



CPCBC4004A

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. Answers will be documented and FT003 (Oral examination declaration form) must be completed.
- 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.
- 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 GENEVIEVE INCLAN

Participant signature

Assessor name

Assessor signature

Date [Click here to enter a date.](#)

Number of questions	Number of questions answered correctly	Satisfactory?	
		Yes	No
24		☐	☐





Q1. What is the critical aspect of identifying and interpreting plans, drawings and specifications for a building project?

Answer

Identifying and interpreting plans and drawings are critical to showing all parties involved in a building project the proposed structure and what it will look like when completed.



Q2. What is the purpose for date stamping of plans, drawings and specifications?

Answer

It is important to date stamp plans once they are received and to clearly mark superseded and amended plans



Q3. Nominate at least six (6) people and/or entities that would use plans drawings and specifications on a building project.

Answer

1. the client and the lending body
2. engineers
3. carpenters
4. bricklayers
5. concreters
6. painters (dry wall & wet wall plasterers)



Q4. Plans and drawings usually hold many and varied features.

Name some of the types of drawings and details you would expect to see on plans and drawings for a building project.

Answer

- Location plan
- Site or Block plan
- Floor plans
- Elevations.
- Sections



Q5. It is necessary to acquire all building plans and specifications at the beginning of the negotiation period so we know all building project details prior to commencing work (including dimensions, construction materials, door and window schedules, masonry control joint locations and smoke alarm locations).

What else would be expected to be provided?

Answer

1. Footing Construction Report and Foundation Soil Assessment
2. Framing plans including wind speed assessment, bracing/tie down provisions, roof and wall framing members.
3. Roof truss computations (where applicable) and supporting documentation in accordance with "Guide to Safer Roof Framing"
4. Energy Efficiency Report with construction details/supporting documentation (6 star Rating from NatHERS, First Rate or other accredited software - NOTE: 5 star only for Transportable Dwellings).
5. Other details as required such as if the building is in a Bushfire Zone or, if you are adding a swimming pool



Q6. Drawings are usually arranged in the approximate order of construction. What might a set of drawings consist of?

Answer

A set of drawings consists of:

Civil (C-1, C-2, etc): include plot or site plans, utilities, easements, grading and landscaping

Structural (S-1, S-2, etc): include foundation, structural steel, building support system, roof framing

Architectural (A-1, A-2, etc): include floor plans, elevations, building sections, door and window schedules and room finishes

Electrical (E-1, E-2, etc): include electrical wiring, lighting plan, reflected ceiling plan, panel schedules

Mechanical (M-1, M-2, etc): include heating, ventilating, sprinkler systems and air conditioning plans

Plumbing (P-1, P-2, etc): include hot and cold water system layout and sewage disposal systems



Q7. Explain how to access the Building Code of Australia (BCA) and its relevance to estimating costs for building and construction projects.

Answer

- Building Code of Australia is Volume One and Two of the NCC. You can access NCC 2015 Free Online at the ABCB website (<https://www.abcb.gov.au/>)
- The NCC is a uniform set of technical provisions for the design and construction of buildings and other structures, and plumbing and drainage systems throughout Australia. Then one of the Estimator's role is to evaluate engineering drawings and architectural specification that has been set out accordingly as per the NCC. It is important that the estimating cost has been based on these provisions.



Q8. Explain how to access the Plumbing Code of Australia (BCA) and its relevance to estimating costs for building and construction projects.

Answer

- The Plumbing Code of Australia (BCA) is the Volume Three of the NCC. You can access NCC 2015 Free Online at the ABCB website (<https://www.abcb.gov.au/>)
- The NCC is a uniform set of technical provisions for the design and construction of buildings and other structures, and plumbing and drainage systems throughout Australia. Then one of the Estimator's role is to evaluate engineering drawings and architectural specification that has been set out accordingly as per the NCC. It is important that the estimating cost has been based on these provisions.



Q9. Explain how to access Australian Standards and their relevance to estimating costs for building and construction projects.

