

Construction Measurement III

SBQ3314

Prime Cost Sum & Provisional Sum

Dr. Sarajul Fikri Mohamed

Table of contents

1. Preparation of Contract Bills
2. Purpose of Measurement PC Sums and Prov Sums
3. PC Sums & Provisional Sums: SMM 2 General Rules
4. Prime Cost Sums: Main Items
5. Provisional Sums: Main Items
6. Example of Air Conditioning Installations Item

Preparation of Contract Bills

Preparation of Contract Bills

PRELIMINARIES

+

PREAMBLES

+

MEASURED WORKS

+

PRIME COST SUMS AND PROVISIONAL SUMS

+

APPENDICES

=

CONTRACT SUM

Preparation of Contract Bills

Preliminaries

- May comprise over 30 items, only a small number of item (15-20 items) priced
- Value may account for between 8% and 15% of contract sum

Preambles

- The quality of materials, workmanship, testing and sample of materials
- The contents are usually extracted from a library.

Measured Works

- The items of work to be undertaken by the main contractor or to be sublet to domestic sub-contractors
- Trade format of elemental format.

PC & Prov Sums

- To cover specialist works not normally undertaken by general contractor.

Appendices

- Includes the tender summary, a list of the main contractors, nominated sub-contractors, price list of materials and nominated sub-contractors works to be tendered.

Purpose of Measurement PC Sums and Prov Sums

Purpose of measurement PC Sum and Prov Sum

1. To determine element and components that involved to the PC Sum and Prov. Sum
2. To measure according to the latest standard method of measurement SMM2
3. To protect the interest of the client and the contractor
4. To minimize future disagreement

PC Sums and Provisional Sums

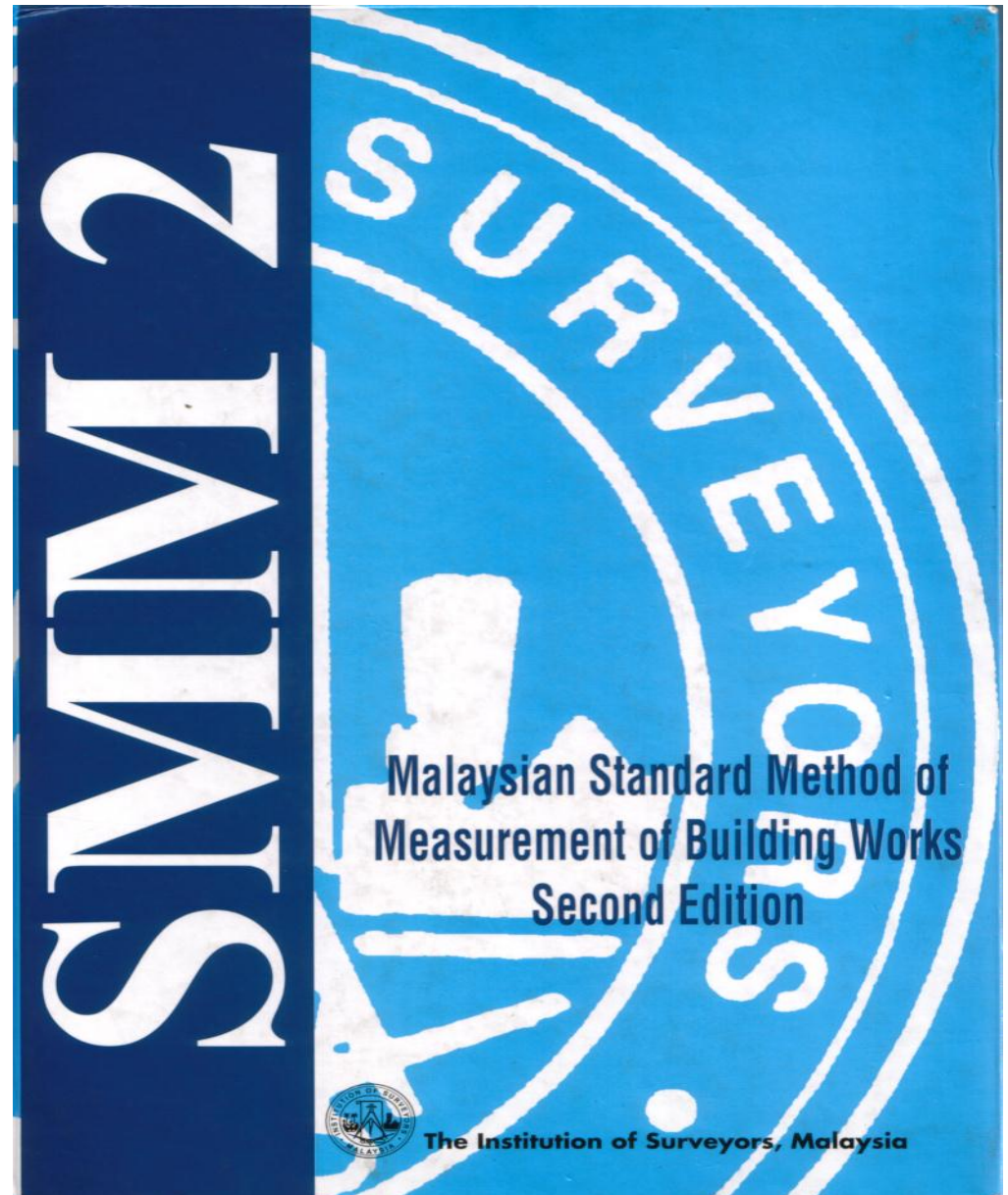
- Some aspects of a building project are not measured in detail but are included in the bills as LUMP SUM items.
- These sums of money are intended to cover specialist work not normally undertaken by the general contractor: PRIME COST SUMS.
- PC Sums cover work undertaken by nominated subcontractors, nominated suppliers and statutory undertakings. Based on quotations for items of work.
- Work which cannot entirely foreseen, defined or detailed at the time that the tendering documents are issued: PROVISIONAL SUMS.

