THE HONG KONG INSTITUTE OF SURVEYORS QUANTITY SURVEYING DIVISION ASSESSMENT OF PROFESSIONAL COMPETENCE FINAL ASSESSMENT – $17^{\rm TH}$ & $18^{\rm TH}$ SEPTEMBER 2013 PRACTICE PROBLEM NOTES TO ASSESSORS



Attachment to Question No. 1

PROPOSED ABC OFFICE DEVELOPMENT COST PLAN NO. 1

CONFIDENTIAL

A. SUMMARY OF COST PLAN

 Site Area
 =
 3,000 m2 (60 x 50m)

 Total Office Gross Floor Area (GFA)
 =
 36,000 m2 (387,504 sq.ft.)

 Total Construction Floor Area (CFA)
 =
 48,540 m2

CFA/GFA = 1.35

9th August 2013

	SECTION	CFA	ESTIMATED COST	UNIT COST
		(m2)	(HK\$)	(HK\$/m2 CFA)
	Site Preparation Works		3,600,000	74
	(based on awarded contract sum)			
	- Site Investigation Works			
	- Tree and Site Survey			
	- Hoardings and Covered Walkways			
	- Tree Transplant			
)	Foundations		117,810,000	2.427
Ĵ	(assume bored piles av. 40m deep from existing		,,	_,
Į	ground)			
7007	Pile Caps and Basement Slab		29,640,000	611
1	Pile Caps and Basement Slab		29,040,000	011
1	Basement Enclosure (1 level)		28,320,000	583
j.	Building and Building Services	48,540	740,970,000	15,265
,.	Building and Building Services	40,540	740,970,000	13,203
	54.0	0.000	00 400 000	7.387
	5.1 Carpark (1 level; 4.5m storey ht; in basement)	3,000	22,160,000	7,387
	(Tievel, 4.5m storey fit, in pasement)			
	5.2 Office (33 floors x 1380m2)	45,540	718,810,000	15,784
	G/F: Entrance Lobby + Plant Room (6m storey ht)	40,040	7 10,010,000	10,704
	1/F to 30/F: Typical floors (4.2m storey ht)			
	+ 1 refuge floor + 1 Mechanical floor (both 5m storey ht)			
	, , ,			
	External and Landscaping Works		8,500,000	175
	External and candocaping Fronto		5,555,555	110
		48,540	928,840,000	19,136
		40,040	020,040,000	10,100
	Preliminaries (15% of items 2 to 6)		138,790,000	2,859
i.	Contingencies (10% of items 2 to 7)		106,400,000	2,192
				2,1,5
	Total Anticipated Construction Cost	48,540	1,174,030,000	24.187
	TOTAL ATTICLIDATED CONSTITUCTION COST			/4.18/

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THE HONG KONG INSTITUTE OF SURVEYORS QUANTITY SURVEYING DIVISION ASSESSMENT OF PROFESSIONAL COMPETENCE FINAL ASSESSMENT – 17TH & 18TH SEPTEMBER 2013 PRACTICE PROBLEM NOTES TO ASSESSORS



Attachment to Question No. 1

PROPOSED ABC OFFICE DEVELOPMENT COST PLAN NO. 1

A. SUMMARY OF COST PLAN (Cont'd)

Exclusions

- Land cost or conversion premium.
- 2. Financing charges and developer's overheads.
- 3. Professional fees, marketing fees and legal fees.
- 4. Pre-opening and promotion expenses.
- 5. All sub-circuits for power supply and lighting at office tenant areas.
- 6. The cost of forming multi-tenancy corridors and partitions at office floors.
- Fluctuation in construction costs from July 2013 price level to those at the date of tenders for the various construction packages.

