

5-2 レイアウトプラン等決定までの「マ」側とのやりとり

(1) JICA → SIRIM

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

P. O. BOX 216 MITSUI BLDG
2-1, NISHI-SHINJUKU, SHINJUKU-KU TOKYO
163 JAPAN

August 22, 1988

Mr. Helme Hashim
Head,
Foundry Technology Unit,
MIDEC, SIRIM.

Dear sir,

It is my great pleasure to submit to you our assignments attached herewith; drawings of the building, revised lists of the equipment and application forms for environmental regulations.

You will find some difference between the contents of the Report of the Meeting and our papers.

1. Floor Plan

- 1) We suggest to separate completely the workshop for green sand moulding from the workshop for CO₂ process.
- 2) To get more space for raw materials storage, we recommend to shift the door to sand moulding section.
- 3) To avoid splashing molten metal, it is better to scatter sands within the pouring zone.
- 4) We propose to provide waste materials storage next to sand storage.

2. Application Form

You will find the data for both induction furnace and sand dryer in the same sheet.

3. List of the Equipment

We made some alteration and modification for the list of the equipment.

4. Foundation and Utility Plan

Foundation plans for green sand moulding and sand dryer and the plan for utility will be submitted to you later.

It would be much appreciated if you could inform us of your comments on our proposal at your earliest convenience.

We thank you in advance for your prompt attention to this letter.

Sincerely yours,

角野祥三

Shozo Kakuno
Director,
Mining and Industrial
Development Cooperation
Department,
JICA

I am sending this letter for your application of an approval to install a furnace and a sand dryer as required under Environmental Regulations.

1. Name and Address of applicant

2. Location of

3. Height of boiler house/....

Furnace

Sand Dryer

4. Maximum height

5. Detail of Equipment

1) Type of Equipment: High Frequency Induction Furnace Sand Dryer

2) Manufacturer INDUCTOTHERM (U.S.A.) SINTOKOGIO, LTD. (Japan)

3) Model

Attach the relevant catalogue/drawing

Title (cata.) VIP POWER-TRAK 325 (draw.) SAND DRYER

Ref. No. Bulletin 97-325 HDR-005

4) Capacity of Equipment 500kg 0.5 Ton/hour

5) Series No. DURA-LINE ROTARY KJLN

6. Details of fuel used

1) Rate of fuel consumption 325 KW/hour 15 l/Hr

2) Type of fuel used ELECTRICITY KEROSENE

3) Analysis of fuel

Sulphur content - 0.015%

Ash content - -

4) Method of fuel feeding and control

(Sand Dryer) Fuel feeding by pump from drum to tank and by gravity from tank to burner.

Attach drawing of proposed feed control arrangement

Title VIP POWER-TRAK (draw.) SAND DRYER

Ref. No. BULLETIN 96B METRIC HDR-005

7. Detail of chimney

1) Proposed chimney DUCT DUCT

2) Diameter at the base 0.3 meter 0.3 meter

Diameter at the top 0.3 meter 0.3 meter

3) Efflux velocity 10 m/sec. 10 m/sec.

4) Chimney height design parameters

a) Attach calculations on chimney height. If there is plan for future expansion, indicate consideration incorporated.

title no concern(forced exit)
 Ref.No.

b) Attach drawings showing the construction details of chimney;
 details of flue gas sampling point and the necessary safe access
 leading to it to be included if solid fuel is used.

title
 Ref.No.

5) Fuel gas Temperature at inlet to chimney	80°C	70°C
at exit of chimney	60°C	50°C
6) Fuel gas dust content before dust collector	1 g/Nm ³	1 g/Nm ³ (MAX.)

8. Technical Description of pollution control equipment
 Using manometer to determine the inlet and outlet pressure
 normally around 170mm

1) Type	FABRIC FILTER	The same to the left
2) Manufacturer	SINTOKOGIO, LTD. (Japan)	The same to the left
3) Model	UDC	The same to the left

Attach catalogue drawing of control equipment

title	SINTO ULTRA-JET COLLECTOR	The same to the left
Ref.No.	CA01 8403-2000 D I a	The same to the left
4) Efficiency	95%	95%
5) Final dust emission	0.05 g/Nm ³	0.05 g/Nm ³

6) Attach calculation sheets on the design and basis of selection of
 the particular pollution equipment control.

title	The calculation sheet for furnace	for sand dryer
Ref.No.	S-002	S-003

7) Plan and elevation of the proposed installation

title	SINTO ULTRA JET COLLECTOR	The same to the left
Ref.No.	CA02 8403-2000 D I a	The same to the left

8) Please attach a performance guarantee the manufacturer

title	DUST COLLECTOR	The same to the left
Ref.No.	S-001	The same to the left

9. Fan

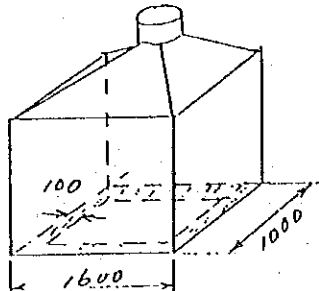
1) Type of fan	TURBO	TURBO
2) Capacity at specified temperature	50m ³ /min 20°C	50m ³ /min 20°C
3) Static pressure	250mm w.g.	250mm w.g.
4) Motor output	3.7KW	3.7KW

10. ~ 11. Smoke density recorder and alarm no no

1. Capacity of air volume

(1) Furnace for Aluminum melting

(A) Turn hood



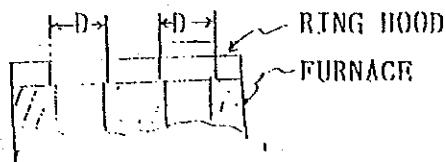
$$Q = L \times t \times V \times 60$$

$$= 5.2 \text{ m} \times 0.1 \text{ m} \times 1 \text{ m/s} \times 60 = 28.8 \text{ m}^3/\text{min.}$$

(30)

(): design value

(B) Ring hood



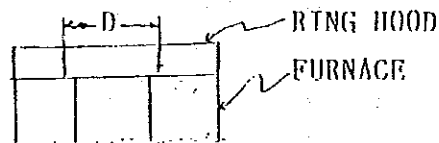
$$Q = \frac{\pi D^2}{4} \times 2.5 \text{ m/s} \times 60 = 10.6 \text{ m}^3/\text{min.}$$

(15)

D=300 mm [only one side]

(A)+(B)=45 m³/min.

(2) 100 Kg-furnace

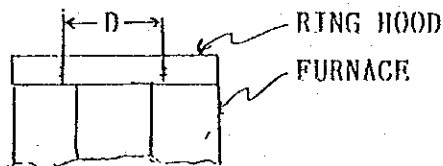


$$Q = \frac{\pi D^2}{4} \times 2.5 \text{ m/s} \times 60 = 18.8 \text{ m}^3/\text{min.}$$

(20)

D=400 mm

(3) 500 Kg-furnace

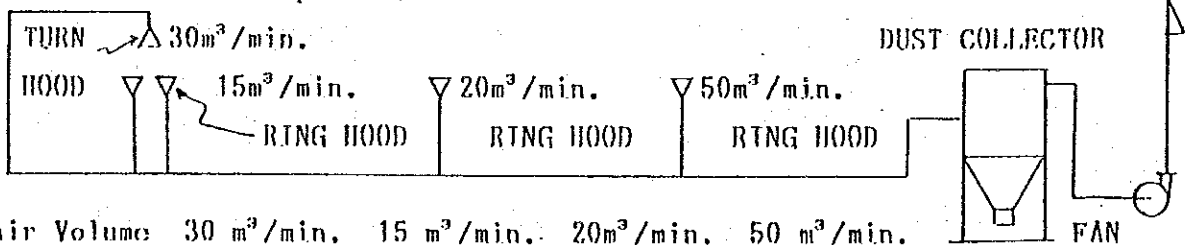


$$Q = \frac{\pi D^2}{4} \times 2.5 \text{ m/s} \times 60 = 42.4 \text{ m}^3/\text{min.}$$

(50)

D=600 mm

2. Flow sheet and air pressure



Air Volume	30 m ³ /min.	15 m ³ /min.	20 m ³ /min.	50 m ³ /min.	
Diameter	150 mm	200 mm	250 mm		

Air pressure loss

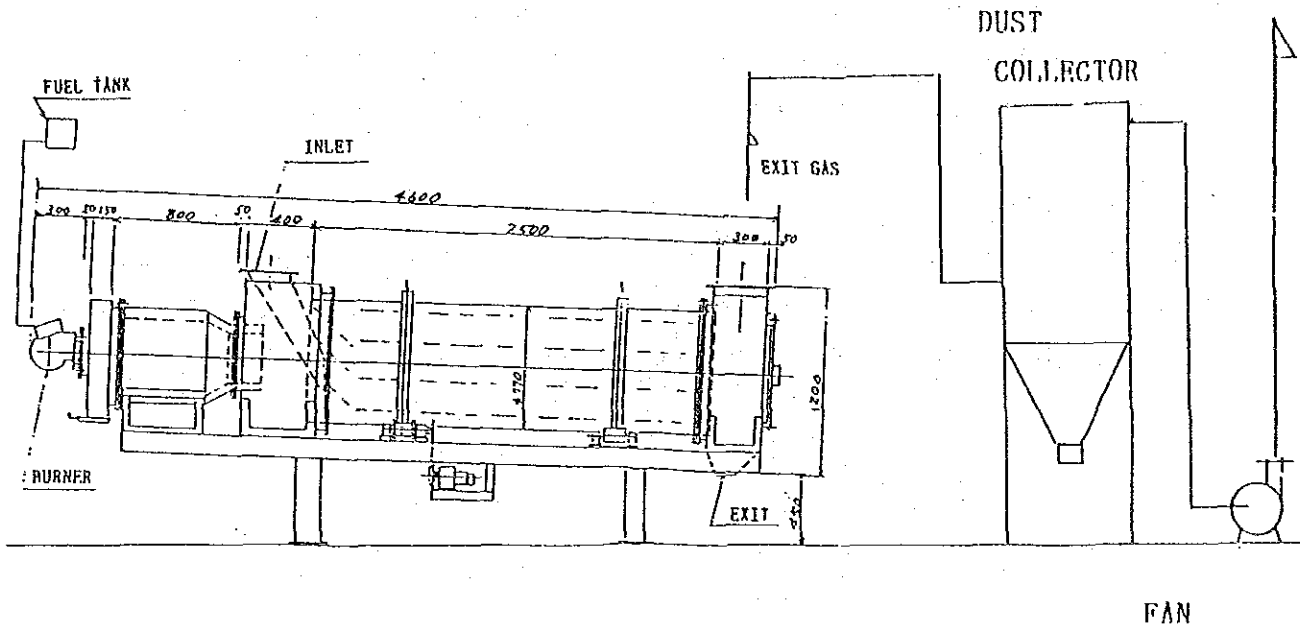
(Duct.) 50mmw.g. + (Dust collector) 180mmw.g. + (Fan etc.) 20mmw.g. = 250mmw.g.

FAN 50 m³/min., 250mmw.g., 3.7KW

1. Capacity of air volume

exit fuel gas volume of Rotary Kiln 18m³/min. at 120°C
 design air volume of pollution equipment 50m³/min. at 70°C

2. Flow sheet and air pressure



Air Volume	50 m ³ /min.	
Diameter	250 mm	
Air pressure loss		
Duct	50mm w.g.	
Dust collector	180mm w.g.	Total 250mm w.g.
Fan etc.	20mm w.g.	
FAN	50m ³ /min., 250mm w.g.,	3.7KW

Would you agree to this added/changed subject of the list of equipment in the report of the meeting.

1. Melling

- (5) Dust collector 50 cu.m/min [addition]
as required under Environmental Regulations

2. Sand preparation

- (10) Dust collector 150 cu.m/min. → 50 cu.m/min. [change]

Reason; The hood of shakeout machine is changed from open type to closed type, so the capacity of dust collector can be smaller.

3. Air compressor etc.

- (1) Air compressor 22KW (3 cu.m/min.) → 15 KW (2 cu.m/min.) [change]

Reason; Rate of air consumption

Moulding machine (2 sets)	1.2 cu.m/min.
Core blowing machine (1)	0.2 cu.m/min.
Shell core machine (1)	0.2 cu.m/min.
Dust collector (4)	0.3 cu.m/min.
Air blow for cleaning (4)	0.2 cu.m/min.
<hr/>	
Total	2.1 cu.m/min.

2.1×0.6 (the ratio of air used at the same time) = 1.3 cu.m/min.

4. Physical test

- (3) Measuring apparatus for hydrogen gas content [addition]

Reason; It is necessary for the quality control of aluminium foundry.

(2) SIRIM → JICA

Surat kami : SIRIM 430/UTF2/1 (111)

Surat tuan :

Bila menjawab, sila beri rujukan Institut Int.



INSTITUT PIAWAIAN DAN
PENYELIDIKAN PERINDUSTRIAN
MALAYSIA
Standards & Industrial Research Institute of Malaysia
Peraturan Dato' Menteri, Seksyen 2,
Peti Surat 95, 40700 Shah Alam,
Selangor Darul Ehsan,
MALAYSIA

Date : 30/8/88

Mr. Shozo Kakuno,
Director,
Mining and Industrial Development
Cooperation Department,
Japan International Cooperation Agency (JICA),
P.O. Box 216, Mitsui Building,
2-1, Nishi-Shinjuku, Shinjuku-ku,
Tokyo, 163 Japan.

Dear sir,

Thank you for the drawings and documents dated August 22, 1988 which you sent through JICA, Malaysia Office.

We will take into account your comments and recommendation in our discussion with the appointed consultants.

Going through the submitted drawings, we found a few points which need further clarifications from you. For your information, I have been assigned by Mr. Helms to oversee the renovation of the proposed building.

Question 1

Please refer to drawing ML0001:

For the sand test room, you indicated working table along the wall. We, would like to get your recommendation for the material to be used, e.g. timber or concrete top with brick support.

Question 2

Please refer to drawing ML0001 :

An enlarged drawing of the portion of interest is enclosed.

From the drawing, the location of the existing concrete table and sink unit is shown. We would like to get your opinion whether it needs to be relocated to position shown in drawing ML0001 or to consider options below.

...2/-

- i) the existing location remains and the proposed location is replaced with another portion of working table.
- ii) the existing location remains and the proposed location is ^{replaced} with the proposed ~~replaced~~ test table.

Question 3

Please refer to drawing ML0001.

An enlarged drawing of the analysis room is enclosed.

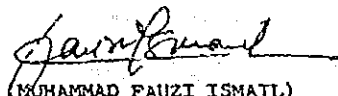
We would like to have more detail layout of the proposed analysis room.

Could you furnish us with information on the following points :-

- i) a cross-sectional view of the proposed room. This is to enable us to study the gas requirement as indicated by the gas point.
- ii) the approximate weight of the proposed analysis system. Our understanding of the proposed room is that it will have a raised floor. Thus requiring us to get more detail for the design of the floor.
- iii) the air-conditioning system. Does it require a separate air-conditioning unit? Does it require a precision controlled air-condition unit?
- iv) could you tell us the humidity of the proposed room. What is the required relative humidity of the proposed room?
- v) Does the system need to be operational 24 hrs/day?
- vi) Does the analysis system require line/voltage condition?

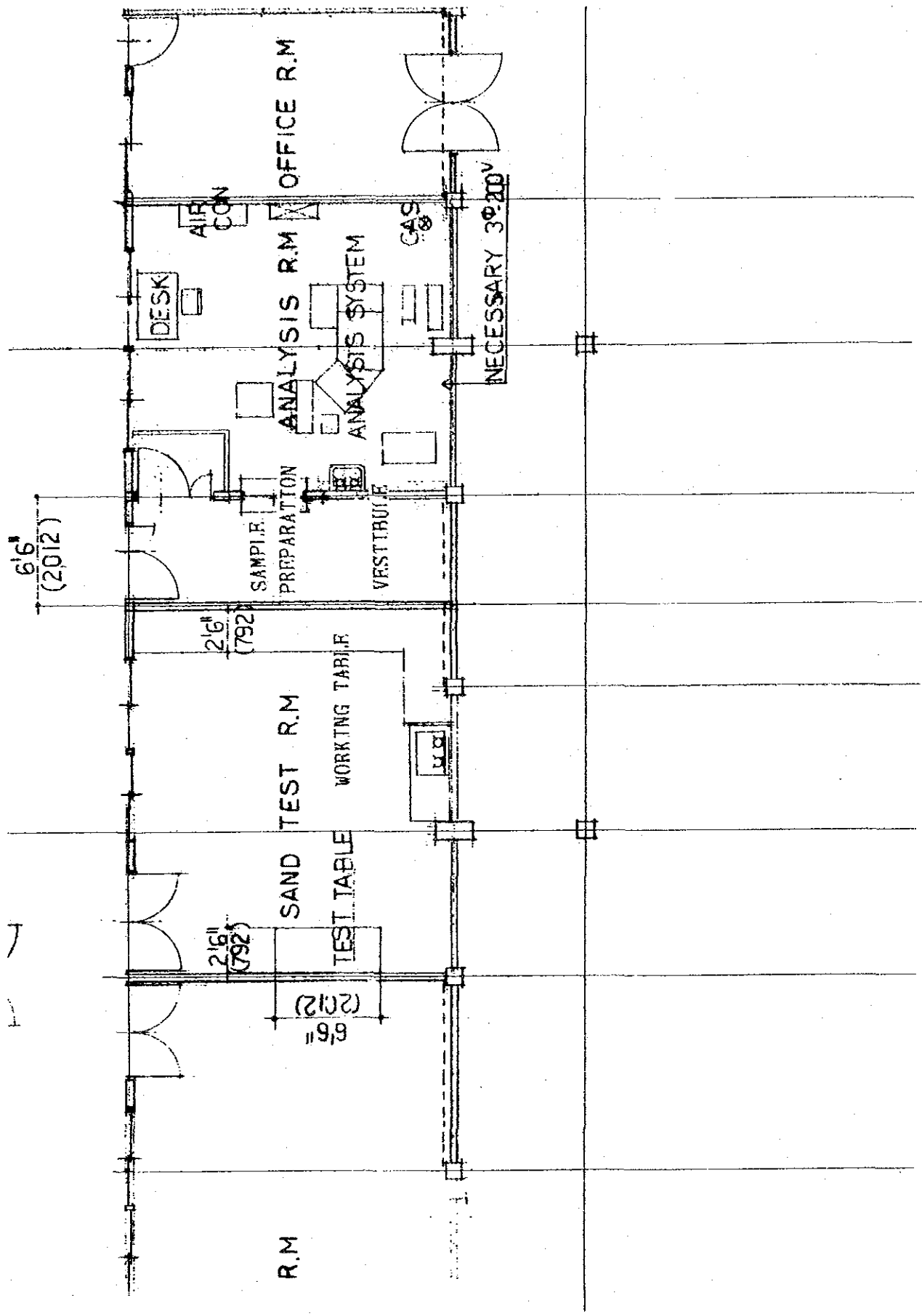
Your kind cooperation is greatly appreciated. We look forward to comments from you soon.

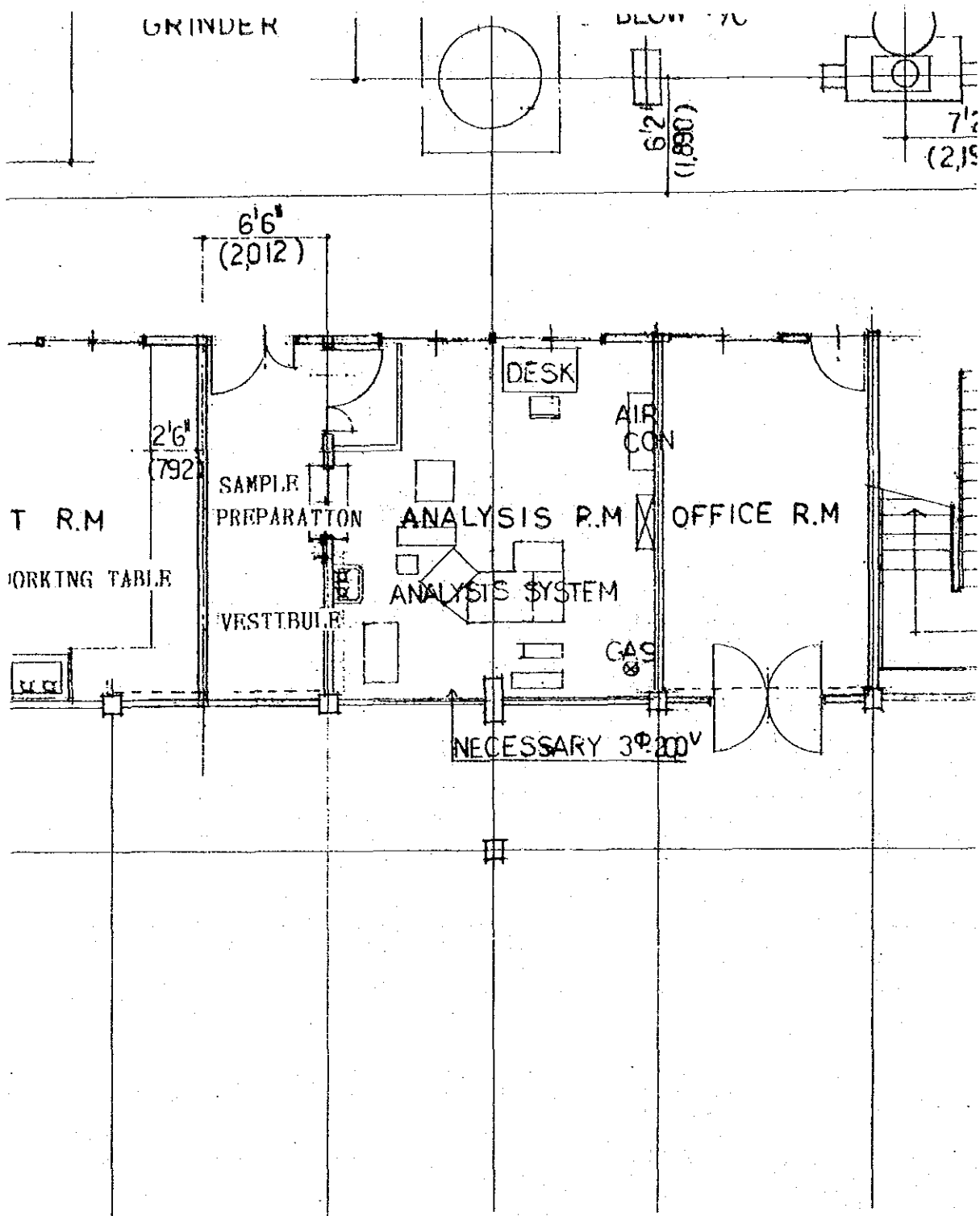
Yours sincerely,



(MUHAMMAD FAUZI ISMAIL)
Research Officer,
Foundry Technology Unit,
for Controller,
Standards and Industrial Research
Institute of Malaysia.

- C.C. -- Mr. Katsuhiko Fujihiro
Senior Engineer
The Materials Process Technology Center
Japan.
- Mr. Ahmad Zainal Ahmad
Planning & Evaluation Unit
SIRIM.





(3) JICA → SIRIM

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

P. O. BOX 216 MITSUI BLDG
2-1, NISHI-SHINJUKU, SHINJUKU-KU TOKYO
160 JAPAN

September 2, 1988

Mr. Muhammad Fauzi Ismail
Research Officer,
Foundry Technology Unit,
MIDEC, SIRIM.

Dear sir,

Thank you very much for your comments and questions to our proposal.

I would like to respond to your questions as follows.

1. For your question No.1

I think that marble is the most suitable material for working table top and that its thickness should be more than 50 mm.

I hear that there are several working tables with marble top at block M in SIRIM.

2. For your question No.2

The existing concrete table and sink unit is good enough to be used as they are.

So I agree to your proposal i) ,that is, the existing location remains and the proposed location is replaced with another working table.

3. For your question No.3

1) A cross-sectional view of the proposed room is shown in the attached drawing. In that drawing, you can find that pipes for gas and water can be installed beneath the raised floor. Anyway, please be sure that the layout plan and the utility requirement is still tentative, and will be finalized after JICA decision.

2) The floor is recommended to be raised more than 50 mm from the ground level, which will make it easy to relocate the equipment and to keep the room clean.

For this purpose, I propose to adopt the free access floor. For more detail information, please see the attached pamphlet. This is the example of free access floor.

(The floor is fabricated with 600 mm square aluminium. The floor space of the analysis room is about 33 m². If we do the same construction in Japan, we will have to pay at least 1,200 k Japanese yen including the fee for not only the materials but also the construction itself.)

3) A separate air conditioning unit is required. As the temperature in the room should be maintained constantly within $\pm 3^{\circ}\text{C}$ between 15 $^{\circ}\text{C}$ and 28 $^{\circ}\text{C}$, you should keep on operating air conditioning unit all day long. During daytime, there is no

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160 JAPAN

problem if you use central air conditioning unit, while the room which needs air conditioning unit at night is only this 'analysis room.' In this case, it is more economical if you use only separate one. This is why I propose you that you should install both central and separate air conditioning unit in the analysis room.

- 4) Relative humidity in the room should be maintained less than 75 %.
- 5) In connection with 3), the air conditioning unit should be kept operating 24 hours/day.
- 6) Line voltage needs to be maintained $\pm 10\%$ deviation. There is some possibility that you will have to prepare C.V.C.F.(= Constant Voltage Constant Frequency Power Supply)

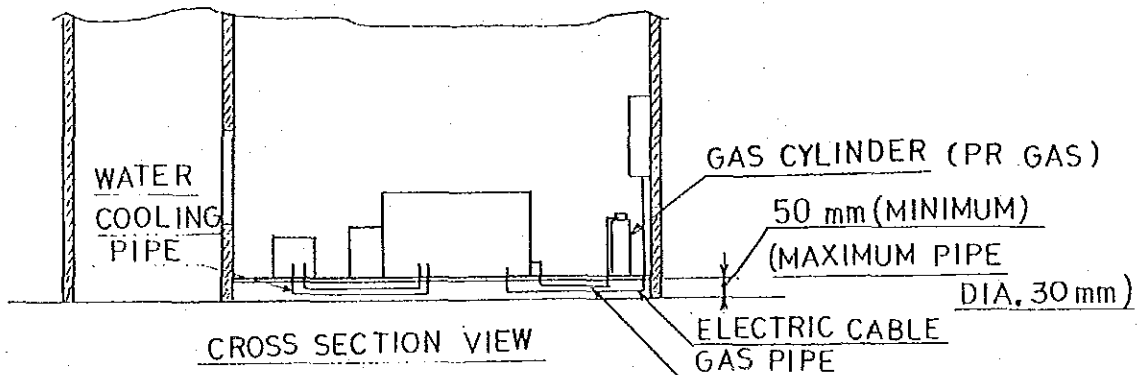
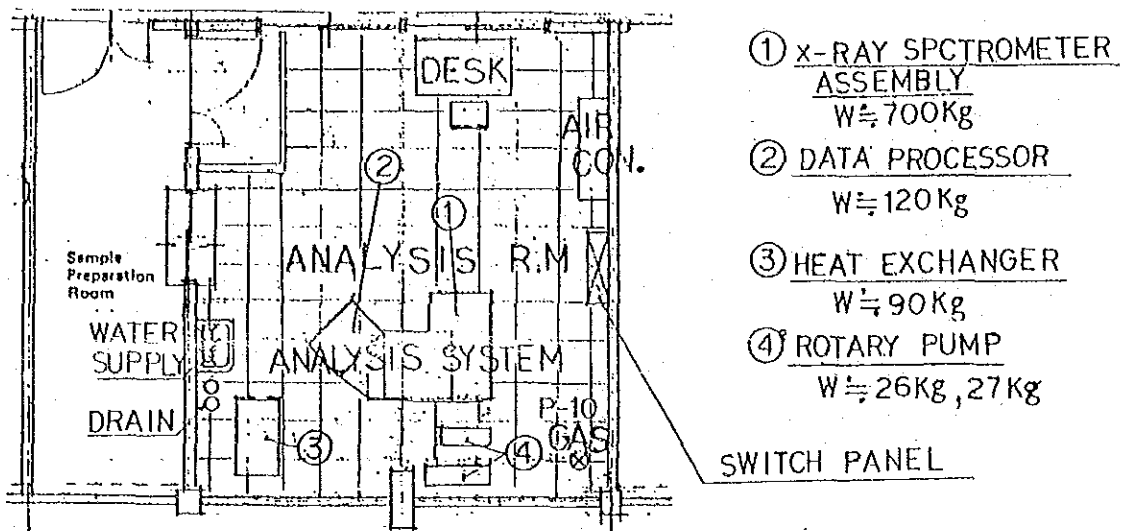
If you need further information, please let me know.

Sincerely yours,

角野祥三

Shozo Kakuno
Director,
Mining and Industrial
Development Cooperation
Department,
JICA

Examples of the X-Ray Analysis Room



Utility Requirements

■ Power Supply

Single phase 200V, 50A ±10%	For X-ray spectrometer and rotary pump (sub evacuation)
Single phase 200V, 5A ±10%	For temperature stabilizer
Three phase 200V, 15A ±10%	For heat exchanger and rotary pump (main evacuation)

(cf) Independent power should be provided for temperature stabilizer for which continuous power supply is required.

■ Earth Ground

Resistance should be less than 10 Ohms

■ Water Supply

Quality:	Tap water
Temperature:	Below 32°C
Flow:	13 l/min. at 25°C 20 l/min. at 30°C

■ Room Temperature

Between 15°C and 28°C maintained constant within ±3°C (24 hrs/day)

■ Humidity

Less than 75% RH

(cf) X-ray spectrometer assembly;
W1350, D850, H1150, W ≈ 700 kg
Electronic circuit panel;
W600, D850, H1150, W ≈ 120 kg

Gas supply for FPC:

PR gas (90% Ar and 10% CH₄)
Gas density stabilizer is attached
Capacity of gas cylinder: (1.4m³) (under normal pressure)
Gas consumption: 35 ~ 50 mL/min.

(4) SIRIM → JICA

Surat kami: SIRIM 430/UTF 2/1 (iii)

Surat tuan:

Bila menjawab, sila beri rujukan Institut Ini.



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MALAYSIA

Standards & Industrial Research Institute of Malaysia

Persiaran Dato' Menteri, Seksyen 2,
Peti Surat 35, 40700 Shah Alam,
Selangor Darul Ehsan,
MALAYSIA

Tarikh : 5/9/1988

Mr. Shozo Kakuno,
Director,
Mining & Industrial Development
Cooperation Department,
Japan International Cooperation Agency (JICA),
P.O. Box 216, Mitsui Building,
2-1, Nishi-Shinjuku, Shinjuku-RU,
Tokyo, 163 Japan.

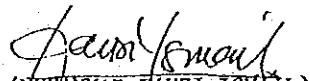
Dear Sir,

Following our fax to you dated 30/8/1988, attached please find the preliminary drawings submitted to SIRIM by the Structural and Civil Consultants. Please comment on our proposals. Our next meeting with the consultants will be held on 7th Sept., 1988.

Looking forward to hearing from you soon.

Thanks.

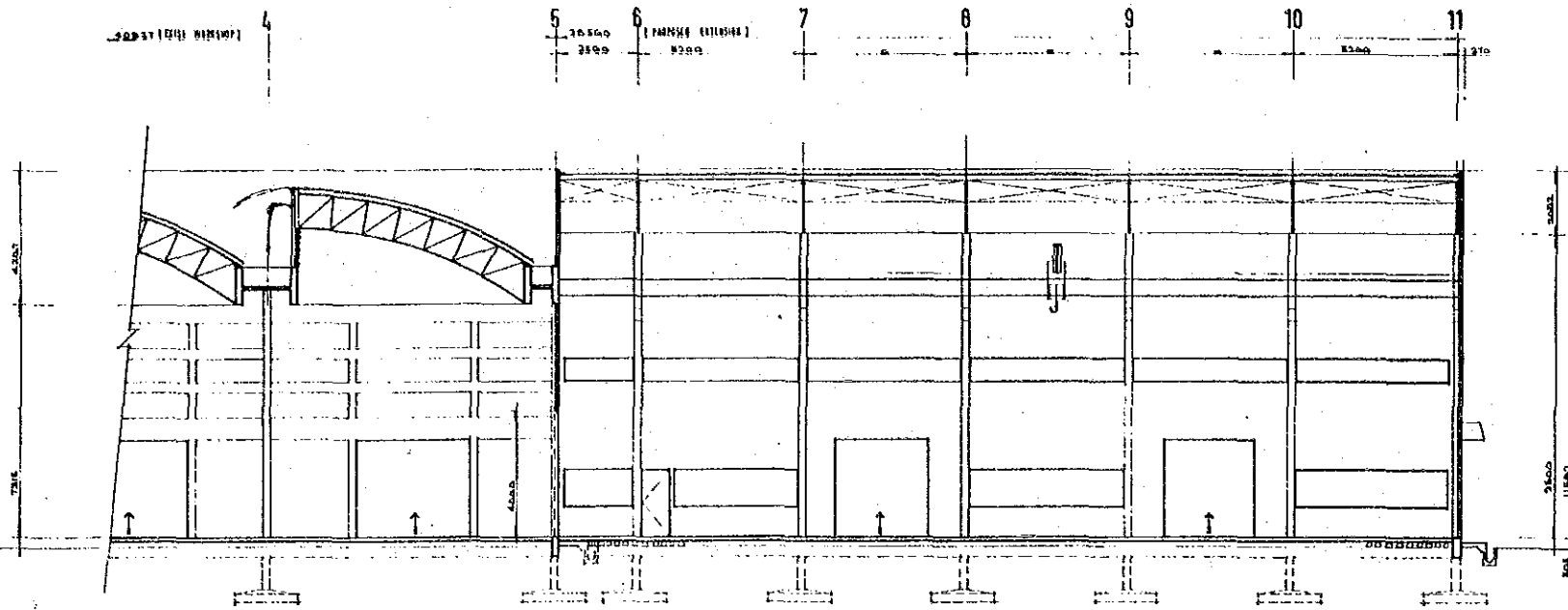
Yours sincerely,


(MUDAHMAD FAUZI ISMAIL)

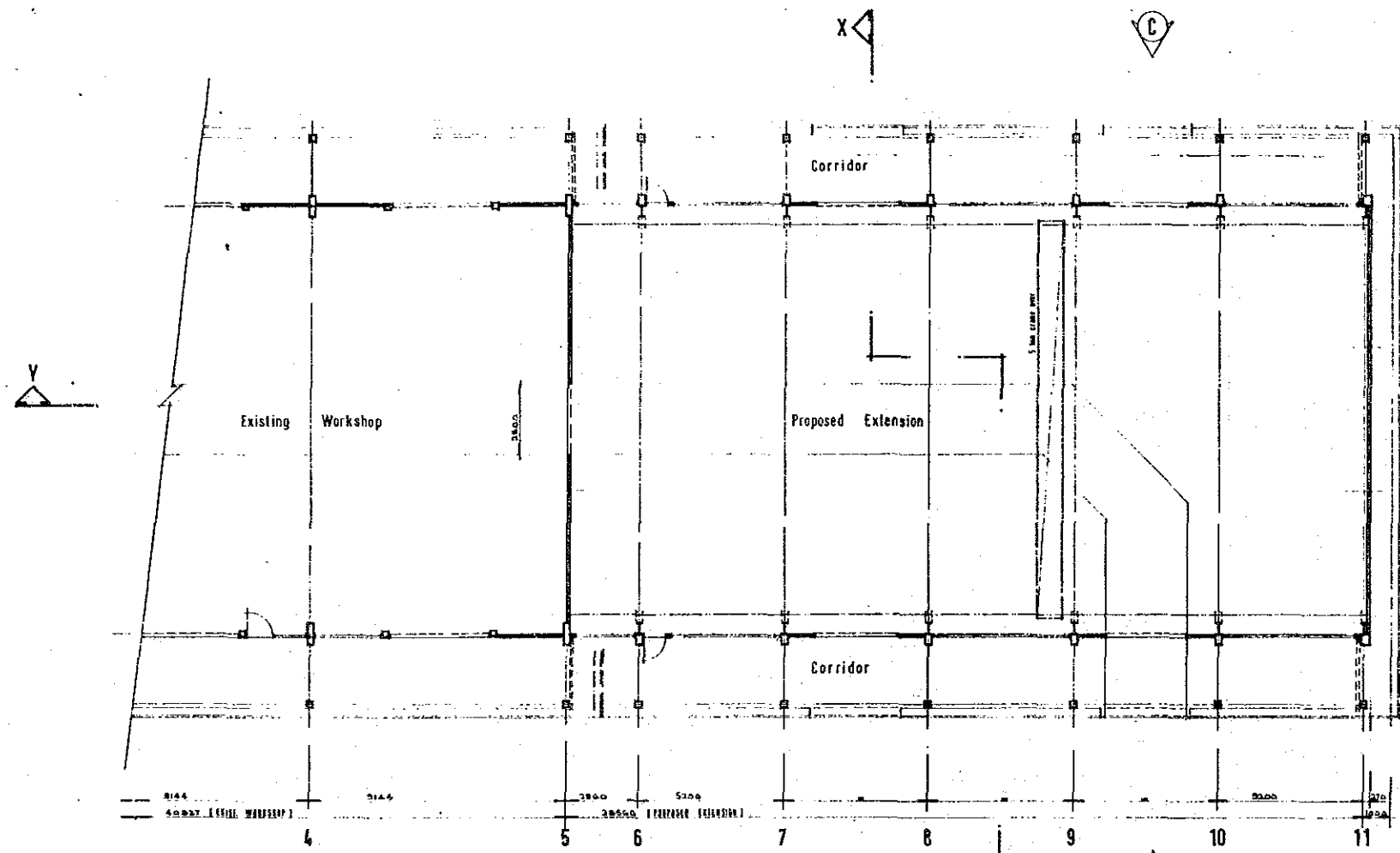
Research Officer
Foundry Technology Unit
For Controller
Standards & Industrial Research
Institute of Malaysia.

- c.c - Mr. Helme Hashim
Head of Foundry Technology Unit.
- Mr. Ahmad Zainal Abidin
Planning & Evaluation Unit.

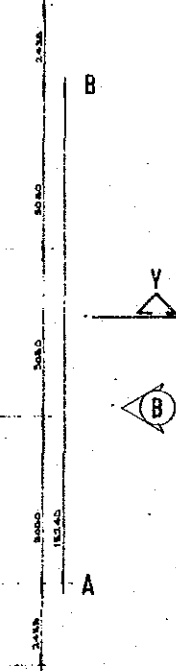
/ni.



SECTION Y-Y.



GROUND FLOOR PLAN.



PRELIMINARY
DATE OF ISSUE: 9 AUG 1988

TARIKH PINDAAN TANDA

REKAMAN JURUTERA PERUNING SON. BHD.
157-A, JALAN MAHARAJALELA,
50150, KUALA LUMPUR, MALAYSIA.

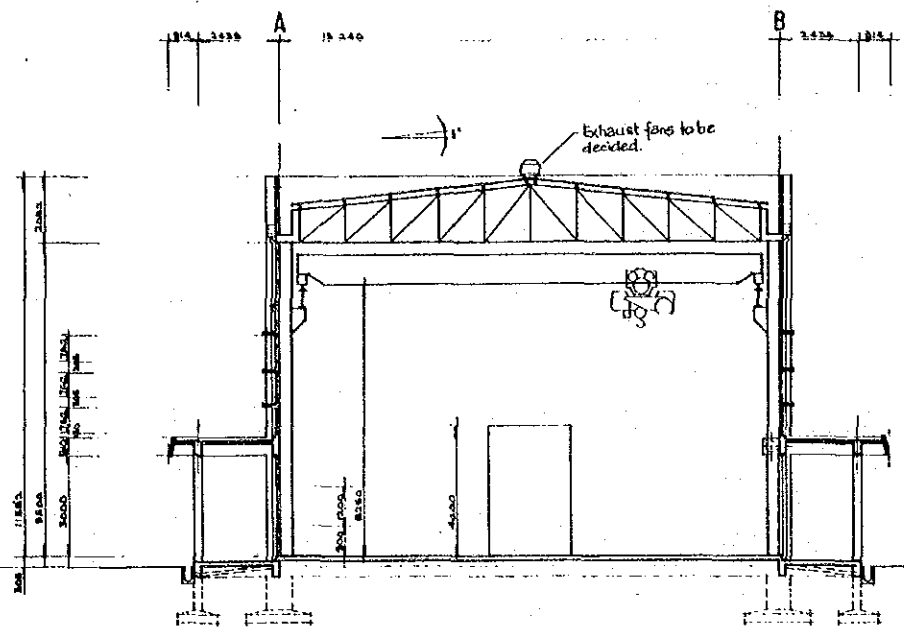
TITLE: **EXTENSION TO EXIST. WORKSHOP.**
GROUND FLOOR PLAN AND SECTION Y-Y.

DESIGNER: _____
DRAWN BY: _____

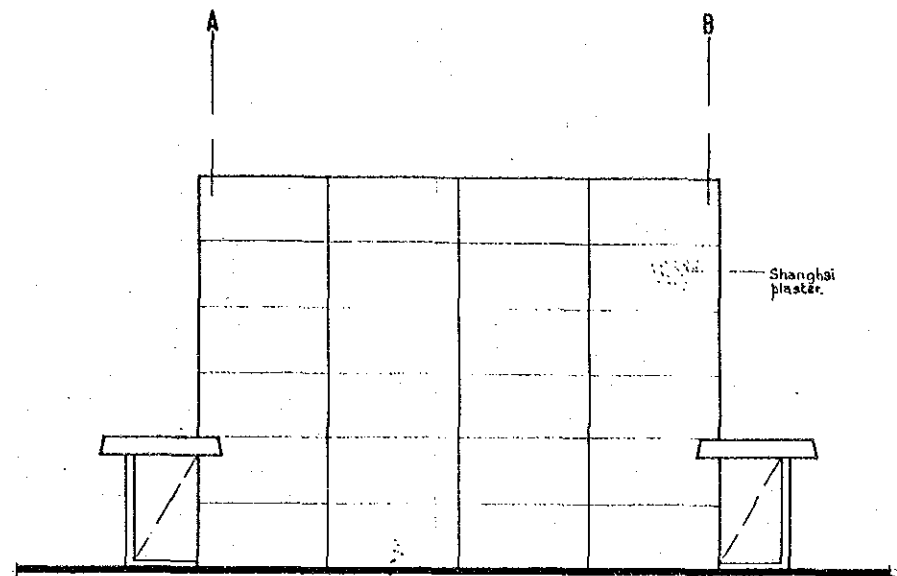
DATE: _____
SCALE: _____

UKURAN : 1 : 100 M.
NO. LUKISAN : _____
TARIKH : 0808, 1988.

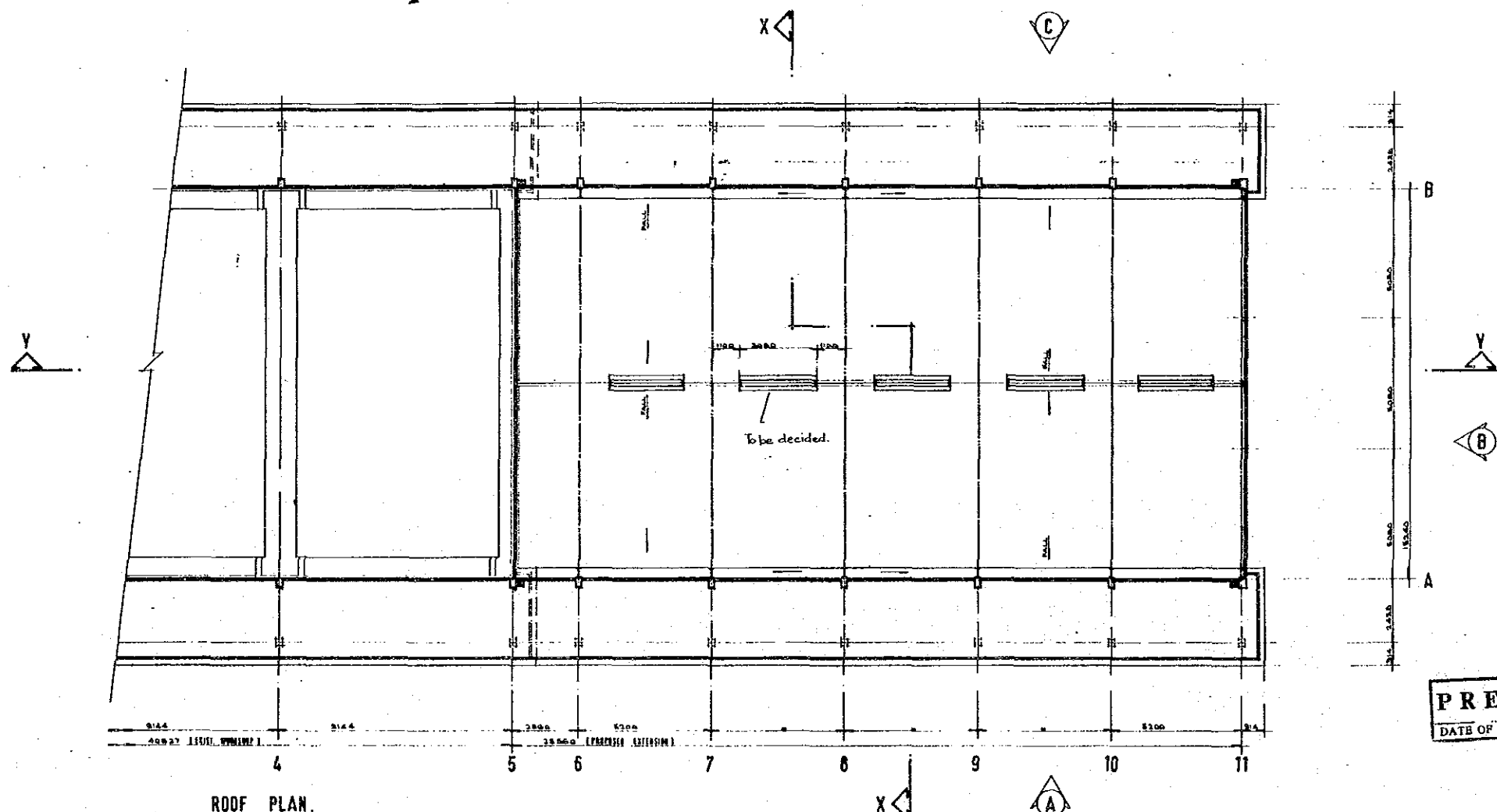
REKAMAN JURUTERA PERUNING SON. BHD.
157-A, JALAN MAHARAJALELA,
50150, KUALA LUMPUR, MALAYSIA.



