

THE PAPUA NEW GUINEA UNIVERSITY OF TECHNOLOGY  
THE DEPARTMENT OF ARCHITECTURE AND CONSTRUCTION MANAGEMENT  
SECOND SEMESTER EXAMINATION  
FIFTH YEAR BACHELOR IN BUILDING  
BL 502 – QUANTITY SURVEYING & ESTIMATING 5

Room: ST1  
Date: Wednesday 2<sup>nd</sup> November 2022  
DURATION: 3 Hours  
Time: 08:20 – 11:30 am

Instructions to Candidates

1. You have 10 minutes to read the paper. Do not begin writing during this time.
2. Fill in the Attendance Slip with your name and student I.D. number now
3. There are five (5) pages to this exam paper including drawing attachment.
4. **There are only three (3) Questions** and you are to **answer all these questions.**
5. ALL ANSWERS MUST BE WRITTEN IN THE ANSWER BOOK (S) PROVIDED
6. Each question must be answered starting on a New Page.
7. Notes and Textbooks are not allowed in the Test Room.  
Only materials allowed and to be brought in by students are;
  - Calculators
  - Biro and Rulers

WRITE YOUR NAME AND IDENTIFICATION NUMBER CLEARLY ON THE FRONT PAGE. DO IT NOW!

TOTAL MARKS = 100 MARKS

**Question One****[50 marks]**

Bill, measure, and extend (Take off) the following quantities for each item. (Refer to Drawing attached)

- A. 2040 x 840 x 40mm solid core door fixed with 3 No 100mm brass butt hinges to timber door frames (D1).....**No**
- B. Metal, adjustable socket louvre frames with furniture, fixed to timber window frames.....**No**
- C. Clear louvre blades, 150 x 4mm thick, fixed to metal louvre frames.....**M**
- D. CP deadlock set with furniture, fixed to solid core door and frames.....**No**
- E. 0.4mm custom orb corrugated roofing sheet, 760mm wide, with two corrugation side laps and 75mm end laps, to slope exceeding 20 degrees and fixed with screws and washers, to timber roof framing.....**M<sup>2</sup>**
- F. 300mm girth zincalume ridge capping, with 75mm end laps, fixed with screws and plastic washers to timber roof framing.....**M**
- G. 200 x 200 x 4mm thick plain white ceramic tile, grout jointed to 4mm wide pointing, fixed with cement adhesive to horizontal concrete floor.....**M<sup>2</sup>**
- H. Prepare and apply one coat masonry sealer and two coats masonry paint to internal and external masonry block walls.....**M<sup>2</sup>**
- I. Prepare and apply one coat undercoat and two coats finishing coat to ceiling linings and soffit linings.....**M<sup>2</sup>**
- J. Prepare, stop and apply two coats of varnish to solid core timber wooden doors.....**M<sup>2</sup>**

**Question Two****[40 marks]**

Compile the Unit Rates for the items in Question One.

**Question Three****[10 marks]**

Create and complete the Bill of Quantity for the items stated in Question One and Two.

END OF EXAM

DATA SHEET (pages 3 and 4)

Use these data to compile the Unit Rates.

<b>Materials:</b>	<b>Cost:</b>
NOTE: Delivery to site cost is inclusive of price of materials	
1. Price of solid core door ex supplier	K150.00/no
a) Price of 100mm brass butt hinges (pair) with furniture ex supplier	K2.50/no
2. Price of louvre frames (pair) with furniture ex supplier	K12.50/no
3. Price of louvre blades per Metre ex supplier	K5.60/m
4. Price of CP deadlock set with furniture ex supplier	K105.00/no
5. Price of custom orb roofing sheet per Metre ex supplier	K12.50/m
a) Screws and washers to roofing sheet	K0.80/m <sup>2</sup>
b) Silicone to roofing sheet	K0.50/m <sup>2</sup>
6. Price of ridge capping, 2.40m standard length ex supplier	K15.60/standard length
a) Screws and washers to ridge cap	K0.50/m
b) Silicone to ridge cap	K0.25/m
7. Price of 200 x 200 x 4mm ceramic tile, 15 tiles per pack ex supplier	K18.50/pack
a) Adhesive, 0.6 litres @ K2.50/L	
b) Cement grout, 0.5kg @ K2.30/kg	
8. Price of 4 Litres masonry sealer paint tin ex supplier	K150.00/4L
9. Price of 4 Litres masonry paint tin ex supplier	K160.00/4L
10. Price of 4 Litres undercoat paint tin ex supplier	K180.00/4L
11. Price of 4 Litres finishing coat paint tin ex supplier	K200.00/4L
12. Price of 4 Litres varnish tin ex supplier	K120.00/4L
13. Price of putty @ K16.00/5kg	
14. Sandpaper @ K20.00/100sheets ex supplier	
15. Wastage to materials @ 10%	
16. Offload and stacking	K1.90
NOTE: Use this labour for all buildup of rates calculations	
<b>Labour:</b> 1 x Tradesman @ K5.00/hr assisted by 2 x Labourers @ K3.60/hr	
<b>Outputs:</b>	
Fixing of door with butt hinges @1.5 hr / No	
Fixing of louvre frames @ 30 minutes / No	
Fixing of louvre blades @ 15 minutes / M	
Fixing of CP deadlock set @ 45 minutes / No	
Fixing of roofing sheet @ 3.5m <sup>2</sup> / hr	
Fixing of ridge capping @ 4m / hr	
Fixing ceramic tile @ 1.3hr / 100 tiles	
<b>Profit + on-cost: 10%</b>	

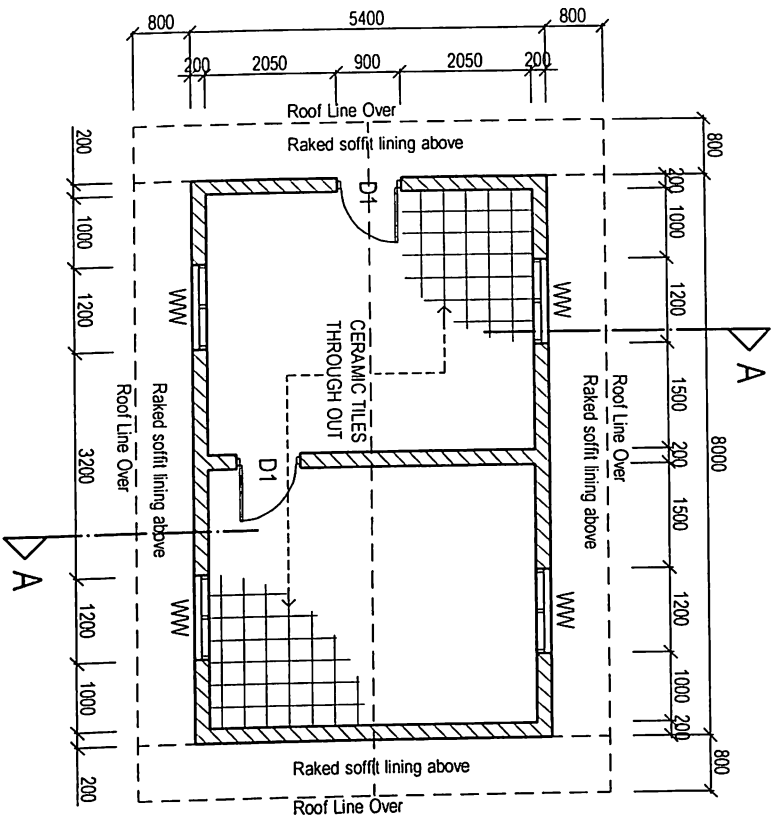
## Painting Outputs for decoration and painting works

Table 1      Covering capabilities per 100m<sup>2</sup>

<b>Material:</b>	<b>Surface:</b>	<b>Quantity required to cover 100m<sup>2</sup></b>
Masonry sealer	Roughcast - masonry	25 Litres
Masonry paint	Roughcast - masonry	29 Litres
Undercoat	Timber / Wood	7.2 Litres
Finishing coat	Timber / Wood	8.3 Litres
Varnish	Timber / Wood	7.0 Litres
Sandpaper	Preparation	8 sheets
Putty for stopping	Timber / Wood	2.5kg

