

CPCCBC4004A

IDENTIFY AND PRODUCE ESTIMATED COSTS FOR BUILDING AND CONSTRUCTION PROJECTS

THEORY EXAM INSTRUCTIONS

- This exam will occur under standard assessment conditions.
 - An oral examination may be allowed under certain circumstances, whereby the Participant's answers will be documented by a party other than the Participant. This must be acknowledged in writing (e.g. Interview and Assessor Comments)
- Participants must provide enough detail in their responses to demonstrate their knowledge and skills.
- Please fill in the details below, providing your name, signature and date of assessment.
 - Your signature acknowledges that this is your own work.
- Assessors are to complete marking in pen of a different colour to the Participant.
- If a Participant initially answers a question incorrectly but modifies their response, they must follow the instructions below:
 - If a Participant changes their response in writing, they must put their initials next to the written change.
 - If a Participant changes their response verbally, this must be noted on the exam paper by the assessor.

Participant name _____

Participant signature _____

Date _____

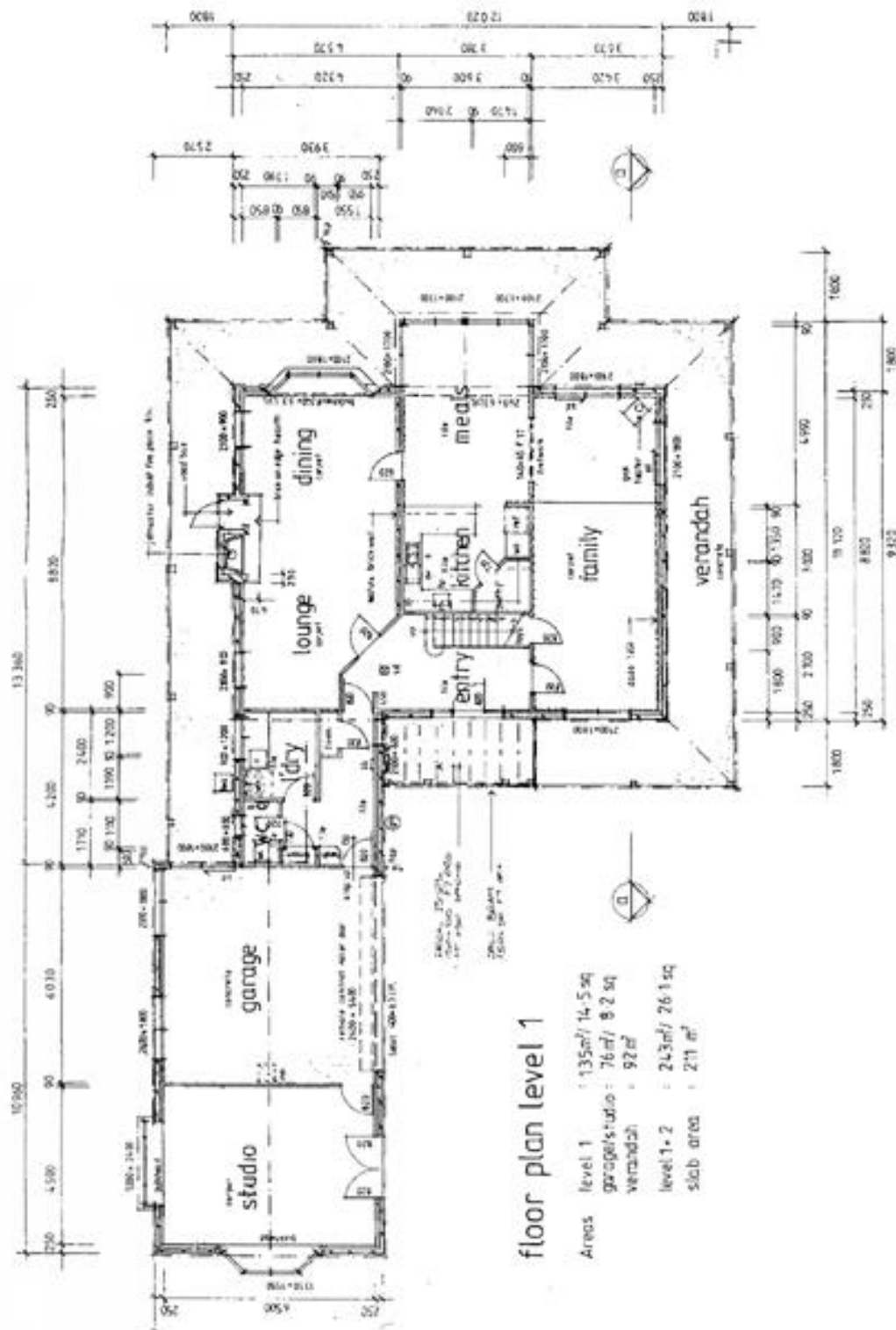
Assessor name _____

