

CPCCBC4014 PREPARE SIMPLE BUILDING SKETCHES AND DRAWINGS

THEORY EXAM

Participant name	
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FOR THE PARTICIPANT

Instructions

- You will complete written questions as outlined on the following pages. You must attempt all questions and provide enough detail in your responses to demonstrate your knowledge.
- It is anticipated that you should complete this assessment within two (2) hours. But additional time may be allowed upon negotiation with the Assessor.
- You must complete all questions unsisted by the Assessor or other personnel. It may refer to reference material as needed. All questions must be answered correctly for a 'Satisfactory' assessment outcome to be awarded.
- An oral examination may be allowed under certain circumstances, whereby your answers will be documented by another party.
- Any written questions that are incomplete, or not answered satisfactorily will need to be completed again after further training support.
- If you answer a question incorrectly but modify your response, put your initials next to the written change (or the Assessor must initial a verbal change).

Resources required

Pen

FOR THE ASSESSOR

Instructions

- Where oral examination has occurred, ensure that this is acknowledged in writing (e.g. FT001 and Assessor Comments)
- All questions must be satisfactorily demonstrated by the Participant for a Satisfactory determination (indicated by an Assessor tick to the right of the question).
- Assessors are to complete marking in pen of a different colour to the Participant.
- If the Participant verbally modifies their response, write in the modified response verbatim and put your initials next to the written change.

ASSESSOR COMMENTS

As necessary, outline:

- Details on reattempts, alternative arrangements or reasonable adjustments made.
- Where a Participant is deemed 'Not Satisfactory', provide recommendations for future training.

Q1. Describe each of the following types of plans and explain what they are used for.

Answer

Type of plan	Description	Use
Presentation drawings	e.g. These drawings include tones and/or hatches to represent different materials. They are diagrams and not intended to appear realistic. Basic presentation drawings typically include people, vehicles, and trees.	e.g. To explain a scheme and to highlight its features. They are used to describe the design and are generally shown to clients during the design process.
Isometric drawings	e.g. A type of 3D drawing that is set out using 30-degree angles. In an isometric drawing, the foreshortening of the axes is equal. Therefore the final image produced is not distorted.	e.g. Isometric drawings are used to provide a 3D representation of an object, building, or design on a 2D surface.
Orthographic drawings	e.g. Orthographic drawings use three-dimensional drawings. In each of these drawings, the object (e.g. house) is viewed along parallel lines that are perpendicular to the plane of the drawing (e.g. top view, front view, and side view).	e.g. Used to show an object from every angle to help the builders / contractors plan the construction.
Perspective drawings	e.g. Perspective drawings are an approximate representation on a flat surface of an object (e.g. a house or a building) as it is perceived by the eye.	e.g. Perspective drawing is used to depict spatial depth or perspective, and to accurately depict a 3D object onto a 2D plane.



Q2. A client doesn't understand where or how two (2) wall inserts would look beside a window in the designated living room. What type of drawing could you draw to assist in their understanding?

Answer

Should reflect but is not limited to: An Isometric or a perspective drawing of the wall with the window and inserts to provide a 3D representation of the situation.

☐

Q3. What type of drawing would you need to present to builders or contractors to give a visual aid of all angles of the building?

Answer

Should reflect: Orthographic drawings.

☐

Q4. What type of drawings are used to demonstrate landscape features such as trees, rocks and shrubs?

Answer

Should reflect: Presentation drawings.

☐

Q5. What type of information can you interpret from a site plan?

Answer

Should reflect but is not limited to: Adjacent roads including the name of the road, the location of the project site, structures or features that are to be retained or demolished/ removed, the building layout and orientation, boundary, the block identification, the verge, the finished floor level, existing fences and trees, contour lines and levels, datum, easements. Location of power and drainage and sewerage connections, driveway. Shows a general view of the property as a whole and the entire scope of work involved for the project.

☐

Q6. What is building information modelling (BIM)?

Answer

Should reflect but is not limited to: Used to design and document buildings and infrastructure, BIM is a 3D model-based process easily shareable, so the collaborators can brainstorm and make the necessary changes to resolve identified conflicts before the construction of the building project.



Q7. Explain how the NCC is relevant to construction drawings.

Answer

Should reflect: As the NCC sets out the technical provisions for design, construction, and performance of buildings and plumbing and drainage systems, the requirements provided must be reflected in the construction drawings during the planning stage (i.e. drawings and sketches at this stage must show that the design, materials, or construction meets the relevant Performance Requirement or Deemed-to-Satisfy (DTS) Provision).



Q8. Discuss the importance of complying with standards during a building and construction project.

Answer

Should reflect but is not limited to: Complying with standards is one way to achieve compliance with government minimum requirements set out in the NCC. In addition, standards serve as concrete examples of best practice that can then be used to model what needs to be done in a building and construction project. They serve as thresholds that the project must meet not only to achieve safety but also to achieve sustainability and proper functionality. These standards are also going to be used to assess the completed building so referring to them during the construction phase means greater chances of passing these assessments.



