Australian Government

Department of Education, Employment and Workplace Relations

CPPBDN8006A Identify and manage new building design technologies

Release: 1

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Modification History

New unit

Unit Descriptor

This unit of competency specifies the outcomes required to identify new technologies that support building design practices.

The capacity to manage new technologies, such as building information modelling (BIM), that support three-dimensional (3-D) modelling and visualisation is also addressed. This includes use of the technology to enhance collaboration of different professionals during the life cycle management of a building (planning through to maintenance stages) and its services.

Application of the Unit

This unit of competency supports senior managers and business owners who manage the application of new technologies applied in building design practices.

Licensing/Regulatory Information

Work in this area must be completed according to relevant legislative, industry and organisational requirements, including occupational health and safety (OHS) policies and procedures.

Different states and territories may have regulatory mechanisms that apply to this unit. Users are advised to check for regulatory limitations.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

1	Analyse the availability of new technologies	1.1	Research is conducted to identify and analyse the ***range of new technologies*** that are available to the building design sector.
		1.2	Applications of the new technologies and the potential benefits to the business are assessed.
		1.3	Costs of acquiring and using new technologies are evaluated to inform purchase decision.
		1.4	Decisions are made about the optimum software and hardware solutions to meet the immediate and medium-terms needs of the practice.
2	Introduce technology to the practice	2.1	Purchase, installation and commissioning of new technologies are planned and managed.
		2.2	Staff training in the use of new technologies is organised and undertaken.
		2.3	Potential benefits and uses of the technology are communicated to client.
		2.4	Documentation to support efficient and effective usage is completed.
3	Manage the use of BIM	3.1	***Benefits of using BIM*** to work collaboratively in the design, modelling, documentation and management of buildings during their life cycle are communicated to ***related professionals***.
		3.2	Protocols and the specification of input and output parameters are developed and communicated to related

professionals.

3.3 Processes to monitor BIM usage are developed and put in place.

3.4 Processes to manage the creation, labelling, storage and sharing of files and materials are developed and put in place.

3.5 Resourcing and budgeting to manage the ongoing use of the system are identified and put in place.

Required Skills and Knowledge

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

Required skills

- administration and management skills to:
  - manage documents
  - manage time, including planning and prioritising work
- analytical and problem-solving skills to:
  - evaluate alternative software and hardware solutions
  - design protocols and procedures to support the introduction and use of new technology
- budgeting and financial management skills
- interpersonal skills to interact with clients and relevant professionals
- language, literacy and numeracy skills to:
  - communicate at a project management level with clients, colleagues and contacts, including:
    - negotiating with related professionals
    - writing reports
  - interpret and apply complex information, including contracts, codes and standards, and system manuals and specifications
- negotiation skills to conclude contracts
- technical skills to:
  - analyse software and hardware functionality sufficient to make a purchase decision
  - apply protocols to manage the creation, storage, use and sharing of data
- technology skills to use information technology and 3-D modelling software

Required knowledge

- architectural styles and terminology
- contractual requirements and implications for the business
- design drawing and representation methods
- design of work processes to support the effective operation of new technologies
- digital file management procedures
- financial management and budgeting processes
- functions and operation of 3-D modelling software program
- organisational resource requirements to undertake the introduction of new technologies
- risk management processes
- technical role and performance of new technologies, including BIM

Evidence Guide

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

Critical aspects for assessment and evidence required to demonstrate competency in this unit	A person should demonstrate the ability to: • produce research to analyse the range and application of technologies in a building design practice • document the purchase and management of new technology within a business design practice.

Context of and specific resources for assessment	Assessment of this unit:
	• must be in the context of the work environment
	• may be conducted in an off-site context, provided it is realistic and sufficiently rigorous to cover all aspects of workplace performance, including task skills, task management skills, contingency management skills and job role environment skills
	• must meet relevant compliance requirements.
	Resource implications for assessment include:
	• access to:
	  • suitable assessment venue and equipment
	  • suitable simulated or real opportunities and resources to demonstrate competence
	• assessment instruments.

Method of assessment	Assessment for this unit must verify the practical application of the required skills and knowledge, using one or more of the following methods: • written and/or oral assessment of the candidates required knowledge for the unit • observed, documented and/or firsthand testimonial evidence of the candidates • implementation of appropriate procedures and techniques for the safe, effective and efficient achievement of the required outcomes • identification of the relevant information and scope of the work required to meet the required outcomes • identification of viable options and the selection of options that best meet the required outcomes • consistently achieving the required outcomes.

Guidance information for assessment	This unit could be assessed on its own or in combination with other units relevant to the job function. Where applicable, physical resources should include equipment modified for people with disabilities. Access must be provided to appropriate learning and/or assessment support when required. Assessment processes and techniques must be culturally appropriate, and appropriate to the language and literacy capacity of the candidate and the work being performed.

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Range of new technologies while focussed on BIM may also include:	• mass co**m**puter storage devices • plotters • printers • scanners • software applications.
BIM may be defined as:	• applications that support 3-D and visualisation modelling • applications that capture information about the building fabric as a part of 3-D model.
Benefits of using BIM may include:	• avoidance of 'clashes' in the design and building process • enhanced geographic information • enhanced identification of quantities and property of building components • enhanced sharing of information between related professionals • improved clarity regarding spatial relationships • improved construction planning and materials fabrication.
Related professionals may include:	• access consultants • architects • builders • building certifiers • building developers • building surveyors • civil engineers

	• fire systems designers and engineers • hydraulic consultants • local government planning authority staff • mechanical services consultants and engineers • OHS consultants • plumber and plumbing consultants • quantity surveyors • services consultants • structural engineers.

Unit Sector(s)

Building design

Custom Content Section

Not applicable.