

3) Plumbing Fixtures

The following fixtures will be provided to conform to the system adopted for the existing facilities.

- a) High-tank water closets
- b) High-tank urinals
- c) Washing stands
- d) Cleaning sink
- e) Sinks in Science Laboratories

4) Fire Fighting System

Hose reels (hydrant system) will be provided following the relevant standard in Malaysia, and fire extinguishers will be installed where necessary.

5) Gas Supply System

A system for supplying propane gas for science experiments will be provided. Gas cylinders will be installed by the Malaysian side while the Japanese side will carry on the necessary plumbing work for supplying the gas up to the gas burner cocks.

4-2-6 Educational Equipment Plan

(1) Educational equipment shall be selected based on the following criteria:

- 1) Educational policy and system of JLC
- 2) Education level, current situation and future plans of JLC
- 3) Curriculum and time tables/schedules during each semester
- 4) Number of students and number of classes
- 5) Uniformity with the existing equipment
- 6) Availability of the existing equipment and its utilization

7) Easy operation and maintenance

(2) The major equipment provided by the Japanese side is as follows:

1) Audio/Visual Equipment

a) Language Laboratory (for 30 students)

1. Control console 1
Display: 9 inch, touch-screen system
Power consumption: 310 W
2. Master tape recorder 1
Recorder with dual tape mechanism,
built-in 8 bit cpu
Track system: 4 tracks, 2 channels
Tape speed: 4.8 cm/s
3. Power source unit 1
Power output: DC 19 V, 20 A (max)
Power consumption: 1.4 KVA
4. Data printer 1
Printing system: thermal dot printer
5. Console desk (for teacher) 1
Dimensions: 1.2W × 0.8D × 0.7H (m)
6. Booth recorder (for students) 30 sets
Track system: 4 tracks, 2 channels
Tape speed: 4.8 cm/s
Sentence repeat function,
Analyzer response,
Program selection
7. Booth (for two students) 15 sets
Low partition type
Dimensions: 1.42W × 0.48D × 0.77H (m)
8. Head set 31 sets
Microphone: electric condenser type
9. Speaker (for internal use) 2 sets
16 inch cone type, 25 W
10. Video display system with slide projector 1 set
Video camera: CCD color camera
Power consumption: 355 W
11. Desk for video display system 1

12. Video cassette player	1
Output: 1.0 Vp-p ± 0.2 V, 75 Ω	
Video signal: S/N more than 45 dB	
Audio signal: S/N more than 48 dB	
Power consumption: 58 W	
Video system: PAL, SECAM and NTSC multi-standard system	
13. Desk for peripheral devices for LL	1
14. Color video monitor	1
13 inch, for teacher	
15. Color video monitor	4
21 inch, for students	
16. Video/audio distributor	1
5 outputs, 1 input	
17. Connecting cable	1 lot
18. Printing paper (3 rolles/box)	2 boxes
19. Cassette duplicator	1
Duplication speed: 8 times normal speed	
Track: 4 track, 4 channel	
20. Tape eraser	1
21. Spare recorder for students	2
22. Spare head set	4 sets
23. TV hanger	4 sets
24. Installation materials	1 set
25. Cassette tape (60 minutes)	50

b) Audio/Visual Room

1. Video projector 1	
Color system: PAL, SECAM and NTSC multi-standard system	
Light output: 600 lumen	
Power consumption: 355 W	
2. Remote control unit	1
1 output, 2 inputs	
Power consumption: 2 W	
3. Screen	1
Size: 72/100 inch, compatible	
Dimensions: 2.2 W $\times$ 1.76 H (m)	

4. Video display system with slide projector	1
Video camera: CCD color camera	
Power consumption: 135 W	
5. Desk for video display system	1
6. Video cassette player	1
Output: 1.0 Vp-p ± 0.2 V, 75 Ω	
Video signal: S/N more than 45 dB	
Audio signal: S/N more than 48 dB	
Power consumption: 58 W	
Video system: PAL, SECAM and NTSC	
multi-standard system	
7. Video monitor (13 inch)	1
8. Control power AMP	1
Input: microphone 4 channels	
line 1 channel	
Output: 80 W + 80 W	
9. Speaker system	2 sets
16cm ϕ cone type $\times$ 2 pcs	
Power consumption: 20 W	
10. Microphone	4
Uni-directional dynamic microphone	
11. Microphone stand (desk type)	2
12. Microphone stand (floor type)	1
13. Cassette tape deck	1
Compact cassette system	
14. Condenser microphone	1
Uni-directional type	
15. VTR/monitor rack	1
16. /suspension support	1 lot
1 set for projector	
4 set for speaker	
17. Connecting cable	1 set
18. Cable for microphone	1 set
19. Installation materials	1 set