PC Sums & Provisional Sums: SMM 2 General Rules

PRIME COST SUM AND PROVISIONAL SUM

MEASUREMENT RULES

SECTION A GENERAL RULES



Provisional Sum: Measurement Rules: Section A

A.8 PRIME COST SUM AND PROVISIONAL SUM

Information

- ‘Provisional sum’ is defined as a sum provided for work or for costs which ***cannot entirely be foreseen***, defined or detailed at the time the tender documents are issued.

Provisional Sum: Measurement Rules: Section A

GENERAL RULES

A.8 PRIME COST SUM

The term 'prime cost sum' is defined as a sum provided for work or services to be executed by a nominated sub-contractor, a government or a statutory authority or for materials or goods to be obtained from a nominated supplier.

Such sum shall be deemed to be exclusive of **any profit required and/or attendance** to be provided by the main contractor and provision shall be made for the addition thereof where applicable

Prime Cost Sums: Main Items

Prime Cost Sums : MAIN ITEMS

The Prime Cost Sums shall be expended as directed by the Superintending Officer or deducted in whole or in part if not expended

Electrical Installations

MATV, CCTV and PA System.

Air-Conditioning and Mechanical Ventilation System

Fire Fighting System

Hot Water System

Lift and Escalator System

Prime Cost Sums : ELECTRICAL WORKS

Ref	Description	Rate	RM	C
	PART F1 – PRIME COST SUMS			
	<u>PRIME COST SUMS</u>			
	<u>Notes:</u>			
	i) The Prime Cost Sums shall be expended as directed by the Superintending Officer or deducted in whole or in part if not expended			
A	<u>Electrical Works</u>			
	Provide a Prime Cost Sums of Ringgit Malaysia : Two Million Six Hundred Seventy Four Thousand Only (RM2,674,000.00) for Electrical Works	SUM	2,674,000	00
	• Allow for profit%	%		
	• Allow for attendance	L.S.		

Prime Cost Sums : AIR-CONDITIONING WORKS

Ref	Description	Rate	RM	C
	PART F1 – PRIME COST SUMS			
	<u>PRIME COST SUMS</u>			
	<u>Notes:</u>			
	i) The Prime Cost Sums shall be expended as directed by the Superintending Officer or deducted in whole or in part if not expended			
B	<u>Air-Conditioning and Mechanical Ventilation System</u>			
	Provide a Prime Cost Sums of Ringgit Malaysia : Seven Hundred Thousand Only (RM700,000.00) for Air-Conditioning and Mechanical Ventilation System	SUM	700,000	00
	• Allow for profit%			
	• Allow for attendance	%		
		L.S.		

Prime Cost Sums : FIRE FIGHTING SYSTEM

Ref	Description	Rate	RM	C
	PART F1 – PRIME COST SUMS			
	<u>PRIME COST SUMS</u>			
	<u>Notes:</u>			
	i) The Prime Cost Sums shall be expended as directed by the Superintending Officer or deducted in whole or in part if not expended			
C	<u>Fire Fighting System</u>			
	Provide a Prime Cost Sums of Ringgit Malaysia : One Hundred Eighty Thousand Only (RM180,000.00) for Fire Fighting System	SUM	180,000	00
	• Allow for profit%	%		
	• Allow for attendance	L.S.		

Provisional Sums: Main Items

Provisional Sums : MAIN ITEMS

The Provisional Sums shall be expended as directed by the Superintending Officer or deducted in whole or in part if not expended

Telephone Rental and Call Charges

Landscaping Works

Relocation of Existing Services & Decanting Works

Signage

Upgrading The Existing Sewerage Treatment Plant

Sanitary Plumbing for Existing Building

Extension of TNB Sub-Station

Provisional Sums : COMPONENTS

Ref	Description	Rate	RM	C
	PART F2 – PROVISIONAL SUMS			
	<u>PROVISIONAL SUMS</u>			
	<u>Notes:</u>			
	i) The Provisional Sums shall be expended as directed by the Superintending Officer or deducted in whole or in part if not expended			
	<u>Telephone Rental and Call Charges</u>			
A	Provide a Provisional Sums of Ringgit Malaysia : Five Thousand Only (RM5,000.00) for Telephone Rental and Call Charges	SUM	5,000	00
	<u>Landscaping Works</u>			
	Provide a Provisional Sums of Ringgit Malaysia : Two Hundred Thousand Only (RM200,000.00) for Landscaping Works	SUM	200,000	00

What We Practice ?

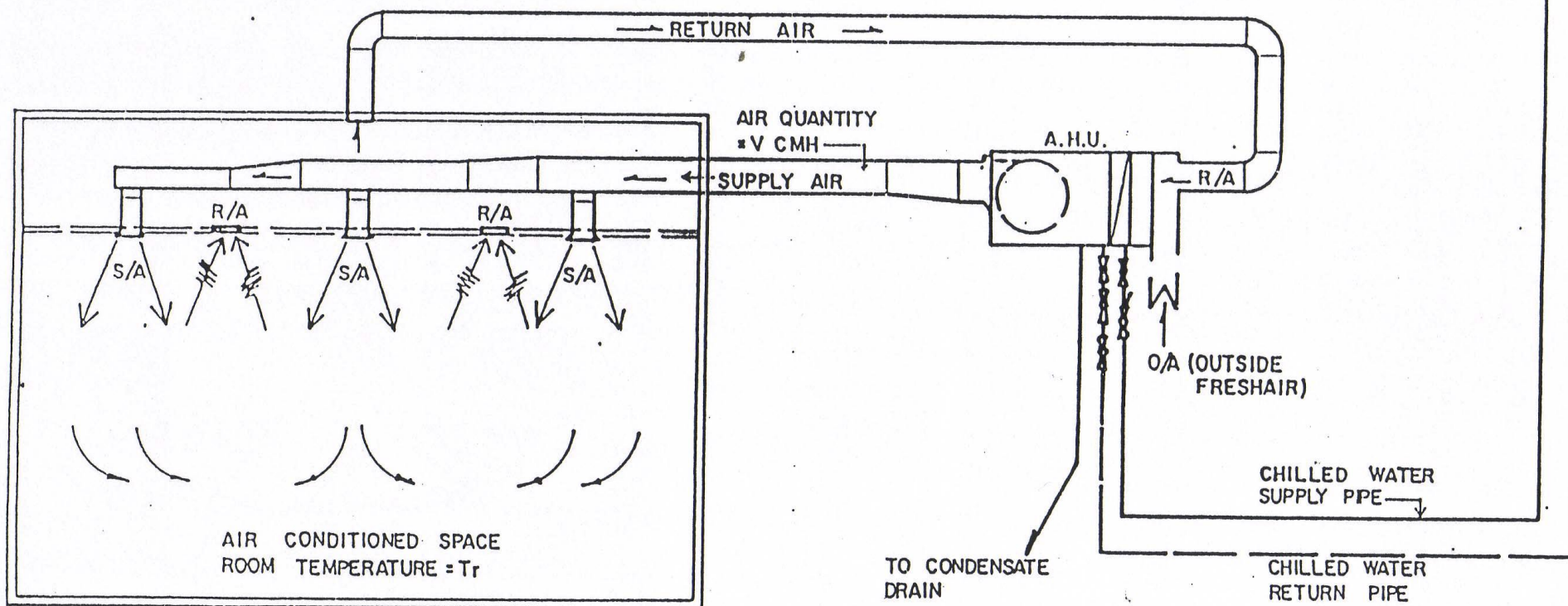
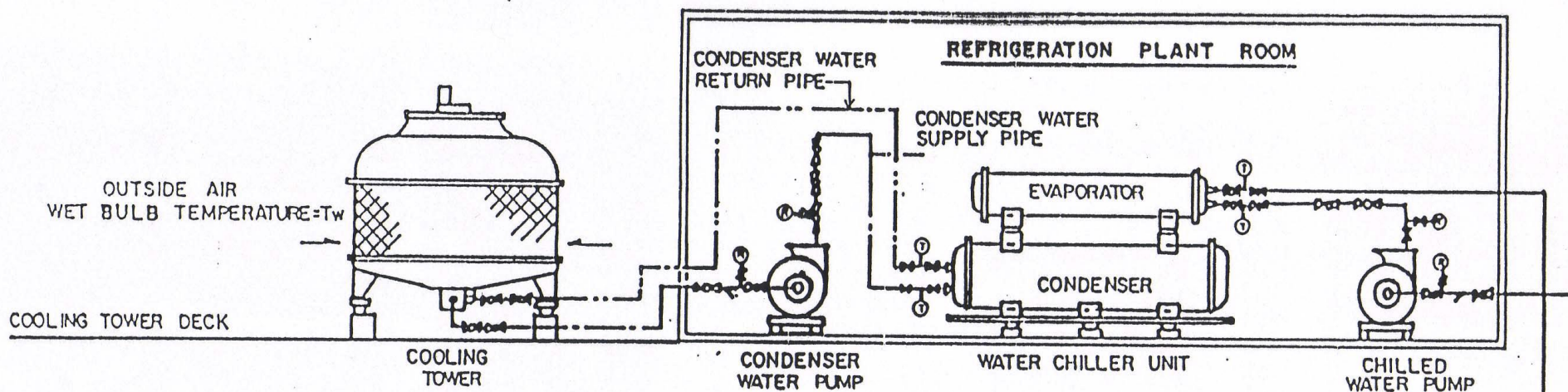
Air