Answer

- You can access the Australian Standards Online through 'Standards Australia' website <https://www.standards.org.au/>
- Standards are published documents setting out specifications and procedures designed to ensure products, services and systems are safe, reliable and consistently perform the way they were intended to. And when estimating, we determined and based the materials, product, and labour as per the specifications that has been set out.



Q10. Identify two (2) standards that would be relevant to the industry sector.

Answer

1. AS 3959-2009 - Construction of buildings in bushfire-prone areas
2. AS 1100.301-2008 - Technical drawing - Architectural drawing





Q11. Explain the impact of WorkCover requirements on costs to the project.

Answer

It is compulsory in Queensland to insure workers against workplace accidents by taking out an accident insurance policy with WorkCover Queensland. These costs should be included into the cost of a project, so that the company recovers overheads. WorkCover is considered a direct job cost (labour), which are costs that are incurred/involved with the actual construction.



Q12. Explain the impact of Environmental Protection Agency requirements on costs to the project.

Answer

A number of environmental related costs will be incurred, such as seeking approvals (see also Statutory Costs) and waste management site fees. Estimators must also consider environmental management tasks such as third party water quality monitoring costs, contractors implementation of management controls and so on.



Q13. Calculate and cost the lineal timber order for 93 x 19 DAR Meranti and allow 5% wastage. The cost per lineal metre is \$6.40.

**The requirements are: 22 @ 2400; 30 @ 3600; 10 @ 4800; 12 @ 1880
Show your calculations.**

Answer

$22 \times 2.4 = 52.8 \text{ m}$
 $30 \times 3.6 = 108.0 \text{ m}$
 $10 \times 4.8 = 48.0 \text{ m}$
 $12 \times 1.88 = 22.56 \text{ m}$
Total Qty = $231.36 \text{ m} + 5\% \text{ wastage}$
 $= 231.36 \text{ m} + 11.568$
 $= 242.928 \text{ m}$

Total Cost = $242.928 \times \$6.40/\text{lm}$
=\$1,554.74 (answer)



- Q14. A building floor plan measures 24000 x 14000 and the specification states the sheet flooring is 3.6 x 0.9 x 19mm Yellow TERMIFLOR T&G H2 at \$58.38 per sheet.

Calculate the area of floor sheeting required when an allowance of 2% is made for waste and cutting. Determine the number of sheets to order to the nearest whole sheet and calculate the cost for the flooring.

Show your calculations.

Answer

Total Floor Area = 24×14
= $336 \text{ m}^2 + 2\%$
= $336 \text{ m}^2 + 6.72$
= 342.72 m^2

Total Sheets = $342.72 \text{ m}^2 / (3.6 \times 0.9)$
= $342.72 / 3.24$
= 105.78 or 106 sheets (rounded off)

Total Cost = 106 sheets x \$58.38 per sheet
= \$ 6,188.28



- Q15. If a solid cavity brick wall is to be built 23000mm long and 2400mm high (no windows and no doors), how many bricks would be required if the number of bricks per square metre is 50? Show your calculations.

Answer

Computation:
 $23 \times 2.4 = 55.2 \text{ m}^2 \times 50 \text{ bricks per m}^2$
= 2,760 bricks (Answer)



- Q16. You are a QBCC licensed plasterer and a client (Owner Builder) Davey Jones-Locker of 100 Reef Avenue, Brisbane, Queensland wants you to quote for plastering an internal wall of his house build and has described to you the following information over the phone:**

The Client tells you the Council approved plans and drawings state the finished ceiling height from the top of slab floor is 2400mm. There is one external solid timber door (D4) is 2340 x 870 x 35 in this wall and no other openings. The length of this house end wall is 11 metres.

The house is of brick veneer construction and includes a 50mm cavity and the load bearing external framing is 70 x 45 MGP12 (a Boral product "Pineguard Blue"). The bricks are standard bricks 230 x 76 x 100mm. (L x H x W).

The Client tells you that the door is positioned 2100mm from an internal corner (RHS in aerial view) and as seen from inside the house looking out. The specification and drawings state 10mm regular internal plasterboard. You know from experience regular plasterboard is supplied in the following sizes lengths 6M, 4.8M, 4.2M, 3.6M, 3M, 2.7M and 2.4M with recessed edge and widths of 1200mm and 1350mm.

The Client wants a quote to fix and finish this internal wall with plasterboard.

Your labour and on-costs are charged at \$51.50 an hour per tradesman plus materials including sheets, fixing, finishing and sanding. You estimate ancillaries including stud glue, screws, base coat, top and finish coats at \$315.00 and that there is two (2) days' work.

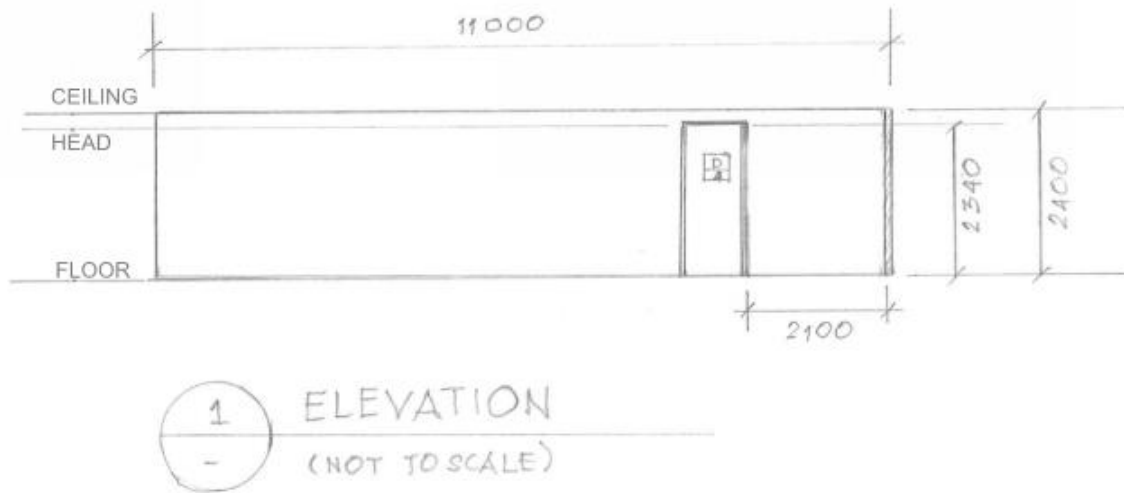
Your business works a 38 hour week you allow workers a 15 minute morning tea break and half hour for lunch. You will need two (2) tradesmen first day and one (1) tradesman second day including materials and equipment supply, fixing, finishing and sanding.

You are to research or acquire plasterboard sheet prices and attach this price list to your email. You are not required to supply or fix cornice.

Sketch the wall in Plan View (not to scale), dimension it with relevant measurements, and position the door on the right side of your plan view sketch and then calculate the plasterboard required and approximate waste expressed as a percentage (%) for internally lining this wall.

Estimate the cost of the job, including supplying plasterboard materials fixing setting, finishing and sanding plus labour. Then write a covering email to be sent to the client. You must show your methods for calculating cost of sheets, waste, plus fixing, setting, finishing and sanding.

Attach your quote, sketch, calculations and pricing list and email this to your Trainer/Assessor (details provided by them).

DRAFT AREA**COMPUTATION:**

Note:

- Use 10mm RE Plasterboard 2400x1200 @ \$3.29 per m² or \$9.48 per sheet.
- No deductions to door opening.

$$\begin{aligned}\text{Qty} &= 11.0 \times 2.4 \\ &= 26.4\text{m}^2 + 5\% \text{ wastage} \\ &= 26.4\text{m}^2 + 1.32 \\ &= 27.72\text{m}^2\end{aligned}$$

$$\begin{aligned}\text{\# of sheets} &= 27.72\text{m}^2 / (2.4 \times 1.2) \\ &= 9.625 \text{ or } \underline{10 \text{ sheets}} \text{ (answer)}\end{aligned}$$

**DRAFT AREA**

MATERIALS	QTY	UOM	UNIT PRICE	TOTAL
10mm RE Plasterboard 2400x1200	10	sheets	\$ 9.48	\$ 94.80
Ancillaries (stud glue, screws, fixin, finishing, sanding)	1	item	\$ 315.00	\$ 315.00
Total Materials				\$ 409.80
LABOUR	QTY	UOM	RATE	TOTAL
2 tradesman first day (8 hours) + 1 tradesman second day (8 hours) = 24 hours	24	hours	\$ 51.50	\$ 1,236.00
Total Labour				\$ 1,236.00
SUBTOTAL				\$ 1,645.80
PROFIT / MARGIN 15%				\$ 246.87
TOTAL PRICE				\$ 1,892.67
GST 10 %				\$ 189.27
TOTAL AMOUNT				\$ 2,081.94

COVERING EMAIL LETTER:

Subject: Quotation 1001A - Internal Walls

Dear Mr. Davey Jones-Locker,

I am pleased to submit a quotation as attached for plastering an internal wall to your house build as discussed over the phone.

If you have any questions with regards to this quotation, please don't hesitate to contact me.

Sincerely,

Genevieve Inclan
Licensed Plasterer

INCLAN PLASTERER

2633 Gold Coast Highway,
Broadbeach, Qld 4218
Phone: 07 5667 9022

Answer



QUOTATION

VALID UNTIL: December 30, 2018
PREPARED BY: Genevieve Inclan

[illegible]



Everything else is just plasterboard

CEMINTEL®

HIMMEL
INTERIOR SYSTEMS

Cree8 Constructions Pty Ltd

ABN 55 008 631 356			Account Number: 552242	
CSR Building Products Limited			Current 19-Jul-18	
Material Group	Material Number	Description	UOM	Net Price (GST exclusive)
G16	10023	6.5mm RE Gyprock Flexible Plasterboard	M ²	\$5.68
G01	10034	10mm RE Gyprock Plus Plasterboard	M ²	\$3.29
G02	10048	13mm RE Gyprock Plasterboard	M ²	\$3.48
G05	10073	10mm RE Gyprock Supaceil	M ²	\$4.76
G06	10000	10mm RE Gyprock Aquachek	M ²	\$5.65
G07	10009	13mm RE Gyprock Aquachek	M ²	\$6.74
G18	26966	10mm RE Gyprock Soundchek	M ²	\$6.55
G19	10078	13mm RE Gyprock Soundchek	M ²	\$6.84
G21	10121	13mm RE Gyprock Impactchek	M ²	\$12.51
G03	10059	13mm SE Gyprock Plasterboard	M ²	\$5.33
G20	10128	13mm Gyprock Perforated Plasterboard	M ²	\$21.60
G42	93508	10 mm RE SuperChek	M ²	\$8.12
G17	90752	Gyprock Ec08 Fire Re 13mm	M ²	\$14.53
G47	97243	Gyprock Ec08 Partition Re 13mm	M ²	\$6.88
G48	97248	Gyprock Ec08 Impact Re 13mm	M ²	\$12.51
G49	135275	Gyprock Sensitive RE 10mm (NEW)	M ²	\$6.55
G08	10016	13mm RE Gyprock Fyrchek	M ²	\$5.51
G10	10022	16mm RE Gyprock Fyrchek	M ²	\$6.23
G09	10124	13mm RE Gyprock Fyrchek MR	M ²	\$8.06
G11	10125	16mm RE Gyprock Fyrchek MR	M ²	\$10.69
G04	117832	16mm RE EC08 Complete	M ²	\$13.78
G04	122122	13mm RE EC08 Complete	M ²	\$11.43
G12	10114	25mm RE Gyprock Shaft Liner Panels	M ²	\$13.13
Gyprock™ Cove Cornice				
G26	10132	55mm Gyprock Cove Cornice	L/M	\$1.31
G27	11768	75mm Gyprock Cove Cornice	L/M	\$1.63
G28	10065	90mm Gyprock Cove Cornice	L/M	\$1.68
Gyprock™ Architectural Cornice Profiles				
G29	116776	Cornice Alto (90mm 4800)	L/M	\$4.04
G29	10080	Cornice Tempo (90mm 4800)	L/M	\$4.12
G30	17846	Cornice Symphony (75mm 4800)	L/M	\$3.38
G29	19216	Cornice Concerto (90mm 4800)	L/M	\$3.96
G29	115542	Cornice Trio (75mm 4800)	L/M	\$3.80
G40	116774	Cornice Aria (75mm 4800)	L/M	\$3.77
G40	134464	Cornice Presto (90mm x 15mm 4800)W	L/M	\$3.36
G40	134922	Cornice Duo (50mm 4800)	L/M	\$4.08



Q17. There are many different ways of estimating project costs. You can use your past experience, or 'square metre' rates but if you are unfamiliar with estimating and pricing then you should resort to the *materials and labour method* of costing using an item-by-item approach which is considered as the best industry approach to estimating.

What are at least three of the nominated methods for estimating?

Answer

1. Costing by area
2. Costing by material and labour
3. Costing by a costing guide or estimating manual

☐

Q18. Name some of the circumstances to consider in relation to labour adjustment factors when estimating a project for construction.

Answer

- Add 10% to 15% when working temperatures are below 40 degrees or above 95 degrees.
- Add 15% to 25% for work on a ladder or a scaffold, in a crawl space, in a congested area or remote from the material storage point.
- Deduct 10% when the work is in a large open area with excellent access and good light.
- Include all productive labor normally
- Add 1% for each 10 feet that materials must be lifted above ground level.
- Add 5% to 50% for tradesmen with below average skills.
- lent on site. Deduct 5% to 25% for highly motivated, highly skilled tradesmen.
- Deduct 10% to 20% when an identical task is repeated many times for several days at the same site.
- Add 30% to 50% on small jobs where fitting and matching of materials is required, adjacent surfaces have to be protected and the job site is occupied during construction.
- Add 25% to 50% for work done following a major flood, fire, earthquake, hurricane or tornado while skilled tradesmen are not readily available. Material costs may also be higher after a major disaster.
- Add 10% to 35% for demanding specs, rigid inspections, unreliable suppliers, a difficult owner or an inexperienced architect.

☐

Q19. If a bricklayer lays 600 bricks in an eight (8) hour day, what is the average number of bricks laid per hour by the bricklayer?
Tick your response.

Answer

Choice	Possible Answers
☐	65
☐	70
☐	55
☐	90
☒	75
☐	105
☐	85

☐

Q20. What and where are some of the potential sources you could go to in choosing your suppliers for goods and services?

Answer

Online is the best way to locate suppliers such as manufacturers and wholesalers. They may also advertise in the Yellow Pages. Attending industry events and exhibitions is another good way to find suppliers and examine their products and services. You can also use your [networks](#) to find suppliers.

☐

Q21. What are some of the primary (key) factors for choosing your suppliers?

Answer

1. Price
2. Reliability
3. Stability
4. Location

☐

Q22. What are some of the ways you could communicate with your suppliers for gaining quotes?

Answer

- written request
- email request
- faxed request
- telephone request
- verbal request



Q23. Explain the concept of a 'Labour Only' quote?

Answer

The labour cost component is worked out with reference to industry manuals such as *Cordell's* or *Rawlinsons* which provide cost estimates for reference.

A sub-contractor can quote for labour on an hourly basis (eg \$70 per hour) for a particular job without specifying the time to complete the job. This charge covers the overheads and profit in running their business.

Alternatively, labour can be quoted as part of the cost of construction. In this type of quote, labour can be quoted in three different ways:

- Per unit: installation of doors is usually quoted per unit
- Per lineal metre: the cost of building walls to a specified height such as 2400 mm may be quoted per lineal metre of wall length
- Per square metre: the cost of building wall may be quoted on the floor area in square metres



*You will be provided an allocated period by your instructor to complete this task.
You may use appropriate costing software programs in completing this task.*

Q24. Referring to the supplied set of house plans, you must do the following scheduling and costing:

- Identify and nominate a supplier/s and schedule the materials and cost the internal and external timber wall framing.
- Identify and nominate a supplier/s and schedule the materials and cost the foundations and lower floor concrete slab including the schedule and costing for reinforcement.
- Identify and nominate a supplier/s and schedule the materials and cost for the sub floor framing and the flooring for the upper floor plan.
- Calculate the architrave and skirting required for the fit out of the upper floor only in lineal metres.
- Calculate the wet area tiles for the upper floor only which are client chosen for both floors and walls with the wall tiles 250 x 100 and floor tiles 300 x 300.
- Estimate the labour only cost to tile all the wet areas only in the home. The tiler charges labour only \$44.00 per square metre.
- Determine the roofing material and number of square metres of it that are required.
- Complete the aluminium windows and doors schedule and other external doors schedule for the lower floor only.
- Complete a full internal doors schedule for the lower floor only. N.B. Assume all doors are flush panel 2040mm in height and 35mm thick.
- Estimate the labour only cost for hanging all doors on the lower floor – if a tradesman takes 2 hours to jamb an opening, hang the door, fit the door furniture, door stops, architrave and fit a door-open-restraint. The hourly rate is \$27.80 plus 20% on costs.

Answer

a.				
Supplier: Finlayson				
Internal Wall Framing (Lower & Upper Floor)				
MATERIALS	QTY	UOM	UNIT PRICE	AMOUNT
70x35 F5 stud @ 450ctr	677	lm	\$ 2.40	\$ 1,624.80
70x35 F5 top plate	112.6	m	\$ 2.40	\$ 270.24
70x35 F5 bottom plate	112.6	m	\$ 2.40	\$ 270.24
35x70 F5 noggings 1 row	112.6	m	\$ 2.40	\$ 270.24
fixings	304.02	m2	\$ 1.00	\$ 304.02
Total Material Cost				\$ 2,739.54



Supplier: Finlayson, Bowens

External Wall Framing				
MATERIALS	QTY	UOM	UNIT PRICE	AMOUNT
Lower Floor (77.71m long x 3m high)				
90x35 F5 stud @ 450ctr	520	LM	\$ 2.67	\$ 1,388.40
35x90 top plate	155.42	LM	\$ 2.67	\$ 414.97
35x90 bottom plate	77.71	LM	\$ 2.67	\$ 207.49
35x90 F5 noggings 1 row	77.71	LM	\$ 2.67	\$ 207.49
fixings, etc	233.13	m2	\$ 3.00	\$ 699.39
lintels over opening				
90x45 F8	4.99	LM	\$ 5.14	\$ 25.65
140x45 F14	4.42	LM	\$ 12.31	\$ 54.41
170x45 F17	8.83	LM	\$ 21.74	\$ 191.96
240x45 LVL	9.45	LM	\$ 33.29	\$ 314.59
studs @ side of opening				
70x35	132	LM	\$ 2.40	\$ 316.80
70x45 F8	54	LM	\$ 4.09	\$ 220.86
Upper Floor (53.15m long x 3m high)				
70x35 F5 stud @ 450ctr	356	LM	\$ 2.40	\$ 854.40
70x35 F5 top plate	106.3	LM	\$ 2.40	\$ 255.12
70x35 F5 bottom plate	106.3	LM	\$ 2.40	\$ 255.12
35x70 F5 noggings 1 row	53.5	LM	\$ 2.40	\$ 128.40
fixings, etc	159.45	m2	\$ 3.00	\$ 478.35
lintels over opening				
90x45 F8	5.46	LM	\$ 5.14	\$ 28.06
120x45 F8	3.6	LM	\$ 13.20	\$ 47.52
140x45 F14	1.52	LM	\$ 12.31	\$ 18.71
170x45 F17	5.42	LM	\$ 21.74	\$ 117.83
240x45 LVL	2.05	LM	\$ 33.29	\$ 68.24
studs @ side of opening				
70x35	144	LM	\$ 2.40	\$ 345.60
Total Material Cost				\$ 6,639.37

b.

C.

Floor Area = 123.4m²

Supplier: Bowens

MATERIALS	QTY	UO M	UNIT PRICE	AMOUNT
FLOOR SHEETING:				
19mm Structural Plywood (incl. 10% wastage)	135.74	m ²	\$ 15.00	\$ 2,036.10
Fixings	135.74	item	\$ 5.00	\$ 678.70
FLOOR FRAMING:				
HJ200, 170x45 @ 450ctrs floor joist	275	LM	\$ 21.00	\$ 5,775.00
170x63 Treated Joist	9.2	LM	\$ 25.99	\$ 239.11
200x63 LVL Bearer	2.4	LM	\$ 38.50	\$ 92.40
45x70 F8 Nailing Plate	46	LM	\$ 8.91	\$ 409.86
70x35 F5 to web	6	LM	\$ 2.40	\$ 14.40
150x35 Nailing Plate	6	LM	\$ 16.75	\$ 100.50
90x45 F8 pine floor joist @ 450ctrs	7	LM	\$ 5.14	\$ 35.98
fixings, bolt, tie, hanger, etc.	135.74	m ²	\$ 10.00	\$ 1,357.40
Total Material Cost				\$ 10,739.45

d. Timber Skirting (Upper Floor), Qty = 99.4 LM

Timber Door Architraves (Upper Floor), Qty = 41 LM

e. Floor Tiles:

Upper Floor, Area = 16m² / (0.3 x 0.3)

= 177.78 tiles + 10% wastage

= 199.56 or 200 floor tiles @ 300x300

Wall Tiles:

Upper Floor; Assumed wall tiles to be up to ceiling height @ 2400, all sides except where there is joinery, vanity, etc.

Area = 18.6m long x 2.4m high

= 44.64m² / (0.25 x 0.1)

= 44.64 / .025

= 1785.6 + 10% wastage

= 1,964.16 or 1,965 wall tiles @ 250x100

f. Floor Tiles, Labour Cost = \$44 per m² x 16m²

= \$704.00

Wall Tiles, Labour Cost = \$44 per m² x 44.64m²

= \$1,936.00

Total Labour Cost = **\$2,640.00** (Upper Floor Only)

g. Lower Floor Garage; 0.42BMT Klip Lok Roof Sheeting,

Area = 64m² approx.

Lower Floor Roofing; 0.42BMT Colorbond Trimdek Roof Sheeting,

Area = 49m² approx.

Upper Floor Roofing; 0.42BMT Zinalume Trimdek Roof Sheeting,

Area = 170m² approx.

Answer

h.



WINDOW SCHEDULE		
LEVEL	WINDOW NO.	QUANTITY
LF	09-06	2
LF	09-09	1
LF	09-15	1
LF	12-09	1
LF	18-09	3
LF	18-18	1
LF	21-15	2
LF	21-16	1
LF	SD 21-30	2
LF	SD 21-36	1

EXTERNAL DOOR SCHEDULE					
LEVEL	DESCRIPTION	DOOR TYPE	DOOR SIZE		QTY
			Length	Height	
LF	Bath Door	External Door	820	2040	1
LF	Laundry Door	External Door	820	2040	1
LF	Entry Door	External Door	820x820	2040	1

i.

INTERNAL DOOR SCHEDULE						
LEVEL	DESCRIPTION	DOOR TYPE	DOOR SIZE			QTY
			Length	Height	Thickness	
LF	Pantry Door	Flush Panel	620	2040	35	1
LF	Store Door	Flush Panel	720	2040	35	1
LF	Bath Door	Flush Panel	770	2040	35	1
LF	Laundry Door	Flush Panel	820	2040	35	1
LF	Store Door	Flush Panel	820	2040	35	1
LF	Study Door	Flush Panel	820	2040	35	1
LF	Garage Internal Door	Flush Panel	870	2040	35	1
LF	Rumpus Door	Flush Panel	720x720	2040	35	1

j. Hourly Rate = \$27.80 + 20% on cost
= \$27.80 + \$5.56
= \$33.36 per hour

Total Labour Cost = \$33.36 per hour x 2 hours x 9 doors (upper floor only)
= \$600.48 (Answer)