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Attachment to Question No. 1

PROPOSED ABC OFFICE DEVELOPMENT COST PLAN NO. 1

B. <u>ELEMENTAL BREAKDOWNS FOR BUILDING AND BUILDING SERVICES</u>

I. CARPARK (4.5m floor height)

Construction Floor Area (CFA) =

3,000 m2

9th August 2013

	Element			Elemental Total	Elemental Unit Cost	
				(HK\$)	(HK\$/m2 CFA)	_
1.	Carcase					
	1.1 Frame and slabs (assume same as office)		10,140,000	3,380	
	1.2 Internal walls	,		600,000	200	
	1.3 Doors and Fire Shutters			600,000	200	
]	11,340,000] [3,780]
2.	Finishings					
	2.1 Roof finishes			900,000	300	
	2.2 Floor finishes			1,050,000	350	
,	2.3 Internal wall finishes			750,000	250	
	2.4 Ceiling finishes			600,000	200	
	2.5 Decor, graphics and sig	nage		300,000	100	
]	3,600,000] [1,200]
3.	Furniture and Fittings					
	3.1 Metal works and sundrie	es		240,000	80	
]	240,000] [80]
4.	Services					
	4.1 Plumbing and disposal			900,000	300	
	4.2 Electrical			1,800,000	600	
	4.3 Fire services			1,050,000	350	
	4.4 MVAC			2,100,000	700	
	4.5 Lifts				d in office cost)	
	4.6 Carpark control system			800,000	267	
	4.7 Builders work, profit and	l attendance		330,000	110	
]	6,980,000] [2,327]
				00.100.000		
			Total	22,160,000	7,387	

THE HONG KONG INSTITUTE OF SURVEYORS QUANTITY SURVEYING DIVISION ASSESSMENT OF PROFESSIONAL COMPETENCE FINAL ASSESSMENT – 17TH & 18TH SEPTEMBER 2013 PRACTICE PROBLEM NOTES TO ASSESSORS



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Attachment to Question No. 1

PROPOSED ABC OFFICE DEVELOPMENT COST PLAN NO. 1

B. ELEMENTAL BREAKDOWNS FOR BUILDING AND BUILDING SERVICES (Cont'd)

II. OFFICE

Construction Floor Area (CFA) = 45,540 m2 9th August 2013

Element		Elemental Total	Elemental Unit Cost	
		(HK\$)	(HK\$/m2 CFA)	
1.	Carcase			
	1.1 Frame and slabs	153,970,000	3,380	
	1.2 External walls	1,170,000	26	
	1.3 Internal walls	13,240,000	291	
	1.4 Doors and shutters	5,850,000	129	
	1.5 Canopies]	27000	
	1.6 Structural glazing	135,020,000	2,965	
	1.7 Curtain walls	J		
	1.8 Windows and louvres	200 250 200	0.704	
		[309,250,000] [6,791]	
2.	Finishings			
	2.1 Roof finishes	950,000	21	
	2.2 Floor finishes	39,280,000	863	
	2.3 Internal wall finishes	30,700,000	674	
	2.4 Ceiling finishes	22,500,000	494	
	2.5 External wall finishes	4,640,000	102	
	2.6 Decor, graphics and signage	7,640,000 [105,710,000	168	
		[103,710,000] [2,521]	
3.	Furniture and Fittings	٦		
	3.1 Metal works and sundries	20.440.000	440	
	3.2 Built-in furniture and fittings	20,410,000	448	
	3.3 Special lighting fittings		,	
		[20,410,000] [448]	
4.	Services	5.540.000	100	
	4.1 Sanitary fittings	5,540,000	122	
	4.2 Plumbing and disposal 4.3 Electrical and ELV			
	4.3 Electrical and ELV 4.4 Fire services			
	4.4 Fire services 4.5 MVAC	264,400,000	5,806	
	4.6 Lifts including fit out	204,400,000	5,800	
	4.7 Gondola			
	4.8 Façade lighting			
	4.9 Builders work, profit and attende	nce 13,500,000	296	
	• • • • • • • • • • • • • • • • • • • •	- 10,***		
		[283,440,000] [6,224]	
		Total 718,810,000	15,784	
		10101	10,104	

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Attachment to Question No. 1