2) Science Laboratory Equipment

a) Chemistry Laboratory

- Equipment

1. Water distiller	2
Glass, 4 ℓ/Hr, heater 3kW	
2. Deionizer	1
30 ℓ/Hr	
3. Aspirator	10
20 ℓ polyethylene bottle	
4. Balance	
- Analytical electronic balance	10
Readability: 0.1 mg	
Range: 160 g	
- Top loading electronic balance	5
Readability: 0.1 g	
Range: 600 g	
- Triple beam balance	5
Readability: 0.1 g	
Range: 2610 g	
5. Hot plate	3
Plate: 460 × 300 mm	
Heater: 2 kW	
Temperature: 350°C (max)	
6. Waterbath (12-hole)	7
Dimensions: 400 × 300 × 100 (mm)	
Hole: 76 mmφ × 12	
Heater: 1.5 kW	
7. Oven	3
Capacity: 50 ℓ	
Temperature: ambient +5° ~ 200°C	
Heater & blower: 1.6 kW	
8. 2-door refrigerator	1
120 ℓ, 80 W	
9. Magnetic stirrer (with heater)	2
Plate: 18 × 18 (cm)	
Herter: 1.1 kW	
Stirrer: 11 W	
10. Drying cabinet	2
Capacity: 220 ℓ	
Heater: 750 W	

11. Melting point apparatus	10
Temperature: 350°C (max), digital	
Thermometer: accuracy $\pm 0.1^\circ\text{C}$	
12. PH meter	6
Digital, 0 ~ 14 pH	
13. Conductivity meter	6
Digital indication 999 μS ~ 99.9 μS	
14. Chromatography	
- Chromatography tank	40 sets
- Ultraviolet lamps 6 W	4
- Blower (Hot air) 700 W	6
15. Barometer	1
Fortin type, mercury barometer	
660 ~ 810 mm Hg, 890 ~ 1095 mb	
16. Ice glaze maker	1
Cube ice, 60 kg/day, 0.5 kW	
17. Freezer	1
200 ℓ , 85 W	
18. Stop watches	80
0 ~ 60 seconds, 0 ~ 30 minutes	
19. Trolley	3
Three decks, 1 $\times$ 1 (m)	
20. Tool kit (chisel, driver, plier, soldering iron, spanner, hammer, drills, etc. in a tool box)	1 set
21. Safety equipment	
- Apron (PVC)	3
- Eye-mask (polycarbonate)	3
- Fire blanket	3
- Face mask (Spare filters 5)	3 sets
- Heatproof gloves	3 pairs
- Goggles	3 pairs
- First aid box	1
22. Bunsen burner	80
13 mm OD (outlet), 9 mm OD ϕ (inlet)	
23. Tripod stand	80
24. Retort stand	80
25. Wind shield	80
26. Cork borer machine (manual)	1

27. Thermometer - 10°C ~ 110°C	80
0°C ~ 360°C	40
28. Wire gauze (15 cm × 15 cm)	80
29. Crucible (porcelain) with lid (35 ml)	80
30. Evaporating dish (90 mmφ)	80
31. Test tube racks (8 hole)	80
32. Test tube holders (wood)	80
33. Test tube brush	80
34. Tong (for crucible)	80
35. Spatula	80
36. Wash bottles (500 ml)	80
37. Eyeshields	80
38. Draft chamber (W1.8m x H2.4m x D0.9m)	2
Dimensions: W 1.8m × H 2.4m × D 0.9m	
Fan: 0.4 kW, with duct	
Services: gas, water, electricity	