Assessor signature _____

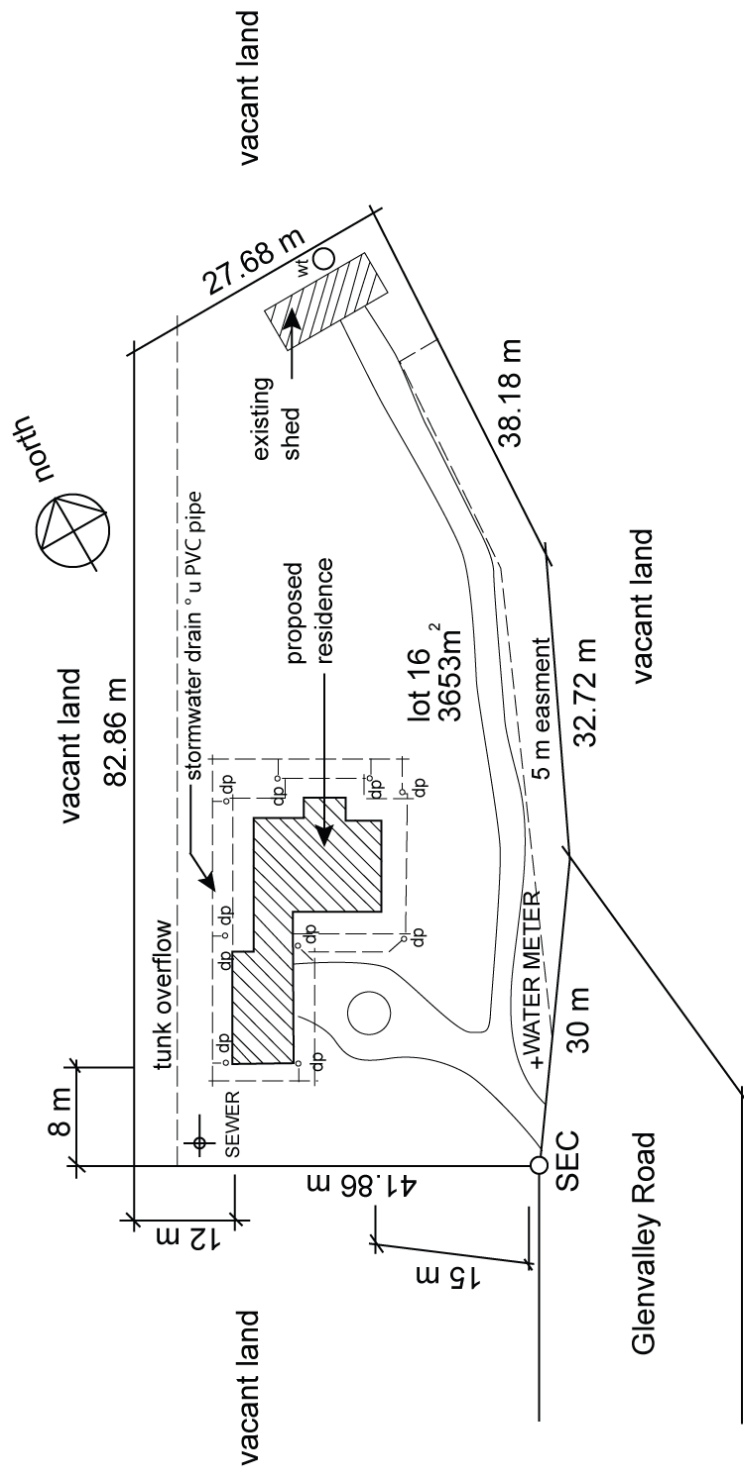
Date _____

Number of questions	Number of questions answered correctly	Task outcome (Tick)	
		Satisfactory	Not Yet Satisfactory
37		☐	☐

Refer to the plans and specifications below to respond to Q1. to Q9.



Clients : H&M Smith Lot 16 Glenvalley Road Richmond	North	drawn : DJA date : 11/10/07 scale : 1 : 50 drg no : WD 9733 sheet 4 of 7	REVISIONS		Joe Foreman Ph: 03 9514 2311 Mob: 0413 113 113 18 Fairview Road, Richmond 3216
			NO	DATE	BY



Site Plan 2

Clients : H&M Smith Lot 16 Glenvalley Road Richmond	North	drawn : DJA date : 11/10/07 scale : 1 : 500 drg no : WD 9733 sheet 6 of 7	REVISIONS		Joe Foreman Ph: 03 9514 2311 Mob: 0413 113 113 18 Fairview Road, Richmond 3216
			NO	DATE	BY

Q1. Match the sheet numbers and document types by writing the appropriate letter next to each number in the centre column.

Answer	Sheet Number		Answers	Document Type		☐
	1	Sheet 4		A	Floor plan	
	2	Sheet 5		B	Section plan	
	3	Sheet 6		C	Site plan	

Q2. Which sheet number of Drawing WD 9733 identifies the storm water drainage for the proposed structure? Tick your response.

Answer	Choice	Possible Answers	☐
		Sheet 4	
		Sheet 5	
	✓	Sheet 6	