SECTION X-X.



ELEVATION 'B'



ROOF PLAN.

PRELIMINARY
DATE OF ISSUE: 8 AUG 1988

TARIKH PINDAAN TANDA

PROJEK :
PROPOSED EXTENSION TO
EXISTING RESEARCH COMPLEX
ON LOT 10510, PERINGKAT 4,
LEBUH RAYA PERSEKUTUAN,
SHAH ALAM, SELANGOR FOR
M/A. S. K. M.

TAJUK :
EXTENSION TO EXIST. WORKSHOP.
ROOF PLAN, ELEVATION 'B'
AND SECTION X-X.

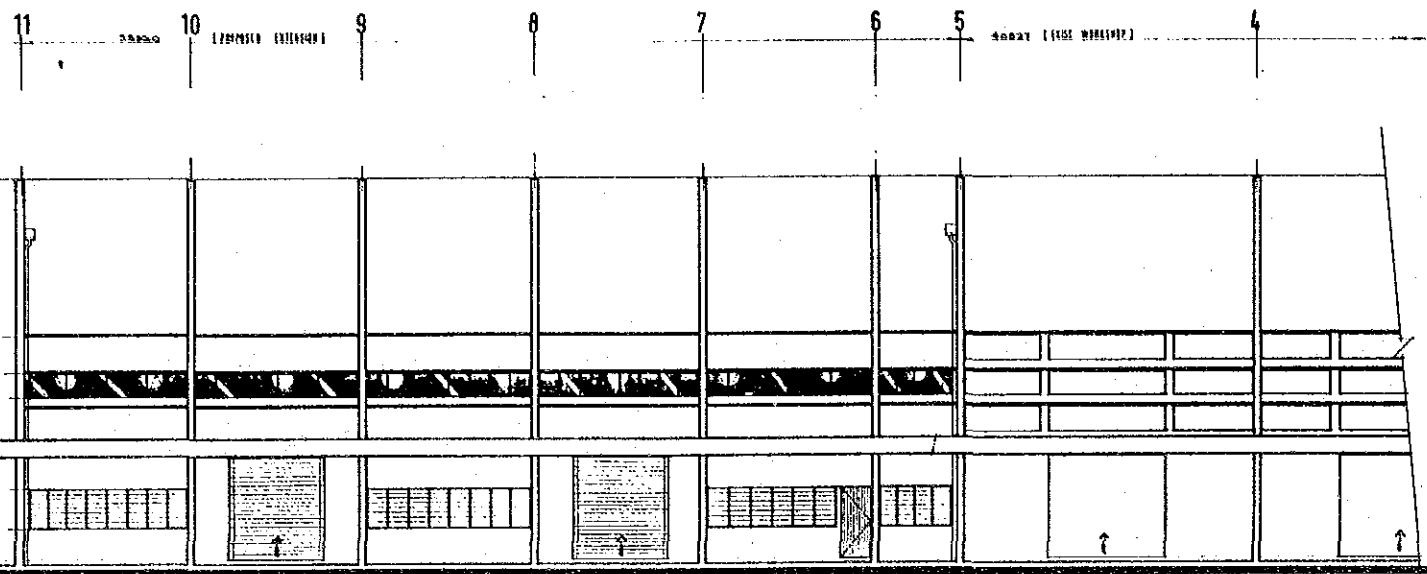
TAMBAHAN PERUBAHAN :

RAJAH ALAMAT :

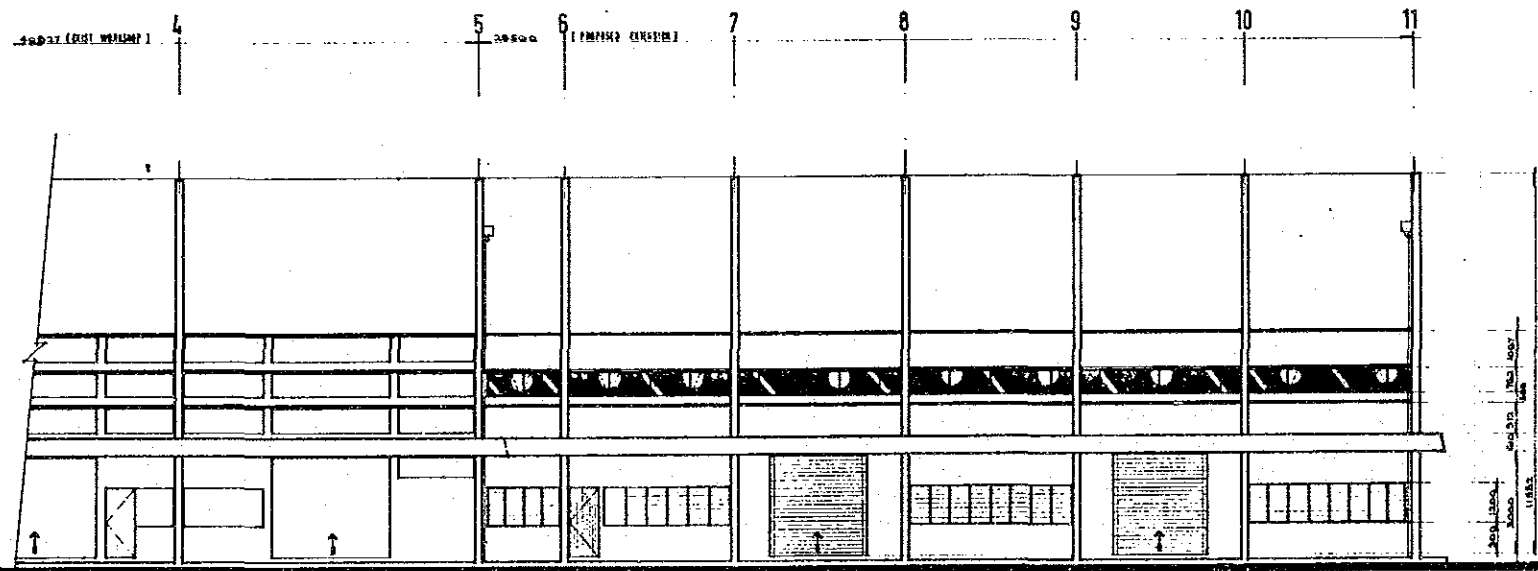
TAMBAHAN PERUBAHAN :

UKURAN :	1 : 100 M.
NO. LUKISAN :	SR/588/2
TARIKH :	0605, 1988.

REKAMAN ARKUTERA PERUBING S.M. BHD.
157-A, JALAN MAHARAJALELA,
50150, KUALA LUMPUR, MALAYSIA.



ELEVATION 'C'



ELEVATION 'A'

PRELIMINARY
DATE OF ISSUE: 9 AUG 1988

TARIKH	PINDAAN	TANDA
--------	---------	-------

PROJEK:
PROPOSED EXTENSION TO
EXISTING RESEARCH COMPLEX
ON LOT 10810, PERINGKAT 4,
LEKOH KAJA PERSEKUTUAN,
SHAH ALAM, SELANGOR FOR
M/S. S. I. S. M.

TAJUK:
EXTENSION TO EXIST. WORKSHOP.
ELEVATIONS 'A' AND 'C'.

TAMBAHAN PERALIS:

NAMA: _____
ALAMAT: _____

TAMBAHAN PERMITS:

UKURAN : 1 : 100 M.

NO. LUKISAN: SK / 283 / 3

TARIKH : 0608 , 1988.

REKANAM JURUTERA PERUNDING S.M. BHD.
157-A, JALAN MAHARAJALELA,
50150, KUALA LUMPUR, MALAYSIA.

(5) SIRIM → JICA

Surat kami; SIRIM 430/UTP 2/1 (iii)

Surat tuan:

Bila monjawab, sila beri rujukan Institut ini.



INSTITUT PIAWAIAN DAN
PENYELIDIKAN PERINDUSTRIAN
MALAYSIA
Standards & Industrial Research Institute of Malaysia
Peralanan Dato' Menteri, Seksyen 2,
Peti Surat 35, 40700 Shah Alam,
Selangor Darul Ehsan,
MALAYSIA

Tarikh : 13/9/1988

Mr. Shozō Kakuno,
Director,
Mining & Industrial Development Cooperation
Department,
Japan International Cooperation Agency (JICA),
P.O. box 216, Mitsui Building,
2-1, Nishi-Shinjuku, Shinjuku-ku,
Tokyo, 163 Japan.

Dear Sir,

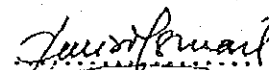
Thank you for your fax dated September 2, 1988. All your comments and proposals will be passed to all our consultants immediately.

I enclosed herewith 2 drawings related to the crane installation in the proposed building. The details include corbels, runway beams, etc. We would like your comments on the crane installation details. We would also like to know whether the main contractor should provide all these items and *do* the installation or the main contractor will only install all these items to be provided by your side.

Looking forward to hearing from your soon.

Thanks.

Yours sincerely,


.....
(MUHAMMAD FAUZI ISMAIL)
Research Officer,
Foundry Technology Unit
For Controller,
Standards & Industrial Research
Institute of Malaysia.

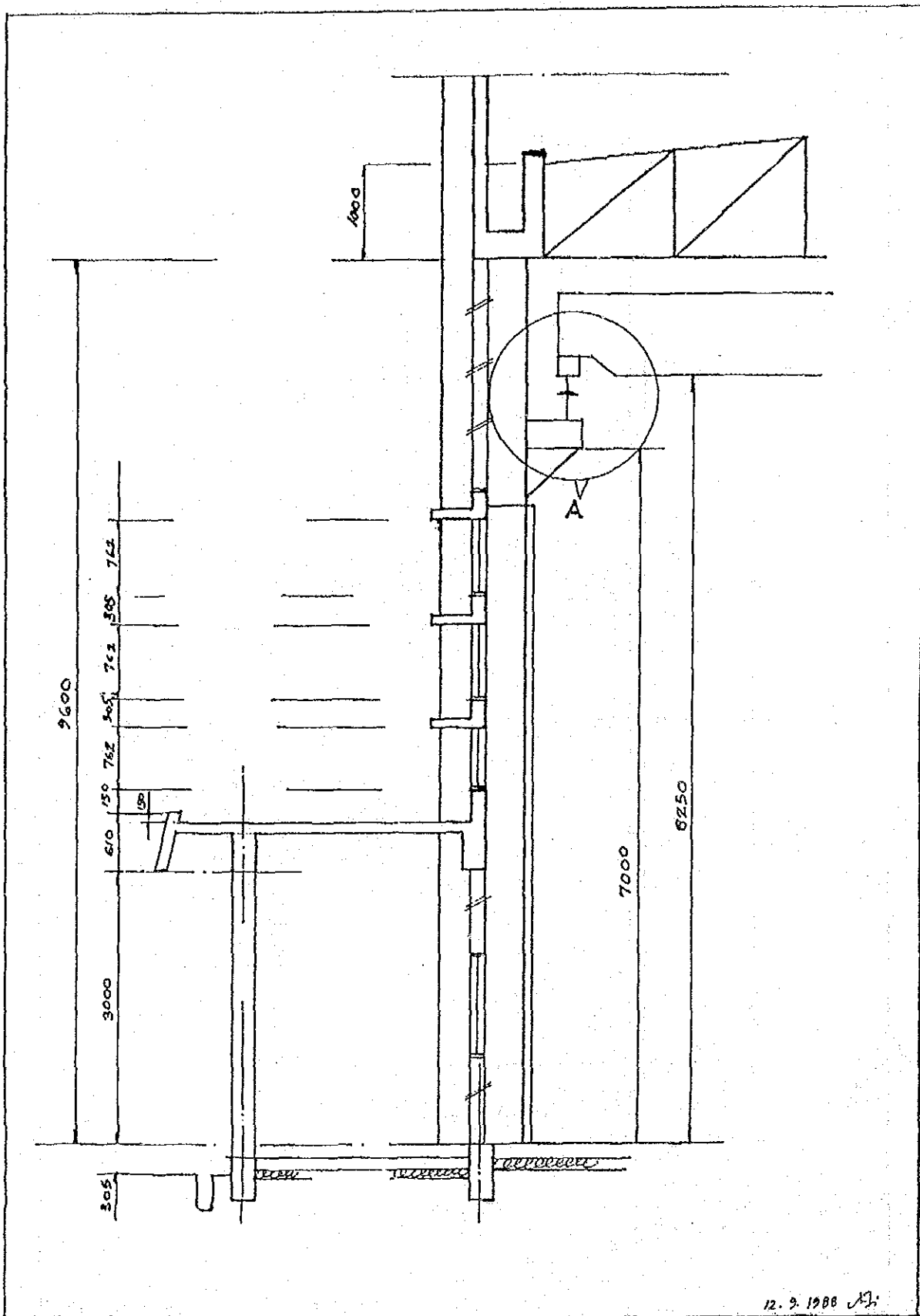
c.c - Mr. Katsuhiko Fujihira
Senior Engineer,
Planning Division
The Materials Process Technology Center
Tokyo, Japan.