Glass equipment

1. Beakers	
600 ml	80
250 ml	160
100 ml	160
50 ml	160
2. Conical flasks	
250 ml	240
100 ml	160
3. Measuring cylinders	
100 ml	80
10 ml	80
4. Filter funnels (75 mm)	80
5. Pipette (25 ml)	80
(bulb pipette) (10 ml)	80
6. Pipette graduated (10 ml)	80
7. Watch glass	160
8. Weighing bottle (200 mm × 400 mm)	160
9. Test tubes	
25 mm × 150 mmH	400
20 mm × 150 mmH	400
15 mm × 150 mmH	400

10. Gas jars (50 mm × 200 mmH)	80
11. Distillation flasks & Condensers	80 sets
Liebig type 500 mmL	
12. Dessicators (30 cmφ)	20
13. Buchner filter funnel, flasks & filter pump	20 sets
funnel (70 mmφ)	
flask (500 ml)	
filter pump	
14. Measuring flask	
100 cm ³	80
250 cm ³	80
15. Burettes (50 ml)	80
16. Reagent bottles (white, 500 ml)	60
(brown, 500 ml)	60
17. Dropping bottles (white, 60 ml)	60
(brown, 60 ml)	60
18. Dispensing bottles (60 ml)	120

b) Physics Laboratory

- Equipment

1. Freezer	1
200 l, 85 W	
2. Water distiller	1
Glass type, 4 l/HR	
Heater: 3kW	
3. Travelling microscope	15
Readability: 0.01 mm	
Range: 170 mm (horizontal)	
100 mm (vertical)	
Telescopic objective lens	
4. Vernier caliper (with depth gauge)	30
Readability: 0.1 mm	
Range: 0 ~ 11 cm	
5. Micrometer	30
Readability: 0.1 mm	
Range: 0 ~ 25 mm	
6. Stop watch	40
0 ~ 60 seconds, 0 ~ 30 minutes	

7. Thermometer (bar)	
0 ~ 50°C	20
0 ~ 360°C	20
8. Spirit level (wooden, 30 cm)	10
9. Pulley	10 sets
- Single 63 mmφ × 2	} Set
- Double 63+45 mmφ × 2	
10. G-clamp (100 mm)	10
11. Optical bench sets	10 sets
Scale: 120 cm	
Accessories: lamphouse, screen holder, mirror	
12. Spherometers	10
Dial: 40 mmφ,	
Readability: 0.005 mm	
Vertical scale: -7 ~ +7 mm	
13. Wheatstone bridge (with galvanometer)	20
Range: 0.001 Ω ~ 10 MΩ	
14. Accumulator (2V, 20 Ah)	20
15. Battery (dry cell, 1.5 V)	100
16. Resistance box	5
Range: 0 ~ 10,000 × 1 Ω	
Accuracy: ±2%	
17. Bunsen burner	20
13 mm OD (outlet), 9 mm OD (inlet)	
18. Ammeter	
- direct current (0 ~ 10 A)	20
- alternating current (0 ~ 10 A)	20
- direct current (milliampere, 0 ~ 500 mA)	20
19. Voltmeter	
- direct current (0 ~ 10 V)	20
- alternating current (0 ~ 250 V)	20
- direct current (millivolt, 0 ~ 100 mV)	20
20. Weights (50g, 20g, 10g, 5g)	15 sets
21. Rheostat	20
Resistance: 9.1 Ω	
22. Multimeter	10
Digital multimeter	

DC, ACC range: 200 mA ~ 10 A	
2,000 mV ~ 750 V	
Resistance: 20 MΩ ~ 20 Ω	
23. Ruler	
1 m (steel)	20
0.5 m (steel)	20
24. Balance (Triple beam balance)	5
Readability: 0.1 g	
Range: 2,610 g	
25. Balance (Top pan balance)	3
Readability: 0.1 g	
Range: 600 g	
26. Electric drill	1
1 mm ~ 10 mm × 19 pcs, 400 W	
27. Soldering iron (16 W)	2
28. Battery charger	3
Voltage: 2, 6, 12 (V)	
85 W, 1 ~ 4A	
29. Variable resistance box	10
Dials: 6	
Range: 0.1 Ω ~ 100 kΩ	
30. Tripod stand (for burner)	20
31. Retort stand & clamps	40 sets
32. Slotted weights	10 sets
(50g, 20g, 10g, 5g, with hanger)	
33. Tuning fork	10 sets
(256, 320, 384, 512, Hz)	
34. Calorimeter	10
Dimensions: 75 × 50 mm (inner vessel)	
100 × 60 mm (outer vessel)	
Accessories: heating coil, agitator	
35. Magnet bar	20 sets
16 × 10 × 50 mmL × 2 pcs	
36. Switches	
- single pole (AC 50 V, DC 75 V)	10
- double pole (AC 50 V, DC 75 V)	10
- reversing key (slide type)	10