Q3. Identify the Volume and Parts of the NCC that outline the requirements for stormwater drainage for Classes 1 and 10, and Classes 2 to 9.

Answer	Classes 1 and 10	Classes 2 to 9	☐
	Volume 2, Part 3.1.3.5	Volume 1, F1.1	

Q4. Which Australian Standard is referenced in the NCC with regards to stormwater drainage?

Answer AS/NZS 3500.3 ☐

Q5. What is the area of the verandah? Tick your response.

Answer	Choice	Possible Answers	☐
		76m ²	
	✓	92m ²	
		135m ²	
		211m ²	
		243m ²	

Q6. What is the pitch of the verandah roof?

Answer 15° ☐

Q7. What size are the verandah beams?

Answer 150x50 ☐

Q8. Which of the following Jamb Studs are to be used for both the upper and lower storeys? Tick all that apply.

Answer ☐

Choice	Possible Answers
☒	90x45
☒	90x70
☐	90x90

Q9. Identify three (3) subcontractors that may work on this construction project.

Answer Assessor's discretion. May include: Carpenter, Concreter, Steel fixer ☐

Q10. Identify three (3) items of plant and/or equipment that may be used on this construction project.

Answer Assessor's discretion. May include: Excavator, Carpentry tools, Concreting tools ☐

Q11. Identify the Volume and Part of the NCC that outlines the requirements for the timber weatherboards identified in Sheet 5.