PRIME COST SUM

Air-Conditioning
Installations

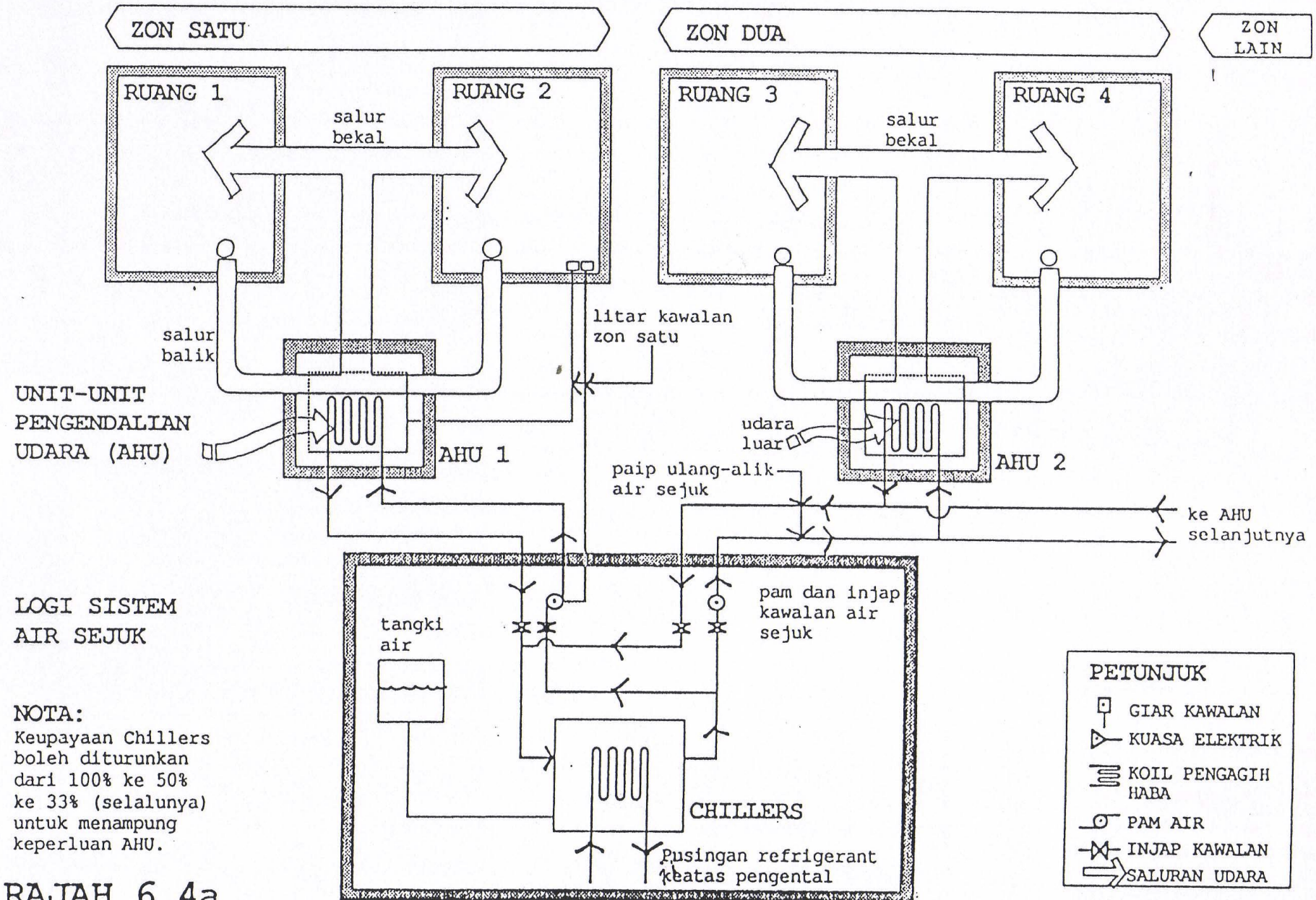
Ref	Description	Rate	RM	C
B	<p>PART F1 – PRIME COST SUMS</p> <p><u>PRIME COST SUMS</u></p> <p><u>Notes:</u></p> <p>i) The Prime Cost Sums shall be expended as directed by the Superintending Officer or deducted in whole or in part if not expended</p> <p><u>Air-Conditioning and Mechanical Ventilation System</u></p> <p>Provide a Prime Cost Sums of Ringgit Malaysia : Seven Hundred Thousand Only (RM700,000.00) for Air-Conditioning and Mechanical Ventilation System</p> <ul style="list-style-type: none"> • Allow for profit% • Allow for attendance % 	<p>SUM</p> <p>%</p> <p>L.S.</p>	<p>700,000</p>	<p>00</p>