Glass equipment

1. Beakers

500 ml	20
250 ml	20
100 ml	20
50 ml	20
1 l	20

2. Glass blocks

(rectangular, 114 mm × 63 mm × 19 mm)

3. Prism (50 mm × 50 mm)

20

4. Concave lens 50 mmφ

focus length 5 cm	10
10 cm	10
15 cm	10
20 cm	10

5. Convex lens 50 mmφ

focus length 5 cm	10
10 cm	10
15 cm	10
20 cm	10

6. Plane mirror

20

7. Concave mirror

focus length 7.5 cm	10
10 cm	10
15 cm	10
20 cm	10

8. Convex lens

focus length 7.5 cm	10
10 cm	10
15 cm	10
20 cm	10

9. Lens holder

40

c) For biology experiments

- Equipment

1. Microscopes

- Educational microscope 5

Objective lens: 4×, 10×, 100×

Eyepieces: 10×

- Light: 20 W
- Stereoscopic microscope 1
 - Magnification: 7 ~ 40X
 - Eyepieces: 10X
 - Lighting stand
 - 2. Slide cabinet 1
 - Dimensions: 270 W × 345 D × 340 H
 - Drawers: 9
 - Capacity: 2,900 pieces (76 mm × 26 mm)
 - 3. Dissecting apparatus
 - set of 6 tools for students 10 sets
 - set of 15 tools for lecturers 1 set
 - 4. Autoclave (290φ × 270H) 1
 - Dimensions: 290 φ × 270 H (mm)
 - Pressure: 0.7 ~ 1.05 kg/cm²
 - Heater: 1.85 kW
 - 5. Incubator set 1 set
 - Dimensions: 1,340H × 500W × 550D (mm)
 - Temperature range: 0 ~ 45°C
 - Power consumption: 375 W

Glass equipment

- 1. Dessicator (30 cmφ) 2
- 2. Large Aquarium (for keeping sea creatures) 2
 - Dimensions: 600 × 290 × 360 H (mm)
 - Accessories: net, thermometer, filter, pump

3) Other Equipment

- 1. Microcomputer (personal computer) 5
 - 16 bit, IBM compatible
 - Display: 14 inch color display
- 2. Dot matrix printer 1
 - Impact dot matrix printer
 - Printing speed: 80 cps in LQ mode
 - 240 cps in draft mode
 - Paper size: 3 ~ 16.5 inch, 15 inch (roll)

3. Daisy wheel printer 1
Printing speed: 33 cps / 40 cps (max)
Paper size: 16.6 inch
4. Plotter 1
Media: Paper or OHP film
Media size: A3, A4
No. of pens: 6
5. Copying machine 1
Coping speed: 40 copies/min (A4 size)
Copy size: A3 ~ A6
Reduce/enlarge system,
Document feeder, sorter
Power consumption: 1.5 kW
6. Japanese language wordprocessor 1
Display: 14 inch
Dictionary: approx. 16,000 words
Function: Editing, European language,
data processing, illustrating
Printer: thermal dot printer
Accessories: cut sheet feeder
7. Rotary mimeographer 1
Paper size: max 276 × 396 mm
min 76 × 127 mm
Speed: 40 ~ 130 cpm
8. Scanner 1
Size on original: 280 × 375 mm
Image area: 260 × 355 mm
Speed (drums): 600 rpm
9. Electric typewriter 1
Print element: daisy wheel 96 charactors
Width of paper: 15 inch (max)
Correction memory: 700 characters
Keyboard: 46 keys

4-2-7 Furniture Plan

The following are the furniture to be newly provided or transferred to the expanded area.

