CPCCST4005 Prepare drawings for heritage works

Application

This unit of competency specifies the skills and knowledge required to prepare drawings for heritage works associated with historic buildings and structures of cultural significance. To successfully prepare drawings requires a comprehensive understanding of architectural forms, specifically period architecture, and appropriate drafting techniques. The unit requires the ability to interpret specifications for drawings, measure and calculate dimensions accurately, and work to scale.

The unit of competency supports builders, project managers and related construction industry professionals responsible for heritage works during residential and commercial projects.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Prerequisite Unit

Nil.

Unit Sector

Construction.

Elements and Performance Criteria

1. Plan and prepare for drawing requirements.	1.1	Identify specifications for drawing from request or conservation authority requirements.
	1.2	Determine dimensions of the historical or significant building in accordance with appropriate methods, taking into account the type of structure, access to details and previous drawings available, if applicable.
	1.3	Determine method of recording feature details in accordance with nature of the feature, location and accessibility.
	1.4	Determine and apply method and system of recording identification, location and dimensional information in accordance with requested drawing requirements.
	1.5	Identify, list and use equipment and instruments in accordance with recording task requirements.
2. Organise information for drawing preparation.	2.2	Gather information to identify and group all recorded details associated with each area or section of the building or structure.
	2.3	Determine size of the drawing and scale to be used in accordance with dimensions of building, structure or section.
	2.4	Identify and locate sketches, tracings or photographs of recorded features with other recorded information related to feature work.
3. Draw or develop orthographic description.	3.1	Draw or develop block layout of views and designed spacings, where applicable, to planned layout and scale accurately to recorded or calculated dimensions.
	3.2	Detail orthographic description views to show visible lines of structure and

		elements as seen with each view to correct scale representation of recorded dimensions.
	3.3	Show architectural drawing conventions, symbols and hatching, on drawings in accordance with relevant Australian standards.
	3.4	Produce plans of large buildings by use of grids, where applicable, to provide cross-referencing and dimensioning by coordinates.
	3.5	Locate dimensions and reference notations relevantly on drawings to provide full detailed descriptions as required with each view.
	3.6	Provide appendices and reference details of drawing with drawing in accordance with overall request.
4. Draw or develop sectional detailed drawings.	4.1	Draw or develop sectional detailed drawings to scale to show detailed structural description of relationship between elements in accordance with recorded dimensions.
	4.2	Show architectural hatching on drawings to represent materials, in accordance with relevant Australian standards.
	4.3	Locate dimensions and reference notation on drawings to provide full details of sectional description.
5. Develop detailed drawings of feature work.	5.1	Enlarge photographic recording of feature work shape and design by photocopying to provide more realistic size for analysis and reproduction.
	5.2	Determine gridlines in accordance with actual dimensions of the feature work shape and reproduce to enlarged photocopy.
	5.3	Examine enlarged photocopy closely for distortion from the photographing process and make necessary adjustments to the design.
	5.4	Examine tracing recordings in accordance with the whole feature or part thereof and link with other tracings or sketches to ascertain the feature shape to be reproduced.
	5.5	Develop design shape drawings to produce accurate design to scale with grid lines where applicable.
	5.6	Produce cross-sectional details accurately to scale, to provide three-dimensional information.
	5.7	Produce dimensions, reference notation, specific location and appendices for drawings in accordance with client request or design aims.
6. Complete work.	6.1	Check drawings for accuracy, clarity of line, completeness of drawing and associated dimensions and details.
	6.2	Make copies in accordance with original request.
	6.3	Record production details and coded reference information.

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- communication skills to:
  - enable clear and direct communication, using questioning to identify and confirm requirements, share information, listen and understand
  - read and interpret:
    - documentation from a variety of sources
    - plans, specifications and drawings

- written skills to:
    - record relevant information
- numeracy skills to:
    - ability to use instruments and equipment for measuring
    - calculate measurements
- organisational skills to:
    - set out work
    - work to scale.

Unit Mapping Information

Supersedes and equivalent to CPCCBC4037A Prepare drawings for heritage works.

Companion Volume Implementation Guide:

https://vetnet.education.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad

Assessment Requirements for CPCCST4005 Prepare drawings for heritage works

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by carrying out the necessary preparatory processes and developing at least two examples of each form of drawing specified, using sample or case study heritage projects for any of the buildings listed below:

- built or sculptured artefacts
- cathedrals and churches
- civic buildings
- commercial and retail buildings
- government buildings
- houses
- mansions
- out buildings
- wharves

In doing this, the candidate must:

- demonstrate application of conservation principles and consultative processes associated with preservation of historic structures
- comply with Work Health and Safety (WHS) regulations applicable to workplace operations
- apply organisational quality procedures and processes within the context of preparing drawings to conservation requirements
- apply recording and identification system for measurements, locations and details
- select and use appropriate processes, instruments and equipment to measure and record information
- use appropriate and safe techniques to obtain measurements and details
- apply accurate techniques in preparing information for related drawings
- select and use appropriate techniques to ascertain accurate analysis of featured design shapes
- apply techniques to ensure all relevant information is included in orthographic description
- select and use appropriate techniques to produce accurate, sharp and complete drawings.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- Australian standards - AS1100.101 and AS1100.301
- conservation processes, including good conservation practice arising from principles of Burra Charter
- finishing trade applications to materials

- methods and processes relating to historic building construction, including the range and use of building materials, structure of buildings and drafting techniques:
    - drawings:
        - development:
            - computer aided drafting
            - drafting techniques
            - drawings developed in accordance with National Trust guidelines or AS1100.101 - 1992 Technical Drawing - General Principles, and AS1100.301 - 1985 Architectural Drawing.
        - orthographic descriptions:
            - front, rear and side elevations
            - plans
            - sectional elevations
            - sectional plans
        - sectioned detail drawings:
            - ceiling and roof framing construction
            - ceiling construction
            - chimney construction
            - cladding details
            - external wall construction
            - fence construction
            - footings and foundation
            - internal wall construction
            - roofing details
            - sub-floor construction
    - methods to determine dimensions:
        - accurately trace shapes or features
        - calculate height by use of levelling equipment and/or trigonometry
        - physically tape and measure all internal and external measurement
        - scale proportion of roof, chimney and spire heights from photograph where wall height is determined
- methods of measuring
- relevant architectural knowledge, including orders of architecture and the characteristics and features of period architecture:
    - feature work:
        - decorative tiling
        - mosaic tiling
        - ornamental mouldings
        - ornamental plasterwork
        - ornamental stonework
    - types of historical or significant buildings:
        - built or sculptured artefacts
        - cathedrals and churches
        - civic buildings
        - commercial and retail buildings
        - doors
        - external features
        - fences

        - government buildings
        - houses
        - mansions
        - out buildings
        - walls
        - wharves
        - windows
- workplace and equipment safety requirements, including relevant statutory regulations, codes and standards.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment of performance must be undertaken in the workplace or in a simulated workplace environment. Tasks are to be performed to the level of proficiency and within the time limits expected in a workplace.

Assessors are responsible for ensuring that the person demonstrating competency has access to:

- historic locations appropriate to competency range
- drafting and computer equipment
- equipment relevant to measuring processes.

Links

Companion Volume Implementation Guide:

https://vetnet.education.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad