

THE HONG KONG INSTITUTE OF SURVEYORS  
QUANTITY SURVEYING DIVISION  
ASSESSMENT OF PROFESSIONAL COMPETENCE  
FINAL ASSESSMENT – 17<sup>TH</sup> & 18<sup>TH</sup> SEPTEMBER 2014  
PRACTICE PROBLEMS / PART II WRITTEN TEST  
NOTES TO ASSESSORS



## SMART QS PRACTICE

## ATTACHMENT 'A'

## BILLS OF QUANTITIES

Ref. 號	Item 項目	Quantity 數量	Unit 單位	Rate 單位	Total 總額
		Given BQ Qty		Bulk check result	Assessor's Notes
<b>INTERNAL WALLS AND PARTITIONS</b>					
Reinforced concrete Grade 45D/20 in					
1.	100 mm Wall	450	m <sup>3</sup>		Wall Area (m <sup>2</sup> ) 4,500
2.	150 mm Wall	300	m <sup>3</sup>		Conc vol. in m <sup>3</sup> / thk of wall 2,000
3.	200 mm Wall	125	m <sup>3</sup>		Conc vol. in m <sup>3</sup> / thk of wall 625
	Formwork to				= wall area [A] 7,125
4.	Wall	24,250	m <sup>2</sup>		14,250 m <sup>2</sup> Qty 24,250 m <sup>2</sup> Is incorrect
Deformed high yield steel bar reinforcement					
5.	Bars 32 mm diameter and below in general reinforcement	42,000	kg		Total kg 131,250
6.	Bars above 32 mm diameter in general reinforcement	76,150	kg		Ratio = Kg / Conc vol.
7.	Bars below 12 mm diameter in links, stirrups and binders	13,100	kg		Total conc m <sup>3</sup> 875
8.	Not used	-	-		Total (5) to (8) = 131,250 kg divided by Conc Qty (1) to (3) = 875 m <sup>3</sup> = 150 kg/m <sup>3</sup> Ratio = between 100 to 200 kg/m <sup>3</sup> is acceptable
<b>EXTERNAL WALLS</b>					
Reinforced concrete Grade 45D/20 in					
9.	150 mm Wall	300	m <sup>3</sup>		Wall Area (m <sup>2</sup> ) 2,000
10.	200 mm Wall	410	m <sup>3</sup>		Conc vol. in m <sup>3</sup> / thk of wall 2,050
	Formwork to				= wall area [B] 4,050
11.	Wall	2,750	m <sup>2</sup>		8,100 m <sup>2</sup> Qty 2,720 m <sup>2</sup> Is incorrect
Deformed high yield steel bar reinforcement					
12.	Bars 32 mm diameter and below in general reinforcement	497,000	kg		Total kg 1,036,600
13.	Bars above 32 mm diameter in general reinforcement	518,300	kg		Total conc m <sup>3</sup> 710
14.	Bars below 12 mm diameter in links, stirrups and binders	21,300	kg		Ratio = Kg / Conc vol.
15.	Not used	-	-		Total Qty (12) to (15) / Qty (8) to (10) = 1,460 kg/m <sup>3</sup> grossly in error
		Carried to Collection	\$		
CONTRACT NO. 123 MAIN CONTRACT				BQ/1	

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		Given BQ Qty		Bulk check result	Assessor's Notes
<b>PRECAST CONCRETE WALL PANELS TO EXTERNAL WALLS</b>					
Precast reinforced concrete wall panel construction constructed of concrete of minimum strength of 40 mPa of the required profile and corbels 550 mm wide x 300 mm high including all necessary reinforcement, moulds, finished with class F3 or better formwork finishes: hoisting and setting in position and bedding, complete with anchorages, sealants and all necessary fixing accessories as described and as shown on Drawings No. ST-001					
16.	3000 x 1500 x 150 mm Thick typical precast wall panel (Ref. PC1)	10	No.		Ext face area (m <sup>2</sup> ) 45
17.	3000 x 1500 x 200 mm Thick typical precast wall panel (Ref. PC2)	45	No.		Internal face area (m <sup>2</sup> ) 203
18.	3500 x 1500 x 200 mm Thick typical precast wall panel (Ref. PC1)	25	No.		No. of panels x panel area 10 No. x 4.50 m <sup>2</sup>
<b>INTERNAL WALL FINISHES</b>					
Cement and sand (1:3) screeds					
19.	15 mm Screed on walls and columns to receive ceramic mosaic tiling	102	m <sup>2</sup>		Ditto 45No. X 4.50 m <sup>2</sup>
20.	Ditto to receive homogeneous tiling	1,040	m <sup>2</sup>		Ditto 25 No. x 5.25 m <sup>2</sup>
Cement and sand (1:3) plaster steel trowel finish					
21.	15 mm Plaster on walls and columns	38,000	m <sup>2</sup>		Ext face area [C] 379
50 x 50 x 10 mm XYZ Ceramic mosaic tiling laid on bedding and slurry, fixed with proprietary tile adhesive and tile grouting, all as described and in accordance with the manufacturer's instruction					
22.	Walls and columns	102	m <sup>2</sup>		Screed area = tile area Qty (19) = Qty (22)
23.	Walls and columns	1,040	m <sup>2</sup>		Qty (20) = Qty (23)
		Carried to Collection	\$		
CONTRACT NO. 123 MAIN CONTRACT				BQ/2	



## SMART QS PRACTICE

## ATTACHMENT 'A'

## BILLS OF QUANTITIES

Ref. 编号	Item 项目	Quantity 数量	Unit 单位	Rate 单价	Total 总额
	<b>EXTERNAL WALL FINISHES</b>	<b>Given BQ Qty</b>			<b>Bulk check result</b>
	Cement and sand (1:3) plaster steel trowel finish				
24.	15 mm Plaster on walls and columns	4,050	m <sup>2</sup>		Matches with ext. Insitu r.c. wall area = paint area
	<b>INTERNAL PAINTING</b>				
	Prepare and apply one coat of water-based alkaline resistant primer and two top coats of water-based acrylic resin emulsion paint on				
25.	Plastered walls and columns	25,000	m <sup>2</sup>		17,537 m <sup>2</sup> Qty 25,000 m <sup>2</sup> is incorrect
	<b>EXTERNAL PAINTING</b>				
	Prepare and spray apply one primer coat of water-based multi-functional epoxy resin sealer, one coat of water-based acrylic resin texture coat, one mid-coat and one topcoat on				
26.	Fairface walls	36	m <sup>2</sup>		379 m <sup>2</sup> Qty 36 m <sup>2</sup> does not match with precast wall panel area
27.	Plastered walls and columns	4,050	m <sup>2</sup>		Matches with ext. Insitu r.c. wall area and plaster area
Carried to Collection \$					

## Assessor's Notes

Overall external wall area  
Qty(24) = ext wall area  
(insitu r.c.) Qty(B) = paint  
area Qty(27)

Paint area Qty (25) = Plaster  
area Qty (21)

Paint area Qty (26) =  
Precast wall area Qty (D)

Paint area Qty (27) = Ext.  
wall area (insitu r.c.) Qty(B)  
= Plaster area Qty (21)



## Question No. 3 – Editing of BQ Descriptions

You are a Consultant QS currently preparing the tender documents for piling works. Your assistant QS, John, has completed a draft BQ (Attachment 'B') for your review and editing. You should write notes of comments with reasons for his attention.

You are not required to make any adjustment to the quantities.

Background information:

- Type of piles : 1.50 m diameter bored piles without lining or bell-out
- No. of Piles : 10 No. piles
- Type of tests : Pending Engineer's specification and items to be added later
- Method of measurement : In accordance with HKSMM4 – Section V(e) "Bored Piles" (a copy of Pages 33 to 35 is attached)

[10 marks]

## Summary of Bulk Check Quantities

	Wall Area (m <sup>2</sup> )	Formwork Area (m <sup>2</sup> )	Int wall finishes (m <sup>2</sup> )	Ext wall finishes (m <sup>2</sup> )
Internal walls	7,125	14,250	14,250	
External walls (in-situ)	4,050	8,100	4,050	4,050
External walls (precast panel)	379	n/a	379	379
	11,554			
x 2 sides				
		22,350 m <sup>2</sup>	18,679 m <sup>2</sup>	4,429 m <sup>2</sup>
Overall total:	23,108 m <sup>2</sup>		23,108 m <sup>2</sup>	

	Rebars (kg)	Conc Vol. (m <sup>3</sup> )	Ratio (kg/m <sup>3</sup> )	Reasonable Un-reasonable
Internal r.c. walls	131,250	875	150	Reasonable
External r.c. walls (insitu)	1,036,600	710	1,460	Un-reasonable