, highly specialised, technical, creative or conceptual skills in complex and highly specialised or varied contexts.
- Demonstrate full responsibility and accountability for personal outputs.
- Demonstrate full responsibility and accountability for all aspects of the work or functions of others, including planning, budgeting and strategy.

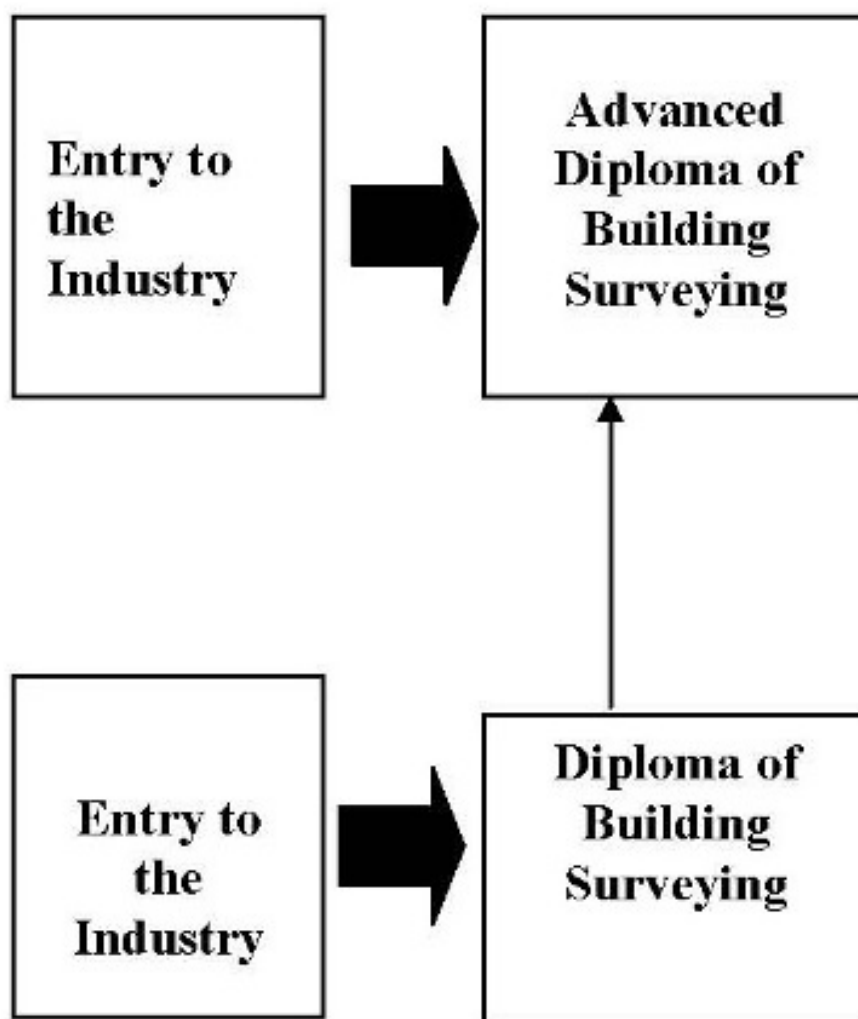
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## Training Pathways Outline

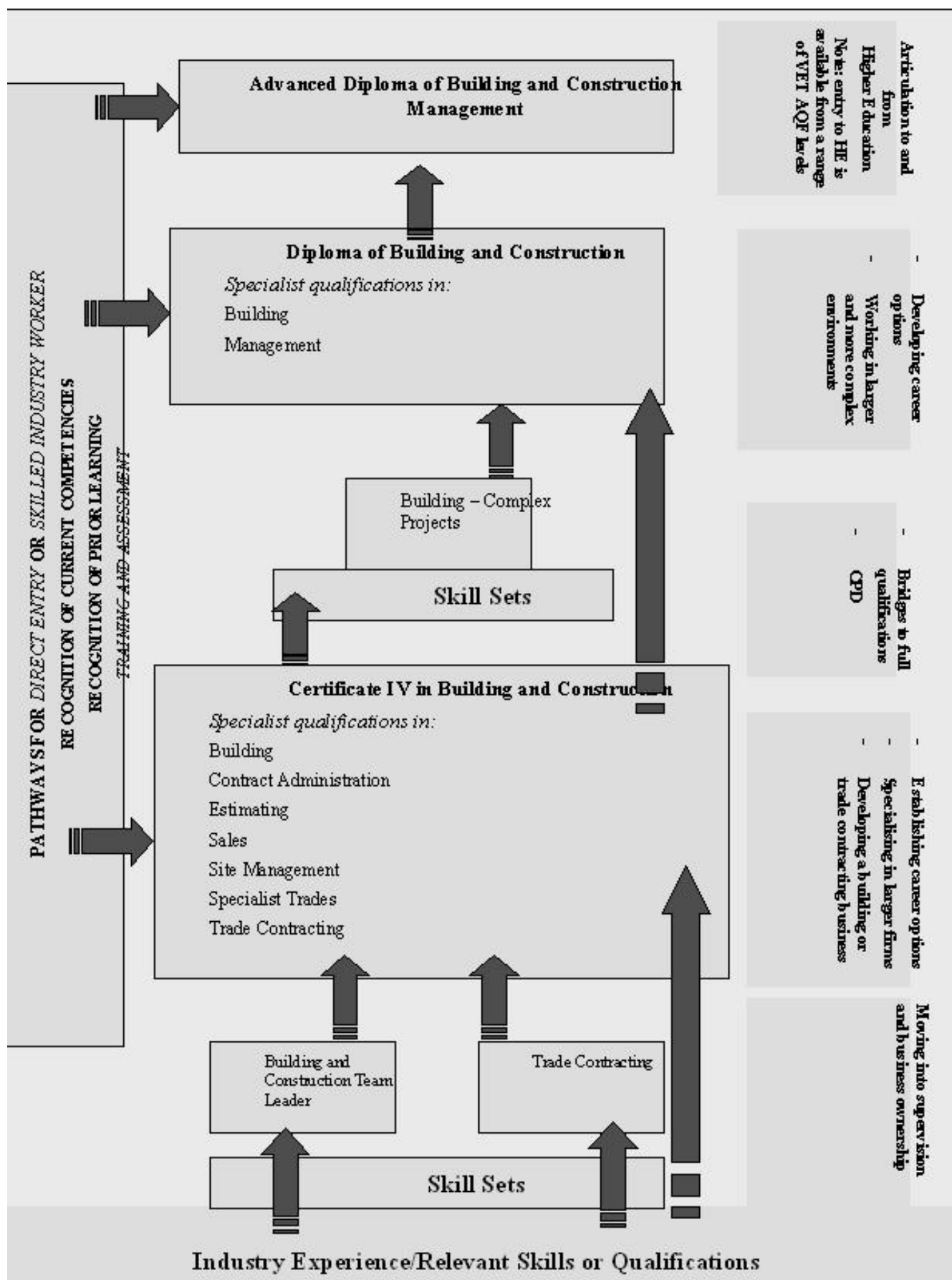
Entry levels and articulation are shown in the following diagrams:

ENTRY	CERTIFICATE		
	I	II	III
	General Construction (BCG 10103)		
		General Construction (BCG 20103)	
			Bricklaying/blocklaying (BCG30103)
			Carpentry (BCG30203)
			Concreting (BCG30303)
			Demolition (General Construction) (BCG30403)
			Dogging (BCG30503)
			Painting and Decorating (BCG30603)
			Rigging (BCG30703)
			Roof Tiling (BCG30803)
			Scaffolding (BCG30903)
			Solid Plastering (BCG31003)
			Steel Fixing (BCG31103)
			Wall and Ceiling Lining (BCG31203)
			Wall and Floor Tiling (BCG31303)
			Waterproofing (General Construction) (BCG31403)

## Pathways to building surveying qualifications







## Skill Sets

### Definition

Skill sets are defined as single units of competency, or combinations of units of competency from an endorsed Training Package, which link to a licence or regulatory requirement, or defined industry need.

### Wording on Statements of Attainment

Skill sets are a way of publicly identifying logical groupings of units of competency which meet an identified need or industry outcome. Skill sets are not qualifications.

Where skill sets are identified in a Training Package, the Statement of Attainment can set out the competencies a person has achieved in a way that is consistent and clear for employers and others. This is done by including the wording 'these competencies meet [the relevant skill set title or industry need is included]' on the Statement of Attainment. This wording applies only to skill sets that are formally identified as such in the endorsed Training Package.

All Statements of Attainment must include the wording 'A Statement of Attainment is issued by a Registered Training Organisation when an individual has completed one or more units of competency from a nationally recognised qualification'. The following may also be used 'these competencies form part of the [the relevant qualification(s) code and title are inserted]'.

This section below provides information on skill sets within this Training Package, with the following important disclaimer: **Readers should ensure that they have also read the part of the Training Package that outlines licensing and regulatory requirements.**

## Skill Sets in this Training Package

### Trade contracting

This skill set addresses the skills used by experienced tradespeople operating as a sole trader, or with limited staff, contracting their services to builders. The contractors may be in the early stages of developing and growing their newly established businesses.

The intent of the skill set is to provide an initial set of business skills to support contractors' existing trade skills.

The completion of this skill set provides a pathway to a range of Certificate IV qualifications.

BCGBC4004A	Identify and produce estimated costs for building and construction projects
BCGBC4024A	Resolve business disputes
BCGBC4034A	Apply codes and standards to building trade and services contracting
BSBCMN310A	Deliver and monitor a service to customers
BSBOHS403A	Identify hazards and assess OHS risks
BSBSBM401A	Establish business and legal requirements
BSBSBM406A	Manage finances

#### PLUS one of the following units:

BCGBC4025A	Manage personal work priorities and professional development
BCGBC4031A	Process client requirements
BSBCMN420A	Write complex documents

The suggested form of words for inclusion on a Statement of Attainment is: These units from BCG03 General Construction Training Package meet industry requirements for experienced tradespersons performing trade contracting work in the construction industry.

## **Building, construction and services team leader**

This skill set addresses the skills used by experienced tradespeople and operators who are moving into roles with additional responsibility and team leadership, typically in smaller businesses. The intent of the skill set is to identify the team leadership and other skills that will enable the development of staff under the supervision of an experienced site supervisor or builder. The completion of this skill set provides a pathway to a range of Certificate IV qualifications.

BCGBC4002A	Manage occupational health and safety in the building and construction workplace
BCGBC4009A	Apply legal requirements to building and construction projects
BSBFLM404A	Lead work teams

The suggested form of words for inclusion on a Statement of Attainment is: These units from BCG03 General Construction Training Package meet industry requirements for experienced tradespersons and operators working as building, construction and services team leaders in the construction industry.

## **Building - complex projects**

The role of a builder requires the acquisition and use of a complex and diverse range of skills. The range and depth of skills required of a builder is amplified by the size and complexity of projects on which he or she works.

This skill set is designed as a 'bridge' for experienced builders already operating at the Certificate IV level who are preparing to undertake larger scale projects which may entail developing additional skills and also, possibly, seeking a higher level of builders' license in the relevant State/Territory. This skill set may be supported by a continuing professional development programs which are increasingly being required of builders.

The completion of this skill set provides a pathway to the Diploma qualification.

BCGBC5003A	Supervise the planning of on-site medium-rise building or construction work
BCGBC5007A	Administer the legal obligations of a building or construction contract
BCGBC5008A	Apply structural principals to the construction of medium-rise buildings
BSBFLM507B	Manage quality customer service
BSBPM505A	Manage project quality
BSBPM508A	Manage project risk

The suggested form of words for inclusion on a Statement of Attainment is: These units from BCG03 General Construction Training Package meet industry requirements for experienced builders in building-complex projects where it is necessary to apply a diverse range of skills to projects amplified by their size and complexity.

# Assessment Guidelines

## Introduction

These Assessment Guidelines provide the endorsed framework for assessment of units of competency in this Training Package. They are designed to ensure that assessment is consistent with the Australian Quality Training Framework (AQTF) *Standards for Registered Training Organisations*. Assessments against the units of competency in this Training Package must be carried out in accordance with these Assessment Guidelines.

## Assessment System Overview

This section provides an overview of the requirements for assessment when using this Training Package, including a summary of the AQTF requirements; licensing/registration requirements; and assessment pathways.

### Benchmarks for Assessment

Assessment within the National Training Framework is the process of collecting evidence and making judgements about whether competency has been achieved to confirm whether an individual can perform to the standards expected in the workplace, as expressed in the relevant endorsed unit of competency.

In the areas of work covered by this Training Package, the endorsed units of competency are the benchmarks for assessment. As such, they provide the basis for nationally recognised Australian Qualifications Framework (AQF) qualifications and Statements of Attainment issued by Registered Training Organisations (RTOs).

## Australian Quality Training Framework Assessment Requirements

Assessment leading to nationally recognised AQF qualifications and Statements of Attainment in the vocational education and training sector must meet the requirements of the AQTF as expressed in the *Standards for Registered Training Organisations*.

The *Standards for Registered Training Organisations* can be downloaded from the DEST website at [www.dest.gov.au](http://www.dest.gov.au) or can be obtained in hard copy from DEST. The following points summarise the assessment requirements under the AQTF.

### Registration of Training Organisations

Assessment must be conducted by, or on behalf of, an RTO formally registered by a State or Territory Registering/Course Accrediting Body in accordance with the *Standards for Registered Training Organisations*. The RTO must have the specific units of competency and/or AQF qualifications on its scope of registration. See Section 1 of the *Standards for Registered Training Organisations*.

### Quality Training and Assessment

Each RTO must have systems in place to plan for and provide quality training and assessment across all its operations. See Standard 1 of the *Standards for Registered Training Organisations*.

### Assessor Competency Requirements

Each person involved in training, assessment or client service must be competent for the functions they perform. See Standard 7 of the *Standards for Registered Training Organisations* for assessor competency requirements. Standard 7 also specifies the competencies that must be held by trainers.

## **Assessment Requirements**

The RTOs assessments must meet the requirements of the endorsed components of Training Packages within its scope of registration. See Standard 8 of the *Standards for Registered Training Organisations*.

## **Assessment Strategies**

Each RTO must identify, negotiate, plan and implement appropriate learning and assessment strategies to meet the needs of each of its clients. See Standard 9 of the *Standards for Registered Training Organisations*.

## **Mutual Recognition**

Each RTO must recognise the AQF qualifications and Statements of Attainment issued by any other RTO. See Standard 5 of the *Standards for Registered Training Organisations*.

## **Access and Equity and Client Services**

Each RTO must apply access and equity principles, provide timely and appropriate information, advice and support services that assist clients to identify and achieve desired outcomes. This may include reasonable adjustment in assessment. See Standard 6 of the *Standards for Registered Training Organisations*.

## **Partnership Arrangements**

RTOs must have, and comply with, written agreements with each organisation providing training and/or assessment on its behalf. See Standard 1.6 of *Standards for Registered Training Organisations*.

## **Recording Assessment Outcomes**

Each RTO must have effective administration and records management procedures in place, and must record AQF qualifications and Statements of Attainment issued. See Standards 4 and 10.2 of the *Standards for Registered Training*.