PROPOSED ABC OFFICE DEVELOPMENT COST PLAN NO. 1

C. BACK-UP CALCULATIONS

9th August 2013

28,321,965

28,320,000

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	<u>Description</u>	Quantity	<u>Unit</u>	Rate HK\$	Amount HK\$	Total (HK\$)
Sec	ction 2 - Foundations					
a.	Bored piles; assume 2.5m dia. average 40m; allow 60 no.	11,781	m3	10,000	117,810,000	117,810,000
Sec	ction 3 - Pile Caps and Basement Slab					
a. b.	Pile caps Ground beams and slabs (basement floor area)	48,540 3,000	m2 CFA m2	450 2,600 _	21,843,000 7,800,000 29,643,000	29,640,000
Sec	tion 4 - Basement Enclosure (1 level)					
	Basement floor plan = Basement perimeter = Basement storey height = Excavation depth = Depth of sheet piles =	220 4.5 6.5	m m (4.5m + 2r		slab and pile caps)
a. b.	Excavate and cart away = 3000m2 x 6.5m = Steel sheet piles av. 13m deep (150kg/m2) = 220 x 13m x 150kg/m2 = Strutting for sheet piles (400kg/m2);	19,500 429,000 572,000	m3 kg	375 15	7,312,500 6,435,000 8,580,000	
C.	6.5m exposed height = 220 x 6.5m x 400kg/m2 =	572,000	kg	15	0,300,000	
d. e. f. g. h.	Grout curtain; assume not required 400mm RC Screen wall; 4.5m high Waterproofing to screen wall Waterproofing to basement slab Wearing slab to basement slab	990 990 3,000 3,000	m2 m2 m2 m2 m2	2,120 300 300 450	2,098,800 297,000 900,000 1,350,000	
İ.	Sundries and dewatering (5%)	-,	sum	_	1,348,665	

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Attachment to Question No. 1

BACK-UP CALCULATIONS (Cont'd)

Section 5.2 - Office Building and Building Services

9th August 2013

	Construction Floor Areas of Office =	45,540	m2			
	<u>Description</u>	Quantity	<u>Unit</u>	Rate (HK\$)	Amount (HK\$)	Total (HK\$)
1.1	Frame and slabs					
	Horizontal elements					
	Reinforced concrete, Grade 40; to slab and beam	18,216	m3	1,300	23,680,800	
	(0.4m3 per 1m2 CFA) Rebar to slab and beam (average 180kg/m3)	3,278,880	kg	10.0	32,788,800	
	Formwork to slab and beam (1.8m2 per 1m2 CFA)	81,972	m2	350	28,690,200	
	Allow 5% for miscellaneous	01,012	sum	000	4,258,000	89,420,000
	Vertical elements					
	Reinforced concrete, Grade 60; to column and structural wall (0.2m3 per 1m2 CFA)	9,108	m3	2,000	18,216,000	
	Rebar to column and structural wall (average 300kg/m3)	2,732,400	kg	10.0	27,324,000	
	Formwork to column and structural wall (1m2 per 1m2 CFA) Allow 5% for miscellaneous	45,540	m2	350	15,939,000	C4 550 000
	Allow 5% for miscellaneous		sum	_	3,074,000	64,550,000 153,970,000
						100,010,000
1.2	External walls		sum			1,170,000
1.3	Internal walls					
	150mm thick reinforced concrete wall	8,000	m2	950	7,600,000	
	150mm thick concrete block wall	2,400	m2	350	840,000	
	Toilet cubicles	600	No.	8,000 _	4,800,000 13,240,000	13,240,000
					15,240,000	10,240,000
1.4	Doors and shutters					
	Double leaf timber door to service lift lobbies	32	No.	15,000	480,000	
	Single leaf metal door to plant rooms	150	No.	15,000	2,250,000	
	Single leaf timber door to lavatories Single leaf timber door to staircases	120 192	No.	10,000 10,000	1,200,000 1,920,000	
	origin real arriver door to starredood	102	110.	10,000	5,850,000	5,850,000
1.5	Structural glazing curtain walls, windows and louvres and canopies		sum			135,020,000
2.1	Roof finishes					
2.1	Waterproofing membrane and insulation with protective	1,380	m2	600	828,000	
	cement screed and tiles.					
	Allow 15% for skirting, miscellaneous		sum	_	124,000	
					952,000	950,000
2.2	Floor finishes					
	Granite slab (PC supply rate \$3,000/m2) to entrance lobby	400	m2	4,800	1,920,000	
	Self levelling screed to tenant areas	32,100	m2	180	5,778,000	
	Raised floor without carpet to office tenant areas Granite slab (PC supply rate \$2,500/m2) to typical lift lobbies	32,100	m2 m2	700 4.000	22,470,000 1,440,000	
	Granite slab (PC supply rate \$2,500/m2) to typical lift lobbles Granite slab (PC supply rate HK\$1,000/m2) to toilets	900	m2	2.200	1,980,000	
	Homogeneous tiles to corridors to Plant Rooms & Service lift	1,000	m2	500	500,000	
	lobbies Cement and sand screeding with dustproof hardener to	3,000	m2	250	750,000	
	plant rooms	5,550		200	. 55,550	
	Cement and sand screeding and nosing tile to staircases and smoke lobbies	800	m2	400	320,000	
	Cement and sand screeding with dustproof hardener to mechanical floor and refuge floor	2,200	m2	250	550,000	
	Allow 10% for skirting, miscellaneous		sum		3,571,000	
				_	39,279,000	39,280,000