Q9. Why is it important to confirm that construction plan information complies with building and construction regulations.

Answer Should reflect but is not limited to: To avoid damage to reputation, ☐

prosecution, fines and rework situations. To avoid loss of licence and work.

Q10. When selecting information from plans to present to others, what will determine the format of the information you wish to present?

Answer Should reflect: You must first consider the audience and how the drawing ☐

will be presented, consider the most appropriate format of information to be
able to relay information more effectively, whether a hardcopy print is
required or whether CAD or BIM models are needed. You must also
consider drawing conventions and that you have the tools and equipment
needed to create your drawings.

Q11. What is involved when inspecting drawing equipment for serviceability?

Answer Should reflect: Checking that the equipment or tools you plan to use fits for ☐

purpose and has no faults or issues. This can include, checking for faults or
jams in manual tools, checking if all software to be used is up to date.

It may involve conducting a test or pre-start check on the tools or equipment
or having the tools or equipment go through a trial or test run to ensure that
they function as expected. You should document identified faults and issues
according to workplace policies and procedures for reporting faulty
equipment.

Q12. Listed below are common drawing conventions. Provide a brief explanation of each.

Answer

Drawing convention	Explanation
Sheet layout	e.g. Sheet layout is the placement of border and title block on a drawing sheet.
Title Block	e.g. The title block provides the basic information about the drawing (e.g. project name, project details, client information, site address, date, scale and sheet number)
Line types	e.g. A line type is a set of 2D geometric elements that repeats along a line in both directions from a centre point.
Symbols	e.g. Symbols are the shorthand of a drawing which are used to simplify the drafting work for both the drafter and the ones interpreting the drawings, e.g. Ø for diameter.
Dimensions	e.g. The dimension is a numerical value expressed in units of measurement and used to define the size, location, orientation, form of an object.
Dimension lines	e.g. The dimension line is a line, broken in the middle to allow the placement of the dimension value, with terminators at each end.
Abbreviations	e.g. They are shortened form of a word or phrase which are used to simplify the drafting work for both the drafter and the ones interpreting the drawings, e.g. AB for an air brick.



Q13. Explain what is learned and confirmed by reading AS 1100.101.

Answer

Should reflect: Sets out the basic principles of technical drawing practice, and covers terminology and abbreviations used in technical drawings; materials, sizes and layout of drawing sheets; types and thicknesses of lines; types and dimensions of letters, numerals and symbols; drawing scales; projectioning; sectioning; dimensioning and geometry tolerancing and the conventional representation of features and parts. Appendices provide information on the development of pictorial drawings and geometry tolerancing.



Q14. Provide a brief explanation for the following building and construction methods.

Answer

Methods	Explanation
Solid brick construction	e.g. This form of masonry construction utilises layers, referred to as wythes, of brick with header bricks to hold them together..
Brick veneer construction	e.g. In this method, a wooden or steel frame is concealed with a single layer of bricks as the exterior layer.
Framing	e.g. Describes the method of fitting together the pieces to provide the frame that gives a structure support and shape.
Post and beam construction	e.g. Post and beam construction is a building method that uses heavy timbers instead of dimensional lumber. Connections in this method are made usually with plates and or bolts.



Q15. Define the following construction terminology.**Answer**

Term	Definition
Nogging	e.g. A horizontal piece of timber fixed between studs in a framed wall
Pilot hole	e.g. A hole drilled to receive a nail or a screw
Masonry	e.g. Brick, concrete, stone, artificial stone, or terra cotta laid in mortar
Admixture	e.g. Materials added to mortar or concrete to achieve particular modifications to the normal properties of the basic material

**Q16. Discuss what different types of information you must gather to create effective sectional drawings and sketches from building plans.****Answer**

Should reflect: You may require a brief from the client or the builder that describes exactly what is to be observed in the sectional drawing. This may be achieved during meetings where you will need to write notes or via emails, memos or alternate method of communication. You will need the current version of the plans and specifications relevant to the sectional drawing to be drawn from to determine measurements, details, materials. You may need access to manufacturer installation instructions, standards, codes and legislation, depending on the drawing requirements.



Q17. What type of information might you need to effectively draw bracing details for a wall adjacent to ceiling joists?

Answer

Should reflect but is not limited to: Material requirements including measurements, joist and frame placement and measurements, joining details, bracing location, material and joining material, fixings and methods.



Q18. Discuss the importance of adding labels to the drawing discussed in Q17.

Answer

Should reflect: Labels provide text to describe parts of drawings. Labels should be affixed in the drawing to provide a textual description of important parts of the drawing, such as measurements. A label should be added to specify the ceiling joist or truss bottom chord's layout or position against the wall bracing top plate.



Q19. Why should the drawing be created 'to scale'?