## **Issuing AQF Qualifications and Statement of Attainment**

Each RTO must issue AQF qualifications and Statements of Attainment that meet the requirements of the *AQF Implementation Handbook* and the endorsed Training Packages within the scope of its registration. An AQF qualification is issued once the full requirements for a qualification, as specified in the nationally endorsed Training Package are met. A Statement of Attainment is issued where the individual is assessed as competent against fewer units of competency than required for an AQF qualification. See Standard 10 and Section 2 of the *Standards for Registered Training Organisations*.

## **Industry advice for skilled delivery**

The Construction and Property Services Industry Skills Council (CPSISC), on behalf of its industry, is committed to ensuring the quality of training and assessment outcomes. Critical to the achievement of this goal is the delivery of training and assessment services by skilled and experienced trainers and assessors.

In order to deliver the qualifications at Certificate IV to Advanced Diploma (excluding the Diploma and Advanced Diploma Building Surveying) within this Training Package, all trainers and assessors should have the following minimum competency, recognition and experience:

### **Certificate IV**

Recommended construction industry requirements for trainers and assessors relative to relevant vocational competencies:

- relevant and current industry experience at a professional or para-professional level.

This may be evidenced by registration on the National Building Professionals Register (at either Levels 1 or 2) or registration on the National Building Technologists Register (at Level 1).

Examples of appropriate employment include:

- the principal or senior manager of a building practice constructing several complete houses a year
- project manager, contracts manager; site manager; quantity surveyor or general foreman on larger construction projects
- possession of the competencies being taught, and/or accepted by industry as subject matter experts, that will be evidenced by a relevant AQF qualification or other formal recognition at this or at a higher AQF level.

Examples of formal recognition are:

- proof of membership of a relevant professional body to at least Associate or Corporate (Chartered) level.

## Diploma

Recommended construction industry requirements for trainers and assessors relative to relevant vocational competencies:

- relevant and current industry experience at a professional or para-professional level.

This may be evidenced by registration on the National Building Professionals Register (at level 1).

Examples of appropriate employment include:

- the principal or senior manager of a building practice working in the commercial construction sector and/or which completes a significant number of residential or commercial projects each year, including a number of concurrent projects
- project manager, contracts manager or other senior manager for a building practice working in the commercial construction sector and/or which completes a significant number of residential or commercial projects each year, including a number of concurrent projects
- possession of the competencies being taught, and/or accepted by industry as subject matter experts, that will be evidenced by a relevant AQF qualification or other formal recognition at this or at a higher AQF level.

Examples of formal recognition are:

- proof of membership of a relevant professional body to at least Corporate (Chartered) level.

## Advanced Diploma

Recommended construction industry requirements for trainers and assessors relative to relevant vocational competencies:

- relevant and current industry experience at a professional or para-professional level.

This may be evidenced by registration on the National Building Professionals Register (at Level 1).

Examples of appropriate employment include:

- the principal or senior manager of a building practice working in the commercial construction sector and/or which completes a significant number of large scale and high rise projects each year including a number of concurrent projects
- project manager, contracts manager or other senior manager for a building practice working in the commercial construction sector and/or which completes a significant number of large scale and high rise projects each year, including a number of concurrent projects
- possession of the competencies being taught, and/or accepted by industry as subject matter experts, that will be evidenced by a relevant AQF qualification or other formal recognition at this or at a higher AQF level.

Examples of formal recognition are:

- proof of membership of a relevant professional body to at least Corporate (Chartered) level.

## Licensing/ Registration Requirements

### General construction

Licensing and registration requirements that apply to specific industries, and vocational education and training, vary between each State/ and Territory, and can regularly change. The developers of this Training Package, together with DEST, consider that the licensing/registration requirements described in this section apply to RTOs, assessors or candidates with respect to this Training Package. While reasonable care has been taken in its preparation, the developers of this Training Package and DEST cannot guarantee that the list is definitive or accurate at the time of reading; the information in this section is provided in good faith on that basis.

A number of occupations and roles within the building and construction are regulated in some or all of the States and Territories.

The regulatory authorities for the building and construction industry are:

Jurisdiction	Name of Regulatory Body	Address
Australian Capital Territory	ACT Planning and Land Authority	Second Floor South Dame Pattie Menzies House 16 Challis Street Dickson ACT 2602
New South Wales	Office of Fair Trading	Licensing and Industry Standards - Home Building Service Office of Fair Trading Level 4, 1 Fitzwilliam Street Parramatta NSW 2150
Northern Territory	Northern Territory Building Practitioners Board	First Floor Cavenagh House 38 Cavenagh Street Darwin NT 0800
Queensland	Building Services Authority	11 Edmondstone Street

		South Brisbane Qld 4101
South Australia	Office of Consumer and Business Affairs	Chesser House Level 3, 91-97 Grenfell Street Adelaide SA 5000
Tasmania	Building Standards and Regulation	30 Gordons Hill Road Rosny Park TAS 7018
Victoria	Building Practitioners Board	Level 27 Casselden Place 2 Lonsdale Street Melbourne VIC 3000
West Australia	Builders Registration Board	Parliament Court 18 Harvest Terrace West Perth WA 6005

Certification responsibilities and systems are administered by State legislation and may differ between States and Territories. In order to conduct assessments for statutory licensing or other industry registration conditions, assessors may need to meet additional requirements. While Registered Training Organisations may have information on the licensing requirements for their particular State or Territory, these requirements may change over time and differ between State and Territory jurisdictions. Assessors are therefore advised to contact the relevant licensing or registration body, details of which are outlined in the following chart.

The driving of plant on public roads will require the driver to obtain the relevant class drivers license from the relevant transport department or equivalent in their jurisdiction.

License/ Registration	Jurisdiction	Contact Details
Boom type elevating work platform (boom length 11m or more) Forklift truck Scaffolding - basic Scaffolding - intermediate Dogging Rigging - basic Rigging - intermediate Materials hoist Personnel and materials hoist Explosive power tools Demolition Asbestos removal Vehicle loading crane (including and over 10m tonne)	Australian Capital Territory	ACT WorkCover <a href="http://www.workcover.act.gov.au">www.workcover.act.gov.au</a>



Concrete placing boom		
Boom type elevating work platform (boom length 11m or more) Forklift truck Scaffolding - basic Scaffolding - intermediate Dogging Rigging - basic Rigging - intermediate Materials hoist Personnel and materials hoist Explosive power tools Formwork Welding Demolition Asbestos removal Vehicle loading crane (including and over 10m tonne) Concrete placing boom	New South Wales	WorkCover New South Wales <a href="http://www.workcover.nsw.gov.au">www.workcover.nsw.gov.au</a>
Boom type elevating work platform (boom length 11m or more) Industrial truck (forklift) operation Scaffolding - basic Scaffolding - intermediate Dogging Rigging - basic Rigging - intermediate Materials hoist Personnel and materials hoist Vehicle loading crane (including and over 10m tonne) Asbestos Removal Concrete placing boom	Northern Territory	Northern Territory Work Health Authority <a href="http://www.deet.nt.gov.au/wha/">www.deet.nt.gov.au/wha/</a>
Operator of a boom type elevating work platform with a boom length of 11m or more	Queensland	Department of Industrial Relations (Workplace Health and Safety Division) <a href="http://www.dir.qld.gov.au">www.dir.qld.gov.au</a>

<p>Operator of a fork lift truck (other than pedestrian operated)</p> <p>Scaffolding - basic</p> <p>Scaffolding - intermediate</p> <p>Dogging</p> <p>Rigging - basic</p> <p>Rigging - intermediate</p> <p>Materials hoist</p> <p>Man and materials hoist</p> <p>Vehicle loading crane (including and over 10m tonne)</p> <p>Concrete placing boom</p>		
<p>Boom type elevating work platform (boom length 11m or more)</p> <p>Forklift truck</p> <p>Scaffolding - basic</p> <p>Scaffolding - intermediate</p> <p>Dogging</p> <p>Rigging - basic</p> <p>Rigging - intermediate</p> <p>Materials hoist</p> <p>Personnel and materials hoist</p> <p>Vehicle loading crane (including and over 10m tonne)</p> <p>Asbestos removal</p> <p>Concrete placing boom</p>	South Australia	South Australia Workcover Corporation <a href="http://www.workcover.com">www.workcover.com</a>
<p>Boom type elevating work platform (boom length 11m or more)</p> <p>Forklift truck</p> <p>Scaffolding - basic</p> <p>Scaffolding - intermediate</p> <p>Dogging</p> <p>Rigging - basic</p> <p>Rigging - intermediate</p> <p>Materials hoist</p> <p>Personnel and materials hoist</p>	Tasmania	Workplace Standards Tasmania <a href="http://www.wst.tas.gov.au">www.wst.tas.gov.au</a>

Vehicle loading crane (including and over 10m tonne) Asbestos removal Concrete placing boom		
Boom type elevating work platform (boom length 11m or more) Forklift truck Scaffolding - basic Scaffolding - intermediate Dogging Rigging - basic Rigging - intermediate Materials hoist Personnel and materials hoist Vehicle loading crane (including and over 10m tonne) Asbestos removal Concrete placing boom	Victoria	Victorian WorkCover Authority <a href="http://www.workcover.vic.gov.au">www.workcover.vic.gov.au</a>
Forklift truck (optional) Boom type elevating work platform (boom length 11m or more) Scaffolding - basic Scaffolding - intermediate Dogging Rigging - basic Rigging - intermediate Personnel and materials hoist Vehicle loading crane (including and over 10m tonne) Demolition Asbestos removal Concrete placing boom	Western Australia	Department of Consumer and Employment Protection (Worksafe) <a href="http://www.safetyline.wa.gov.au">www.safetyline.wa.gov.au</a>

## Building Surveyors

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 the Assessment Guidelines, 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

The regulatory authorities for building surveying are:

**New South Wales** - Planning NSW

[www.planning.nsw.gov.au](http://www.planning.nsw.gov.au)

**Victoria** - Building Control Commission

PO Box 536E, Melbourne Vic 3000

**Queensland** - Building Services Authority

[www.bsa.qld.gov.au](http://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 *Tasmanian Building Act 2000* 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.

## Pathways

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

- formal or informal education and training
- experiences in the workplace
- general life experience, and/or
- any combination of the above.

Assessment under this Training Package leading to an AQF qualification or Statement of Attainment may follow a learning and assessment pathway, an assessment-only or recognition pathway, or a combination of the two as illustrated in the following diagram.

Each of these assessment pathways leads to full recognition of competencies held - the critical issue is that the candidate is competent, not how the competency was acquired.

Assessment, by any pathway, must comply with the assessment requirements set out in the *Standards for Registered Training Organisations*.

## Learning and Assessment Pathways

Usually, learning and assessment are integrated, with assessment evidence being collected and feedback provided to the candidate at anytime throughout the learning and assessment

process.

Learning and assessment pathways may include structured programs in a variety of contexts using a range of strategies to meet different learner needs. Structured learning and assessment programs could be: group-based, work-based, project-based, self-paced, action learning-based; conducted by distance or e-learning; and/or involve practice and experience in the workplace.

Learning and assessment pathways to suit New Apprenticeships have a mix of formal structured training and structured workplace experience with formative assessment activities through which candidates can acquire and demonstrate skills and knowledge from the relevant units of competency.

### **Assessment-Only or Recognition of Prior Learning Pathway**

Competencies already held by individuals can be formally assessed against the units of competency in this Training Package, and should be recognised regardless of how, when or where they were achieved.

In an assessment-only or Recognition of Prior Learning (RPL) pathway, the candidate provides current, quality evidence of their competency against the relevant unit of competency. This process may be directed by the candidate and verified by the assessor, such as in the compilation of portfolios; or directed by the assessor, such as through observation of workplace performance and skills application, and oral and/or written assessment. Where the outcomes of this process indicate that the candidate is competent, structured training is not required. The RPL requirements of Standard 8.2 of the *Standards for Registered Training Organisations* must be met.

As with all assessment, the assessor must be confident that the evidence indicates that the candidate is currently competent against the endorsed unit of competency. This evidence may take a variety of forms and might include certification, references from past employers, testimonials from clients, and work samples. The onus is on candidates to provide sufficient evidence to satisfy assessors that they currently hold the relevant competencies. In judging 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 endorsed unit of competency)
- reliable (shows that the candidate consistently meets the endorsed unit of competency)
- current (reflects the candidate's current capacity to perform the aspect of the work covered by the endorsed unit of competency), and
- 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).

The assessment only or recognition of prior learning pathway is likely to be most appropriate in the following scenarios:

- candidates enrolling in 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, and
- people with disabilities or injuries requiring a change in career.

### **Combination of Pathways**

Where candidates for assessment have gained competencies through work and life

experience and gaps in their competence are identified, or where they require training in new areas, a combination of pathways may be appropriate.

In such situations, the candidate may undertake an initial assessment to determine their current competency. Once current competency is identified, a structured learning and assessment program ensures that the candidate acquires the required additional competencies identified as gaps.

### Assessor Requirements

This section identifies the mandatory competencies for assessors, and clarifies how others may contribute to the assessment process where one person alone does not hold all the required competencies.

### Assessor Competencies

The *Standards for Registered Training Organisations* specify mandatory competency requirements for assessors. For information, Standard 7.3 from the *Standards for Registered Training Organisations* follows:

7.3	<b>a</b>	The RTO must ensure that assessments are conducted by a person who has:
		<ul style="list-style-type: none"> <li>the following competencies* from the Training Package for Assessment and Workplace Training, or demonstrated equivalent competencies: <ul style="list-style-type: none"> <li>TAAASS401A Plan and organise assessment;</li> <li>TAAASS402A Assess competence;</li> <li>TAAASS404A Participate in assessment validation;</li> <li>relevant vocational competencies, at least to the level being assessed.</li> </ul> </li> </ul>
	<b>b</b>	However, if a person does not have all of the competencies in Standards 7.3 <b>a</b> (i) and the vocational competencies as defined in 7.3 <b>a</b> (ii), one person with the competencies listed in Standard 7.3 <b>a</b> (i), and one or more persons who have the competencies listed in Standard 7.3 <b>a</b> (ii) may work together to conduct assessments.
		* A person who holds the competencies BSZ401A Plan assessment, BSZ402A Conduct assessment, and BSZ403A Review assessment from the Training Package for Assessment and Workplace Training will be accepted for the purposes of this standard. A person who has demonstrated equivalent competencies to BSZ401A and BSZ402A and BSZ403A in the period up to 12 months following publication of the Training and Assessment Training Package will also be accepted for the purposes of this standard.

## Designing Assessment Tools

This section provides an overview on the use and development of assessment tools.

### Use of Assessment Tools

Assessment tools provide a means of collecting the evidence that assessors use in making judgements about whether candidates have achieved competency.

There is no set format or process for the design, production or development of assessment tools. Assessors may use prepared assessment tools, such as those specifically developed to support this Training Package, or they may develop their own.

### Using Prepared Assessment Tools

If using prepared assessment tools, assessors should ensure these are benchmarked, or mapped, against the current version of the relevant unit of competency. 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 Quality Council as meeting their quality criteria for Training Package support materials.