(1) Tutorial Room -7, -8, -9, -10

- 40 desks (for students) in each room
- 40 chairs in each room
- 1 teacher's desk in each room
- 1 teacher's platform in each room

(2) Language Laboratory -1, -2

1) Language Laboratory -1

- | | | | |
|---|----------------------------|---|--|
| 5 | 3-booth consoles | } | (to be transferred
from the existing
LL) |
| 5 | 2-booth consoles | | |
| 1 | booth console for teachers | | |
| 1 | chair for teachers | | |

2) Language Laboratory -2

- 30 chairs for students
- 1 chair for teachers

(3) Tutorial Room -1, -4, -5

Total for 3 rooms:

- 13 desks for teachers (transferred from existing facilities) +8 additions
- 13 chairs for teachers (transferred from existing facilities) +8 additions
- 35 side tables
- 8 stools
- 8 bookshelves
- 3 lockers

(4) Science Laboratories

1) Physics Laboratory

- 9 fixed experiment tables seating 8
- 75 chairs for students
- 1 fixed teacher's platform
- 1 fixed teacher's table for experiments
- 1 teacher's chair
- 3 long working tables

2) Chemistry & Biology Laboratory

- 9 fixed experiment tables seating 8, with sink
- 75 chairs for student
- 1 teacher's platform
- 1 teacher's table for experiment (fixed)
- 1 teacher's chair
- 3 long working tables

3) Preparation room -1, 2

- 2 table for six
- 2 reception desk
- 10 chairs
- 6 shelves

4) Dark Room

- 8 desks, each for two students
- 2 working tables
- 16 stools

5) Balance Room

- 1 table for measuring
- 4 working tables

6) Storage -1, -2

- 22 shelves

7) Studying Room (including library corner)

6 reading tables
12 chairs
9 bookshelves

8) Audio/Visual Room

40 desks
40 chairs
1 movable teacher's table

9) Editing Room

5 working tables
3 office chairs

10) Meeting Room

9 tables, each for eight persons
36 chairs

11) Printing Room

5 working table
3 office chairs

4-2-8 Rehabilitation Plan

(1) Conversion and Transfer

Some of the existing rooms will be moved to more efficient locations in terms of traffic line design by the following conversions and/or transfer of furniture:

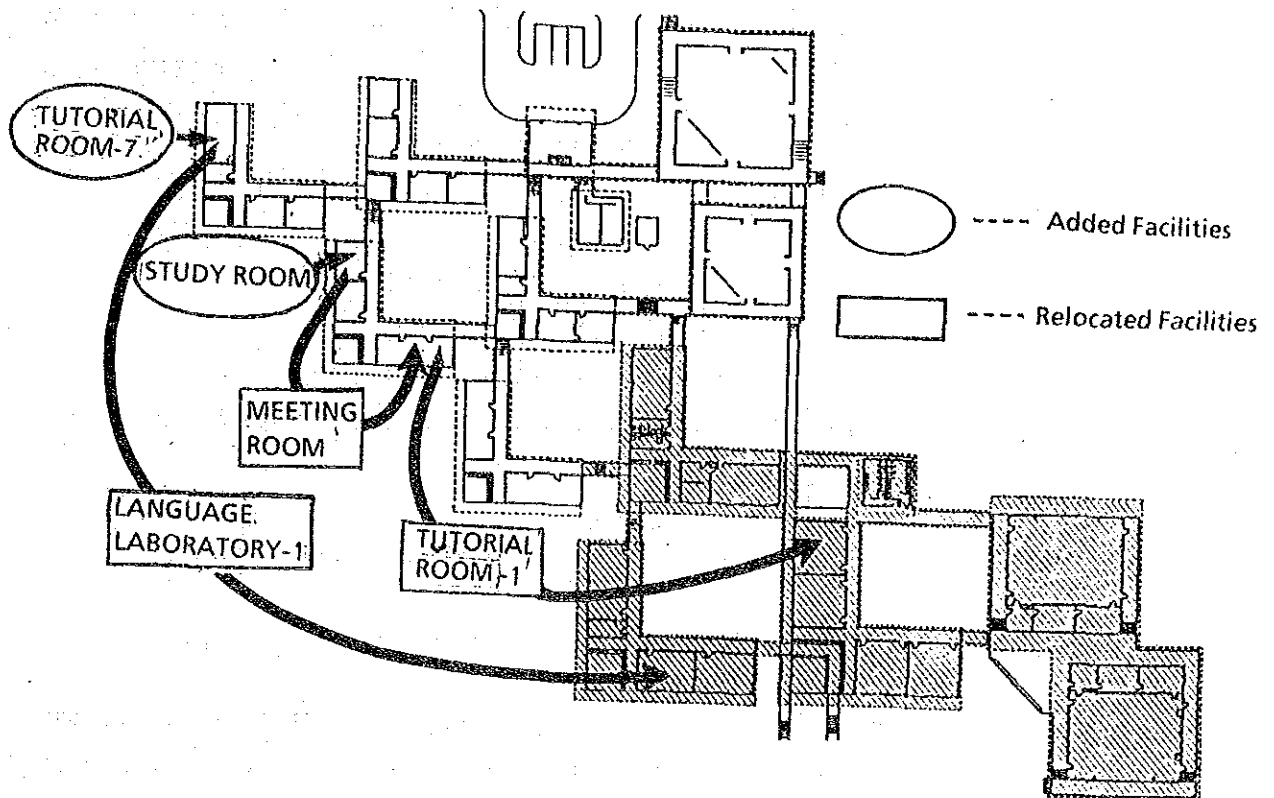


Fig. 4-17 Rehabilitation Plan

- 1) Language Laboratory + Wordprocessor Room → Tutorial Room - 7

The existing Language Laboratory (40 m²) and Wordprocessor Room (14 m²) will be turned into a single room by removal of the partition wall between them and converted into Tutorial Room - 7. Furniture will be newly purchased.

Equipment of the existing Language Laboratory will be transferred to the new Language Laboratory - 1, and will form a part of the new Cluster 8 together with Language Laboratory - 2. The wordprocessors will be transferred to the Printing Room which is newly provided in Cluster 6.

2) Meeting Room → Study Room with Library Corner

The existing Meeting Room will be converted into a Study Room by the replacement of furniture as shown below.

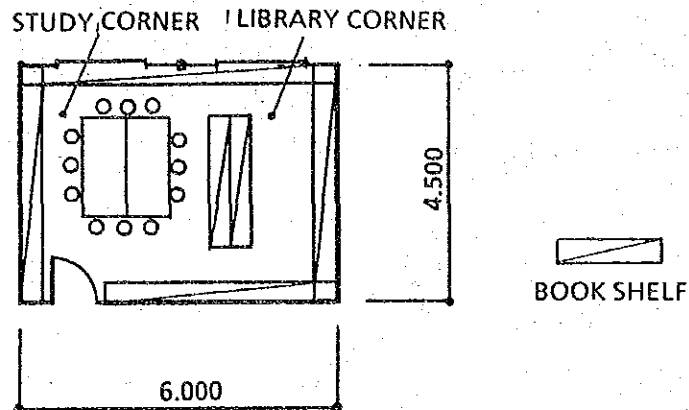


Fig. 4-18 Study Room

3) Lecturer's Office - 1 → Meeting Room

The existing Lecturer's Office - 1 will be converted into a Meeting Room with the replacement of furniture as shown below.

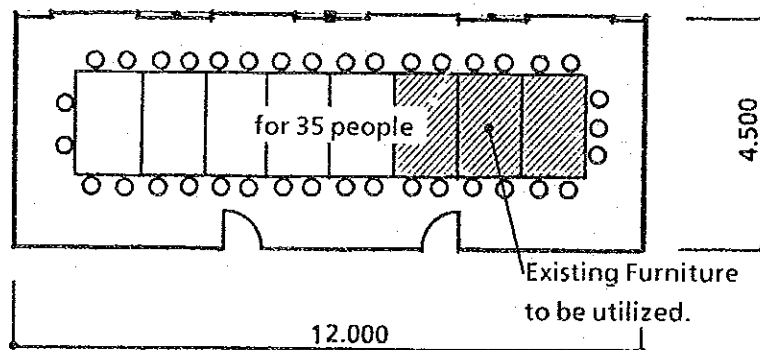


Fig. 4-19 Meeting Room

Lecturer's Office - 1 will be newly provided in Cluster - 7.

(2) Rehabilitation of the existing facilities

The following specific countermeasures are drawn up to cope with the problems with the existing facilities listed up in 3 - 4.

1) Improving the ventilation system of each room

High-side pivoted windows will be newly provided above the doors for ventilation of the existing room. The above works will be conducted in all the rooms of Cluster - 1 to Cluster - 5.