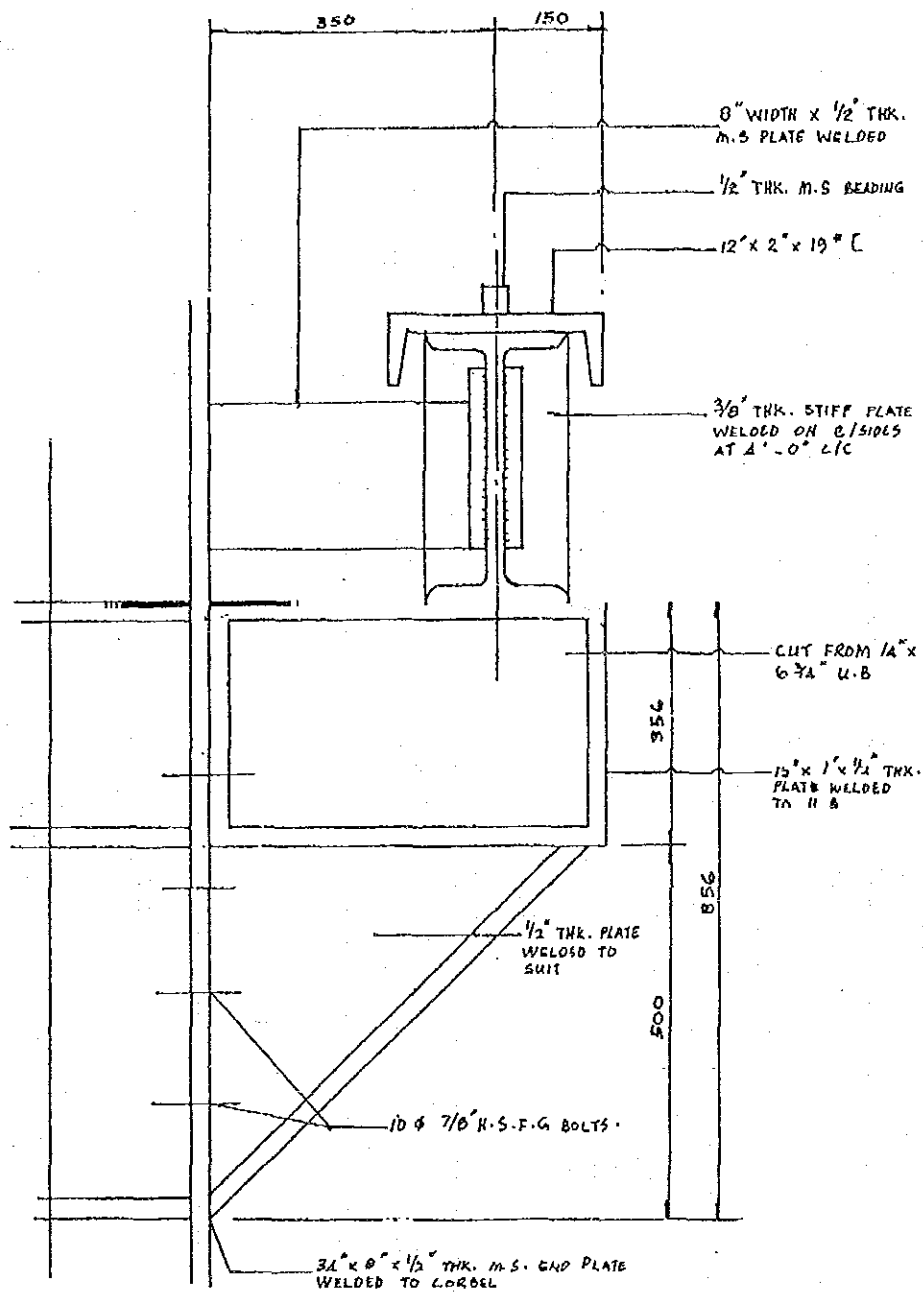
/ni.

...2/-

- Mr. Keizo Kagawa
Asst. Resident Representative
JICA Malaysia
Kuala Lumpur.

- Mr. Ahmad Zainal Abidin
Planning & Evaluation Unit
SIRIM.





DETAIL A

12. 5. 1988 *[Signature]*

(6) JICA → SIRIM

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

P. O. BOX 216 MITSUI BLDG
2-1, NISHI-SHINJUKU, SHINJUKU-KU TOKYO
160 JAPAN

October 29, 1988

Mr. Muhammad Fauzi Ismail
Research Officer,
Foundry Technology Unit,
MIDEC, SIRIM.

Dear sir,

I would like to express my thanks for your kind cooperation extended to us during our stay in Malaysia.

Now I would like to submit to you our assignment as follows;

1. To inform the duration, timing and numbers of short term experts in the field of installation and operation

I think that this item will be fixed after the tender of the Equipment which will be provided by the Japanese side.
So I will be able to inform you around next May.

2. To inform the price and specification of C.V.C.F.
(Stabilizer, Uninterapatable Power Unit)

I'm collecting the pamphlets concerning this items.

3. To send the examples of the documents concerning the shipping of the Equipment

Please see the attached documents (1) . We used these documents at the time of MITEC Aftercare Program.

4. To inform the general specifications of the Equipment which are not fixed

Please see the attached documents (2).

If you have further questions, please let me know.

Sincerely yours,



Makoto Yamashita
for Director,
Mining and Industrial
Development Cooperation
Department,
JICA

Enclosures
cc: Mr. Keizo Kagawa

LIST OF THE EQUIPMENT

THE PROPOSAL FROM THE JAPANESE TEAM				THE OUTCOME OF THE DISCUSSION		
NO.	EQUIPMENT AND APPARATUS	SPECIFICATION	QUANTITY	SPECIFICATION	QUANTITY	REMARKS
1.	Melting					
	1) High frequency electric furnace (with power unit)	500kg/325kw	1			
	2) High frequency electric furnace	100kg/100kw	1			
	3) Crucible furnace	80kg (for Cu) 25kg (for Al)	1 1			
	4) Cooling tower	for electric furnace	1			
	5) Dust collector	50m ³ /min	1			Except hood, duct and piping
	6) Scale	50kg/max 300kg/max	1 1			
	7) Ladle	50kg/max 100kg/max 500kg/max	1 2 2		600kg/max	
	8) Burner (gas fired)		2			
	9) Over head hoist crane	5 ton, 14m×28m	2 set			By Malaysian side
10) Fork lift car	1.5 ton. (with shovel)	1		To be informed later		
2.	Moulding					
	1) Joint squeeze stripper moulding machine	650×575 (mm) (with pattern 2 sets)	2			
	2) Roller conveyor	800 mm (width)	1			
	3) Flask	300×240 × (200/200)mm 580×460 × (200/200)mm 1,000×800 × (300/250)mm	10 set 5 set 3 set			
4) Pneumatic rammer		2				
3.	Core making					
	1) Core blowing machine	130 (W) × 200 (L) × 180 (H) (with pattern 2 sets)	1			
	2) Shell core blowing machine	300 (W) × (70/70) × 300 (H) (with pattern 2 sets)	1			

THE PROPOSAL FROM THE JAPANESE TEAM				THE OUTCOME OF THE DISCUSSION		
NO.	EQUIPMENT AND APPARATUS	SPECIFICATION	QUANTITY	SPECIFICATION	QUANTITY	REMARKS
4.	Sand preparation [CO ₂ & organic sand]					
	1) Bucket elevator	10 t/h	1			Except duct and piping
	2) Sand storage with belt feeder	3 cu.m	1			
	3) Whirl mixer	150 kg/Batch	1			
	4) Dust collector	50 cu.m/min.	1			
	[Green sand]					
	5) Shakeout machine	1,000×1,000 (mm)	1			Except duct and piping
	6) Belt conveyor	10 t/h with magnet pully	1			
	7) Bucket elevator	10 t/h	1			
	8) Sand storage with belt feeder	3 cu.m	1			
	9) Sand mixer	120 kg/Batch	1			
10) Dust collector	50 cu.m/min.	1				
[Sand drier]						
11) Sand drier (with sand supplying equipment and dust collector)	0.5 t/h	1 set	Capacity: 0.5t/h Fuel: Kerosene Dust Collector: 50m ³ /min.		Except duct and piping	
5.	Finishing					
	1) Shot blasting machine with dust collector	table type 1m(dia.)/5.5kw	1			Except duct and piping Except duct and piping
2) Grinder with dust collector		1	Wheel size: 510mm(dia) 11kw			
6.	Air compressor etc.					
	1) Air compressor with dehydrator	15kw (2 cu.m/min.) <u>Air-cooling system</u>	1 set			
2) Emergency electric power	Diesel engine	1 set	Fuel: Kerosene 30kw			
7.	Instrumental analysis					
	1) X-ray fluorescent analysis	16kVA	1	80mA, 50kV		
2) G.S analyzer		1	LECO CS-244			
8.	Physical test		1			
	1) CE meter		1			
	2) Immersion pyrometer		1			
	3) Gas analyzer		1	ALFAITH Model: DP-MKII		

(7) SIRIM → JICA

Surat kami: SIRIM 436/UTF2/1(iii)

Surat tuan:

Bila menjawab, sila beri rujukan Institut ini.



INSTITUT PIAWAIAN DAN
PENYELIDIKAN PERINDUSTRIAN
MALAYSIA

Standards & Industrial Research Institute of Malaysia
Lot 10810, Peringkat 3,
Labuhaya Persekutuan,
Pati Surat 35, 40700 Shah Alam, Selangor.

Tarikh : 30.11.1988

Mr. Makoto Yamashita,
Technical Cooperation Division,
Mining & Industrial Development Cooperation
Agency (JICA),
Tokyo,
Japan.

Dear Sir,

We have received your documents dated October 29, 1988. Thank you for the information.

We can inform you now that the office room are almost completed except for the air-conditioning system. We will send you photos upon completion of the work.

The tender for the renovation and extension of the building was advertised on November, 3, 1988 and closed on November 24, 1988. The Consultant in-charge are doing the evaluation. We hope to award the tender in mid-December. This renovation excludes the installation of crane and all details on cooling tower.

We also have on-going discussions with the mechanical and Electrical Consultants. From these discussions, we have a few question that need answers from the Japanese side.

QUESTION 1

We would like to know the final equipment layout for the workshop. During our last discussion with the Implementation Survey Team, we were informed that the Japanese side will provide all this information.

QUESTION 2

We would like to know the electrical loading for each equipment. This will enable the Electrical Consultant to complete his work.

QUESTION 3

We would like to know more on the details of the cold water and LPG piping in the workshop. This includes the location and routing of the pipes. We would also like to know any special requirements for their supplies.

QUESTION 4

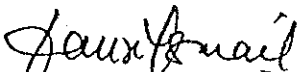
Concerning the cooling tower. We would like to know the requirement of the piping from the site to the workshop as well as the route. Please let us know of any special requirement.

QUESTION 5

This concerns the crane. It is agreed that the Malaysian side will provide 2 sets of crane. We would like to know any special requirement for the cranes to be installed e.g., speed of the hoist or dual speed mode. I will be sending you a copy of the specification of the crane already installed in the Plastic Pilot Plant that you have visited. Is the specification listed adequate for the foundry workshop?

Thanking you in advance for your kind cooperation.

Yours sincerely,


(MUHAMMAD FAUZI ISMAIL)
For Head,
Foundry Technology Unit,
Standards & Industrial Research
Institute of Malaysia.

c.c - Mr. Keizo Kagawa,
JICA Malaysia.

/ni.

(8) JICA → SIRIM

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

P.O. BOX 216 MITSUI BLDG
2-1, NISHI-SHINJUKU, SHINJUKU-KU TOKYO
160 JAPAN

December 5, 1988

Mr. Muhammad Fauzi Ismail
Research Officer,
Foundry Technology Unit,
MIDEC, SIRIM.

Dear sir,

I enclosed herewith a paper on the additional information concerning the Project.

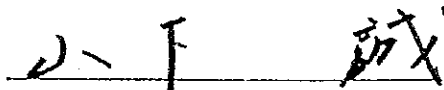
I must apologize for the slight delay because I have been to the Oriental Republic of Uruguay on business from November 19 to December 2.

The items which can't be informed this time are now under preparation. Fortunately, we will have the chance that Mr. Zainal will visit our office on December 16, when we will inform him of the above items.

By the way, how about your assignment I asked you to finish by the end of October? I'm looking forward to hearing from you soon.

If you have further questions, please let me know.

Sincerely yours,



Makoto Yamashita
for Director,
Mining and Industrial
Development Cooperation
Department,
JICA

cc:Mr.Keizo Kagawa

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

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160 JAPAN

1. Specification of Over Head Hoist Crane

Talking of the speed of the crane, you had better purchase the crane with dual (2) speeds; one is normal for the daily operation and the other is slow for pouring.

Moreover, the duration to which you can move the crane with dual (2) speeds are as follows;

- 1) up and down
- 2) right and left

Anyway, I will submit to you further information later.

2. List of the Equipment

Please see the List of the Equipment No.9 14) Gas Pressure Meter which we discussed at the time the Implementation Survey Team visited your country.

As far as this equipment is concerned, both of us agreed to delete it when the Japanese Experts Team made a visit on your country last May.

I think that we overlooked it and failed to omit it at the time of R/D. So it is better to omit this equipment from the List .

(9) SIRIM → JICA

Surat kami: SIRIM 436/UTF2/1(111)

Surat tuan:



INSTITUT PIAWAIAN DAN
PENYELIDIKAN PERINDUSTRIAN
MALAYSIA

Standards & Industrial Research Institute of Malaysia
Lot 10810, Peringkat 3,
Lebuhraya Perskutuan,
Peti Surat 35, 40700 Shah Alam, Selangor.

Bila menguweb, sila beri rujukan Institut ini

Tarikh : 24/12/88

Mr. Makoto Yamashita,
Technical Cooperation Division,
Mining & Industrial Development Cooperation Dept.,
Japan International Cooperation Agency,
Tokyo, Japan.

Dear Sir,

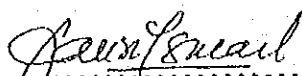
Regarding the emergency back-up system for the furnace. We fully agreed with your suggestion to have an extra water-tank. This requirement will be conveyed to our consultants for further action. The existing tanks available at the Pilot Plant and Plastic Technology Centre building will also be taken into consideration.

All other suggestions and instruction will be forwarded to our consultants as soon as possible.

Wishing you a Happy New year.

Thanks.

Yours sincerely,


.....
(MUHAMMAD FAUZI ISMAIL)
Research Officer
Foundry Technology Unit
for Controller
Standards & Industrial Research
Institute of Malaysia.

c.c. Mr. K. Kagawa
JICA Malaysia Office.

5-3 「マ」側との協議の覚書

Items mutually agreed by both sides
at the discussion on October 7, 1988

1. The name of the Project

"The Japanese Technical Cooperation for the Project on Foundry Technology Unit in the Standards and Industrial Research Institute of Malaysia"

2. Term of the Cooperation

Five years from the date of signing of the Record of Discussions.

3. Layout of the Site

1) Office rooms for both Japanese experts and Malaysian C/P personnel

- a. The Japanese side proposed to the Malaysian side that it would be better to adopt partition-less rooms, that is, to provide only one large room to all the Japanese experts because of the style of the Japanese Technical Cooperation.

The Malaysian side opposed to it.

(Reason)

- There will be many visitors, which will prevent the experts from working.
- Once only one large room is built, there will no chance to reconstruct it into many small rooms because of the difficulties in securing the budget. Finally both sides agreed that the Japanese expert and R.O. in the same field would share the same room.

- b. The Malaysian side promised that the office room for the Japanese expert would be completed by the end of November.

2) Air-Conditioner

The Malaysian side would provide the central operated air

conditioning system in the site at its own expense.

Moreover, due to the speciality of the Equipment, separate air conditioner will be provided in the analysis room besides central one by the Malaysian side.

3) Crane and its facilities

The Japanese side proposed to the Malaysian side that crane and its facilities should be provided and installed by the Malaysian side at its own expense (the number of the crane).