## Developing Assessment Tools

When developing assessment tools, assessors must ensure that they:

- are benchmarked against the relevant unit or units of competency
- are reviewed as part of the validation of assessment strategies as required under 9.2 (i) of the *Standards for Registered Training Organisations*
- meet the assessment requirements expressed in the *Standards for Registered Training Organisations*, particularly Standards 8 and 9.

A key reference for assessors developing assessment tools is TAA04 Training and Assessment Training Package and the unit of competency TAAASS403A *Develop assessment tools*. There is no set format or process for the design, production or development of assessment materials.

## Conducting Assessment

This section details the mandatory assessment requirements and provides information on equity in assessment including reasonable adjustment.

### Mandatory Assessment Requirements

Assessments must meet the criteria set out in Standard 8 from the *Standards for Registered Training Organisations*. For information, Standard 8 from the *Standards for Registered Training Organisations* is reproduced below.

8		<b>RTO Assessments</b>
		The RTOs assessments meet the requirements of the endorsed components of Training Packages and the outcomes specified in accredited courses within the scope of its registration.
8.1		The RTO must ensure that assessments (including RPL):
	i.	comply with the assessment guidelines included in the applicable nationally endorsed Training Packages or the assessment requirements specified in accredited courses;
	ii.	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 the applicable Training Package or modules specified in the applicable accredited course;
	iii.	are valid, reliable, fair and flexible;
	iv.	provide for applicants to be informed of the context and purpose of the assessment and the assessment process;
	v.	where relevant, focus on the application of knowledge and skill to standard of performance required in the workplace and cover all aspects workplace performance, including task skills, task management skills, contingency management skills and job role environment skills;

	vi.	involve the evaluation of sufficient evidence to enable judgements to be made about whether competency has been attained;
	vii.	provide for feedback to the applicant about the outcomes of the assessment process and guidance on future options in relation to those outcomes;
	viii.	are equitable for all persons, taking account of individual needs relevant to the assessment; and
	ix.	provide for reassessment on appeal.
8.2	a	The RTO must ensure that RPL is offered to all applicants on enrolment
	b	The RTO must have an RPL process that:
		<ul style="list-style-type: none"> <li>i. is structured to minimise the time and cost to applicants; and</li> <li>ii. provides adequate information, support and opportunities for participants to engage in the RPL process.</li> </ul>

## Delivery and assessment of Employability Skills

Employability Skills are integral to workplace competency and, as such, must be considered in the design, customisation, delivery and assessment of vocational education and training programs in an integrated and holistic way, as represented diagrammatically below.

Training providers must analyse the Employability Skills information contained in units of competency in order to design valid and reliable learning and assessment strategies. This analysis includes:

- reviewing unit(s) of competency to determine how each relevant Employability Skill is found and applied within the unit
- analysing the Employability Skills Summary for the qualification in which the unit(s) is/are packaged to help clarify relevant industry/workplace contexts with regard to the application of Employability Skills at that qualification level
- designing learning and assessment activities that address the Employability Skills requirements.

For more information on Employability Skills in Construction and Property Services Industry Skills Council Training Packages go to the Construction and Property Services Industry Skills Council website at <http://www.cpsisc.com.au>.

## Access and Equity

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.

Reasonable adjustments can be made to ensure equity in assessment for people with disabilities. Adjustments include any changes to the assessment process or context that meet the individual needs of the person with a disability, but do not change competency outcomes. Such 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.

## Industry Assessment Contextualisation 2



## Assessment in the General Construction Industry

When assessing an area covered by a licence, or other regulatory requirement, the assessment must be conducted according to the requirements of the managing authority and according to the Assessment Guidelines contained within this Training Package. In the case of certificated occupations managed by a Regulator or NOHSC, assessment must be carried out by a certificated assessor in accordance with their guidelines. Interpretation and implementation of these guidelines are the responsibility of the relevant state or territory authority.

For further information on licensing requirements refer to:

the State/Territory Regulator listed in the Assessment guidelines; and/or

the National Occupational Health and Safety Commission or other relevant and current standards.

## Further Sources of Information

The section provides a listing of useful contacts and resources to assist assessors in planning, designing, conducting and reviewing of assessments against this Training Package.

### Contacts

## Contacts

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

State or Territory	Organisation	Contact Details
New South Wales	Construction Industry Advisory Board (NSW) PO Box 1925 HORNSBY WESTFIELD NSW 1635	Chief Executive Officer Tel (02) 9987 4027 Fax (02) 9987 4072 Email: <a href="mailto:douglasg@citab.com.au">douglasg@citab.com.au</a>
Queensland	Construction Training Queensland PO Box 28 SALISBURY QLD 4107	General Manager Tel (07) 3274 7999 Fax (07) 3276 7888 Email: <a href="mailto:info@ctq.com.au">info@ctq.com.au</a>
Northern Territory	Major Industries Training Advisory Council GPO Box 1610 DARWIN NT 0801	Executive Director Tel (08) 8981 0077 Fax (08) 8922 9699 Email: <a href="mailto:tim@mitac.com.au">tim@mitac.com.au</a>
Western Australia	Building and Construction Industry Training Council (Inc) 1 st Floor	Executive Director Tel (08) 9381 3900 Fax (08) 9297 3635

	1152 Hay St WEST PERTH WA 6005	Email: <a href="mailto:bcticwa@bcticwa.com.au">bcticwa@bcticwa.com.au</a>
South Australia	Construction Industry Training Board (SA) PO Box 1227 UNELY SA 5034	Chief Executive Officer Tel (08) 8172 9500 Fax (08) 8172 9501 Email: <a href="mailto:info@cpsisc.com.au">info@cpsisc.com.au</a>
Tasmania	Tasmanian Building and Construction Industry Board PO Box 105 SANDY BAY TAS 7006	Executive Director Tel (03) 6223 7804 Fax (03) 6234 6327 Email: <a href="mailto:email@tbcitb.com.au">email@tbcitb.com.au</a>
Australian Capital Territory	ACT Building and Construction Industry Training Council PO Box 882 DICKSON ACT 2602	Executive Director Tel (02) 6241 3977 Fax (02) 6241 3262 Email: <a href="mailto:citc@iimetro.com.au">citc@iimetro.com.au</a>
National	Construction and Property Service Industry Skills Council PO Box 314 HALL ACT 2618	Chief Executive Officer Tel (02) 6230 2907 Fax (02) 6230 2849 Email: <a href="mailto:info@cpsisc.com.au">info@cpsisc.com.au</a>

TVET Australia Ltd

Level 21, 390 St Kilda Road

MELBOURNE VIC 3004

PO Box 12211

A'Beckett Street Post Office

MELBOURNE VIC 8006

Telephone: (03) 9832 8100

Fax: (03) 9832 8199

Web: [www.atpl.net.au](http://www.atpl.net.au)

Email: [sales@atpl.net.au](mailto:sales@atpl.net.au)

Innovation and Business Industry Skills Council

Building B, Level 2

192 Burwood Road

HAWTHORN VIC 3122

Telephone: (03) 9815 7000

Fax: (03) 9815 7001

Email: [virtual@ibsa.org.au](mailto:virtual@ibsa.org.au)

## General Resources

Refer to <http://antapubs.dest.gov.au/publications/search.asp> to locate the following ANTA publications.

*AQF Implementation Handbook, third Edition*. Australian Qualifications Framework Advisory Board, 2002, [aqf.edu.au](http://aqf.edu.au)

Australian Quality Training Framework (AQTF) - for general information go to:  
[www.dest.gov.au/sectors](http://www.dest.gov.au/sectors)

Australian Quality Training Framework (AQTF) - for resources and information go to:  
[www.dest.gov.au](http://www.dest.gov.au)

Australian Quality Training Framework *Standards for Registered Training Organisations*, Australian National Training Authority, Melbourne, 2005. Available in hard copy from State and Territory Training Authorities or can be downloaded from [www.dest.gov.au](http://www.dest.gov.au)

*TAA04 Training and Assessment Training Package*. This is available from the Innovation and Business Skills Australia (IBSA) Industry Skills Council and can be viewed, and components downloaded, from the National Training Information Service (NTIS). National Training Information Service, an electronic database providing comprehensive information about RTOs, Training Packages and accredited courses - [www.ntis.gov.au](http://www.ntis.gov.au) *Style Guide for Training Package Support Materials*, Australian National Training Authority, Melbourne, 2003. Can be downloaded from the ANTA page at [www.dest.gov.au](http://www.dest.gov.au)

## Assessment Resources

*Training Package Assessment Guides* - a range of resources to assist RTOs in developing Training Package assessment materials developed by DEST with funding from the Department of Education, Training and Youth Affairs. It is made up of 10 separate titles, as described at the ANTA publications page of [www.dest.gov.au](http://www.dest.gov.au). Go to [www.resourcegenerator.gov.au/loadpage.asp?TPAG.htm](http://www.resourcegenerator.gov.au/loadpage.asp?TPAG.htm)

Printed and/or CD ROM versions of the Guides can be purchased from Australian Training Products (ATP). The resource includes the following guides:

- 1 Training Package Assessment Materials Kit
- 2 Assessing Competencies in Higher Qualifications
- 3 Recognition Resource
- 4 Kit to Support Assessor Training
- 5 Candidates Kit: Guide to Assessment in New Apprenticeships
- 6 Assessment Approaches for Small Workplaces
- 7 Assessment Using Partnership Arrangements
- 8 Strategies for ensuring Consistency in Assessment
- 9 Networking for Assessors
- 10 Quality Assurance Guide for Assessment

An additional guide "Delivery and Assessment Strategies" has been developed to complement these resources.

## Assessment Tool Design and Conducting Assessment

VETASSESS & 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.

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

## **Assessor Training**

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

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

Australian Training Products Ltd *Assessment and Workplace Training, Training Package - Toolbox*, ATPL Melbourne.

Green, M, et al. 1997, *Key competencies professional development Package*, Department for Education and Children's Services, South Australia.

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

## **Assessment System Design and Management**

Office of Training and Further Education 1998, *Demonstrating best practice in VET project - assessment systems and processes*, OTFE Victoria.

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

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

**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.

**Unit Sector**

Building Surveying

**ELEMENT****PERFORMANCE CRITERIA**

- |   |  |
|---|--|
| 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<br>1.2 Planning and construction effects of the Building Code of Australia and construction requirements of the relevant Australian Standards are researched and documented<br>1.3 Effects of State/Territory, local government and service supply authorities legislation on design and construction are researched and documented<br>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<br>2.2 All salient features of a site, sufficient for the preparation of design and construction documents are recorded on the plan   |
| 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<br>3.2 Principles and practices of site establishment and different types and uses of builders' plant and equipment are identified and evaluated  |
| 4. Determine trade sequencing   | 4.1 Trade sequencing appropriate to the different forms of residential construction are identified and evaluated<br>4.2 Structural systems commonly used in domestic scale buildings are described and sketched<br>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  |

- |   |  |
|---|--|
| 5. Evaluate and apply cyclone resistant construction to buildings | <ul style="list-style-type: none"><li>5.1 Cyclone category areas and code specification are defined</li><li>5.2 Terrain categories and their application to cyclone design are defined</li><li>5.3 Methods of 'tie down' construction are identified from BCA</li><li>5.4 Applications of structural bracing principles are identified in specifications</li><li>5.5 Alternative approaches of construction in cyclone areas are evaluated in accordance with BCA</li></ul>  |
| 6. Evaluate construction standards and practices                  | <ul style="list-style-type: none"><li>6.1 Standards and practices for claddings, linings, finishes and coatings associated with domestic scale buildings are identified and evaluated</li><li>6.2 Standards and practices of window, door and joinery fabrication and installation are identified and evaluated</li><li>6.3 Basic principles and integration of building services into the building are identified and evaluated</li><li>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</li><li>6.5 Types, principles, standards and practices for the installation of the services in single and two storey residential dwellings are identified and evaluated</li><li>6.6 Types, principles, construction standards and practices of relative to domestic stair construction, balustrading and hand rails are identified and evaluated</li></ul> |

## KEY COMPETENCIES

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:

Key Competency	Example of Application	Performance Level
Communicating 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.	2
Collecting analysing and organising information	Research, analyse, organise and understand the principles of construction for domestic scale buildings plus subsequent reporting procedures.	2
Planning and organising activities	Plan and organise activities including the planning of analytical processes, the stages of trade sequencing appropriate to different forms of project construction.	2
Working with others and in teams	Work with others and in a team by recognising dependencies and using co-operative approaches to optimise satisfaction and productivity.	2
Using 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.	2
Solving 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.	3
Using technology	Use workplace technology related to information gathering and analysis, diagnosis, information research, report writing, administration and management procedures.	2

## 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

**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

**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

**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).

**Unit Sector**

Building Surveying

**ELEMENT****PERFORMANCE CRITERIA**

- |  |  |
|--|--|
| 1. Analyse building materials  | 1.1 Properties of materials are analysed and selected for performance<br>1.2 Quality standards and performance of materials are identified according to BCA<br>1.3 Methods of testing materials are recorded<br>1.4 Visual characteristics of materials are identified and recorded<br>1.5 Compatibility between materials and their performance are identified and documented   |
| 2. Investigate suitability of materials for typical domestic scale buildings | 2.1 Samples of commonly used construction materials are identified and selected for investigation according to their purpose and standard work practices<br>2.2 Materials identified as structurally adequate are selected in accordance with BCA<br>2.3 Materials of a required fire resistance are selected in accordance with BCA<br>2.4 Materials based on cost effectiveness are selected in accordance with manufacturers' specifications<br>2.5 Alternative materials for a given application are selected according to BCA |

## KEY COMPETENCIES

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:

Key Competency	Example of Application	Performance Level
Communicating 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.	2
Collecting analysing and organising information	Research, analyse, organise and understand the evaluation of materials for domestic scale buildings plus subsequent reporting procedures.	2
Planning and organising activities	Plan and organise activities including the planning of analytical processes, the evaluation and selection of building materials for domestic scale buildings.	2
Working with others and in teams	Work with others and in a team by recognising dependencies and using co-operative approaches to optimise satisfaction and productivity.	2
Using 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.	2
Solving 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.	3
Using technology	Use workplace technology related to information gathering and analysis, diagnosis, information research, report writing, administration and management procedures.	2

## 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

**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.
- 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.

**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.

**Unit Sector**

Building Surveying

**ELEMENT****PERFORMANCE CRITERIA**

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|---|---|
| 1. Use drawing instruments, equipment and materials to set out drawings                                   | 1.1 Drawing instruments, equipment and materials are used to produce scaled line work, simple geometric shapes, lettering, numbering and the correct setting out of drawings  |
| 2. Produce drawings at varying scales using architectural conventions for linework, lettering and symbols | 2.1 Linework is applied in a range of different types and media in accordance with standard industry drawing practice<br>2.2 Hand letter text is formed in a variety of formats<br>2.3 Different drawing scales are identified and used<br>2.4 Graphic symbols are identified and used<br>2.5 Orthographic projection in building drafting applications are drawn accurately to scale<br>2.6 Notations and dimensions are added to complete drawing |
| 3. Read and interpret plans and specifications for a single storey dwelling                               | 3.1 Inter-relationships between plans and specifications are identified and interpreted<br>3.2 Location and interpretation of key information is identified according to drawing and specifications   |
| 4. Draw three dimensional sketches  | 4.1 Annotated 3D sketches of various building components using parametric (eg isometric) or perspective techniques are produced to specifications   |
| 5. Produce building permit approval drawings  | 5.1 Building permit approval drawings including detailed specification notes for residential dwellings are completed to architectural conventions.  |



## KEY COMPETENCIES

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?