Answer Volume 2, Part 3.5.4.2 ☐

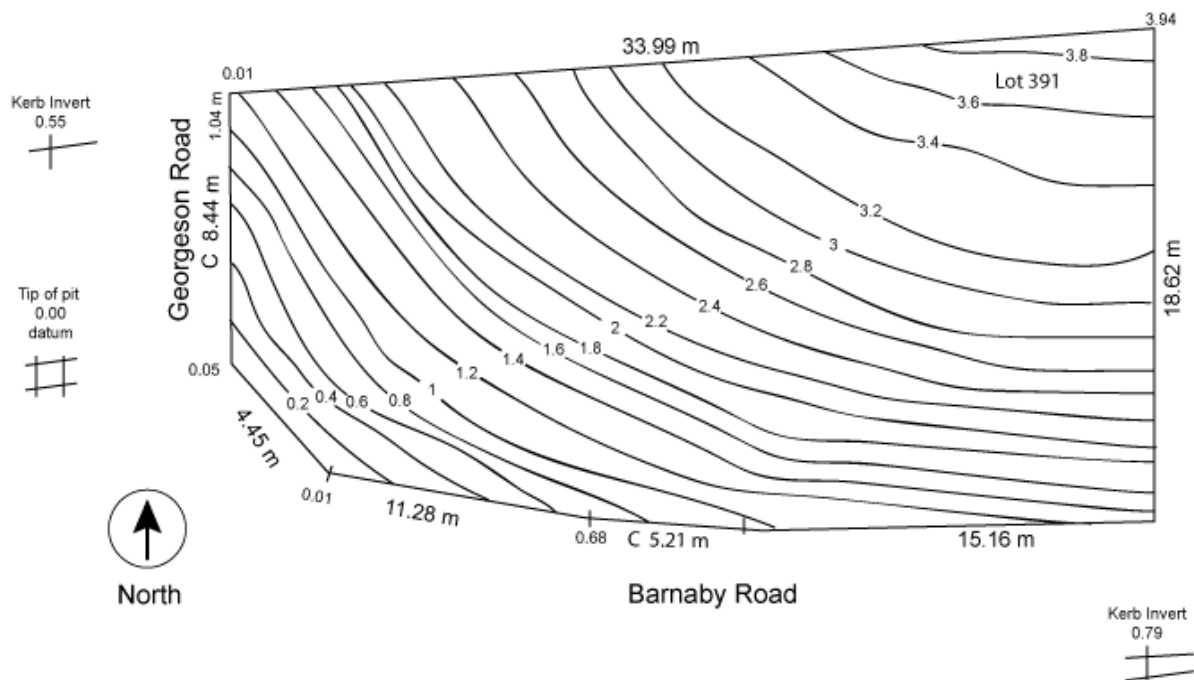
Q12. Which Australian Standard is referenced in the NCC with regards to timber structures?

Answer

AS 1720

☐

Refer to the contour plan below to respond to Q13. to Q15.



Q13. What is the datum reading at the tip of the pit?

Answer

0.00

☐

Q14. What is the level at the kerb invert?

Answer

0.79

☐

Q15. True or False (Tick your response): The lowest point on the site is found at the northernmost point.

Answer

	True
✓	False

☐

Q16. True or False (Tick your response): A Gantt Chart may assist with determining the numbers of on-site personnel required and the time requirements for a project.

Answer

✓	True
	False

☐

Q17. Identify labour that may be required for non-contract elements of a construction project.

Answer

Assessor's discretion. May include: Office administration staff.

☐

Q18. Explain how the following methods may be used to calculate the costs for on-site work.

Answer

Method	Explanation
Per hour	Should resemble: Labour is calculated on an hourly basis, without specifying the time to complete the job.
Per unit	Should resemble: Labour is quoted per item installed (e.g. cost per door installation).
Per metre	Should resemble: Labour is quoted per lineal metre or square metre installed.

☐

Q19. Which of the following documents may you refer to when establishing material quantities for a construction project? Tick all that apply.

Answer

Choice	Possible Answers
✓	Plans
✓	Project contract
✓	Specifications
✓	Standard construction contracts

☐

Q20. True or False (Tick your response): The fast way to locate suppliers, such as manufacturers and wholesalers, is to find them online.

Answer

✓	True
	False

☐

Q21. Explain how each of the following factors affects supplier selection.