Answer

Should reflect but is not limited to: Scale refers to the ratio that dictates the size of scale drawings, which are drawings used for accurately illustrating actual building components or items at fixed, reduced, and enlarged sizes. Scale drawings can be measured with a scale rule to determine their actual size. Scales are used when illustrating the drawing so that the details of the object are captured and ensuring that the object fits in the drawing sheet. When objects are scaled up, one can see and examine the intricate details of a component better.



Q20. When using symbols and abbreviations, how can you ensure that each reader of the plans understand what they mean?

Answer

Should reflect: Firstly, ensure that the symbol or abbreviation is appropriate to the element or component you are describing or referring to and according to Australian standards and industry requirements. ☐ Avoid placing abbreviations where they overlap with other drawing elements such as lines, shading, symbols, etc. You should add a legend demonstrating the meaning of each symbol, abbreviation and other drawing conventions used.



Q21. Discuss the sheet layout and information included to present elevation drawings to the local council for approval.

Answer

Should reflect but is not limited to: A drawing of each side of the building to give a complete and final picture of the building structure. Include all the necessary information to be submitted to the local council, ensuring the information is clearly labelled and includes precise and accurate measurements of the building structure. Each sheet will contain dimensions, scale, title block, notes, section number and type of view.



Q22. What format would you produce construction plans to present to each of the following recipients?

Answer

Recipients	Format (hard copy/ digital)
Client	Hard copy
Builder / Contractor	Hard copy
Local Council	Hard copy or digital according to council requirements



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PRACTICAL ASSESSMENT

Participant name

FOR THE PARTICIPANT

Instructions

- The tasks outlined on the following pages will require performance of normal workplace activities, as a result of a structured activity set by an Observer in the workplace or a simulated activity set by your Assessor/Observer.
- The timeframe for these tasks will be established by your Assessor/Observer in consideration of location conditions and industry requirements.
- You must complete all tasks assisted by the Assessor or other personnel, unless the supervisor notes assistance.
- You must attempt all tasks (and itemised steps) for a 'Satisfactory' assessment outcome to be achieved.
 - For an observation conducted that is incomplete, or without satisfactory performance, the observation will need to be completed again after further training support.

FOR THE ASSESSOR/OBSERVER

Instructions

- The following observation record should be used to judge and record your observations of the Participant as they complete the task(s) set. You must record your observations of the Participant's performance.
 - For each occasion, indicate the task performed and whether it was a simulation or workplace-based task.
 - Any simulated assessment must ensure the Participant still performs under workplace conditions which reflect industry standards.
 - In the comments, provide clear detail regarding the task that the Participant was required to do (e.g. PPE used, materials handled, attachments connected, plant types).
- All steps must be satisfactorily demonstrated by the Participant for a 'Satisfactory' determination (indicated by an Assessor tick to the right of each itemised step, or an Observer tick to the right of each itemised step, and confirmation by an Assessor in the Assessor Comments).
 - Where you have determined that one or more task steps have not been satisfactorily demonstrated, provide the Participant with additional support and outline details of such assistance in the Assessor/Observer Comments. Allow the Participant two (2) further opportunities to demonstrate the task again to allow an opportunity for a 'Satisfactory' assessment outcome to be achieved.
 - If after three (3) attempts the Assessor determines that the Participant cannot demonstrate the required steps, a 'Not Satisfactory' outcome is to be determined.

TASK OUTCOME					
Task	Date	Task Type (Tick)	Location	Task outcome (Tick)	
				Satisfactory	Not Satisfactory
Task 1 (Occasion 1)		☐ Workplace ☐ Simulation		☐	☐
Task 1 (Occasion 2)		☐ Workplace ☐ Simulation		☐	☐

ASSESSOR COMMENTS: GENERAL

As necessary, outline:

- Details on reattempts, alternative arrangements or reasonable adjustments made.
- Where a Participant is deemed 'Not Satisfactory', provide recommendations for future training.

ASSESSOR COMMENTS: PRACTICAL TASK 1: OCCASION 1 Structural component

- ☐ Individual student (as named on cover page)
☐ Multiple students [☐ All from Attendance Report, ☐ Specific students involved – identify students]

Task	Provide detail
1.2B. 1.2C. 1.3B.	Specify Standard drawing conventions applied: e.g. use of all appropriate lines, abbreviations, measurements, title block, symbols, labels and notes
1.3C.	Specify form created for presentation: e.g. printed A3 design of wall detail for inclusion in plans CSTC RTO facility e.g. presented in hard copy

ASSESSOR COMMENTS: PRACTICAL TASK 1: OCCASION 2 Non-structural component

- ☐ Individual student (as named on cover page)
☐ Multiple students [☐ All from Attendance Report, ☐ Specific students involved – identify students]

Task	Details
1.2B. 1.2C. 1.3A. 1.3B.	Specify Standard drawing conventions applied: e.g. use of all appropriate lines, abbreviations, measurements, title block, symbols, labels and notes
1.3C.	Specify form created for presentation: e.g. printed A3 design of shower base detail for inclusion in plans CSTC RTO facility e.g. presented in hard copy