Key Competency	Example of Application	Performance Level
Communicating ideas and information	Communicate and negotiate ideas and information to translate legislation enabling production of working drawings for residential buildings.	3
Collecting analysing and organising information	Research, analyse, organise and understand the application and production of working drawings for residential buildings.	3
Planning and organising activities	Plan and organise activities including the planning of working drawings for residential buildings and analytical processes related to organisation of regulatory factors.	3
Working with others and in teams	Work with others and in a team by recognising dependencies and using co-operative approaches to optimise satisfaction and productivity.	2
Using 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.	2
Solving 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.	3
Using technology	Use workplace technology related to information gathering and analysis, diagnosis, information research, report writing, production of working drawings, administration and management procedures.	2

## 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

**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
- 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

**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).

**Unit Sector**

Building Surveying

**ELEMENT****PERFORMANCE CRITERIA**

- |   |  |
|---|--|
| 1. Promote sustainable building and conservation practices in the community   | 1.1 Environmental changes are determined due to land-use and building development according to the natural elements of specific localities<br>1.2 Development of settlements and the evolution of urban structures for specific communities are researched, analysed and documented<br>1.3 Constrains on building development sites are identified and reported according to the physical nature of environment<br>1.4 Sustainable development and the benefits of conservation are recorded and promoted<br>1.5 Controls on development are analysed and reported   |
| 2. Identify the legal requirements relating to building developments  | 2.1 Components of land use and building legislation are identified and documented including the BCA as it applies to building developments.<br>2.2 Legislation affecting forms of development, including environmental safeguards is identified and recorded<br>2.3 Factors influencing safety of buildings and structures according to legislative requirements are identified and reported<br>2.4 Aims and objectives of building and land-use legislation are interpreted   |
| 3. Determine individual and community responsibilities relating to approval applications for building and land-use developments | 3.1 Consent requirements for building and land-use approval are determined in accordance with legislative requirements<br>3.2 Development applications are prepared in accordance with legislative requirements<br>3.3 List of relevant authorities involved with project development is documented<br>3.4 Development application notices and responses are identified and prepared in accordance with legislative requirements<br>3.5 Appeal rights for individuals and community relating to building and land-use applications are identified and recorded in accordance with legislative requirements |

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|--|---|
| 4. Interpret and apply building, land-use and related legislation                            | 4.1 Building and land-use legislation is applied to various classes of building in accordance with legislative requirements<br>4.2 Special provisions of legislation are researched, identified and recorded<br>4.3 Non-compliance with building, land-use and other related environmental legislation is identified and recorded<br>4.4 Heritage and Conservation legislation relating to building, land-use is researched, identified and recorded<br>4.5 Environmental health issues influencing building and land-use legislation are researched and documented   |
| 5. Determine the legal responsibilities of builders and owners relative to building projects | 5.1 Responsibilities of owners/builders lodging building or land-use applications are determined in accordance with legislative requirements<br>5.2 Notices/orders issues with respect to applications and site safety signage requirements are identified and recorded in accordance with legislative requirements<br>5.3 Owner responsibility relating to construction of party walls is identified and recorded in accordance with legislative requirements<br>5.4 Owner responsibility relating to proposed work affecting adjoining land is identified and recorded in accordance with legislative requirements  |
| 6. Apply special provisions of building and land-use legislation                             | 6.1 Land division requirements are identified and recorded in accordance with legislative requirements<br>6.2 Special requirements for major projects relating to preparation and assessment of environmental impact statements are recorded in accordance with legislative requirements<br>6.3 Referral to prescribed Government agencies/departments is identified and noted in accordance with legislative requirements<br>6.4 Land-use requirements applying to specific locations are identified and recorded in accordance with legislative requirements<br>6.5 Vehicle parking requirements applying to developments are identified and recorded in accordance with legislative requirements |
| 7. Establish the system for dispute resolution   | 7.1 Responsibilities of individuals under building and land-use legislation are identified and recorded in accordance with legislative requirements<br>7.2 Appeal rights provided for under building and land-use legislation are identified and recorded<br>7.3 Consequences for non-compliance with orders and notices are documented   |

## KEY COMPETENCIES

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:

Key Competency	Example of Application	Performance Level
Communicating 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.	2
Collecting analysing and organising 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.	3
Planning and organising 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.	2
Working with others and in teams	Work with others and in a team by recognising dependencies and using co-operative approaches to optimise satisfaction and productivity.	2
Using 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.	1
Solving 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.	2
Using technology	Use workplace technology related to information gathering and analysis, diagnosis, information research, report writing, administration and management procedures.	2

## 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

**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
- 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.

**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.

**Unit Sector**

Building Surveying

**ELEMENT****PERFORMANCE CRITERIA**

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| 1. Evaluate geological formation of rocks and their subsequent weathering to form various soil types | 1.1 Formation of igneous, sedimentary and metamorphic rocks are identified and documented<br>1.2 Mode of transportation, deposition and formation of sands, gravels and clays are identified and documented  |
| 2. Read and evaluate both topographical and geological maps  | 2.1 Topographical and geological maps are interpreted without error<br>2.2 Maps of both types are interpreted by drawing sections indicating features<br>2.3 Retaining structures and systems suitable for various situations are identified   |
| 3. Identify soil types and their behaviour   | 3.1 Cohesive and granular soils are identified from hand specimens without error<br>3.2 Soil properties are identified and calculated with reference to standards, codes and industry literature<br>3.3 Effects of depth on overburden and pore water pressure are estimated   |
| 4. Determine suitability of foundation soils to support various types of structures                  | 4.1 Meaning of total and differential settlement of a building is interpreted without error<br>4.2 Factors influencing settlement and the ultimate bearing capacity of the ground are interpreted<br>4.3 Total and net pressure on foundation soils due to the load of a structure are calculated  |
| 5. Identify and apply the various methods and applications of soil testing                           | 5.1 Australian Standard laboratory testing of permeability, strength, consolidation and point load tests (for rocks) is identified and interpreted<br>5.2 Australian Standard for carryout sub-soil investigations and in-situ testing is identified and interpreted<br>5.3 Soil testing methods are selected and applied or accessed through competent agencies |

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| 6. Determine footing systems for the site conditions and building type                   | 6.1 Mechanism of soil shrinkage and swelling is interpreted<br>6.2 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)<br>6.3 Footing system for a domestic scale building is determined in accordance with BCA |
| 7. Site maintenance requirements necessary to minimise long term damage to the structure | 7.1 Influence of moisture content changes in clay soils is determined<br>7.2 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  |

## KEY COMPETENCIES

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:

Key Competency	Example of Application	Performance Level
Communicating 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.	2
Collecting analysing and organising information	Research, analyse, organise and understand the footing and geomechanical requirements of domestic scale buildings.	3
Planning and organising 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.	2
Working with others and in teams	Work with others and in a team by recognising dependencies and using co-operative approaches to optimise satisfaction and productivity.	3
Using 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.	2
Solving 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.	2
Using technology	Use workplace technology related to information gathering and analysis, diagnosis, information research, report writing, administration and management procedures.	2

## 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

**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
- 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

**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.

**Unit Sector**

Building Surveying

**ELEMENT****PERFORMANCE CRITERIA**

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|---|---|
| 1. Identify and analyse the construction faults arising on residential building sites | 1.1 Information is collected relating to the specific construction problem<br>1.2 Construction problem is identified relative to original specifications<br>1.3 Construction problem is communicated to appropriate personnel and documented in accordance with standard work practices<br>1.4 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).                                  |
| 2. Identify construction techniques/methods and materials                             | 2.1 Building terminology is used accurately in the communication of issues<br>2.2 Existing or designed construction problems are identified and evaluated from working drawings and specifications<br>2.3 Alternative methods/materials to meet construction aims and objectives are prepared to specification nominated in the BCA and Australian Standards<br>2.4 Detailed sketches of available alternative methods/materials available to meet the construction aims and objectives are prepared to specification |
| 3. Resolve construction faults using alternative construction methods                 | 3.1 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<br>3.2 Selected method is integrated into the project in order to resolve the construction problems in accordance with project aims<br>3.3 Evaluation of the available alternative forms of construction are carried out in accordance with project aims |
| 4. Resolve common on-site faults with building materials                              | 4.1 Commonly occurring on-site problems with building materials and their causes are evaluated<br>4.2 Corrective and preventative measures are identified and implemented   |

## KEY COMPETENCIES

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:

Key Competency	Example of Application	Performance Level
Communicating ideas and information	Communicate and negotiate ideas and information to enable confirmation of work requirements and legislation translation of construction faults on residential buildings.	3
Collecting analysing and organising information	Research, analyse, organise and understand the process for assessing construction faults on residential buildings plus subsequent reporting procedures	3
Planning and organising 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.	3
Working with others and in teams	Work with others and in a team by recognising dependencies and using co-operative approaches to optimise satisfaction and productivity.	3
Using 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.	2
Solving 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.	3
Using technology	Use workplace technology related to information gathering and analysis, diagnosis, information research, report writing, administration and management procedures.	2

## 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?**

- 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?**

- 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 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.

**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.

**Unit Sector**

Building Surveying

**ELEMENT****PERFORMANCE CRITERIA**

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|---|--|
| 1. Measure linear distances on site using building and basic surveying equipment          | 1.1 Areas and volumes of regular shapes and figures are calculated<br>1.2 Distances are measured accurately independent of site characteristics and measurement methods<br>1.3 Distances are measured on building sites within a tolerance of 1mm error in 4.0m or (1:4000) without error<br>1.4 Overall distances are calculated from field data without error<br>1.5 Slope corrections are recorded accurately   |
| 2. Carry out a closed level transverse procedure using the Rise and Fall recording method | 2.1 Levelling equipment is inspected for damage, wear and serviceability<br>2.2 Set-up steps are performed and instruments made ready for use without error<br>2.3 Instruments are checked for accuracy and adjusted (where possible) within 3 mm over 60 metres using the two peg test<br>2.4 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<br>2.5 Data of traverse is correctly recorded and extended including mathematical column checks by use of the Rise and Fall method |

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| 3. Perform grid surveys for contour purposes                                       | 3.1 Site identification is established and all survey pegs located without error<br>3.2 Grid distances are determined and grid is pegged correctly<br>3.3 All site detail which may effect the building operation is recorded without error<br>3.4 Reduced levels of all grid points are determined from a close performed onto the bench mark to within 10 mm, without error<br>3.5 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.<br>3.6 Grades of line are determined within a 0.5% tolerance and expressed as percentage, rise to run ratio, or degrees.<br>3.7 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<br>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<br>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<br>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<br>5.2 Temporary adjustments to "set up" levelling devices are carried out to standard operating procedures<br>5.3 Levelling devices are used to determine (read) both horizontal and vertical angles to an accuracy of 20"<br>5.4 Levelling devices are used to set our horizontal angles to an accuracy of 20"<br>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<br>6.2 Equipment is used to control set out and vertical is identified<br>6.3 Basic differences in survey control and set out between frame and concrete multi-storey buildings is outlined<br>6.4 Carry out survey of each level for vertical accuracy of 10 mm using two levelling devices   |

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| 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<br>7.2 The bearing and distance between two sets of coordinates (north and east) are calculated<br>7.3 The coordinates of a point given the bearing and distance from a point with known coordinates are calculated<br>7.4 Offsets from a coordinated point given the bearing and distance from a point with known coordinates are determined<br>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 |
| 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<br>8.2 Different restrictions on the use of land title and restricted development are illustrated<br>8.3 Building covenants and the statutory bodies responsible are identified<br>8.4 Restrictions stated in legislation which regulate setbacks for residential buildings are identified and differentiated.   |



## KEY COMPETENCIES

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:

Key Competency	Example of Application	Performance Level
Communicating 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.	2
Collecting analysing and organising information	Research, analyse, organise and understand the application of site surveys and set out procedures plus subsequent reporting procedures.	2
Planning and organising 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.	3
Working with others and in teams	Work with others and in a team by recognising dependencies and using co-operative approaches to optimise satisfaction and productivity.	2
Using 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.	3
Solving 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.	3
Using technology	Use workplace technology related to information gathering and analysis, diagnosis, information research, report writing, administration and management procedures.	2

## 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.

**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?**

- 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.

**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.

**Unit Sector**

Building Surveying

**ELEMENT****PERFORMANCE CRITERIA**

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|--|---|
| 1. Analyse the Australian administrative legal system  | 1.1 Differences between common law, statute law, delegated legislation and local government law are analysed and documented.<br>1.2 Civil law and examples of civil action relevant to building control are identified and analysed.<br>1.3 Administrative law relevant to building control is determined and interpreted.  |
| 2. Evaluate administrative law applicable to building control activities                                   | 2.1 Individual elements of judicial review legislation are evaluated and documented.<br>2.2 Natural justice is identified and evaluated as it relates to decision making through the building control process.  |
| 3. Describe the procedures and benefits of enforcing the law   | 3.1 Legislative benefits and examples from building control enforcement are investigated and documented.<br>3.2 Major regulatory enforcement strategies are identified and recorded.<br>3.3 Powers of entry are identified and analysed.<br>3.4 Warrants and the legal considerations in obtaining a warrant are identified and documented.<br>3.5 Types of evidence and the gathering of evidence for the purposes of investigating and proving a breach of legislation are identified and documented.<br>3.6 Offences are identified and the process for drafting and issuing a notice is evaluated and documented. |
| 4. Analyse the impact of other legislation on State and Territory building/development control legislation | 4.1 Implications of Commonwealth legislation on State and Territory building/development control legislation are examined and documented.<br>4.2 Implications of other State and Territory legislation on building/development control legislation is examined and documented.  |
| 5. Analyse the professional code of conduct and ethics applicable to building control                      | 5.1 Concepts regarding conflict of interest as specified by relevant legislation are identified and recorded.<br>5.2 Concepts regarding duty of care as it relates to common law are evaluated and documented.  |

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| 6. Analyse the concepts of liability and responsibility of building practitioners as detailed in legislation | 6.1 Liability of building practitioners as specified by relevant legislation is evaluated and documented.                          |
|  | 6.2 Responsibilities and statutory duties of building practitioners as specified by relevant legislation evaluated and documented. |

## KEY COMPETENCIES

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:

Key Competency	Example of Application	Performance Level
Communicating 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.	2
Collecting analysing and organising information	Research, analyse, evaluate, interpret and report information related to building control legislation and how it impacts on building surveyors.	2
Planning and organising 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.	2
Working with others and in teams	Work with others and in a team by recognising dependencies and using co-operative approaches to optimise satisfaction and productivity.	1
Using 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.	1
Solving 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.	2
Using technology	Use workplace technology related to information gathering and analysis, diagnosis, information research, report writing, administration and management procedures.	2

## 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?**

- 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?**

- 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
- 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