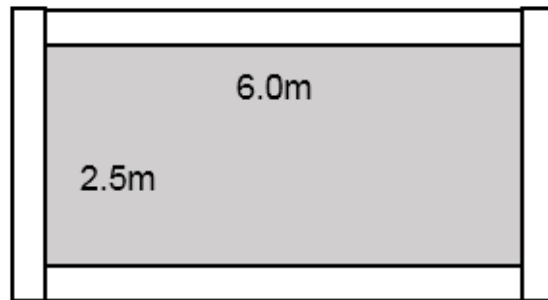
Answer

Factor	Impact
Location	Should resemble: Dealing with distant suppliers might mean longer delivery times and extra freight costs.
Price	Should resemble: Affordability is a key factor, but cheap does not always equate with quality.
Reliability	Should resemble: Suppliers should be able to deliver the right goods and on time.
Stability	Should resemble: Look for experienced suppliers who have been in business a long time. This illustrates financial stability.
Supplier groups	Should resemble: While using a single supplier has its advantages, it also has risks. It might be better to use a carefully selected group of suppliers as insurance against any problems occurring.

☐

Read the following information to respond to Q22. to Q27.

The diagram below shows formwork that is required for a concrete slab.



The table below outlines the costs for this task.

Item	Cost
Timber	\$2.50 per metre
Concrete	\$50.00 per cubic metre (excluding GST)
Labour	\$49.50 per hour

Q22. Calculate the lineal meters of timber (150mm wide x 25mm thick) required to form up the edge of a concrete slab which is 6.0m x 2.5m x 150mm. Provide no allowance for waste. Show your answer to two decimal places.

Answer

$$2 \text{ sides @ } 6.0\text{m} \rightarrow 6.0 \times 2 = 12.00\text{m}$$

$$2 \text{ sides @ } 2.5\text{m} \rightarrow 2.5 \times 2 = 5.00\text{m}$$

$$\text{Overlap for each } 2.5\text{m length} = 0.025\text{m} \times 2 = 0.05\text{m}$$

$$\rightarrow \text{Two pieces with overlap} \rightarrow 0.05 \times 2 = 0.1\text{m}$$

$$\text{Total} \rightarrow 12 + 5 + 0.1 = 17.10\text{m}$$



Q23. Use your response to Q22. to calculate how much the timber will cost. Show your workings and answer to two decimal places.

Answer

$$17.10 \times 2.50$$

$$= \$42.75$$



**Q24. Calculate how many cubic metres of concrete are required.
Show your workings and answer to two decimal places.**

Answer ☐

$\text{Volume} = L \times W \times D$

$= 6.00 \times 2.50 \times 0.15$

$= 2.25\text{m}^3$

**Q25. Use your response to Q24. to calculate the cost of the required concrete.
Show your answer to two decimal places and ensure it includes GST.**

Answer ☐

$2.25\text{m}^3 \times \$50.00$

$= \$112.50 + 10\% [\times 0.1]$

$= \$112.50 + \11.25

$= \$123.75$

**Q26. Calculate how much the labour will cost if the job takes 6 ½ hours.
Show your workings and answer to two decimal places.**