What Client Want ?



(CHILLED WATER SYSTEM)

KONSEP PEMASANGAN SISTEM LOGI AIR SEJUK



NOTA:
Keupayaan Chillers boleh diturunkan dari 100% ke 50% ke 33% (selalunya) untuk menampung keperluan AHU.

RAJAH 6.4a

Air Conditioning Installations

COMPONENTS

Pipe works

Equipment and ancillaries

Insulation

Sundries

Builder's work

Air Conditioning System :

SUMMARY OF MEASUREMENT RULES



Air Conditioning System :

SUMMARY OF MEASUREMENT RULES

CLAUSE	ELEMENT	METHOD	UNIT
Q.1.1	All element	Shall be given in regulations, kind and quality of material, gauge, thickness or substance of material with any tests.	
Q.1.2	Assembling and jointing	Connecting flanges and jointing shall include with the items.	
Q.1.3	Patterns, moulds, templets	Shall be include with the items.	
Q.1.4	Priming and painting	Described the work whether applied before or after fabrication or assembly.	
Q.1.5	Nails, bolts, nuts, holes, screws, plugs, shot-fired pins	In the description of work, stated the method of fixing.	

Air Conditioning System :

SUMMARY OF MEASUREMENT RULES

Q.1.6 (a-f)	<ul style="list-style-type: none"> a) building board b) timber c) metal-faced or composition-faced timber d) brickwork, concrete or stonework e) plain metal f) glass 	Shall stated the method of fixing and including the necessary drilling of the backgrounds and be given in the description.	
Q.1.7	Temporary work	Shall be include with the items (removing temporary work and making good)	
Q.1.8	Connections	Shall be given in the description the nature of work, turning off supplies of any restriction when breaking into existing pipes.	
Q.2.1	<ul style="list-style-type: none"> d) fire fighting installation t) air conditioning system 	Given under an appropriate heading with its metalwork and supports.	

Air Conditioning System : SUMMARY OF MEASUREMENT RULES

Q.3.1	All element	The location for the work that must be identified : i) internally ii) externally iii) in plant rooms	
Q.8.1	Pipes	Measured all over the pipe fittings, short running lengths and branches stating the type and nominal size. Separate it if it is purpose-made pipe. Curved pipe stating the radius. Joints shall be given in the description stating the method of jointing.	M
Q.8.2	Joints of a special characters and extra demountable couplers	Shall be described as extra over	Nos.
Q.8.3	Flexible pipes and extensible pipes	Measured as fully extended and shall each be so described.	
Q.8.4	Pipes laid or fixed in ducts, trenches and chases	Shall be described.	

Air Conditioning System :

SUMMARY OF MEASUREMENT RULES

Q.8.5	Flow and return header pipe	All measurement stating the length, type and nominal size of the main pipe and branch pipe and also method of construction and jointing the ends.	Nos.
Q.8.6	Pipe fittings and purpose made pipe fittings	All details, cutting and jointing shall be described.	Nos.
Q.8.7	Expansion loops	All measurement stating the limiting dimensions and the amount of expansions to be accommodated.	Nos.
Q.8.8	Expansion compensators	All measurement stating the type of joint and the amount of expansions to be accommodated.	Nos.
Q.8.9	Flanges and unions	Necessary solely for erection purposes shall included.	
Q.8.10	Jointing	All jointing shall be deemed included with the items.	
Q.8.11	Fittings and jointing	All measurements stating he size and kind of pipe flanged concerned perforating	Nos.