**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.

**Unit Sector**

Building Surveying

**ELEMENT****PERFORMANCE CRITERIA**

- |   |   |
|---|---|
| 1. Research combustion process as it relates to different materials               | 1.1 Processes and flame characteristics of combustion of solids, liquids and gases are identified and recorded<br>1.2 Factors contributing to combustion are identified and recorded<br>1.3 Endothermic and exothermic processes are researched and recorded<br>1.4 Heat of combustion fuels are calculated without error<br>1.5 Factors contributing to propagating of flame front are analysed and recorded |
| 2. Analyse the flammability on the different states of matter                     | 2.1 Flammability in terms of the fire triangle and fire tetrahedron theories is analysed and recorded<br>2.2 Flammability of matter in physical states is examined and recorded<br>2.3 Flammability in terms of upper and lower flammability limits is identified and recorded<br>2.4 Factors contributing to the explosiveness of dusts are identified and recorded  |
| 3. Identify conditions of burning at the fire point                               | 3.1 Limiting Adiabatic Flame Temperature (LAFT) values are interpreted accurately<br>3.2 Process of extinguishment related to the combustion process is analysed and recorded   |
| 4. Record mechanisms of heat transfer during fire growth, development and spread  | 4.1 Heat transfer factors in fire situations are identified and recorded<br>4.2 Processes of self-induced heating are analysed and recorded<br>4.3 Behaviour of fires in partially and fully enclosed compartments are observed and recorded<br>4.4 Amount of smoke produced from a fire is calculated  |
| 5. Record the behaviour of building materials subjected to extreme levels of heat | 5.1 Building materials are evaluated for fire safety and recorded<br>5.2 Effect of fire on structural and non-structural elements are identified and recorded<br>5.3 Effect of fire on plastic and textile materials is identified and recorded   |

- |   |   |
|---|---|
| 6. Devise the fire load of a building and describe the effect on the Building Code of Australia (BCA) classification and compartmentation | 6.1 Effect of the building occupancy on the potential fire load is calculated<br>6.2 Factors that may increase the severity of a fire are researched and recorded<br>6.3 Fire load, fire severity and general burning behaviour of materials are researched and recorded  |
| 7. Report the requirements of fire resistance of materials, building elements and forms of construction                                   | 7.1 Fire resistance levels of materials, building elements and forms of construction are researched and recorded<br>7.2 Early fire hazard indices are applied to the BCA requirements<br>7.3 Australian Standards relating to fire testing of building materials and forms of construction are researched and recorded. |

## KEY COMPETENCIES

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:

Key Competency	Example of Application	Performance Level
Communicating 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.	2
Collecting analysing and organising information	Research, analyse, organise and understand test information related to the impact of fire on building materials.	3
Planning and organising 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.	2
Working with others and in teams	Work with others and in a team by recognising dependencies and using co-operative approaches to optimise satisfaction and productivity.	2
Using 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.	2
Solving 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.	2
Using technology	Use workplace technology related to information gathering and analysis, diagnosis, information research, report writing, administration and management procedures.	2

## 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

**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?**

- 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.

**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.

**Unit Sector**

Building Surveying

**ELEMENT****PERFORMANCE CRITERIA**

- |  |  |
|--|--|
| 1. Devise interaction strategies   | 1.1 Interested and affected individuals and/or parties are identified<br>1.2 A range of interaction strategies are identified, assessed for suitability and selected<br>1.3 Resources required to conduct interaction are determined<br>1.4 Regulations are reviewed to ensure strategies meet all criteria  |
| 2. Assess demographic, cultural, social and psychological considerations | 2.1 Needs of disadvantaged individuals and groups are identified and incorporated<br>2.2 Cultural, social and psychological factors are considered and incorporated<br>2.3 Urban, demographic, technological, political and economic effects are considered and incorporated<br>2.4 Collective community behaviour is assessed                                     |
| 3. 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<br>3.2 All parties involved are informed of the applicable legislations<br>3.3 Information is provided to affected parties at an appropriate time and place<br>3.4 Interaction is undertaken in an orderly manner to ensure all viewpoints are canvassed |
| 4. Record, analyse and report results                                    | 4.1 Responses are assessed and checked against the project brief<br>4.2 Appropriate suggestions for improvement are incorporated within the project brief<br>4.3 An accurate report is prepared including recommendations for approval<br>4.4 Overall effectiveness of the interaction is reviewed and evaluated with action taken where required                  |

## KEY COMPETENCIES

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:

Key Competency	Example of Application	Performance Level
Communicating 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.	3
Collecting analysing and organising information	Research, organise and understand information related to contemporary client interaction and consultation procedures, including social, cultural and psychological considerations.	3
Planning and organising 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.	2
Working with others and in teams	Work with others and in a team by recognising dependencies and using co-operative approaches to optimise satisfaction and productivity.	3
Using 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.	1
Solving 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.	3
Using technology	Use workplace technology related to information gathering and analysis, diagnosis, information research, report writing, administration and management procedures.	2



## 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?**

- 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?**

- 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?**

- 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

**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.

**Unit Sector**

Building Surveying

**ELEMENT****PERFORMANCE CRITERIA**

- |   |   |
|---|---|
| 1. Analyse the purpose and basic intent of the BCA  | 1.1 Objectives of the BCA and the purpose of the respective components are evaluated and documented<br>1.2 "Deemed to satisfy" concept for construction to meet BCA requirements is evaluated and documented  |
| 2. Locate and interpret code/standard requirements that are applicable to particular projects | 2.1 Clauses from the BCA that apply to particular projects are identified and documented<br>2.2 Prescriptive requirements of relevant BCA clauses are determined<br>2.3 Requirements of Australian Standards referenced in the BCA are identified and documented<br>2.4 Special requirements that may be applicable to specific areas are identified and documented   |
| 3. Classify buildings   | 3.1 Nature of a building having regard to use and arrangement is determined<br>3.2 BCA criteria are applied to determine the defined classification<br>3.3 BCA requirements are interpreted for multiple classifications  |
| 4. Apply solutions to construction problems for compliance with the BCA                       | 4.1 Criteria to ensure construction methods comply with the intent of the BCA are determined<br>4.2 Alternative approaches to construction problems that comply with the requirements of the BCA are reported<br>4.3 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<br>4.4 Assessment methods are confirmed and identified as appropriate to meet the DTS provisions of BCA |

## KEY COMPETENCIES

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:

Key Competency	Example of Application	Performance Level
Communicating ideas and information	Communicate and negotiate ideas and information to enable confirmation of work requirements and legislation translation of compliance issues in residential buildings.	3
Collecting analysing and organising information	Research, analyse, organise and understand the process for assessing compliance on residential buildings plus subsequent reporting procedures.	3
Planning and organising 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.	3
Working with others and in teams	Work with others and in a team by recognising dependencies and using co-operative approaches to optimise satisfaction and productivity.	2
Using 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.	3
Solving 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.	3
Using technology	Use workplace technology related to information gathering and analysis, diagnosis, information research, report writing, administration and management procedures.	2

## 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.

**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.

**Unit Sector**

Building Surveying

**ELEMENT****PERFORMANCE CRITERIA**

- |  |   |
|--|---|
| 1. Assess plans and specifications for size, span and spacing of structural members required in ceiling and roof framing | 1.1 Access is obtained to all relevant plans, specifications and documentation<br>1.2 Specified timber species and stress grading is identified<br>1.3 True length of common rafter and overhand and economical size of common rafter is determined to support specified roof structure and covering<br>1.4 Maximum span of common rafter is determined<br>1.5 Position, location and direction of struts and strutting beams to support roof and ceiling loads are determined and documented<br>1.6 Method of support at hip and valley rafters is determined and documented<br>1.7 Location, direction and span of ceiling joists and hanging beams to support specified roof design is determined and documented<br>1.8 Nominated member sizes, spans, spacings and locations are listed, documented and checked for accuracy against plans and specifications |
| 2. Assess plans and specifications for permanent wind bracing requirements for nominated design gust wind speeds         | 2.1 Access is obtained to all relevant plans, specifications and documentation<br>2.2 Location and category of building site is identified against design gust wind speed calculations<br>2.3 Wind directions are selected and noted on plans<br>2.4 Type and number of bracing units for each wind direction is selected<br>2.5 Bracing details and description is documented based upon calculations  |

- |   |   |
|---|---|
| 3. Assess plans and specifications for size, span and spacings of structural members for timber wall frames/s                   | 3.1 Access is obtained to all relevant plans, specifications and documentation<br>3.2 Specified timber species and stress grading is identified<br>3.3 'Roof load width' for walls supporting ceiling and roof structures for a specified roof covering is determined<br>3.4 Economical size for common wall studs is determined<br>3.5 Size of top and bottom wall plates is determined according to load bearing conditions<br>3.6 Size of studs at side window and door opening is determined<br>3.7 Size of lintels to nominated openings is determined<br>3.8 Size of timber posts and beams supporting over hands is determined<br>3.9 Nominated member sizes, spans, spacings and locations are identified, listed, documented and checked against plans and specifications for accuracy |
| 4. Assess plans and specifications for size, span and spacing of structural members for timber stumps, floor bearers and joists | 4.1 Access is obtained to all relevant plans, specifications and documentation<br>4.2 Specified timber species and stress grading is identified<br>4.3 Economical size for floor bearer and joist to suit maximum spans and spacings is determined<br>4.4 Size of timber stumps and footing type and size required to support structural members is determined<br>4.5 Size for timber trimmers, working and trimming joists for stair opening to suit maximum spans and spacings is determined<br>4.6 Location, direction and span of bearers and joists to support specified structure is determined<br>4.7 Nominated member sizes, spans, spacings, direction and bracings are identified, listed, documented and checked for accuracy against plans and specifications                       |

## KEY COMPETENCIES

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:

Key Competency	Example of Application	Performance Level
Communicating 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.	2
Collecting analysing and organising information	Research, analyse, organise and understand the process for assessing timber-framed designs on buildings up to two (2) storeys plus subsequent reporting procedures.	2
Planning and organising 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.	2
Working with others and in teams	Work with others and in a team by recognising dependencies and using co-operative approaches to optimise satisfaction and productivity.	1
Using 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.	2
Solving 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.	3
Using technology	Use workplace technology related to information gathering and analysis, diagnosis, information research, report writing, administration and management procedures.	2

## 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?**

- 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?**

- This unit should be co-assessed with BCG5006, BCG5001 and BCG5039.
- 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 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.

**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.

**Unit Sector**

Building Surveying

**ELEMENT****PERFORMANCE CRITERIA**

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|--|--|
| 1. Identify the significance of the Macro and Micro climates in the construction process | 1.1 Climate zones and their characteristics are identified and recorded<br>1.2 Methods for establishing characteristics of specific climate are established and documented<br>1.3 Construction materials and methods suited to specific climates are determined  |
| 2. Assess design criteria for energy efficient construction                              | 2.1 Characteristics and location specific requirements to establish a design are identified and listed<br>2.2 Appropriate form of construction according to established specifications is selected and documented<br>2.3 Prevailing hot and cool wind directions are identified and recorded<br>2.4 Sun path for the location is identified and documented<br>2.5 Building orientation is established and documented   |
| 3. Assess building designs   | 3.1 Accommodation within the building is assessed and recorded<br>3.2 Effective zoning within the building is established<br>3.3 Floor plan is sketched and recorded<br>3.4 Suitability of design in relation to cross ventilation and shadow lines is determined and recorded<br>3.5 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) |
| 4. Identify that energy consumption practices are incorporated into design briefs        | 4.1 Energy appliances of the building and their consumption are established and recorded<br>4.2 Recommended best practice to conserve energy is identified and documented in energy audits<br>4.3 Selection and use of energy efficient fittings and services are determined and utilised in design brief<br>4.4 Energy budget principles for building fabric and services are identified and applied in accordance with standard industry practice  |

## KEY COMPETENCIES

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:

Key Competency	Example of Application	Performance Level
Communicating ideas and information	Communicate and negotiate ideas and information to enable application of design principles and for translation of energy efficient concepts in buildings.	2
Collecting analysing and organising information	Research, analyse, organise and understand the process for applying design principles for energy efficient design in buildings plus subsequent reporting procedures.	3
Planning and organising activities	Plan and organise activities including the planning of analytical processes, the assessment and strategies related to the determination of energy efficient building designs.	2
Working with others and in teams	Work with others and in a team by recognising dependencies and using co-operative approaches to optimise satisfaction and productivity.	2
Using 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.	3
Solving 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.	3
Using technology	Use workplace technology related to information gathering and analysis, diagnosis, information research, report writing, administration and management procedures.	2



## 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?**

- 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?**

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

**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.

**Unit Sector**

Building Surveying

**ELEMENT****PERFORMANCE CRITERIA**

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|---|--|
| 1. Evaluate documents submitted with an application for building approval             | 1.1 Plans, specifications and structural drawings for residential buildings are evaluated for compliance to building application process<br>1.2 Application/proposal is evaluated against legislative requirements<br>1.3 Components of the application requiring referral to other agencies/departments are identified and forwarded<br>1.4 Common faults with application are identified, noted and reported to relevant parties<br>1.5 Notice of decision, approval, conditional approval or refusal is drafted and processed according to workplace procedures |
| 2. Carry out inspections at various stages of building work                           | 2.1 Compliance of building work is checked according to schedule or at discretion and reports prepared promptly for the appropriate parties<br>2.2 Written notices for non-complying work with a full explanation and any remedial action specified are prepared and processed according to workplace procedures<br>2.3 Follow up inspections are conducted at a suitable time to check rectified work without disruption building progress<br>2.4 Meetings are conducted with the stakeholders, taking notes, minutes and responding as required                  |
| 3. Prepare reports on various building types  | 3.1 Analyses of residential buildings are prepared and advised<br>3.2 Suitability of existing buildings are inspected and reported prior to purchase for proposed use and requirements<br>3.3 Existing buildings are inspected for safety and reports completed<br>3.4 Outcome of construction work prior to occupancy is inspected and reported on  |
| 4. Determine the compliance of building services with respect to building legislation | 4.1 Compliance of building services with building legislation is inspected and reported on prior to occupancy<br>4.2 Legislative requirements are interpreted and applied<br>4.3 Common faults with building services are identified, researched and processed according to workplace procedures.  |

## KEY COMPETENCIES

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:

Key Competency	Example of Application	Performance Level
Communicating ideas and information	Communicate and negotiate ideas and information to enable confirmation of work requirements, legislation and translation of building surveying inspection reports.	3
Collecting analysing and organising information	Research, analyse, organise and understand the application of building surveying for residential buildings plus subsequent reporting procedures.	2
Planning and organising 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.	3
Working with others and in teams	Work with others and in a team by recognising dependencies and using co-operative approaches to optimise satisfaction and productivity.	3
Using 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.	2
Solving 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.	3
Using technology	Use workplace technology related to information gathering and analysis, diagnosis, information research, report writing, administration and management procedures.	2

## 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?**

- 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?**

- 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.