Answer ☐

6.5×49.50

$= \$321.75$

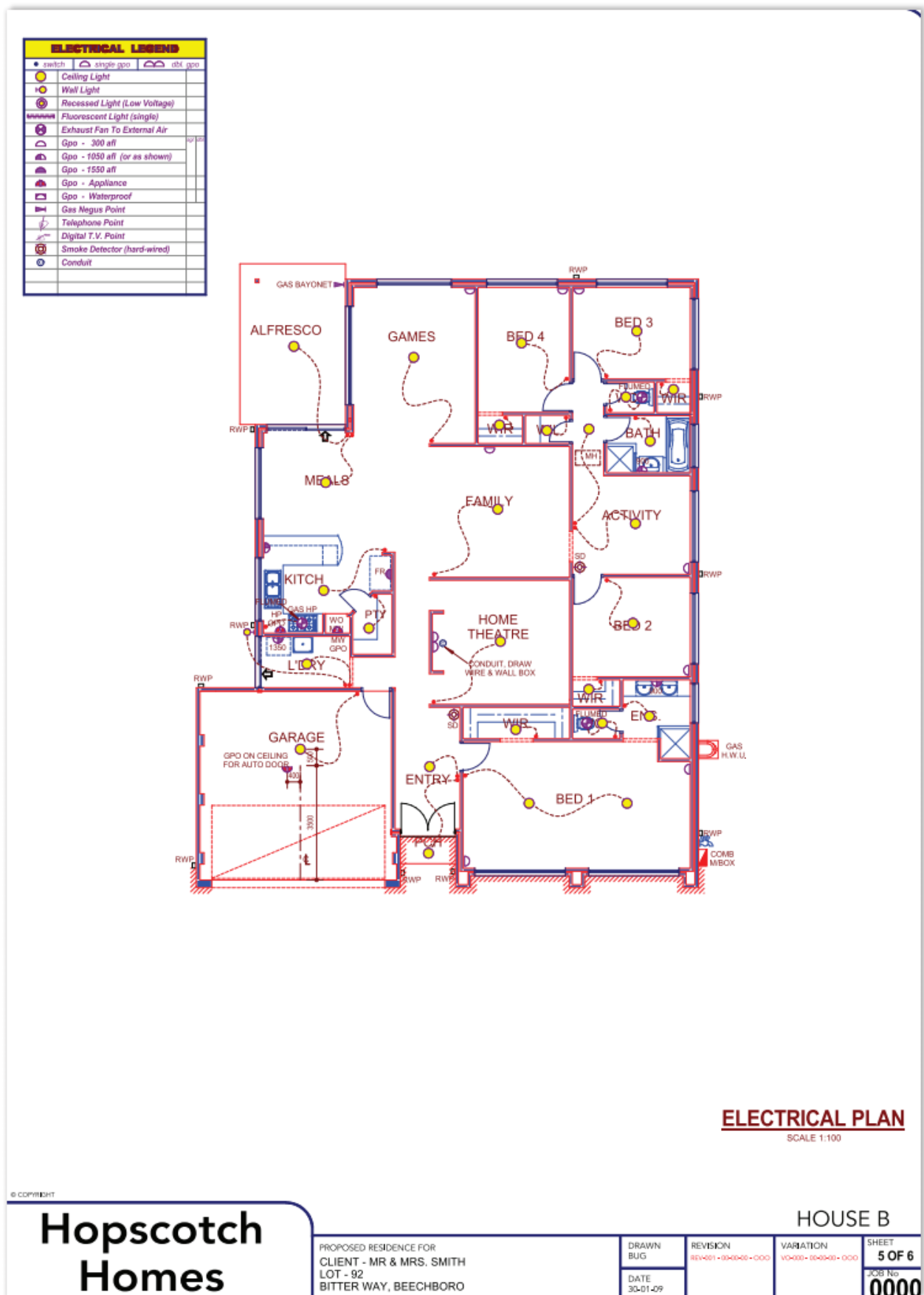
**Q27. Use your responses for Q23. Q25. and Q26. to calculate how much this
project will cost. Show your workings and answer to two decimal places.**

Answer ☐

$42.75 + 123.75 + 321.75$

$= \$488.25$

Refer to the electrical plan below to respond to Q28. and Q29.



Source: https://www.dtwd.wa.gov.au/sites/default/files/teachingproducts/BC1944_CCBY.PDF

Q28. Measure the required quantities for the items listed below.

Answer

Quantity	Item
26	Ceiling light
1	Wall light
1	External light
3	Exhaust fan
2	Smoke detector



Q29. The costs for each of the items are provided in the table below.

Cost	Item
\$49 each	Ceiling light
\$29 each	Exhaust fan
\$82 each	External light
\$39 each	Smoke detector
\$59 each	Wall light

Determine the total costs for each item (using the numbers from Q28.) and the total cost for all items.

Answer

Cost	Item
\$1274	Ceiling light
\$59	Wall light
\$82	External light
\$87	Exhaust fan
\$78	Smoke detector
\$1580	TOTAL



Q30. Name one (1) organisation that provides workers' compensation insurance.