Air Conditioning System :

SUMMARY OF MEASUREMENT RULES

Q.9.1	Special connections Special joints in pipes	Measured separately stating nominal size, kind of pipe, method of jointing and must be classify <ul style="list-style-type: none"> • Connections between pipes of different materials and difference grades and of the same material. • Connections between pipes and appliances or equipment. • Connections to existing pipes. 	
Q.9.2	Isolated joints	As extra over stating the type of jointing	
Q.10	Made bends, made springs, made offsets, beaded ends, ornamental ends, etc.	Shall included with the pipes on which they occur.	
Q.12.1	Standard pipe supports	Shall described on the description of the pipes stating the type and spacing.	
Q. 12.2	Non-standard pipe supports	Shall be described.	Nos.
Q.12.3	Supports that are lined to insulate pipes	Shall described stating the type of lining material.	

Air Conditioning System :

SUMMARY OF MEASUREMENT RULES

Q.12.4	Clips, saddles, pipe-hooks, holderbats, brackets, rollers, chairs, hangers/black plates, Gender-laps	Enumerated separately stating the type and size	Nos.
Q.12.5	Pipe anchor	Enumerated separately stating nominal size of pipe, type and size of components, method of fixing of the pipe and nature of work.	Nos.
Q.13	Connection	Work which may only carried out by Public Undertaking or Local Authority.	P.S
Q.14.1	Ducting	Measured over all ducting fittings, short running lengths and branches, stating the type and size also giving joints stating the method of jointing and stiffeners.	M
Q.14.2	Lining ducting internally with acoustic or protective material	Measured separately stating the type and thickness and internal size	M

Air Conditioning System :

SUMMARY OF MEASUREMENT RULES

Q.14.3	Flexible ducting and extensible ducting	Measured as fully extended	Nos.
Q.14.4	Curved ducting	Shall described stating mean radius. For curved rectangular ducting, state whether shaped to	Nos.
Q.14.5	Ducting fitting	Measured as extra over , catting and forming openings and jointing ducting to fittings shall be deemed to be included. Fittings involving a change of direction of the ducting shall be described.	Nos.
Q.14.6	Jointing in ducting	Everything for making joints shall be deemed to be included with the items.	

Air Conditioning System :

SUMMARY OF MEASUREMENT RULES

Q.15.1	Special connections, special joints	<p>Enumerated separately stating the size, kind of ducting and also method of jointing , classify ;</p> <p>a) Connections between ducting of differing materials.</p> <p>b) Connections between ducting and equipment stating the nature of the equipment.</p> <p>c) Isolated joints which differ from those given in the description of the ducting.</p> <p>d) Flexible connections between ducting and plant.</p>	Nos.
Q.15.2	Ducting turn and splitters	Enumerated separately stating type and material size of ducting	Nos.
Q.15.3	Nozzle outlets, test holes and cores access doors	Shall described stating size, method of jointing and material and thickness or gauge	Nos.
Q.15.4	Cowls, terminals, intake louvers	Stating size and type, size of ducting and method of jointing.	Nos.

Air Conditioning System :

SUMMARY OF MEASUREMENT RULES

Q.16.1	Components for supporting ductwork	Measured stating the size and type and the size. Any spring compensated components described stating the loading and the movement to be accommodated. Classification shall following, single run, multiple run and comb red.	Nos.
Q.16.2	Components for supporting ductwork	Method of fixing shall be given in the description	
Q.27.1	Insulation of ductwork	Measured stating the type and size of the ducting	M
Q.27.2	Working insulation	Around ducting fittings, special fittings and ancillaries shall measured separately as extra over	Nos.