**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.

**Unit Sector**

Building Surveying

**ELEMENT****PERFORMANCE CRITERIA**

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|--|--|
| 1. Identify structural requirements and loads commonly used in structural design                 | 1.1 Structural requirements relating to equilibrium, stability, strength, functionality, economy and aesthetics are determined<br>1.2 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   |
| 2. Analyse the effects of force and moments on structural elements                               | 2.1 Force, moments and equilibrium of force and the effects on structures are identified and recorded<br>2.2 Equilibrium of forces for coplanar systems in consideration of stability is identified and compared for performance   |
| 3. Analyse properties and behaviour of structural materials                                      | 3.1 Effect of force on materials in tension, compression, stress, strain and elasticity is identified and recorded<br>3.2 Structural properties and performances are differentiated for common materials and recorded  |
| 4. Identify section properties of structural elements and their effect on structural performance | 4.1 Cross sectional geometry and common structural shapes are identified<br>4.2 Section properties and the relationship between first, second area moments, section modules and gyration and deflection of beams are identified and compared for performance<br>4.3 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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| 5. Compare the performance and properties of spanning elements                  | 5.1 Structural considerations of loaded spanning elements for bending moments; shear forces; deflection, torsion are determined and compared for performance<br>5.2 Bending behaviour and performance of loaded support beams of various types, shapes, spans and loads are determined and compared for performance<br>5.3 Effect that connections have upon the structural performance of beams are identified and compared for performance<br>5.4 Principles of slab behaviour in relation to spans and stress distribution are identified and compared for performance |
| 6. Determine performance criteria for columns                                   | 6.1 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<br>6.2 Eccentric and axial load affect on the strength of column section and materials are determined and compared for performance  |
| 7. Identify factors affecting design of connections between structural elements | 7.1 Transmission of forces between structural elements are determined and compared for performance<br>7.2 Methods of distributing stresses in connections between structural elements are determined and compared for performance   |
| 8. Outline how loads of various types occur and impinge on a building structure | 8.1 Differences between types of loading including Dead load, Live load, Wind load, Earthquake load, Other load causing actions are determined and compared for performance<br>8.2 Dead and live loads using BCA and relevant Australian Standards are determined<br>8.3 Indication of direction of wind pressures on the various surfaces of buildings specified in BCA and relevant Australian Standards are determined   |

## KEY COMPETENCIES

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:

Key Competency	Example of Application	Performance Level
Communicating 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.	2
Collecting analysing and organising information	Research, analyse, organise and understand the structural requirements of domestic scale buildings.	3
Planning and organising 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.	2
Working with others and in teams	Work with others and in a team by recognising dependencies and using co-operative approaches to optimise satisfaction and productivity.	2
Using 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.	2
Solving 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.	3
Using technology	Use workplace technology related to information gathering and analysis, diagnosis, information research, report writing, administration and management procedures.	2

## 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

## 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

**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 2000 square metre

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.

**Unit Sector**

Building Surveying

**ELEMENT****PERFORMANCE CRITERIA**

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|--|--|
| 1. Prepare comprehensive checklist schedule to investigate, plan and set up sites                  | 1.1 Relevant factors for project scheduling, investigation, planning and site establishment are analysed and determined<br>1.2 Capabilities of builder's plant and equipment for single and multi-building projects are identified and documented<br>1.3 Authorities requirements and procedures to connect temporary services are identified and documented<br>1.4 OH&S requirements for site amenities/services and emergency safety procedures are established and documented   |
| 2. Research and comply with relevant State/Territory legislation and Local Government requirements | 2.1 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<br>2.2 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<br>2.3 Effects of State/Territory, Local Government and Service Supply Authorities regulations on the design and construction are researched and documented<br>2.4 Environmental issues and controls relating to the construction site are evaluated and recorded |

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| 3. Investigate and evaluate building site establishment             | 3.1 Available site services and records of the salient features of a building site are appraised and recorded<br>3.2 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<br>3.3 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<br>3.4 Principles and practices of site establishment and different types and uses of builders' plant and equipment are identified and evaluated<br>3.5 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  |
| 4. Determine stages and sequencing practices for structural systems | 4.1 States and sequencing appropriate to the different forms of project construction are identified and described<br>4.2 Structural systems commonly used in different forms of project construction are identified and described<br>4.3 Types, principles, relevant regulations including BCA, construction standards and practices are identified in accordance with relevant design and construction of structural systems<br>4.4 Sub-structure of different forms of project construction from the foundation up to ground level are detailed and documented<br>4.5 Options available for fenestration design based on bracing design are investigated and described<br>4.6 Tilt up construction process, application, standards and practices are identified and described in accordance with relevant design and construction of structural systems<br>4.7 Drawings of service core layouts are prepared in accordance with relevant design and construction of structural systems<br>4.8 The purposes for dimensional coordination and its benefits to the planning and construction of buildings are evaluated<br>4.9 Shop drawings used for the manufacturing of various structural systems most commonly used are reviewed |
| 5. Determine requirements for scaffolding systems                   | 5.1 Various scaffolding systems are identified and selected in accordance with relevant legislation and Australian Standards   |
| 6. Select suitable methods for rubbish removal from building sites  | 6.1 Rubbish removal methods suitable for a specified medium/high rise building in accordance with relevant legislation and Australian Standards are identified and selected  |
| 7. Select suitable cranes and other modes of material handling      | 7.1 Correct and safe methods of material handling systems are identified and selected in accordance with relevant legislation and Australian Standards   |



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|--|---|
| 8. Identify and apply of earthquake resistant construction to building | 8.1 Major building elements designed to resist earthquakes are defined<br>8.2 Major structural concepts used to resist earthquakes are identified<br>8.3 Sketch application of structural and cladding details to resist earthquakes using appropriate drawing protocol<br>8.4 Factors effecting material selection and installation are nominated  |
| 9. Evaluate construction standards and practices                       | 9.1 Types, construction standards and practices for the installation/application used for claddings, linings, finishes and coatings are identified and evaluated<br>9.2 Detail drawings of the various types of cladding systems and their fixings are prepared in accordance with relevant design specifications<br>9.3 Suitability of various partition systems for use in office landscaping/ layouts are evaluated and deemed appropriate to the function of the office<br>9.4 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<br>9.5 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<br>9.6 Basic principles and integration of building services into the building are identified and evaluated in accordance with standard practices and the supply authority legislation<br>9.7 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<br>9.8 Types, standards and practices for the installation of the services are identified and described in accordance with different forms of project construction |
| 10. Plan for continuing maintenance on a construction project          | 10.1 Design principles required for consideration to accommodate/ facilitate ongoing maintenance are identified and documented<br>10.2 Key services areas of a building project requiring ongoing maintenance are nominated and described<br>10.3 Approaches for entering into maintenance agreements for the provision of subsequent services are identified and documented<br>10.4 Responsibilities of the various parties involved in a building project during the construction, defects liability and service life periods are identified and documented   |

## KEY COMPETENCIES

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:

Key Competency	Example of Application	Performance Level
Communicating 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.	3
Collecting analysing and organising information	Research, analyse, organise and understand the principles of construction for commercial and residential buildings plus subsequent reporting procedures	3
Planning and organising activities	Plan and organise activities including the planning of analytical processes, the stages and trade sequencing appropriate to different forms of project construction.	3
Working with others and in teams	Work with others and in a team by recognising dependencies and using co-operative approaches to optimise satisfaction and productivity.	3
Using 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.	2
Solving 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.	3
Using technology	Use workplace technology related to information gathering and analysis, diagnosis, information research, report writing, administration and management procedures.	2

## 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 2000 square metre
- 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.
  - 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.
- 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 kibbles/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

**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.

**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 2000 square metre.

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.

**Unit Sector**

Building Surveying

**ELEMENT****PERFORMANCE CRITERIA**

- |   |  |
|---|--|
| 1. Read and interpret plans and specifications                        | 1.1 Inter-relationships between plans and specifications are identified and interpreted<br>1.2 Location and interpretation of key information is identified according to drawing and specifications<br>1.3 Key information is located and identified<br>1.4 Drawing responses are identified in accordance with relevant Australian Standards<br>1.5 The application of all documentation is identified and interpreted  |
| 2. Produce draft working drawings                                     | 2.1 The requirements and criteria for draft working drawings are identified and interpreted<br>2.2 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 | 3.1 The requirement and criteria for working drawings are identified and interpreted<br>3.2 Working drawings are based on research and are in accordance with relevant legislation including the BCA and Australian standards<br>3.3 Building drawings include detailed specifications and are completed to architectural conventions and demonstrate consideration of creativity and innovation<br>3.4 Documentation is compiled to satisfy approval requirements |

## KEY COMPETENCIES

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:

Key Competency	Example of Application	Performance Level
Communicating ideas and information	Communicate and negotiate ideas and information to translate legislation enabling production of working drawings for buildings.	3
Collecting analysing and organising information	Research, analyse, organise and understand the application and production of working drawings for buildings.	3
Planning and organising activities	Plan and organise activities including the planning of working drawings for buildings and analytical processes related to organisation of regulatory factors.	3
Working with others and in teams	Work with others and in a team by recognising dependencies and using co-operative approaches to optimise satisfaction and productivity.	2
Using 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.	2
Solving 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.	3
Using technology	Use workplace technology related to information gathering and analysis, diagnosis, information research, report writing, production of working drawings, administration and management procedures.	2



## 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 2000 square metre
  - 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

Plans and specifications	<ul style="list-style-type: none"> <li>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</li> </ul>
Draft working drawings	<ul style="list-style-type: none"> <li>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</li> </ul>
Unit context	<ul style="list-style-type: none"> <li>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.</li> </ul>

## 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 2000 square metre, 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.

### **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.
- 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.

**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 2000 square metre.

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

**Unit Sector**

Building Surveying

**ELEMENT****PERFORMANCE CRITERIA**

- |   |  |
|---|--|
| 1. Identify and analyse the construction faults on building sites up to 3 storeys   | 1.1 Information is collected relating to the specific construction problem<br>1.2 Construction problem is identified relative to original specifications<br>1.3 Construction problem is communicated to appropriate personnel and documented in accordance with standard work practices<br>1.4 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)  |
| 2. Identify construction techniques/methods and materials nominated relevant legislation in the BCA and Australian Standard | 2.1 Building terminology is used accurately in the communication of issues<br>2.2 Working drawings and specifications and identifying existing or designed construction problems are evaluated<br>2.3 Alternative methods/materials to meet construction aims and objectives are prepared to specification nominated in relevant legislation in the BCA and Australian Standard<br>2.4 Detailed sketches of available alternative methods/materials available to meet the construction aims and objectives are prepared to specification |
| 3. Resolve construction faults in construction techniques/ methods  | 3.1 Project working drawings and specifications, identifying existing or designed construction problems are evaluated<br>3.2 Report identifying the available alternative methods/materials available to meet the construction aims and objectives is prepared to specification<br>3.3 Detailed sketches of available alternative methods/materials available to meet the construction aims and objectives are prepared to specification   |

- |   |   |
|---|---|
| 4. Resolve construction faults using alternative construction methods | 4.1 Suitable methods from the available alternative solutions are evaluated and recommended to resolve the problem in accordance with the project aims and objectives |
|   | 4.2 Selected methods are to be integrated into the project in order to resolve the construction problems in accordance with project aims                              |
|   | 4.3 Evaluation of the available alternative forms of construction are carried out in accordance with project aims   |
| 5. Resolve common on-site faults with building materials              | 5.1 Commonly occurring on-site problems with building materials and their causes are evaluated  |
|   | 5.2 Corrective and preventative measures are identified and implemented   |

## KEY COMPETENCIES

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:

Key Competency	Example of Application	Performance Level
Communicating 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.	3
Collecting analysing and organising information	Research, analyse, organise and understand the process of assessing construction faults on residential and commercial buildings plus subsequent reporting procedures	3
Planning and organising 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.	3
Working with others and in teams	Work with others and in a team by recognising dependencies and using co-operative approaches to optimise satisfaction and productivity.	3
Using 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.	2
Solving 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.	3
Using technology	Use workplace technology related to information gathering and analysis, diagnosis, information research, report writing, administration and management procedures.	2

## 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 2000 square metre.
- 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.

**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

**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 and construction principles of buildings.
- Terminology, definitions and hazard identification.
- Research methods.
- Processes for the administration and preparation of documentation.



**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 2000 square metre.

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

**Unit Sector**

Building Surveying

**ELEMENT****PERFORMANCE CRITERIA**

- |   |  |
|---|--|
| 1. Evaluation of slope instability                                | 1.1 Soil and rock strength on slope instability is evaluated and recorded<br>1.2 Modes and mechanics of slope instability are researched and documented<br>1.3 Methods to stabilise slopes are researched and documented   |
| 2. Analyse retaining wall requirements according to the structure | 2.1 Retaining structures and systems suitable for various situations are identified<br>2.2 Active and passive earth pressure and water pressure applicable to various retaining structures is determined<br>2.3 Earth pressures on a gravity retaining wall are determined and analysed according to the required structure for stability  |
| 3. Determine footing design requirements according to situation   | 3.1 Net safe bearing pressure for a footing on a clay soil is calculated without error<br>3.2 Allowable bearing pressures for footings on granular soil from in-site penetration test results are calculated without error<br>3.3 Long term consolidation effects for footings on clay soils is analysed and recorded<br>3.4 Behaviour of footings on soils under earthquake conditions is researched and documented |
| 4. Determine requirements for compaction of soil fill             | 4.1 Maximum dry density/moisture content relationship for a soil is analysed and recorded<br>4.2 Techniques for compaction control and performance of compaction plant are identified and documented   |

## KEY COMPETENCIES

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:

Key Competency	Example of Application	Performance Level
Communicating 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.	2
Collecting analysing and organising information	Research, analyse, organise and understand the footing and geomechanical requirements of buildings.	3
Planning and organising 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.	3
Working with others and in teams	Work with others and in a team by recognising dependencies and using co-operative approaches to optimise satisfaction and productivity.	2
Using 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.	2
Solving 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.	3
Using technology	Use workplace technology related to information gathering and analysis, diagnosis, information research, report writing, administration and management procedures.	2

## 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 2000 square metre. 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?**

- 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?**

- 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.
- 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.

**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 2000 square metre.

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).

**Unit Sector**

Building Surveying

**ELEMENT****PERFORMANCE CRITERIA**

- |   |   |
|---|---|
| 1. Evaluate layouts of water supply for general and fire fighting use | 1.1 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<br>1.2 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<br>1.3 Interconnection of water tanks for fire services is emulated in the intent of non-return to original tanks and the results evaluated   |
| 2. Evaluate sewerage and drainage disposal methods and their layouts  | 2.1 Sewerage connection and layout is identified, evaluated and recorded in accordance with the BCA, relevant legislation and Australian Standards<br>2.2 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<br>2.3 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<br>2.4 Methods for disposing of storm water drainage systems are evaluated and documented in accordance with the BCA, relevant legislation and Australian Standards<br>2.5 Design and installation of storm water drainage systems are evaluated and documented in accordance with BCA, relevant legislation and Australian Standards |

- |   |   |
|---|---|
| 3. Evaluate commonly used methods for smoke hazard management, mechanical ventilation and air-conditioning and methods of air filtration and its layout | <p>3.1 Terms used in mechanical ventilation are clearly recorded stating how ventilation, volume, velocity and content may be controlled</p> <p>3.2 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>3.3 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> |
| 4. Evaluate hot water systems and factors affecting selection   | <p>4.1 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>4.2 Operating principles of various types of hot water systems are evaluated and documented</p>  |
| 5. Identify natural lighting for varying situations and evaluate suitable lighting fixtures for a range of operations                                   | <p>5.1 Natural lighting and general aims of design are identified in accordance with authorities and governing regulation requirements</p> <p>5.2 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>   |
| 6. Evaluate fire fighting and fire detection services   | <p>6.1 Authorities involved in plan perusal and site inspection for the various building classifications and their roles and functions are identified</p> <p>6.2 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>6.3 Fire detection and alarm systems are identified and evaluated in accordance with BCA, relevant legislation and Australian Standards</p>  |
| 7. Determine the requirements for general electrical and electronic service installation  | <p>7.1 Electrical supply authorities and the relevant legislation are identified and recorded</p> <p>7.2 Procedure for electrical supply and connection to site are documented</p> <p>7.3 Electrical design and provision for services and electronic cabling are identified, evaluated and recorded</p> <p>7.4 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</p>   |
| 8. Evaluate methods for vertical transportation and layout  | 8.1 Methods of vertical transportation are identified, evaluated, recorded and sketched in accordance with BCA, relevant legislation and Australian Standards.  |



## KEY COMPETENCIES

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:

Key Competency	Example of Application	Performance Level
Communicating 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.	3
Collecting analysing and organising information	Research, analyse, organise and understand the service layout and connection method requirements of residential and commercial buildings.	3
Planning and organising 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.	3
Working with others and in teams	Work with others and in a team by recognising dependencies and using co-operative approaches to optimise satisfaction and productivity.	2
Using 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.	2
Solving 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.	3
Using technology	Use workplace technology related to information gathering and analysis, diagnosis, information research, report writing, administration and management procedures.	2

## 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 2000 square metre. 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.
- 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.
- 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

**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.

**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 2000 square metre.

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).

**Unit Sector**

Building Surveying

**ELEMENT****PERFORMANCE CRITERIA**

- |   |  |
|---|--|
| 1. Analyse the properties, characteristics, constituents and mix design of concrete                   | 1.1 Plastic concrete properties are stated and documented<br>1.2 Hardened concrete properties are stated and described<br>1.3 Types of hydraulic cement are listed<br>1.4 Properties and uses of cements are listed and described<br>1.5 Hydration process is recorded<br>1.6 Sources of aggregate are listed and properties of each are recorded<br>1.7 Effects of impurities are recorded<br>1.8 Manufacture and testing of concrete is identified and recorded in accordance with the appropriate Australian Standards  |
| 2. Assess the requirements for concrete handling, placement, compaction, finishing and curing methods | 2.1 Effects of site access on the selection and distribution methods listed are documented<br>2.2 Methods of distribution of concrete are listed and recorded<br>2.3 Correct placement methods for level slabs, sloping slabs and vertical walls are recorded<br>2.4 Reasons and effects of compaction on both plastic and hardened concrete are identified and listed<br>2.5 Immersion, surface and form vibration are compared and recorded<br>2.6 Causes of surface defects during concrete placement and compaction are identified and recorded<br>2.7 Finishing process and surface treatments to slab concrete are compared and documented<br>2.8 Type curing methods and detrimental effects of poor or no curing are identified and recorded |
| 3. Identify concrete faults and repair methods  | 3.1 Live and dormant cracks are identified and reported<br>3.2 Repair methods for cracked concrete are established and reported<br>3.3 Causes of concrete cancer are identified and recorded<br>3.4 Repair methods for concrete cancer are established and reported<br>3.5 Diagnosis of faults in concrete are identified and recorded   |

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|---|---|
| 4. Assess the effect of fire on concrete  | 4.1 Detrimental effects of fire/heat on reinforced concrete are documented<br>4.2 Properties of concrete as an insulator to steel are documented<br>4.3 Fire test results are used to determine behavioural performance of concrete in fire<br>4.4 Methods of fire protection to concrete elements are recorded<br>4.5 Methods of repair to fire damaged concrete are identified and reported                         |
| 5. Identify the environmental issues and new technologies which affect concrete                   | 5.1 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<br>5.2 New technologies in concrete are recorded<br>5.3 Performance characteristics of concrete in fire resistance construction are identified and documented in accordance with acceptable standards of practice |
| 6. Determine the cost effectiveness and environmental issues when dealing with recycled materials | 6.1 Cost effectiveness of using recycled materials and related environmental considerations are identified and selected in accordance with acceptable standards of practice   |

## KEY COMPETENCIES

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:

Key Competency	Example of Application	Performance Level
Communicating 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.	3
Collecting analysing and organising information	Research, analyse, organise and understand the evaluation of materials for commercial and residential buildings plus subsequent reporting procedures.	3
Planning and organising activities	Plan and organise activities including the planning of analytical processes, the evaluation and selection of building materials for commercial and residential buildings.	3
Working with others and in teams	Work with others and in a team by recognising dependencies and using co-operative approaches to optimise satisfaction and productivity.	3
Using 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.	2
Solving 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.	3
Using technology	Use workplace technology related to information gathering and analysis, diagnosis, information research, report writing, administration and management procedures.	2



## 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 2000 square metre.
- 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.

**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 2000 square metre.

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

**Unit Sector**

Building Surveying

**ELEMENT****PERFORMANCE CRITERIA**

- |  |  |
|--|--|
| 1. Identify structural requirements and loads commonly used in structural design                 | 1.1 Structural requirements relating to equilibrium, stability, strength, functionality, economy and aesthetics are determined<br>1.2 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  |
| 2. Analyse the effects of force and moments on structural elements                               | 2.1 Force, moments and equilibrium of force and the affects on structures are identified and recorded<br>2.2 Equilibrium of forces for coplanar systems in consideration of stability is identified and compared for performance   |
| 3. Analyse properties and behaviour of structural materials                                      | 3.1 Effect of force on materials in tension, compression, stress, strain and elasticity is identified and recorded<br>3.2 Structural properties and performances are differentiated for common materials and recorded  |
| 4. Identify section properties of structural elements and their effect on structural performance | 4.1 Cross sectional geometry and common structural shapes are identified<br>4.2 Section properties and the relationship between first, second area moments, section models and gyration and deflection of beams are identified and compared for performance<br>4.3 Section properties values for I, Z and R for common sections are determined using tables or standard formulae and compared for performance  |
| 5. Compare the performance and properties of spanning elements                                   | 5.1 Structural considerations of loaded spanning elements for bending moments, shear forces, deflection and torsion are determined and compared for performance<br>5.2 Bending behaviour and performance of loaded support beams of various types, shapes, spans and loads are determined and compared for performance<br>5.3 Effect that connections have upon the structural performance of beams are identified and compared for performance<br>5.4 Principles of slab behaviour in relation to spans and stress distribution are identified and compared for performance |

- |  |   |
|--|---|
| 6. Compare performance criteria for columns  | 6.1 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<br>6.2 Eccentric and axial load affect on the strength of column section and materials are determined and compared for performance  |
| 7. Compare methods of stress distribution in connections between structural elements | 7.1 Transmission of forces between structural elements are identified and interpreted<br>7.2 Methods of distributing stresses in connections between structural elements are identified and compared for performance  |
| 8. Determine how loads of various types occur and impinge on a building structure    | 8.1 Differences between types of loading including Dead load, Live load, Wind load, Earthquake load, Other load causing actions are determined and compared for performance<br>8.2 Dead loads using BCA and relevant Australian Standards are determined<br>8.3 Indication of direction of wind pressures on the various surfaces of buildings specified in BCA and relevant Australian Standards are determined  |
| 9. Evaluate the design of high performance structural elements                       | 9.1 The factors that determine the form of long span structural elements including bending movement, deflection, and shear forces are researched, considered and evaluated<br>9.2 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<br>9.3 Use of steel to reinforce concrete is investigated, evaluated and the outcomes or results recorded |

## KEY COMPETENCIES

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:

Key Competency	Example of Application	Performance Level
Communicating 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.	3
Collecting analysing and organising information	Research, analyse, organise and understand the structural requirements of three (3) storey buildings.	3
Planning and organising 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.	3
Working with others and in teams	Work with others and in a team by recognising dependencies and using co-operative approaches to optimise satisfaction and productivity.	2
Using 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.	2
Solving 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.	3
Using technology	Use workplace technology related to information gathering and analysis, diagnosis, information research, report writing, administration and management procedures.	2

## 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 2000 square metre.
- 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.

**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 2000 square metre.

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.

**Unit Sector**

Building Surveying

**ELEMENT****PERFORMANCE CRITERIA**

- |   |   |
|---|---|
| 1. Analyse the purpose and basic intent of the BCA  | 1.1 Objectives of the BCA are stated<br>1.2 Conditions of the BCA and the purpose of the respective components are evaluated and documented<br>1.3 "Deemed to Satisfy" concept for construction to meet BCA requirements is evaluated and documented  |
| 2. Locate and interpret code/standard requirements that are applicable to particular projects | 2.1 Clauses from the BCA that apply to particular projects are identified and recorded<br>2.2 Prescriptive requirements of relevant BCA clauses are determined<br>2.3 Standards that are referenced in the BCA are identified and recorded<br>2.4 Special requirements that may be applicable to specific areas are identified and recorded   |
| 3. Classify buildings   | 3.1 Nature of a building having regard to use and arrangement is determined<br>3.2 BCA criteria are applied to determine the defined classification<br>3.3 BCA requirements are interpreted for multiple classifications  |
| 4. Apply solutions to construction problems for compliance with the BCA                       | 4.1 Criteria that will ensure construction methods comply with the BCA are determined<br>4.2 Alternative approaches to a construction problem that will comply with the requirements of the BCA are reported<br>4.3 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<br>4.4 BCA assessment methods are identified as appropriate to meet the DTS provisions of BCA. |

## KEY COMPETENCIES

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:

Key Competency	Example of Application	Performance Level
Communicating ideas and information	Communicate and negotiate ideas and information to enable confirmation of work requirements, legislation and translation of compliance issues in buildings.	3
Collecting analysing and organising information	Research, analyse, organise and understand the process for assessing compliance on buildings plus subsequent reporting procedures.	3
Planning and organising 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.	3
Working with others and in teams	Work with others and in a team by recognising dependencies and using co-operative approaches to optimise satisfaction and productivity.	2
Using 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.	2
Solving 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.	3
Using technology	Use workplace technology related to information gathering and analysis, diagnosis, information research, report writing, administration and management procedures.	2

## 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 2000 square metre.
- 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.

**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 2000 square metre.

**Unit Sector**

Building Surveying

**ELEMENT****PERFORMANCE CRITERIA**

- |   |   |
|---|---|
| 1. Evaluate performance based designs                           | 1.1 Role of regulation of buildings and the built environment within society are identified and applied<br>1.2 Societal goals related to the construction and use of buildings are interpreted<br>1.3 BCA hierarchy and the role of Objectives, Functional Statements and Performance Requirements are identified and recorded<br>1.4 Differences between public policy and professional judgement are identified and recorded  |
| 2. Apply the performance-based Building Code of Australia (BCA) | 2.1 Various assessment methods contained in the BCA and their application are identified and applied<br>2.2 Methodologies for determining correct performance requirements to be satisfied are demonstrated<br>2.3 Processes for involving relevant parties in the decision making process are determined<br>2.4 Fire Safety Engineering Brief (FSEB) process is identified and applied<br>2.5 Assessment report for a performance-based solution is prepared<br>2.6 Importance of documentation and record keeping for performance-based solutions are identified and applied<br>2.7 Impacts of a performance-based solution on building maintenance and alterations are identified and reported |
| 3. Evaluate risk assessment                                     | 3.1 Methods of determining and assessing risks are identified and applied<br>3.2 Consequences of various forms of risk are identified and reported<br>3.3 Basic probabilistic analysis including use of event trees are applied in accordance with risk assessment principles<br>3.4 Statistics used in risk assessment practices are interpreted<br>3.5 Research data sources for risk assessment and management are identified and applied  |

- 4. Evaluate fire safety engineering
  - 4.1 Potential fire hazards and causes of fire are identified and reported
  - 4.2 Fire loads and fire growth characteristics are identified and interpreted
  - 4.3 Research data sources for fire safety engineering are identified and interpreted
  - 4.4 Principles of fire detection, suppression and extinguishment are applied
  - 4.5 Tenability limits and effects and toxicity of smoke on building occupants are identified and listed in accordance with fire engineering principles
  - 4.6 Human behaviour and movement principles are identified and applied
  - 4.7 Fire brigade activities and intervention principles are recorded
  - 4.8 Research material, statistics and probabilistic analysis used in fire safety engineering are applied
  - 4.9 Compute software applications used in fire safety engineering are identified and their limitations of use assessed



## KEY COMPETENCIES

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:

Key Competency	Example of Application	Performance Level
Communicating 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.	3
Collecting analysing and organising information	Research, analyse, organise and understand the process applying performance based codes, assessment and management of risk has on buildings plus subsequent reporting procedures.	3
Planning and organising activities	Plan and organise activities including the planning of analytical processes, the implementation of performance based codes and risk strategies upon buildings.	3
Working with others and in teams	Work with others and in a team by recognising dependencies and using co-operative approaches to optimise satisfaction and productivity.	3
Using 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.	2
Solving 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.	3
Using technology	Use workplace technology related to information gathering and analysis, diagnosis, information research, report writing, administration and management procedures.	2

## 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 2000 square metre, 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.

**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 2000 square metre.

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.

**Unit Sector**

Building Surveying

**ELEMENT****PERFORMANCE CRITERIA**

- |  |  |
|--|--|
| 1. Evaluate smoke control in buildings   | 1.1 Psychological effects of smoke on people exposed to building fires are researched<br>1.2 Mechanisms of smoke movement in building are identified and recorded<br>1.3 Smoke control systems identified to meet the requirements for buildings are documented in accordance with legislative requirements<br>1.4 Application of computer packaged smoke control systems are analysed and reported  |
| 2. Analyse passive fire protection systems for buildings                       | 2.1 Compartmentation purposes are reported<br>2.2 Separation requirements for buildings from other buildings and structures are identified and recorded<br>2.3 Requirements for escape from buildings are documented according to BCA requirements   |
| 3. Determine suitability of fire detection systems for buildings               | 3.1 A range of devices for active fire protection, such as alarms and detectors, are identified and selected for purpose use<br>3.2 Acts and building regulations that govern the installation of active fire protection systems are identified and recorded<br>3.3 Requirements for fire detection systems in buildings are identified and selected<br>3.4 Requirements for fire detection systems for buildings that present unusual fire hazards are identified and documented<br>3.5 Agencies responsible for maintenance of fire safety systems in buildings are identified and listed according to State/Territory legislation |
| 4. Determine the requirements for various fire fighting equipment in buildings | 4.1 Legislation that governs the installation of fire fighting equipment is identified and documented<br>4.2 Extinguishing mediums used by fire fighting agencies and their applications are identified and recorded<br>4.3 Properties of extinguishment for the various mediums are identified and documented   |

- |  |  |
|--|--|
| 5. Check and identify fire alarms  | 5.1 Various alarm systems and their operating conditions are identified and documented   |
|  | 5.2 Various forms of detection and suppression systems are identified in accordance with BCA and relevant AS standards and assessed for compliance   |
|  | 5.3 Components and their function in the operation of a sprinkler system are checked for pertinence in accordance with BCA and relevant AS standards |
| 6. Determine the requirements for sprinklers and drenchers in buildings  | 6.1 Functions of sprinkler and drencher systems are recorded   |
|  | 6.2 Sources of water supply to a sprinkler system are identified and documented in accordance with BCA   |
|  | 6.3 Components and their function in the operation of a sprinkler system are interpreted   |
| 7. Integrated active fire protection systems with passive fire protection are evaluated to ensure a safe and economical building | 7.1 Active and passive fire protection systems are identified and selected   |
|  | 7.2 Building examination is carried out to determine the effectiveness of the active and passive fire protection systems according to BCA.           |

## KEY COMPETENCIES

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:

Key Competency	Example of Application	Performance Level
Communicating ideas and information	Communicate and negotiate ideas and information to enable application of fire technology to buildings and for translation of outcomes and solutions.	3
Collecting analysing and organising information	Research, analyse, organise and design the process of applying fire technology to buildings plus subsequent reporting procedure.	3
Planning and organising activities	Plan and organise activities including the planning of analytical processes, the design and implementation of fire technology systems to buildings.	3
Working with others and in teams	Work with others and in a team by recognising dependencies and using co-operative approaches to optimise satisfaction and productivity.	2
Using 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.	2
Solving 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.	3
Using technology	Use workplace technology related to information gathering and analysis, diagnosis, information research, report writing, administration and management procedures.	2

## 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 2000 square metre, 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

**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.
- 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.

**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 Unit Descriptor

## Apply legal procedures to building surveying

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.