4) Dust collectors

As the Japanese side regarded dust collectors as the components of the Building, the Japanese side requested that the Malaysian side would provide and install them at its own expense. As the results of the discussins, both sides agreed as follows;

The Japanese side would provide dust collectors.

The Malaysian side would provide the facilities.

5) Electricity

Both sides reconfirmed that there would be enough capacity of electricity in operating the Unit.

18 ¢ / kW

6) Water

57 ¢/m³

7) Free access floor

The Malaysian side promised to procure it at its own expense.

4. Dispatching the Japanese Expert

- 1) The Japanese side explained the tentative plan of dispatching the long term experts as follows and the Malaysian side accepted the plan.

Chief Advisor	1989. 2 ~
Coordinator	1989. 2 ~
Pattern Making	1990. 1 ~
Melting	1989. 2 ~
Moulding	1990. 1 ~

- 2) Both sides agreed that the necessary numbers of short term experts would be dispatched in the field underneath if necessary arises.

(Pattern Making, Melting Moulding, Quality Control, Test and Inspection Finishing, Product Development, Installation and Operation.

Talking of the duration, timing and numbers of experts in the field of installation and operation of special equipment, the Japanese side would make the plans and inform.

- 3) The Japanese side requested the Malaysian side to submit A1 form as soon as possible.

5. Training C/P personnel in Japan

- 1) The Japanese side explained the program roughly and suggested to the Malaysian side to submit the proposal concerning the contents of the Program.
- 2) Both sides reconfirmed that the duration and field have never changed from the Report of the Meetings prepared in May, 1988.
- 3) The Japanese side explained the system of the acceptance of special counterpart personnel and the Malaysian side understood it.
- 4) The Japanese side requested the Malaysian side to submit A2-3 form as soon as possible.

6. Intake of Manpower

- 1) Talking of intake of manpower, the Japanese side found that there was no change from the time of Long Survey Experts Team.

- 2) The Japanese side explained that the first group of long term experts would be dispatched within the last quarter, Japanese fiscal year 1988. First group will include a Chief Advisor, a Coordinator and the expert on melting.

For this reason, the Japanese side requested the Malaysian side to secure the R.O. in the field of melting by the time the expert is dispatched. The Malaysian side showed the Japanese side the plan of manpower intake year by year and promised to secure R.O. within 1989 Japanese final year.

Before that, Mr. Fauji will have been tentatively allocated as R.O. on melting.

- 3) The Malaysian side explained the system; Once a public official goes abroad to study at the expense of the government, he will have to work as a public official after coming back to Malaysia in the fixed term in accordance with the length the term of studying abroad.
- 4) The Malaysian side has asked Public Service Department to allocate the necessary number of personnel for this Project and the Japanese side appreciated it.

7. Provision of the Equipment

- 1) Main part of this item will be discussed later.
- 2) The Malaysian side requested the Japanese side to add the video set to the list of the Equipment. The Japanese side proposed to the Malaysian side to make a short report to explain why they would need the video set.
- 3) The Malaysian side proposed to the Japanese side to increase the number of personal computer. After the discussion, both sides agreed as follows.

The Malaysian side will make a short report concerning the reason and the purpose of using the personal computer.

3 Personal computers will be provided by the Japanese side.

* Personal computer for special calculation (Made in Japan)

* Personal computer for manufacturing process control
(compatible with IBM)

* Personal computer for making a report, etc.
(compatible with IBM)

4) Talking of copying machine, the Malaysian side asked the Japanese side to provide the machine which is the same level of MITEC.

*5) Concerning CVGE (stabilizer), the Japanese side will inform the Malaysian side of the specification and the price.

6) As for as the raw material (eg. sand) is concerned, the Malaysian side will procure at its own expense.

7) The Japanese side requested the Malaysian side to submit A4 form as soon as possible.

8. Technical Cooperation Program

This matter will be discussed later.

9. Budget

The Japanese side requested the Malaysian side to make a table about both operating budget and development budget.

Items mutually agreed by both sides
at the discussion on October 8, 1988

I. The Record of Discussions

1. The Malaysian side proposed to the Japanese side that abbreviation should be applied to Foundry Technology Unit and the Standards and Industrial Research Institute of Malaysia in page 1.

The Japanese side explained the reason where there was no application as follows.

These two words don't stand for only the name of the organization, rather a part of the Project title. So, if "p" of Project is not a capital letter, we can abbreviate.

The Malaysian side agreed to it.

2. Talking of the expression of the items concerning the General Circular No. 1 of 1979, both sides mutually understood the respective conditions and agreed to wait for the answer back from Ministry of Foreign Affairs in Tokyo.
3. The Malaysian side proposed to the Japanese side to insert "research, development and services" before "in the field", line No. 5 of 1 of I in page 2.

The Japanese side pointed out that the items mentioned above were not the purpose of the technical cooperation but the mission of the Unit, so it would be better not to insert them.

The Malaysian side agreed to it.

4. Talking of the Equipment, the both sides mutually agreed as follows.
 - 1) The Japanese side is
 - a. to undertake to bear claims, if any arises, against the

Equipment except for those arising from the misconduct of the Malaysian side.

- 2) The Malaysian side is
 - a. to provide the domestic transportation and insurance fee for the Equipment provided by JICA at its own expense
 - b. to check, open, install and make a trial run of the Equipment provided by JICA in the presence of the Japanese experts, otherwise the Japanese side will never bear claims.
5. 1) The Malaysian side made a promise to the Japanese side to inform the allocation of C/P personnel of 1989 by March, 1989.
- 2) The Malaysian side explained that to secure the C/P personnel is one thing, and to recruit C/P personnel is another.

The Japanese side understood the explanation logically, however, requested the Malaysian side to recruit the C/P personnel as soon as possible.

6. Economic Planning Unit pointed out that the Ministry of Science, Technology and Environment should be abbreviated as "MOSTE" in Malaysian standard expression.
7. 1) Talking of training program in FTU, the Malaysian side explained that the target of this Unit would be upper level, that is, mainly, engineer class. For this reason, the main part of the training courses will be lectures and seminars. Skill training course would be held at most two times a year.
- 2) The Malaysian side explained that lectures and seminars would be held at the time the short term experts are dispatched.
- 3) The Japanese side explained that lectures and seminars should be held by the Malaysian C/P personnel at the final stage of

the Project and the Japanese experts would be only observers.

8. In the former discussion, the Japanese side decided to provide the video system.

Both sides agreed that this equipment would be used for Product Development.

This is why the sentence "Equipment and Materials for Product Development" was added in Annex III, page 10.

9. The Malaysian side pointed out that there would be the possibility of misunderstanding if the list in Annex IV remains as it is.

After the discussion, the list was revised as follows.

Annex IV.

1. Controller, SIRIM
2. Head, Metal Industry Development Centre
(hereinafter referred to as "MIDEC")
3. Counterpart personnel to the Japanese experts
 - (1) Head, FTU
 - (2) Necessary number of Research Offices, Assistant Research Officers and Technicians in the field of;
 - a. Pattern Making
 - b. Melting
 - c. Moulding
 - d. Quality Control
 - e. Test and Inspection
 - f. Finishing
 - g. Product Development
4. Administrative Personnel
 - (1) Clerical and service staffs
 - (2) A driver
 - (3) Other necessary supporting staff mutually agreed upon

10. The Malaysian side pointed out that "P.O. Box 35" should be inserted before "Persiaran Dats Incenteri in Adress, Annex V, page 12.
11. Economic Planning Unit proposed to the Japanese side to make Controller, SIRIM co-chairman because the Secretary General, MDSTE would be too busy to attend the Joint Committee every time.

The Japanese side accepted this proposal. However the way to express this condition in the Record of Discussions would be informed later by EPU.

II. Technical Cooperation Program

1. The Japanese side requested the Malaysian side to make the list of the Equipment provided by the Malaysian side (eg. Heat-treatment).
2. The Malaysian side explained that the Equipment in the field of non-destructive test (NDT) belonged to another unit, that is, the Japanese expert in the field of Finishing would borrow the Equipment from another unit.

The Japanese side understood it.

3. The Malaysian side proposed to the Japanese side to accept one draughtman as a C/P personnel in Japan.
4. Talking of the operation of the Unit, the Malaysian side planned to operate 50% in 1991.

5 - 4 調查団持參資料

マレーシア鑄造技術協力事業向機材リスト (案) 昭和63年9月27日

1. 機材リスト (案)

No	名 称	金 額 (M¥)			設 置 年 次		
		価 格	保 險, 運 賃	計	一 次 (*)	二 次 (+)	三 次 ()
1	溶 解	63	7	70	64	6	0
2	造 型	14	2	16	6	10	0
3	中 子	15	2	17	0	6	11
4	砂 処 理	42	7	49	11	20	18
5	鑄 仕 上	10	1	11	0	0	11
6	エアーコンプレッサー, 電源	13	2	15	15	0	0
7	分 析 装 置	60	3	63	44	19	0
8	物 理 試 験	8	1	9	5	0	4
9	砂 試 験	13	2	15	0	15	0
10	模 型	14	2	16	2	0	14
11	情 報	5	1	6	6	0	0
12	車 両	3		3	3	0	0
13	(小 計)	(260)	(30)	(290)	156	76	58
14	経 費	10		10	5	3	2
合 計		270	30	300	161	79	60

* 運賃は海上運賃

据付指導・スタートアップ

メーカー

- (1) 高周波誘導炉 14日間 約 1 M¥ (一次)
- (2) CO₂ 砂設備 21日間 約 1.5 M¥ (一次)
- (3) 生型砂設備 21日間 約 1.5 M¥ (二次)
- (4) 砂乾燥機 14日間 約 1 M¥ (三次)
- (5) 蛍光 X線分析装置 21日間 約 1.5 M¥ (一次)

(据付指導・スタートアップ7日間, トレーニング14日間)

総括責任者 (1名)

- 一 次 90日間 約 5 M¥
- 二 次 90日間 約 5 M¥
- 三 次 60日間 約 4 M¥

マレーシア機材リスト (案)

No	名 称	仕 様	数量	金額 (M¥)		
				価格	保険, 運賃	計
1	溶 解			63	7	70
* * * * * * * * +	101 高周波炉 102 高周波炉 103 高周波炉 104 クーリングタワー 105 集塵器 106 計量器 107 採取鍋 108 バナ 109 天井クレーン 110 フォークリフト 111	500kg/325kW (インダクトサーム) 100kg/100kW 80kg(銅) 25kg(AI) 高周波炉冷却用 50m ³ /min (新東) 300kg/max, 50kg/max 500kg×2 100kg×2 50kg×1 プロパン 5ton, 14mスパン(ガータのみ) 1.5t, ショベル付き	1 1 1 1 1 2 5 2 2 1	35 6 2 5 1 9 5	3 1 2 1	38 6 2 6 1 11 6
2	造 型			14	2	16
+ * +	201 ジョルトスキー造型機 202 ローラーコンベア 203 鋳 枠 204 エアランマー 205	650×575mm (木型2組付き) (新東) 800mm 1000×800×300/250mm 580×460×200/200mm 300×240×200/200mm	2 1 3 5 10 2	4 9 1	1 1	5 10 1
3	中 子	(新東)		15	2	17
+ +	301 コアブローイングマシン 302 シェルコアマシン 303	130×180×200mm (模型2組付き) 300×300×70/70mm (模型2組付き)	1 1	5 10	1 1	6 11
4	砂 処 理	(新東)		42	7	49
* * * * +	401 [CO ₂ , 有機] バケツエレベーター 402 砂 タ ン ク 403 ワールミキサー 404 ダストコレクター 405 [生型] シ ュ ー カ ー 406 ベルトコンベヤー 407 バケツエレベーター 408 砂 タ ン ク 409 砂 混 練 機 410 ダストコレクター 411 [砂乾燥他] 412 砂 乾 燥 機	10T/H, 3m ³ フィダー付き 150kg/バッチ 50m ³ /min 1,150×920mm 10T/H, マグネットプーリー付き 10T/H, 3m ³ フィダー付き 120kg/バッチ 50m ³ /min 0.5t/h, 砂供給, 集塵機付	1 1 1 1 1 1 1 1 1 1	(9) 1 2 3 3 3 1 1 2 4 4 16	(2) 1 1 1 1 1 1 2	(11) 1 2 4 4 (20) 4 3 1 2 5 5 (18) 18
5	鋳 仕 上 げ			10	1	11
	501 ショットブラスト 502 グラインダー 503	テーブル式1m 集塵機付き (新東)	1 1	9 1	1	10 1
6	エアコンプレッサー, 電源			13	2	15
* * +	601 エアコンプレッサー 602 非常用電源 603	15kw 除湿付き ジーゼルエンジン	1 1	3 10	1 1	4 11
7	分 析 装 置			60	3	63
* +	701 蛍光X線分析装置 702 C, S分析 703	理学3070E LECO	1 1	42 18	2 1	44 19

No	名 称	仕 様	数 量	金 額 (M¥)		
				価 格 保 険	運 賃 据 付	計
8	物 理 試 験			8	1	9
* 801	CEメータ		1	3	1	4
* 802	浸せき型温度計器		1	1		1
803	ガス分析		1	4		4
804						
+	9 砂 試 験	(新東)		13	2	15
+	901	シンプソン型	1			
+	902	ユニバーサルミキサ	1			
+	903	サンドランマ	1			
+	904	ふるい、ロータップ	1			
+	905	砂洗浄機	1			
+	906	通気度試験機	1			
+	907	強度試験機	1			
+	908	水分計	1			
+	909	硬度計(湿態)	1			
+	910	硬度計(乾態)	1			
+	911	活性粘土試験機	1			
+	912	モルダビリティスター	1	(GF)		
+	913	比表面試験機	1	(GF)		
+	914	コンパクトビリティスター	1	(GF)		
+	915	常温抗折試験機	1	(GF)		
+	916	天秤	1			
+	917	電気オーブン	1			
+	918	試験片製作用木型	1			
+	919	200℃, 800℃用 各1				
	10 模 型	(丸三商事)		14	2	16
	1001	自動一面かん盤	1			
	1002	手押しかん盤	1			
	1003	ハンドソール	1			
	1004	ラジアルボール	1			
	1005	木工旋盤	1			
	1006	手バイト研磨機	1			
	1007	携帯電気かん	1			
	1008	測定器	1			
	1009	ルータ	1			
	1010	丸鋸	1			
	1011	両頭グラインダ	1			
	1012	両頭グラインダ	1			
	1013	両頭研磨機	1			
	1014	木工研磨機	1			
	1015	木工研磨機	1			
	1016	木工研磨機	1			
	11 情 報			5	1	6
* 1101	コンビン機					
* 1102	パソコン					
1103						
	12 車 両			3		3
* 1201	ミニバス					
1202						
	(経 費)			10		10
	合 計			270	30	300

5-5 「日」側 Questionnaire

October 11, 1988

Questionnaire

1. Budget

a. Settlement Accounts of 1988 Malaysian fiscal year

- 1) Development Budget
- 2) Operating Budget

b. Budget from 1988 to 1992

- 1) Development Budget
- 2) Operating Budget

2. Equipment

a. The Equipment provided by the Malaysian side

- 1) Names and specifications
- 2) The Plan of installation

b. The video sets

- 1) Purpose

c. Personal Computer

- 1) Proposed specifications
- 2) Purpose

d. Training C/P personnel in Japan

- 1) The proposal concerning the contents of the Training
- 2) Draughtman (the reason)