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9th August 2013

Attachment to Question No. 1

C. BACK-UP CALCULATIONS (Cont'd)

Total for Office Superstructure

ffice Building and Building Services

0001	on old office building and building octified				11.108001.2012	
	Construction Floor Areas of Office =	45,540	m2			
	<u>Description</u>	Quantity	Unit	Rate (HK\$)	Amount (HK\$)	Total (HK\$)
2.3	Internal wall finishes Granite slab (PC supply rate \$3,000/m2) to entrance lobby	1,600	m2	5,000	8,000,000	
	Plaster and paint to tenant areas	13,000	m2	150	1,950,000	
	Granite slab (PC supply rate \$2,500/m2) to typical lift lobbies	1,200	m2	4,000	4,800,000	
	Granite tiles (PC supply rate \$1,000/m2) to toilets	5,400	m2	2,200	11,880,000	
	Homogeneous tiles to corridors to plant rooms and service lift lobbies	4,000	m2	500	2,000,000	
	Skim coat plaster to plant rooms	12,000	m2	60	720,000	
	Plaster and paint to staircases and smoke lobbies	4,000	m2	150	600,000	
	Ditto to mechanical floors	5,000	m2	150	750,000 30,700,000	30,700,000
					30,700,000	30,700,000
2.4	Ceiling finishes					
	Gypsum board suspended ceiling to entrance lobby	400	m2	2,000	800,000	
	Aluminium panel ceiling to typical lift lobbies Ditto to toilets	360 900	m2 m2	600	216,000 540,000	
	Ditto to office tenant areas	32,100	m2	600	19,260,000	
_	Ditto to corridor to plant rooms & service lift lobbies	1,000	m2	600	600,000	
0	Plaster and emulsion paint to plant rooms	3,600	m2	150	540,000	
Ū	Ditto to staircases	960	m2	150	144,000	
3	Ditto to mechanical floors	2,640	m2	150	396,000 22,496,000	22,500,000
DD/3/0-2.5					22,430,000	22,000,000
2.5	External wall finishes					
	Granite slab (PC supply rate \$3,000/m2) to podium	800	m2	5,000	4,000,000	
	Ceramic tiles to lift machine rooms / roof plant rooms Allow 10% for fins and features	400	m2	550	220,000 422,000	
	Allow 10 % for fill directors			-	4,642,000	4,640,000
2.6	Decor, graphics and signage,		sum			7,640,000
3.1	Metal works and sundries,	٦				
3.2	Built-in furniture and fittings	-	sum			20,410,000
3.3	Special lighting fittings					
		7				
4.1	Sanitary fittings					5,540,000
4.2	Plumbing and disposal	7				
4.3	Electrical and ELV					
4.4	Fire services					
4.5	MVAC		sum			264,400,000
4.6	Lifts including fit out		Juli			204,400,000
	2 4 7					
4.7	Gondola Facado lighting					
4.8	Façade lighting	_				
4.9	Builders work, profit and attendance		sum			13,500,000

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718,810,000

ATTACHMENT TO QUESTION 1

THE HONG KONG INSTITUTE OF SURVEYORS QUANTITY SURVEYING DIVISION ASSESSMENT OF PROFESSIONAL COMPETENCE FINAL ASSESSMENT – $17^{\rm TH}\,\&~18^{\rm TH}$ SEPTEMBER 2013 PRACTICE PROBLEM NOTES TO ASSESSORS



Attachment to Question 1