### Unit Sector

Building Surveying

### ELEMENT

### PERFORMANCE CRITERIA

- |  |  |
|--|--|
| 1. Distinguish between common law, judicial precedent and legislation                            | 1.1 Common law in the Australian legal system is analysed and documented.<br>1.2 Binding and persuasive precedent is analysed and interpreted.<br>1.3 Relationship between common law and statute law is analysed and documented.<br>1.4 Delegated legislation and the authorities' allocated specific powers are documented.<br>1.5 Legal practice of reading case law and law up-dates are appraised and noted.  |
| 2. Identify and interpret the court hierarchy and the civil/criminal jurisdictions of each court | 2.1 Civil/criminal court hierarchy is analysed and documented.<br>2.2 Details of the civil/criminal jurisdiction of each court are analysed and documented.<br>2.3 System of civil/criminal appeals identified and documented.<br>2.4 Jurisdiction the coroner's court has in regulatory practice and its role in legislative reform is identified and documented.<br>2.5 Role of legal personnel in the court system is identified and documented.  |
| 3. Identify and interpret court room procedures  | 3.1 Court examination procedures are identified and documented.<br>3.2 Role of a judge and jury in a civil/criminal trial and eligibility to attend for jury service is identified and documented.<br>3.3 Format of a prosecution brief is identified and documented.<br>3.4 Appropriate manner of entering into and departing from the courts/tribunals is adhered to.<br>3.5 Appropriate manner of addressing the courts/tribunals is adhered to.<br>3.6 Relevant legal language is applied. |
| 4. Identify the types of offences and defences within criminal law                               | 4.1 Presumption of innocence in a criminal case and the burden of proof is analysed and documented.<br>4.2 General principles of criminal liability are determined.<br>4.3 Differences between summary and indictable offences are analysed and documented.<br>4.4 Types of defences are analysed and documented.  |

- |  |  |
|--|--|
| 5. Detail types of evidence admissible in a civil and criminal trial | 5.1 Types of evidence are analysed and documented.   |
|  | 5.2 Differences between types of evidence in a court of law are defined and outlined.  |
|  | 5.3 Evidence rules are identified and documented.  |
| 6. Identify the rules of statutory interpretation                    | 6.1 Acts of parliament and subordinate legislation as a source of law are analysed and documented.                                     |
|  | 6.2 Extrinsic and intrinsic material as they relate to Commonwealth/State/Territory interpretation acts are identified and documented. |
|  | 6.3 Syntactical presumptions are analysed and documented.  |
|  | 6.4 General approaches to statutory interpretation are identified and analysed.  |

## KEY COMPETENCIES

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:

Key Competency	Example of Application	Performance Level
Communicating 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.	2
Collecting analysing and organising 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.	2
Planning and organising 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.	2
Working with others and in teams	Work with others and in a team by recognising dependencies and using co-operative approaches to optimise satisfaction and productivity.	2
Using 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.	1
Solving 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.	2
Using technology	Use workplace technology related to information gathering and analysis, diagnosis, information research, report writing, administration and management procedures.	2

## 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

### **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.

**Unit Sector**

Building Surveying

**ELEMENT****PERFORMANCE CRITERIA**

- |  |  |
|--|--|
| 1. Devise strategies and models of consultation          | 1.1 Range of community consultation theories and models of practice are identified and assessed for suitability<br>1.2 Community development issues are considered when consulting with communities<br>1.3 Consultation strategy is selected enabling interactions between building surveyors and community group/s involved in community issues to occur  |
| 2. Facilitate community consultations                    | 2.1 Strategies to identify key interest group/s in a community are identified and devised<br>2.2 Interest group/s involved in consultation are briefed on process<br>2.3 Community resources to develop and facilitate consultation are assessed for suitability<br>2.4 Clear, accurate information is prepared and distributed to interest group/s involved in consultation process   |
| 3. Record analyse and report on outcome of consultations | 3.1 Responses are validated against design criteria specified in community goals<br>3.2 Responses are grouped/collated into categories to facilitate<br>3.3 Responses are formatted for decision making process to proceed<br>3.4 Summary of responses and adopted recommendations are recorded and forwarded to interest group/s<br>3.5 Accurate reports on community consultation process are prepared, including recommendations to enable informed decisions to be made<br>3.6 Overall effectiveness of consultation strategy is reviewed, evaluated and actioned by Building Surveyor |

## KEY COMPETENCIES

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:

Key Competency	Example of Application	Performance Level
Communicating 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.	3
Collecting analysing and organising information	Research, organise and understand information related to contemporary community development and consultation procedures.	3
Planning and organising 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.	3
Working with others and in teams	Work with others and in a team by recognising dependencies and using co-operative approaches to optimise satisfaction and productivity.	3
Using 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.	2
Solving 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.	3
Using technology	Use workplace technology related to information gathering and analysis, diagnosis, information research, report writing, administration and management procedures.	2

## 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.

**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?**

- 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.

**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****Unit Descriptor****Co-ordinate asset refurbishment**

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.

**Unit Sector**

Building Surveying

**ELEMENT****PERFORMANCE CRITERIA**

- |   |   |
|---|---|
| 1. Establish refurbishment and/or inspection requirements | 1.1 Existing property inspection reports, where available, are used to advise client of the cost benefits associated with property refurbishment<br>1.2 Inspection method and criteria are consistent with the purpose of the inspection, client requirements and building type<br>1.3 Relevant documentation is obtained and reviewed to clarify inspection requirements<br>1.4 Inspections are arranged to minimise disruption to building users<br>1.5 Access arrangements are confirmed prior to entry and where appropriate, agreement to intrusive inspection is secured      |
| 2. Evaluate and report inspection outcomes                | 2.1 Inspection report is prepared in a timely manner, is clear, concise, accurate and in an appropriate format and style consistent with statutory requirements<br>2.2 Inspection outcomes are advised promptly to nominated parties and accurately recorded according to workplace procedures<br>2.3 Processes involved in reaching objectives are evaluated for quality, added value and contribution to further refurbishment management opportunities   |
| 3. Implement services contract/s                          | 3.1 Team input consistent with achieving project objectives is coordinated through the enterprise to the satisfaction of subcontractors and the client<br>3.2 Performance in relation to timelines and budgets is regularly monitored<br>3.3 Necessary variations or adjustments are negotiated with subcontractors and the client and agreed outcomes documented<br>3.4 Refurbishments are completed according to plan within budget and time constraints to client and statutory requirements<br>3.5 Reports and administrative procedures are completed to client specifications |

## KEY COMPETENCIES

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:

Key Competency	Example of Application	Performance Level
Communicating 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.	2
Collecting analysing and organising information	Research, analyse, organise and understand the inspection, assessment and reporting processes associated with asset refurbishment.	2
Planning and organising 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.	3
Working with others and in teams	Work with others and in a team by recognising dependencies and using co-operative approaches to optimise satisfaction and productivity.	2
Using 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.	2
Solving 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.	2
Using technology	Use workplace technology related to information gathering and analysis, diagnosis, information research, report writing, administration and management procedures.	1

## 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.

**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****Unit Descriptor****Manage and plan land use**

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.

**Unit Sector**

Building Surveying

**ELEMENT****PERFORMANCE CRITERIA**

- |  |  |
|--|--|
| 1. Evaluate legislation pertaining to land use planning                                  | 1.1 Statutes and common law impacting upon land use management are researched and analysed<br>1.2 Appeals procedures under present legislation are interpreted   |
| 2. Plan land development and control processes   | 2.1 Formal planning and approval process is identified through legislation<br>2.2 Document appeals procedure identified through legislation<br>2.3 Legal requirements governing the introduction of planning schemes are identified and interpreted<br>2.4 Public consultation measures available under legislation are defined and planned  |
| 3. Evaluate the effects of transport and infrastructure on land use management decisions | 3.1 Specific site requirements for transportation, infrastructure systems and design effects on land use management practices are evaluated and reported<br>3.2 Historical urban development assessments of the impact of transport requirements on land use patterns are researched and reported  |
| 4. Apply spatial organisation factors to the land development process                    | 4.1 The scale and scope of the land development is determined through the land development process<br>4.2 Factors determining positioning of buildings on lots are identified<br>4.3 Provision of adequate space in a development is justified through spatial organisation factors<br>4.4 Streetscapes construction as part of the development process is identified and established  |
| 5. Determine strategies for the use of land  | 5.1 Scope of land use in relation to principles of land use management is evaluated<br>5.2 Extent of existing constraints influencing decision making process of land management is identified<br>5.3 Criteria for prioritising land use area is established according to sustainable development principles<br>5.4 Rural land special consideration inland use management process is established according to sustainable development principles<br>5.5 Strategies for effective land use management are identified through review of management models |

## KEY COMPETENCIES

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:

Key Competency	Example of Application	Performance Level
Communicating ideas and information	Communicate and negotiate ideas and information to enable confirmation of work requirements and legislation, translation of land planning and management reports.	2
Collecting analysing and organising information	Research, analyse, organise and understand the inspection, assessment and reporting of land use planning and management.	3
Planning and organising 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.	2
Working with others and in teams	Work with others and in a team by recognising dependencies and using co-operative approaches to optimise satisfaction and productivity.	2
Using 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.	2
Solving 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.	2
Using technology	Use workplace technology related to information gathering and analysis, diagnosis, information research, report writing, administration and management procedures.	2

## 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

**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?**

- 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.

**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.

**Unit Sector**

Building Surveying

**ELEMENT****PERFORMANCE CRITERIA**

- |                                     |   |
|-------------------------------------|---|
| 1. Prepare a research plan          | 1.1 The views and interests of stakeholders are reflected in the research methodology and it is compatible with ethical considerations<br>1.2 The research methodology is selected in accordance with the needs, purposes and resources to maximise credibility of research outcomes<br>1.3 Research strategies are selected and used which are appropriate to the client group, the information being researched, the resources available and the outcomes sought<br>1.4 Strategies for validating research outcomes are incorporated within the research plan   |
| 2. Implement research strategies    | 2.1 Resources needed to conduct research are determined and allocated<br>2.2 All relevant information is collected in a timely manner and recorded and stored to ensure validity, confidentiality and security<br>2.3 A representative range of people and groups with an interest in the issues identified are consulted to ensure validity of outcomes<br>2.4 Consultation is undertaken according to the agreed practices and protocol of own and other agencies in accordance with organisational practices and protocols<br>2.5 Consideration of cultural sensitivities and ethical issues is embedded in all consultation |
| 3. Organise and analyse information | 3.1 Information is organised in an analytical format suitable for the purpose of the research<br>3.2 Patterns and explanations developed are derived from the data to ensure validity and reliability   |
| 4. Report the findings              | 4.1 Details of the research findings are documented<br>4.2 Opportunities are provided for the validation of the research findings<br>4.3 The results of the research are reported and made available to all relevant stakeholders in the appropriate document format  |

## KEY COMPETENCIES

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:

Key Competency	Example of Application	Performance Level
Communicating ideas and information	Communicate and negotiate ideas and information to enable confirmation of work requirements and legislation.	3
Collecting analysing and organising information	Research, analyse, evaluate and report information related to the building projects.	3
Planning and organising 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.	3
Working with others and in teams	Work with others and in a team by recognising dependencies and using co-operative approaches to optimise satisfaction and productivity.	3
Using 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.	3
Solving 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.	3
Using technology	Use workplace technology related to information gathering and analysis, diagnosis, information research, report writing, administration and management procedures.	2

## 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, 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

- 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 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.

### 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.

**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 2000 square metre 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.

**Unit Sector**

Building Surveying

**ELEMENT****PERFORMANCE CRITERIA**

- |   |   |
|---|---|
| 1. Evaluate documents submitted with an application for building and land use   | 1.1 Plans, specifications and structural drawings for commercial and medium rise residential buildings are evaluated for compliance to building application process<br>1.2 Application/proposal is evaluated against legislative requirements<br>1.3 Components of the application requiring referral to other agencies/departments are identified and forwarded<br>1.4 Common faults with application are identified, noted and reported to relevant parties<br>1.5 Notice of decision, approval, conditional approval or refusal is drafted and processed according to workplace procedures                     |
| 2. Determine the compliance of a new building with the approved plans, relevant legislation and standards during its construction                                     | 2.1 Approved plans are interpreted and critical components intended for inspection and compliance are identified<br>2.2 Critical components are identified onsite and inspected for compliance with approved documentation<br>2.3 On-site problems and suggested rectification methods to achieve compliance are reported in writing according to workplace procedures<br>2.4 Rectified work is checked and formally reported to the relevant authorities contacted or referred to, confirm compliance with any other statutory requirements<br>2.5 Installed services in buildings are identified for compliance |
| 3. Compile a report on an existing building of not more than 3 storeys and with a floor area not exceeding 2000 square metre for compliance with relevant legislation | 3.1 Classification of an existing building is determined<br>3.2 Requirements of a particular class of building are determined and an inspection report is compiled for breach of requirements of the building<br>3.3 Possible effects to the public of the breach are determined<br>3.4 Inconsistent elements and the extent of rectification required for compliance is compiled in the report<br>3.5 Local and State/Territory Government Legislative requirements for any upgrade works are identified and reported  |

## KEY COMPETENCIES

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:

Key Competency	Example of Application	Performance Level
Communicating ideas and information	Communicate and negotiate ideas and information to enable confirmation of work requirements, legislation and translation of building surveying inspection reports.	3
Collecting analysing and organising information	Research, analyse, organise and understand the application of building and surveying for commercial and medium rise residential buildings plus subsequent reporting procedures.	3
Planning and organising 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.	3
Working with others and in teams	Work with others and in a team by recognising dependencies and using co-operative approaches to optimise satisfaction and productivity.	3
Using 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.	2
Solving 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.	3
Using technology	Use workplace technology related to information gathering and analysis, diagnosis, information research, report writing, administration and management procedures.	2

## 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 2000 square metre.
- 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.

**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.

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