5-6 SIRIMがPSDに宛てた書簡(必要なページのみ抜粋)



UNIT TEKNOLOGI FAUNDRI

FOUNDRY TECHNOLOGY UNIT

KEPERLUAN
TENAGA MANUSIA
PROJEK PEMBANGUNAN
UNIT TEKNOLOGI FAUNDRI
SIRIM

Disediakan oleh :

HELME HASHIM
Ketua Unit
Unit Teknologi Faundri

OCTOBER 1988

KEPERLUAN
TENAGA MANUSIA
PROJEK PEMBANGUNAN
UNIT TEKNOLOGI FAUNDRI
SIRIM

KANDONGAN

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2.3	Program Implimentasi Projek UTF	4
3.	Rancangan Operasi UTF	6
3.1	Target Operasi	6
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4.2	Justifikasi Keperluan Tenaga Manusia	19
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5.	Kesimpulan	33

PANDUAN CARTA 3a - 3b

- Carta 3-a : Organisasi dan jumlah keperluan kakitangan peringkat perancangan (Tahun 1988)
- Carta 3-b : Organisasi dan jumlah keperluan kakitangan peringkat Implimentasi (Tahun 1989)
- Carta 3-c : Organisasi dan jumlah keperluan kakitangan peringkat Implimentasi (Tahun 1990)
- Carta 3-d : Organisasi dan jumlah keperluan kakitangan peringkat Operasi (Tahun 1991 keatas)

RO	-	Pegawai Penyelidik	T	-	Juruteknik
IDO	-	Pegawai Senireka	D	-	Pelukis Pelan
SARO	-	Penolong Pegawai Penyelidik Kanan	JT	-	Jurutrengkas
ARO	-	Penolong Pegawai Penyelidik	K	-	Kerani
ST	-	Juruteknik Kanan	PP	-	Pelayan Pejabat
SD	-	Pelukis Pelan Kanan	P	-	Pemandu

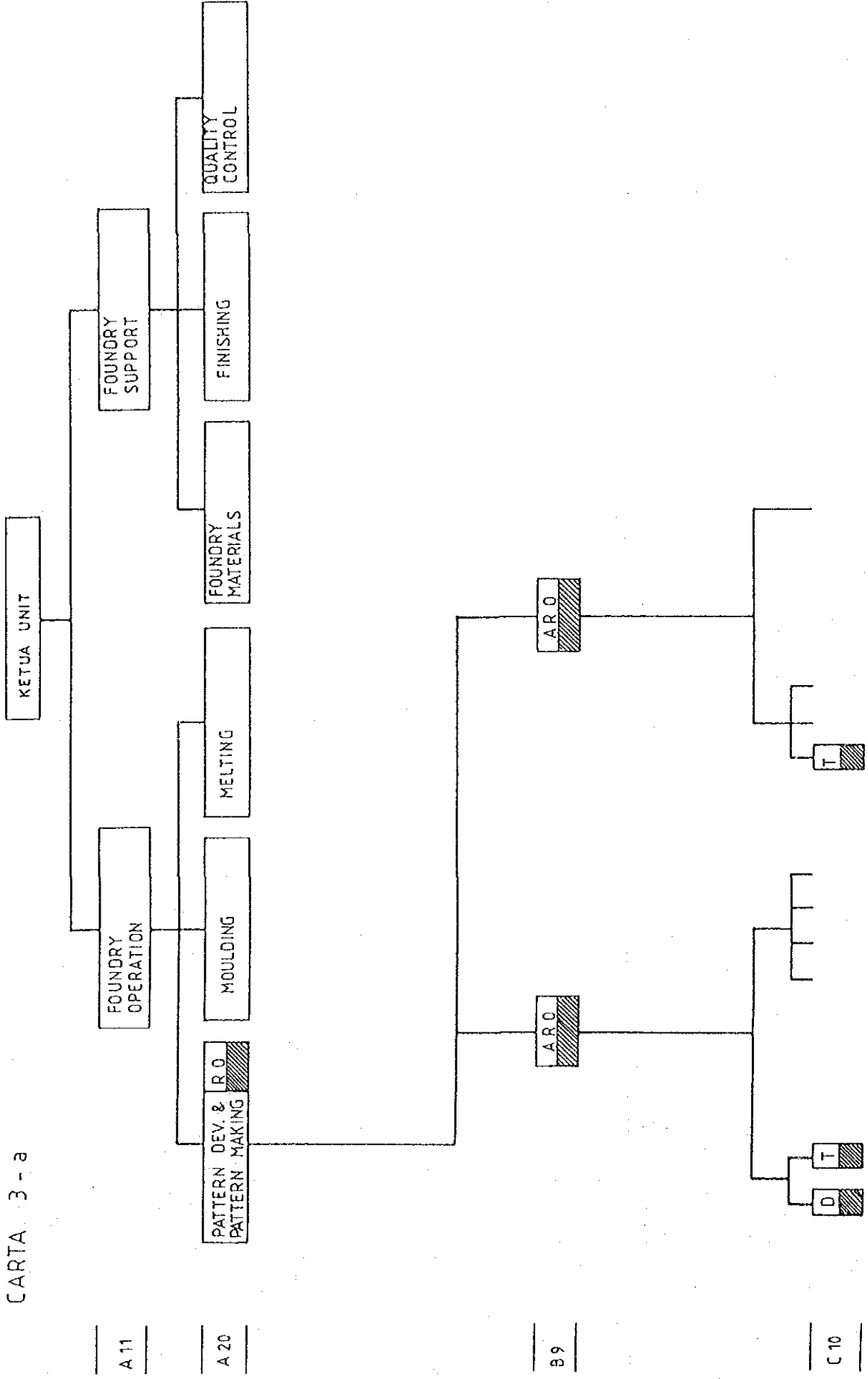


- Jawatan yang dipohon



- Jawatan telah diisi

TAHUN 1988
 CARTA 3 - a



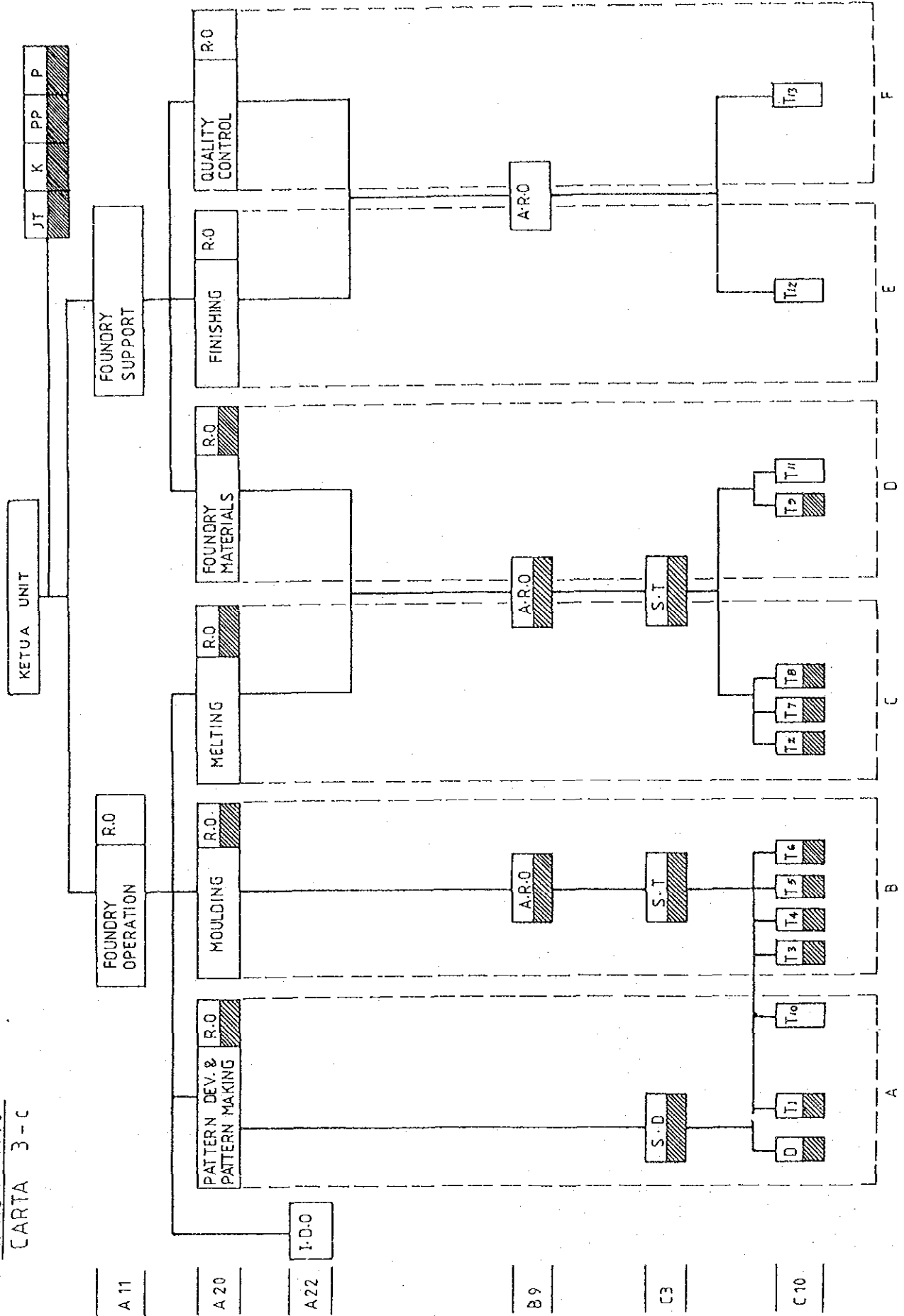
A 11

A 20

B 9

C 10

TAHUN 1990
 CARTA 3 - C



Tahun 1989

Kerja-kerja pembangunan infrastruktur UTF akan bermula pada tahun 1989 ini. Antara kerja-kerja tersebut ialah :

- Pembinaan bangunan tambahan serta renovasi bangunan semasa.
- Penerimaan alat kelengkapan dan pemasangan.
- Latihan kakitangan di Jepun dan juga di UTF sendiri oleh pakar-pakar jangka panjang.
- Menyambong projek-projek R & D.

Kakitangan tambahan adalah diperlukan bagi menampung kerja-kerja diatas yang tidak mungkin dapat dilaksanakan oleh kakitangan yang sedia ada. Carta 3-b menunjukkan organisasi kakitangan UTF bagi tahun 1989.

Tahun 1990

Pada tahun 1990 ini pembangunan UTF masih lagi diperingkat pembangunan infrastruktur. Persediaan akan juga dibuat pada tahun ini supaya UTF akan separuh beroperasi pada tahun 1991 berikutnya. Kerja-kerja utama yang dirancangkan ialah :

- Pemasangan alat kelengkapan dan operasi percubaan.
- Pembelian bahan-bahan keperluan operasi UTF.
- Latihan kakitangan untuk operasi UTF tahun berikutnya.

Carta 3-c menunjukkan organisasi kakitangan dan keperluan tambahan bagi tahun 1990.

Tahun 1991 dan seterusnya

Diantara tahun 1991 hingga 1993 UTF adalah didalam peringkat separuh operasi. Dalam tempoh ini kakitangan UTF akan mempelajari semua proses kerja foundri supaya unit ini berkemampuan beroperasi sepenuhnya setelah tamat tempoh kerjasama SIRIM/JICA pada tahun 1993. Carta 3-d menunjukkan organisasi kakitangan yang dirancang bagi UTF selepas tahun 1993 dan keperluan kakitangan sepenuhnya.

Jumlah kakitangan mengikut peringkat seperti yang dibincangkan dapat dilihat dari jadual 1.

Jadual 1 : Jumlah Keperluan Kakitangan Mengikut Peringkat-Peringkat

	KEPERLUAN							Jumlah
	1988	1989	1990	1991	1992	1993	1994	
KETUA	1	-	-	-	-	-	-	1
PEGAWAI PENYELIDIK TINGKATAN KANAN A11	-	-	1	-	-	-	1	2
PEGAWAI PENYELIDIK TINGKATAN BIASA A20	1	3	2	-	-	-	-	6
PEGAWAI SENIREKA PERUSAHAAN A22	-	-	1	-	-	-	-	1
PEN. PEG. PENYELIDIK TINGKATAN KANAN B3	-	-	-	-	-	-	1	1
PEN. PEG. PENYELIDIK TINGKATAN BIASA B9	2	-	1	-	-	-	-	3
JURUTEKNIK TINGKATAN KANAN C3	-	2	-	-	-	-	1	3
PELUKIS PELAN TINGKATAN KANAN C3	-	1	-	-	-	-	-	1
JURUTEKNIK C10	2	7	4	-	-	6	-	19
PELUKIS PELAN C10	1	-	-	-	-	-	-	1
PEGAWAI KERANI C11	-	1	-	1	-	-	-	2
JURUTRENGKAS C12	-	1	-	-	-	-	-	1
PELAYAN PEJABAT	-	1	-	-	-	-	-	1
PEMANDU	-	1	-	-	-	-	-	1
JUMLAH MENGIKUT TAHUN	7	17	9	1	-	6	3	43
JUMLAH "CUMUCATIVE"	7	24	33	34	34	40	43	

5-7 プレスリリース用資料

- a. 日本側
- b. マレーシア側



Dr. Ahmad Zaharudin Idrus, Controller of SIRIM;
Senior Officials from the Ministeries concerned;
Ladies and Gentlemen :

On behalf of the Japanese Implementation Survey Team, first of all, I would like to express hearty thanks for your sincere cooperation and assistance extended to our team.

During our stay in Malaysia since last Wednesday, we have had a series of productive discussions with you and worked out the Tentative Schedule for the Implementation and Technical Cooperation Programme.

A while ago, the Malaysian and Japanese sides signed and exchanged the Record of Discussions for the Project on Foundry Technology Unit.

As you know, the Foundry Tecnology Unit is one of the units of the Metal Industry Development Centre (MIDEC) in SIRIM. So far, JICA/SIRIM have had the technical cooperation to establish MITEC in 1981 and MIRDC in 1984. These Project have been successful and greatly appreciated by both countries.

Historically speaking, this Project is rather old. In August 1981 three Japanese experts were invited to make a feasibility study on this Project. This means the Project came into existence on the solid foundation of seven years' mutual understanding, cooperation and thorough preparation for seven years.

The Project aims at developing human resources in the field of foundry technology and thus contribute to the technological development of the foundry industry n Malaysia.

High quality casting is indispensable for high quality products, that is, foundry industry is the supporting industry to modern industry, such as automotive, machinery and electric machine industries.



The importance of the role of the Foundry Industry for industrialization of this country is mentioned in the Industrial Master Plan (IMP) and the 5th Malaysian Plan. I believe that this Project would be helpful for the foundry industry to fulfil its responsibility. The Government of Japan, through JICA, will despatch 5 long-term experts and some short-term experts to assist in this Project. Equipments necessary for the implementation of the Project will also be provided. In addition, twelve Malaysian personnel connected with the Project will be sent to Japan for technical training.

In conclusion, I wish to extend again, our sincere thanks to all of the staff concerned for the kind assistance and co-operation rendered to our survey team, and I believe, that this technical cooperation will lead to successful development of the modern manufacturing industries through improving the local foundry industry.

