



Australian Government

CPPBDN4008 Produce digital building design concept drawings

Release: 1

CPPBDN4008 Produce digital building design concept drawings

Modification History

Release 1. New unit.

This version first released with CPP Property Services Training Package Version 1.

Application

This unit of competency specifies the outcomes required to produce building design drawings and documentation with appropriate scale and notations using current industry-standard software packages with building information modelling (BIM) capability.

The unit supports drafters who assist and work under the supervision and instruction of architects and building designers and produce design documentation for all types of residential, commercial and industrial buildings as defined in the Building Code of Australia (BCA), up to the stage of client approval of the design concept. It also covers ensuring that the drawings and documentation meet compliance requirements for the type of building and location and are formatted and notated to facilitate understanding by the client.

Licensing, legislative, regulatory or certification requirements apply to building design drafting in some states. Relevant state and territory regulatory authorities should be consulted to confirm those requirements.

Pre-requisite Unit

Nil

Competency Field

Drafting

Unit Sector

Building design

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions.

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|-------------------------------------|--|
| 1. Produce building design sketches | 1.1. Client brief and designer's concept drawings and notes are reviewed and requirements confirmed. |
| | 1.2. Existing site information and measured drawings are |

- reviewed and information is applied to the production of sketches.
- 1.3. **Compliance requirements** are confirmed and applied to the production of sketches.
 - 1.4. **Building design software** and project templates are used according to **workplace requirements** to produce and save sketches that illustrate designer's concept, with accurate proportions and within project timelines.
 - 1.5. Spatial and dimensional awareness is applied when producing sketches to allow ample space for movement of persons.
 - 1.6. **Rendering techniques** are applied to sketches as required by designer.
 - 1.7. Sketches are reviewed in consultation with designer to check that compliance requirements have been addressed, and adjustments are made and saved as required.
 - 1.8. Scaled renditions of design concept sketches are produced as required.
2. Review and apply designer's instructions in response to client feedback on building design concept sketches.
 - 2.1. Designer's instructions, notes and notations to drawings following client consultations are reviewed and client's required changes to sketches are confirmed.
 - 2.2. Sketches are adjusted and cross-checked to confirm that client requirements are incorporated.
 - 2.3. Impacts of changes on compliance requirements are identified and confirmed through consultation with relevant personnel and according to workplace requirements.
 - 2.4. Adjusted drawings and identified impacts on compliance requirements are reviewed with designer.
 - 2.5. Final adjustments to sketches are made according to instructions and following designer's final consultations with client and other relevant personnel.
 - 2.6. Sketches are stored and saved according to workplace requirements.
 3. Produce building
 - 3.1. Building design software and project templates are used to set up design drawings based on client-approved

design drawings.	concept sketches.
	3.2. Details of spatial, structural and technical elements of the building's design are confirmed with designer and incorporated into building design drawings.
	3.3. Details of strategies to address work health and safety (WHS) issues in the building's design are confirmed with designer and incorporated into design drawings.
	3.4. Details of sustainable building design for the project are confirmed with designer and incorporated into building design drawings.
	3.5. Readability of drawings is reviewed and drawings are adjusted to ensure clarity of detail, consistency and ease of understanding by clients.
	3.6. Design drawings are saved and stored according to workplace requirements.
	3.7. Design drawings are reviewed in consultation with designers to ensure client and compliance requirements and anomalies are addressed, and drawings are adjusted as required.
	3.8. Design drawings are rendered to watercolour wash or photo-realistic finish as required.
4. Review and apply client feedback to building design drawings.	4.1. Designer's instructions, notes and notations to drawings following client consultations are reviewed and client's required changes to design drawings are confirmed.
	4.2. Design drawings are adjusted and cross-checked to confirm that client requirements are incorporated.
	4.3. Impacts of changes on compliance of building are identified and confirmed according to workplace requirements.
	4.4. Adjusted drawings and identified impacts on compliance requirements are reviewed in consultation with designer.
	4.5. Final adjustments to drawings are made according to instructions and following designer's final consultations with client and other relevant personnel.

Foundation Skills

This section describes core skills that are essential to performance and not explicit in the performance criteria. Employment skills essential to performance are explicit in the performance criteria of this unit of competency.