Answer

Assessor's discretion. In Queensland, this is often WorkCover Queensland.



Q31. Which of the following environmental costs should be considered when determining project costs? Tick all that apply.

Answer

Choice	Possible Answers
✓	Approvals
✓	Environmental protection
✓	Permits
✓	Waste management

☐

Q32. List three (3) statutory costs that should be considered when determining project costs.

Answer

Assessor's discretion. May include: Required licences, vehicle registration, required training (e.g. Health and Safety Representatives).

☐

Q33. Which two (2) of the following methods are commonly used when determining the profit on a project? Tick all that apply.

Answer

Choice	Possible Answers
	Double the builder's cost
✓	Lump sum based on market conditions
✓	Percentage on builder's total cost

☐

Q34. True or False (Tick your response): Usually a percentage is added to the estimate to cover company overheads.

Answer

✓	True
	False

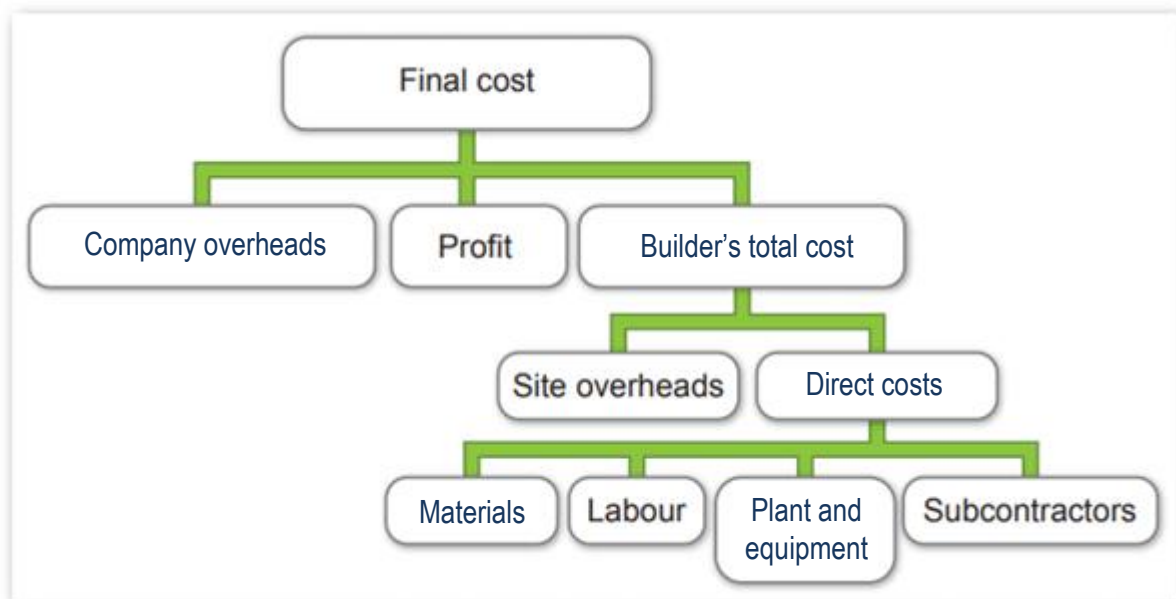
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Q35. Identify one (1) example of company overheads for each of the listed categories.

Answer ☐

Factor	Impact
Business premises	Assessor's discretion. May include: Rent, water rates, cost of display homes
Staff and professional fees	Assessor's discretion. May include: Legal consultant, typist
Transport	Assessor's discretion. May include: Office vehicle, parking fees
Finance	Assessor's discretion. May include: Taxes, bad debts

Q36. Fill in the blanks: Complete the following chart to identify what is included in the final cost for a project.



Choose from

Builder's total cost | Company overheads | Direct costs | Materials | Plant and equipment

☐

Q37. Which of the following should be included in a letter of quotation?
Tick all that apply.

Answer

Choice	Possible Answers
✓	Conditions to your price
✓	Discrepancies
✓	Final cost
✓	Invitation to proceed