Thank you.



SIARAN AKHBAR SIRIM

Signing of the Record of Discussion for the establishment of Foundry Technology Unit in SIRIM

The Malaysian Government through SIRIM and the Japanese Government through JICA signed the Record of Discussion for the establishment of Foundry Technology Unit in SIRIM on Wednesday, 12 October 1988 at 10.00 a.m. at SIRIM Shah Alam, Selangor Darul Ehsan.

SIRIM, represented by its Controller, Dr. Ahmad Zaharudin Idrus and JICA by Mr. Syozo Kakuno, leader of the JICA Implementation Survey Team, Japan. The signing of the Record of Discussion marked the beginning of a five-year SIRIM/JICA technical cooperation for the establishment of the Foundry Technology Unit in SIRIM. The objective of the project is to develop human resources for the transfer of technology in the field of the foundry technology & thus contribute to the technological development of foundry industry in Malaysia. The Unit is expected to be partially operational by 1991 and fully operational in 1993.

Under the Project, the Japanese Government through JICA has agreed to provide the following assistance :

1. The Japanese Government will provide most of the major equipment needed for the operation of the foundry workshop. The estimated cost of the equipment is approximately MR6 million.

INSTITUT PIAWAIAN DAN PENYELIDIKAN PERINDUSTRIAN MALAYSIA.
STANDARDS AND INDUSTRIAL RESEARCH INSTITUTE OF MALAYSIA.

Peti Surat 35, Shah Alam, Selangor. Telefon: 365966, 365862, 365821, 365983
Semua Pertanyaan Dialamatkan Kepada Unit Perhubungan Perindustrian.
Kawad : SIRIMSEC, Shah Alam. Telex : MA38672

2. Five long-term experts will be stationed at the Foundry Technology Unit to transfer various foundry technology to the local counterparts. In addition, a number of short-term experts will also be available as and when required.

3. Short term industrial training, between 6 to 8 months will be provided to 9 Foundry Technology Unit personnel in Japan.

The development of the Foundry Technology Unit marks another milestone in the development of SIRIM as an Industrial Research & Development Institute being the leading Institute for the development of metal-based industry.

Currently under the Metal Industry Development Centre (MIDEC) project which is the reformation of the Metal Industry Technology Centre (MITEC) and the Metal Industry Research & Development Centre (MIRDC), various facilities like computer-aided Design (CAD), Computer Numerical Control (CNC), Metal Stamping etc are offered as services to the industry. With the development of the Foundry Technology Unit (FTU) in SIRIM, further services will be offered & extended to the foundry & metal-based industry in the future.

Public and Industrial Affairs Unit
SIRIM.

12 October, 1988

Jepun setuju bekal peralatan utama bagi operasi peleburan

KUALA LUMPUR 13 Okt. — Kerajaan Jepun telah bersetuju untuk membekalkan peralatan utama yang bernilai hampir \$6 juta bagi operasi peleburan di Malaysia.

Peralatan tersebut akan ditempatkan di Unit Teknologi Peleburan (FTU) di Institut Piawai dan Penyelidikan Perindustrian Malaysia (SIRIM).

SIRIM telah menandatangani persetujuan dengan Japan International Corporation Agency (JICA) untuk menubuhkan unit tersebut semalam. FTU dijangka dapat beroperasi sepenuhnya di tahun 1993.

Melalui persetujuan itu, SIRIM dan JICA akan memulakan kerjasama di bidang teknikal selama lima tahun untuk menubuhkan unit ber-

kenaan.

Menurut kenyataan SIRIM, kerjasama itu bertujuan meningkatkan sumber tenaga manusia di bidang peleburan yang boleh membantu pembangunan teknologi di negara ini.

Kerajaan Jepun melalui JICA juga bersetuju menempatkan lima orang pakarnya di bidang peleburan di FTU untuk memberi tunjuk ajar berkenaan operasi itu. Kelima-lima mereka akan ditempatkan untuk jangka panjang.

Kursus-kursus jangka pendek antara enam hingga lapan bulan di Jepun juga akan diberikan kepada rakyat Malaysia yang terlibat dalam penubuhan unit tersebut.

Penubuhan unit teknologi peleburan ini melambangkan kemajuan SIRIM sebagai institusi penyelidikan dan pembangunan bagi industri-industri yang berasaskan logam.

Dengan penubuhan FTU, SIRIM akan dapat memberikan khidmat-khidmat mengenai peleburan dan industri logam di masa akan datang.

(翻 訳)

Japan agreed to provide
major equipment for smelting operation

Japan Government has agreed to provide approximately \$6 M worth major equipment for Malaysia smelting operation.

This equipment will be placed at the Foundry Technology Unit (FTU) in the Standards & Industrial Research Institute Of Malaysia (SIRIM).

SIRIM has signed an agreement with the Japan International Cooperation Agency (JICA) to set up this unit yesterday. FTU is expected to operate fully in 1993.

The signing of this agreement marked the beginning of 5 years of SIRIM/JICA technical cooperation for the establishment of the FTU.

According to SIRIM's statement, this cooperation is aim to improve human resources in smelting field and thus contribute to the nation's technological development.

The Japanese Government has agreed to provide through JICA 5 experts to FTU's smelting field, so as to give guidance relating to this operation. These 5 experts will be stationed on long term basis.

Short term courses between 6-8 months in Japan will be provided to Malaysian who are involved in the establishment of this unit.

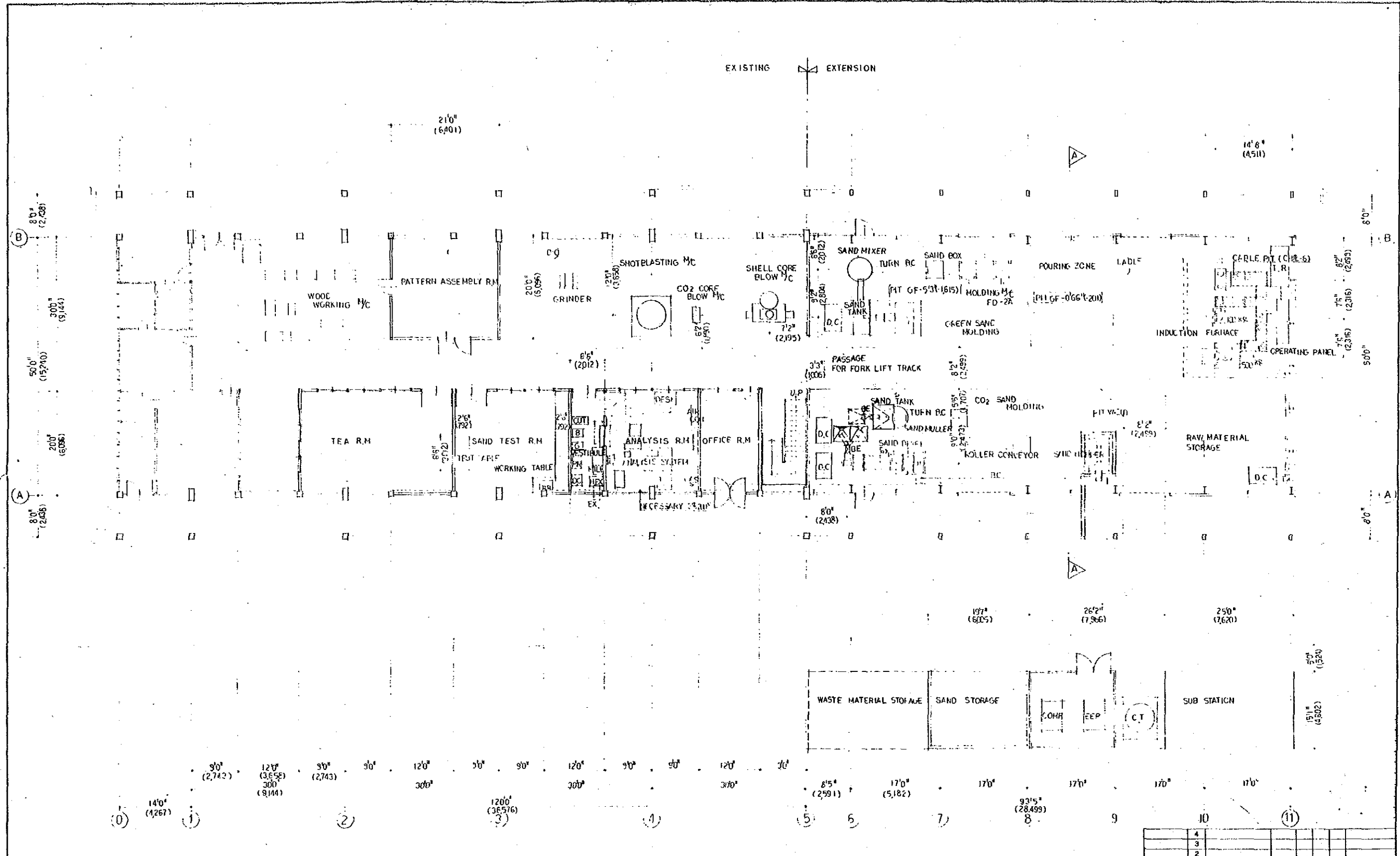
The establishment of FTU signified the advancement of SIRIM as an institute of Development & Research for metal industry.

With the establishment of FTU, SIRIM will be able to provide services relating to smelting & metal industry in near future.

Utusan Malaysia, Friday, 14 October, 1988.

Sirim foundry unit

A FOUNDRY Technology Unit (FTU) will be set up by the Standards and Industrial Research Institute of Malaysia (Sirim) and the Japanese Investment Corporation Agency (Jica), following the signing of an agreement earlier this week. The signing of the record of discussion marked the beginning of five years of Sirim/Jica technical cooperation for the establishment of the FTU. The project's main objective is to develop human resources for the transfer of foundry technology and thus contribute to the nation's technological development. The Japanese Government has agreed to provide through Jica experts and major equipment needed for the operation. Industrial training will be provided to nine FTU personnel in Japan.



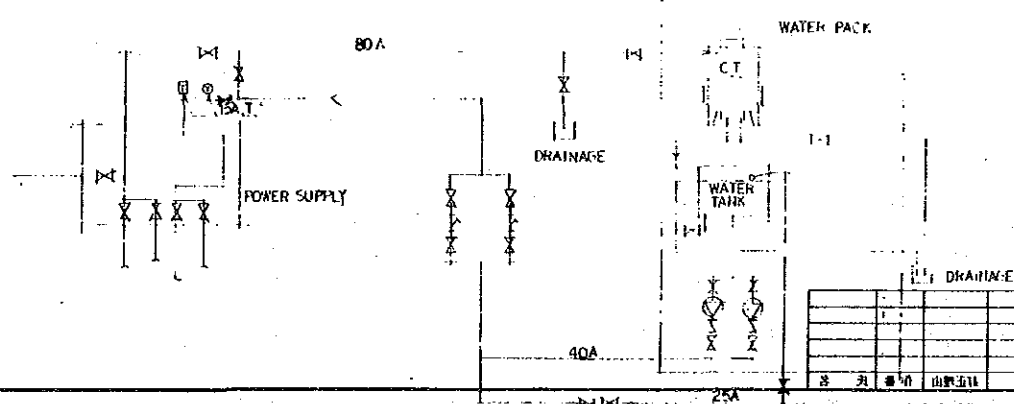
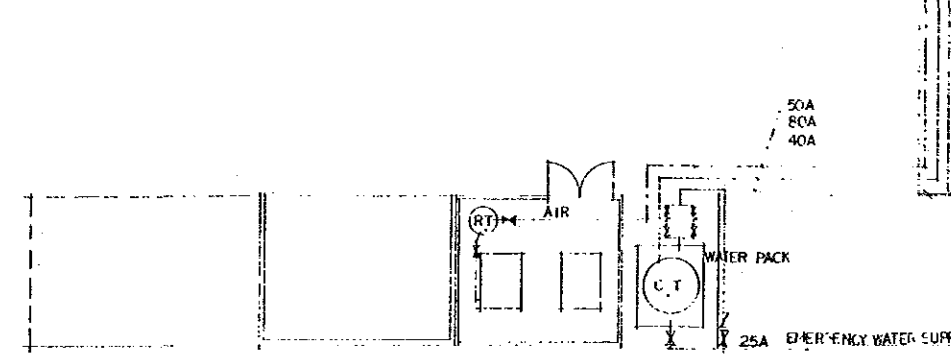
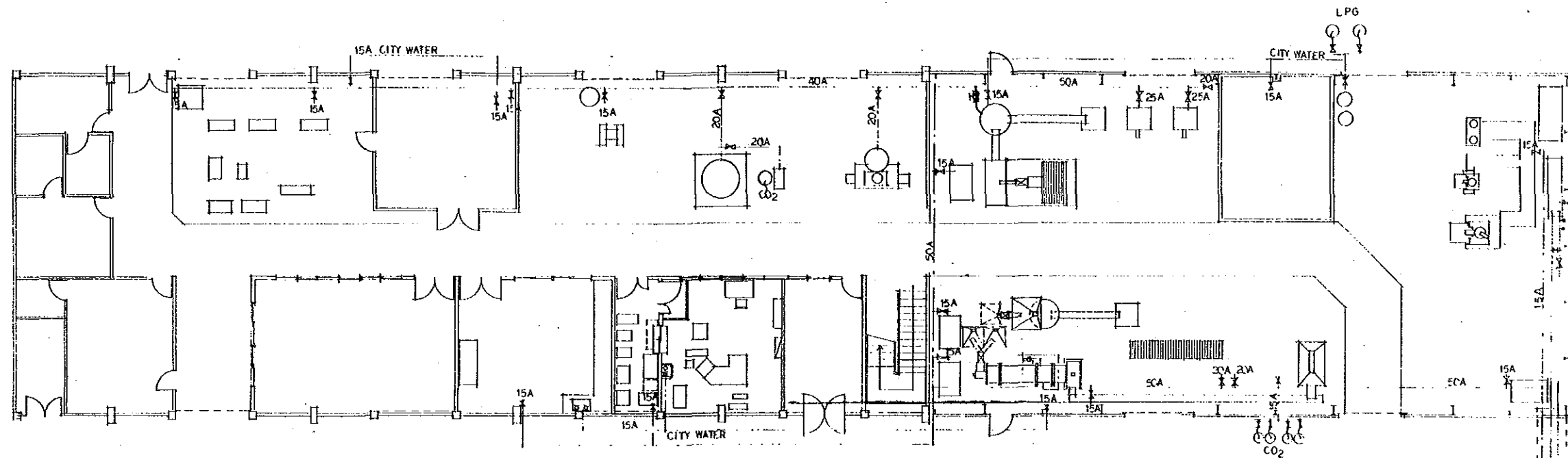
FLOOR PLAN 1/100

1	2	3	4	5	6	7	8	9	10	11
12	13	14	15	16	17	18	19	20	21	22

4										
3										
2										
1										
1	2	3	4	5	6	7	8	9	10	11
12	13	14	15	16	17	18	19	20	21	22

GROUND FLOOR PLAN
ML 0001

PIPEING PLANING DRAWING



4									
3									
2									
1									
在力配機	品名	品名	材料	規格	數量	備註	圖號	圖名	圖號
備註									
製圖									
檢核									
簽證									
審核									

JICA