Skill	Performance feature
Learning skills to:	- develop an understanding of compliance requirements and the constraints they may place on client's requested changes to design concepts - seek advice and respond to feedback from designer.
Numeracy skills to:	- interpret and convert ratios and scales on drawings - use and apply knowledge about space and shape to draw accurate two-dimensional and three-dimensional scale plans and drawings.
Oral communication skills to:	- consult with external professional personnel regarding interpretation of compliance requirements - discuss adjustments to drawings with designer using construction and design terminology.
Reading skills to:	- interpret designer margin notes and simple diagrams to make connections between information and design requirements - interpret specialised vocabulary and acronyms used in compliance requirement documents, including the BCA.
Writing skills to:	consider the audience for design drawings and represent technical information in notations using language suitable for clients with limited or no technical knowledge.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Compliance requirements</i> must include:	- current Australian standards applicable to the building design - federal, state or territory, and local authority legislation and regulations applicable to the building design - National Construction Code.
<i>Building design software</i> must include:	BIM-capable current industry-standard software.
<i>Workplace requirements</i> must include:	- application of drawing conventions according to: - AS1100.101 Technical drawing - General principles - AS1100.301 Technical drawing - Architectural drawing

- building design project procedures relating to:
 - communication protocols for liaising with external consultants
 - file naming, storing and saving systems and procedures
 - quality requirements
 - WHS requirements
 - roles and responsibilities of building project team, including extent and limitations of drafter's role.
- Rendering techniques** must ensure:
- depiction of light and shade
 - range of material finishes
 - readability.
- Review** must include:
- labelling and notation of drawings
 - layout
 - scale
 - white space.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=6f3f9672-30e8-4835-b348-205dfcf13d9b>

Assessment Requirements for CPPBDN4008 Produce digital building design concept drawings

Modification History

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Performance Evidence

A person demonstrating competency in this unit must satisfy all of the elements, performance criteria and foundation skills of this unit. The person must also be able to provide evidence of the ability to produce digital building design sketches and concept drawings and documentation under the supervision and direction of an architect or building designer for the following three different types of building design projects, as defined by the Building Code of Australia (BCA). At least one of the building design projects must include a Class 10 component:

- one Class 1 building
- one Class 2 building
- one building selected from Classes 3 to 9.

At least one of the above building projects must be two storeys and one building project must be three storeys or more.

Each project must be in a different locality where local compliance requirements vary.

A person should provide evidence of:

- researching and applying compliance requirements relating to the nature and location of each building design project
- applying drawing conventions according to:
 - AS1100.101 Technical drawing - General principles
 - AS1100.301 Technical drawing - Architectural drawing
- applying dimensional awareness to designs to ensure ample space is allowed for movement of persons
- producing digital building design sketch drawings and documentation using building information modelling (BIM)-capable current industry-standard software, of the required quality standard and within project timelines, based on client specifications and designer's instructions
- incorporating client feedback into sketches and checking compliance of documentation
- consulting with designer on finalisation of sketches and discussing and implementing strategies to resolve compliance issues
- producing digital design drawings, documentation and building information models using BIM-capable current industry-standard software based on finalised sketches and according to designer instructions

- incorporating client feedback into design drawings, models and documentation and checking whether these meet compliance requirements
- consulting with designer on finalisation of design drawings, models and documentation and discussing and implementing strategies to resolve compliance issues.
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Knowledge Evidence

A person demonstrating competency in this unit must be able to demonstrate the knowledge required to produce digital building design concept drawings and documentation for the three different types of building design projects specified in the performance evidence, including:

- compliance requirements relating to the three building design projects
- drawing conventions relevant to the sketch and design concept drawings
- construction and design terminology required to discuss aspects of digital design documentation with designer
- functions and options of BIM-capable building design software that enable the production of digital building design drawings for residential, commercial and industrial building design projects
- principles of BIM and its use by building and construction professions
- protocols for communication and liaison with construction professionals who provide information for building designs
- roles and responsibilities of internal and external contributors to building design projects
- systems for naming, saving and storing digital files and ensuring version control
- types of drawings, documentation and models required for client consultations regarding building design concepts.

Assessment Conditions

Assessment must be conducted in the workplace or a close simulation of the workplace. Unit outputs must be completed to full industry and workplace standards and procedures.

Suitable assessment of performance requires:

- equipment:
 - computer with internet access and BIM-capable building design software
- materials:
 - project site information
 - reports from technical experts
- specifications – access to:
 - legislation, regulations, codes, standards and other relevant compliance documentation relating to each building design project
 - client's design brief
 - designer's sketches and notes.

Assessor requirements

As a minimum, assessors must satisfy SNR/AQTF assessor requirements.

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