



Australian Government

CPPBDN4009 Analyse building design drawings and review findings

Release: 1

CPPBDN4009 Analyse building design drawings and review findings

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 analyse drawings relating to building designs for residential, commercial and industrial buildings, as defined by the Building Code of Australia (BCA).

It covers interpreting construction industry conventions for drawings, and analysing drawings for different projects to identify design and technical features. It also covers presenting findings and discussing these with the architect or building designer to inform the design process.

The unit supports the work of drafters who assist and work under the supervision and instruction of architects, building designers and other personnel, such as home sustainability assessors.

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. | Interpret drawing | 1.1. | <i>Industry standard formats and content for technical</i> |
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| conventions. | <i>drawings</i> are interpreted. |
| 1.2. | <i>General technical drawing conventions</i> used in all types of construction drawings are interpreted. |
| 1.3. | <i>Architectural conventions</i> used in building design drawings are interpreted. |
| 1.4. | Notations used in general technical and architectural drawings are interpreted. |
| 2. Analyse architectural drawings. | 2.1. <i>Key features of site plans</i> for different projects are identified in drawings and analysed. |
| | 2.2. <i>Key features of floor plans and sub-floor plans</i> are identified in drawings and analysed. |
| | 2.3. <i>Key features of elevations</i> of each aspect of building are identified in drawings and analysed. |
| | 2.4. Sections of buildings are analysed to determine construction methods and features of internal design and finishes. |
| | 2.5. Unknown elements of, or anomalies in, architectural drawings are noted for discussion with architect or building designer. |
| 3. Analyse drawings from other construction disciplines. | 3.1. Land survey drawings are analysed to identify topographical features of site for building design projects and requirements for cutting and filling. |
| | 3.2. Structural engineering drawings are analysed to determine construction methods and load considerations for building design project. |
| | 3.3. Drawings and reports from electrical, hydraulic, fire and mechanical engineers are analysed to determine layout of services for building design project. |
| | 3.4. Drawings and drawing notations from <i>consultants</i> are analysed to identify recommendations for building design project. |
| | 3.5. Unknown elements of, or anomalies in, drawings from other disciplines are noted for discussion with architect or building designer. |
| 4. Present and | 4.1. Advice is sought where required from architect or building designer to assist in identifying and analysing |

discuss findings.

unknown elements of drawings.

- 4.2. Findings from analysis of architectural drawings are presented to, and discussed with, architect or building designer to inform building design process.
- 4.3. Findings from analysis of drawings from other construction disciplines are presented to, and discussed with, architect or building designer to inform building design process.
- 4.4. Strategies for producing corrections to drawings are developed in consultation with architect or building designer and followed up as required.

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:	- access Australian standards to assist in developing understanding of different types of drawings and drawing standards and conventions - draw on experience in drawing analysis and apply to new work.
Numeracy skills to:	- interpret and check the accuracy of numerical information in technical drawings and reports, including dimensions, ratios, scales and scale conversions - use mathematical language to discuss with colleagues findings from analysis of drawings, such as anomalies in dimensions or inaccuracies in scale conversions.
Oral communication skills to:	participate in discussions in the workplace and with external specialists using specialised vocabulary relating to building designs, including the names used for different types of drawings and the names for different building elements and fixtures.
Reading skills to:	- understand specialised vocabulary, abbreviations and acronyms specific to building design work, including terms used by external consultants - use different reading strategies to locate specific and sometimes complex details in drawings and reports.
Writing skills to:	make concise and technically accurate personal notes on findings from analysis of drawings and reports and discussions with designer.

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.

Industry standard formats and content for technical drawings must include:

- drawing types
- project identification
- version control.

General technical drawing conventions must include:

- those specified in:
 - AS1100.101 Technical drawing - General principles
 - AS1100.301 Technical drawing - Architectural drawing
 - AS1101.1 Graphic symbols for general engineering - Hydraulic and pneumatic systems
- abbreviations
- components
- dimensioning lines
- gradients
- layout
- levels
- scales
- spaces
- symbols.

Architectural conventions must include:

- dimensioning
- orientation
- representations of:
 - doors
 - fittings
 - fixtures
 - materials
 - natural light
 - shadow
 - windows.

Key features of site plans must include:

- site boundaries and dimensions
- locations and orientations of buildings
- locations of:
 - utility services
 - retaining walls
 - fences

	• driveways • walkways • setback requirements • easements • topographical data.
Key features of floor and sub-floor plans must include:	• access • construction methods • dimensions • locations of services • plan-level fittings, fixtures and features, including representations of overhead features • room and wall layouts.
Key features of elevations must include:	• dimensions of buildings • exterior finishes • fence locations • features of exterior design.
Consultants must include one or more of those contributing to the design drawings:	• land surveyors • structural, electrical, hydraulic, fire and mechanical engineers • access, acoustic, arborist, energy efficiency, lighting, traffic and other relevant consultants required to contribute to building design projects.

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 CPPBDN4009 Analyse building design drawings and review findings

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, and must be able to provide evidence of the ability to analyse complete sets of drawings 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.

The person must present and discuss with the project architect or building designer:

- an analysis of relevant information, features and details included on architectural drawings, including:
 - details
 - elevations
 - plans:
 - footings and slab setout
 - roof framing layout
 - wall framing layout
 - sections
 - site plans
 - sub-floor and floor plans
- analysis of information, features and details included on drawings specifically required for the project from consultants as listed in the range of conditions
- clarification of unknown elements of drawings through consultation, as required
- anomalies in drawings, including strategies for producing corrections to drawings
- strategies for correcting drawings, as required.

Knowledge Evidence

A person demonstrating competency in this unit must be able to demonstrate the knowledge required to analyse building design drawings for the building projects specified in the performance evidence, including:

- principles of structural engineering sufficient to recognise structural anomalies in building design drawings for the building projects and report them to the designer
- basic principles of the work of those construction professionals who are required to contribute to the building designs of the projects, including:
 - consultants
 - engineers
 - surveyors
- building construction techniques and processes applied to the construction of the buildings
- building materials used in the construction of the buildings, and their application
- building designers' duty of care to ensure quality and safety of designs
- construction terminology required to discuss content of internally and externally sourced drawings with work colleagues and designer
- conventions and formats used for:
 - architectural drawings
 - general technical drawings
- drawing standards:
 - AS1100.101 Technical drawing - General principles
 - AS1100.301 Technical drawing - Architectural drawing
 - AS1101.1 Graphic symbols for general engineering - Hydraulic and pneumatic systems
- types of drawings relevant to building design projects.

Assessment Conditions

Assessment must be conducted in the workplace or a close simulation of the workplace.

Suitable assessment of performance requires:

- equipment:
 - computer with internet access and building information modelling (BIM)-capable building design software materials
- relationships with team members and supervisor:
 - tasks may be completed as an individual and as a team member, under the direction of an architect, building designer or other relevant person
- specifications:
 - Australian standards for drawing
 - design drawings for building projects specified in the performance evidence.

Assessor requirements

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

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