Table 2      Labour outputs per 100m<sup>2</sup>

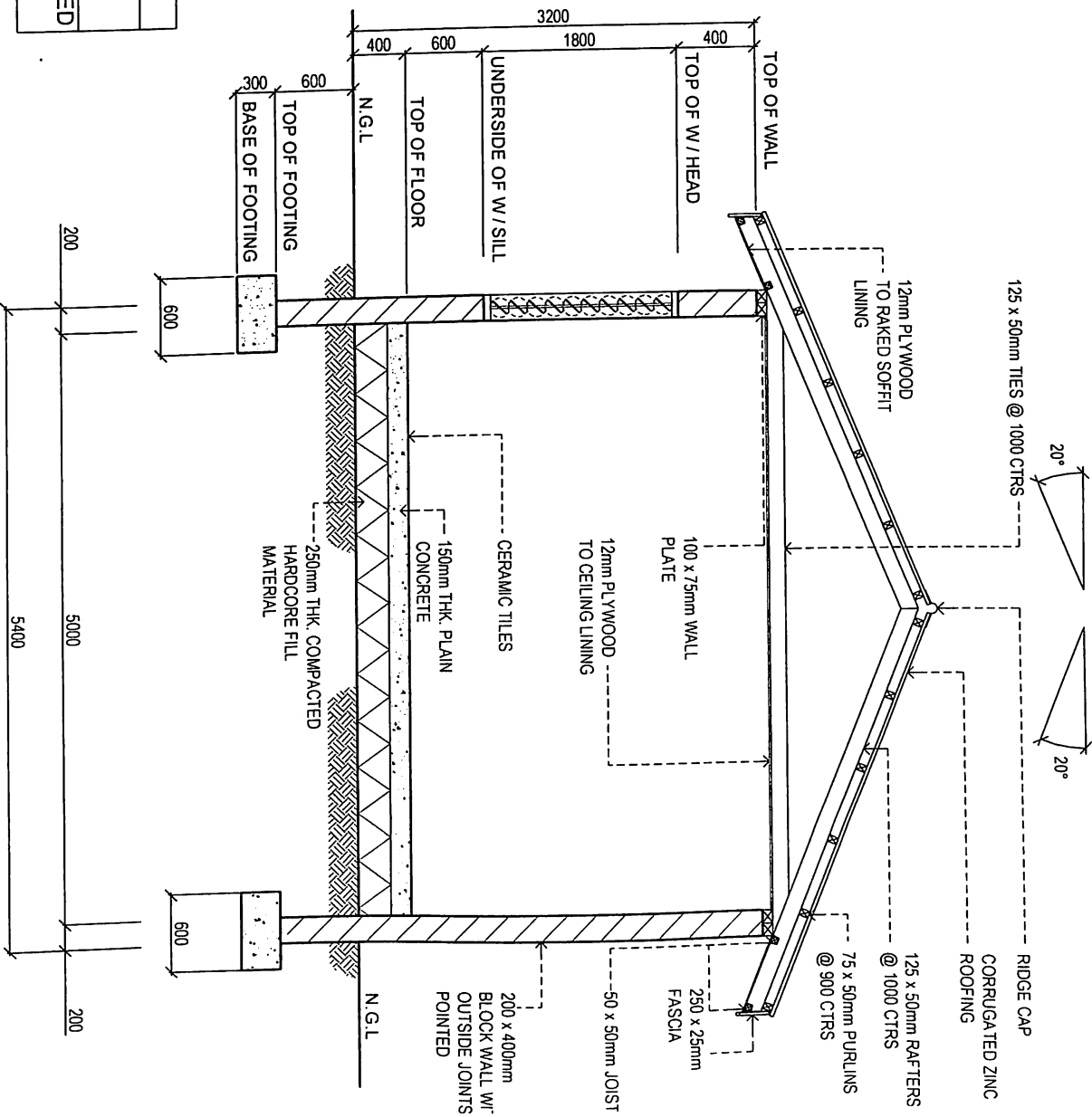
<b>Operation and surfaces</b>	<b>Labour hour per 100m<sup>2</sup></b>
Rubbing down wood surface (preparation)	4.5
Rubbing down masonry wall (preparation)	5.5
Masonry sealer to roughcast - masonry	7.3
Masonry paint to roughcast - masonry	7.0
Undercoat to Timber / Wood	5.0
Finishing coat to Timber / Wood	4.5
Varnish to Timber / Wood	6.3
Stopping	6.0



DOORS / WINDOW SCHEDULE	
D1	SOLID CORE DOOR IN 100 x 50mm HWD FRAME. DOOR OPENING IS 2100 x 900mm
WW	100 x 50mm (2 x BAY) WINDOW FRAMES FIXED TO THE WALL

# FLOOR PLAN

SCALE 1:100



# SECTION A-A

SCALE 1:50