



Australian Government

Department of Education, Employment and Workplace Relations

CPPBDN5016A Produce and present rendered animations of 3-D models of small-scale building designs

Release: 1

CPPBDN5016A Produce and present rendered animations of 3-D models of small-scale building designs

Modification History

New unit

Unit Descriptor

This unit of competency specifies the outcomes required to produce rendered and animated fly-bys and walk-throughs of three-dimensional (3-D) models for small-scale building design projects covered by the Building Code of Australia (BCA), except construction Type A buildings.

It also covers demonstrating and discussing the rendered animations with clients and stakeholders.

Application of the Unit

This unit of competency supports building designers who use 3-D models to inform clients and other stakeholders of potential design concepts.

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

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| 1 | Digitally render 3-D models to photo-realistic quality | 1.1 | 3-D models of <i>small-scale building design projects</i> are imported into rendering software applications as required and objects are separated and saved according to workplace procedures. |
| | | 1.2 | <i>Material finishes</i> are sourced or created using software functions, and applied to objects according to project and workplace requirements. |
| | | 1.3 | Rendering is edited to ensure clarity, and accuracy of detail is retained when 3-D model is transferred to different applications. |
| | | 1.4 | Light and shade requirements are analysed and realistic lighting effects for night and day are created by editing individual light parameters. |
| 2 | Digitally animate 3-D models. | 2.1 | <i>Animation requirements</i> are analysed and animation storyboards created using formats appropriate to project contexts. |
| | | 2.2 | Camera paths and pan camera locations are determined to produce optimal displays of models according to project and workplace requirements. |
| | | 2.3 | <i>Lighting levels and sequences</i> for animations are determined to meet storyboard requirements. |
| | | 2.4 | Fly-by or walk-through animation sequences are created for all camera paths and pan cameras, including animation of objects within scenes. |
| | | 2.5 | <i>Animation presentation parameters</i> are determined and applied to suit different project contexts. |

- 2.6 Animation sequences are combined and edited to produce completed animations that meet project requirements.

- 3 Present rendered animations to clients
 - 3.1 Rendered animations of 3-D models are presented and explained to client according to workplace procedures.
 - 3.2 Hard copy images of specified views are presented and explained to client as required.
 - 3.3 Client feedback is encouraged and incorporated into animations.
 - 3.4 Files for finalised animations are saved and processed according to project and workplace requirements.

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:
 - determine animation image size
 - develop innovative ideas and designs
 - work out sequencing of animations
- interpersonal skills to interact with clients and other stakeholders
- language, literacy and numeracy skills to:
 - calculate the number of animation frames
 - communicate with clients and contacts
 - interpret and apply complex information, including legislation, regulations, codes and standards, and software operation instructions
 - present design options to clients
- technical skills to:
 - apply compliance requirements, including drawing standards
 - produce accurate design documentation
 - create storyboards
- technology skills to use information technology and 3-D modelling, rendering and animation software

Required knowledge

- architectural styles and terminology
- contextual and site constraints
- conventional and sustainable construction materials and methods, including their application, behaviour, characteristics, performance and interactions with other materials
- design drawing and representation methods
- digital file management procedures
- functions and operation of 3-D modelling rendering and animation software programs
- hazards of site, materials, construction practices and building use over life cycle
- key features of building life cycles
- legislation, codes and standards relevant to sustainable design requirements for small-

- scale building design projects, including OHS duties of designers
- organisational scope of business, service levels and fees
- principles of design, including sustainable design
- scientific and social principles of human interactions with the built environment

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.

<p>Critical aspects for assessment and evidence required to demonstrate competency in this unit</p>	<p>A person should demonstrate the ability to:</p> <ul style="list-style-type: none"> • produce rendered animations for digital 3-D models of a range of building designs that meet client expectations and workplace requirements • present animations of a range of building designs to clients, including: <ul style="list-style-type: none"> • explaining design using terms appropriate to clients' understanding • encouraging and answering questions and feedback.
<p>Context of and specific resources for assessment</p>	<p>Assessment of this unit:</p> <ul style="list-style-type: none"> • 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. <p>Resource implications for assessment include:</p> <ul style="list-style-type: none"> • access to: <ul style="list-style-type: none"> • suitable assessment venue and equipment • suitable simulated or real opportunities and resources to demonstrate competence • assessment instruments.
<p>Method of assessment</p>	<p>Assessment for this unit must verify the practical application of the required skills and knowledge, using one or more of the following methods:</p> <ul style="list-style-type: none"> • written and/or oral assessment of the candidates required knowledge for the unit • observed, documented and/or firsthand testimonial evidence of

	<p>the candidates</p> <ul style="list-style-type: none">• 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.
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<p>Guidance information for assessment</p>	<p>This unit could be assessed on its own or in combination with other units relevant to the job function.</p> <p>Where applicable, physical resources should include equipment modified for people with disabilities.</p> <p>Access must be provided to appropriate learning and/or assessment support when required.</p> <p>Assessment processes and techniques must be culturally appropriate, and appropriate to the language and literacy capacity of the candidate and the work being performed.</p>
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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.

<p><i>Small-scale building design projects:</i></p>	<ul style="list-style-type: none"> • include buildings covered by the BCA, except construction Type A buildings • may be residential projects, such as: <ul style="list-style-type: none"> • additions and renovations • heritage restoration • new buildings • may be commercial or industrial projects, such as: <ul style="list-style-type: none"> • factories • motels • offices • restaurants • retail and service outlets • warehouses.
<p><i>Material finishes</i> may include:</p>	<ul style="list-style-type: none"> • carpet • concrete • fabric • masonry • paint • steel • stones • tile • timber.
<p><i>Animation requirements</i></p>	<ul style="list-style-type: none"> • image sizes

may include:	<ul style="list-style-type: none">• number of frames• sequencing of animations• types of animations to be generated.
<i>Lighting levels and sequences</i> may include:	<ul style="list-style-type: none">• daylight and artificial light timing sequences• light switching pattern• lighting levels of light sources• time transitions.
<i>Animation presentation parameters</i> may include:	<ul style="list-style-type: none">• compression• credits• frames per second• length• logo• rendering• title.

Unit Sector(s)

Building design

Custom Content Section

Not applicable.