2) Improving the airconditioning system of each room

- Airconditioners with higher cooling capacity will be newly installed.
- The above work will be conducted in all the six Tutorial Rooms (Tutorial Rooms 1 to 6) that accommodate a large number of students.

3) Improving the illuminance of the Lecture Theatres

The same illuminance on the surface of the desks as that of the Tutorial Rooms will be achieved through additional installation of light fixtures and removal of covers.

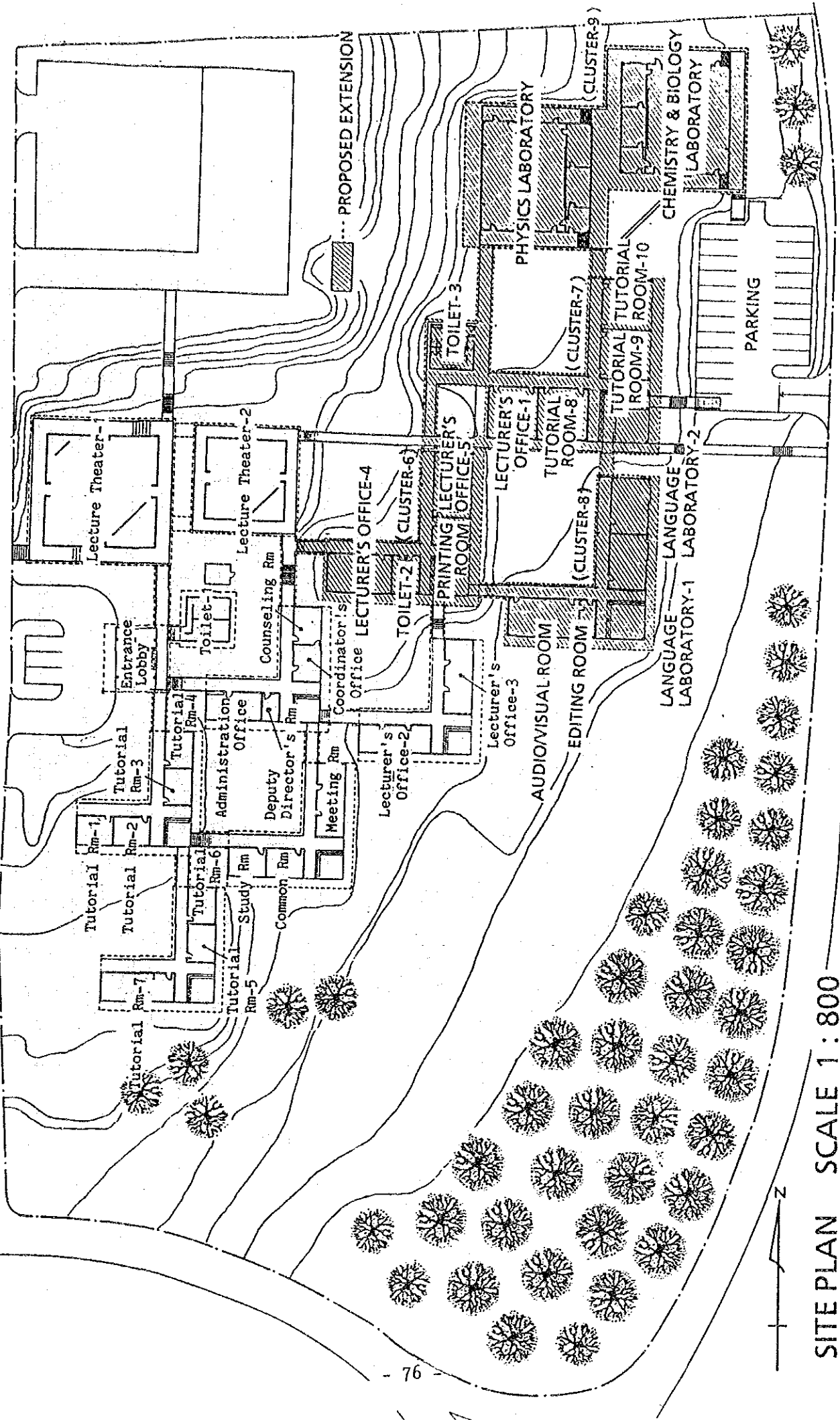
4) Improving the airconditioning system of the Lecture Theatre

This will be achieved by replacing the automatic controller with an appropriate one.

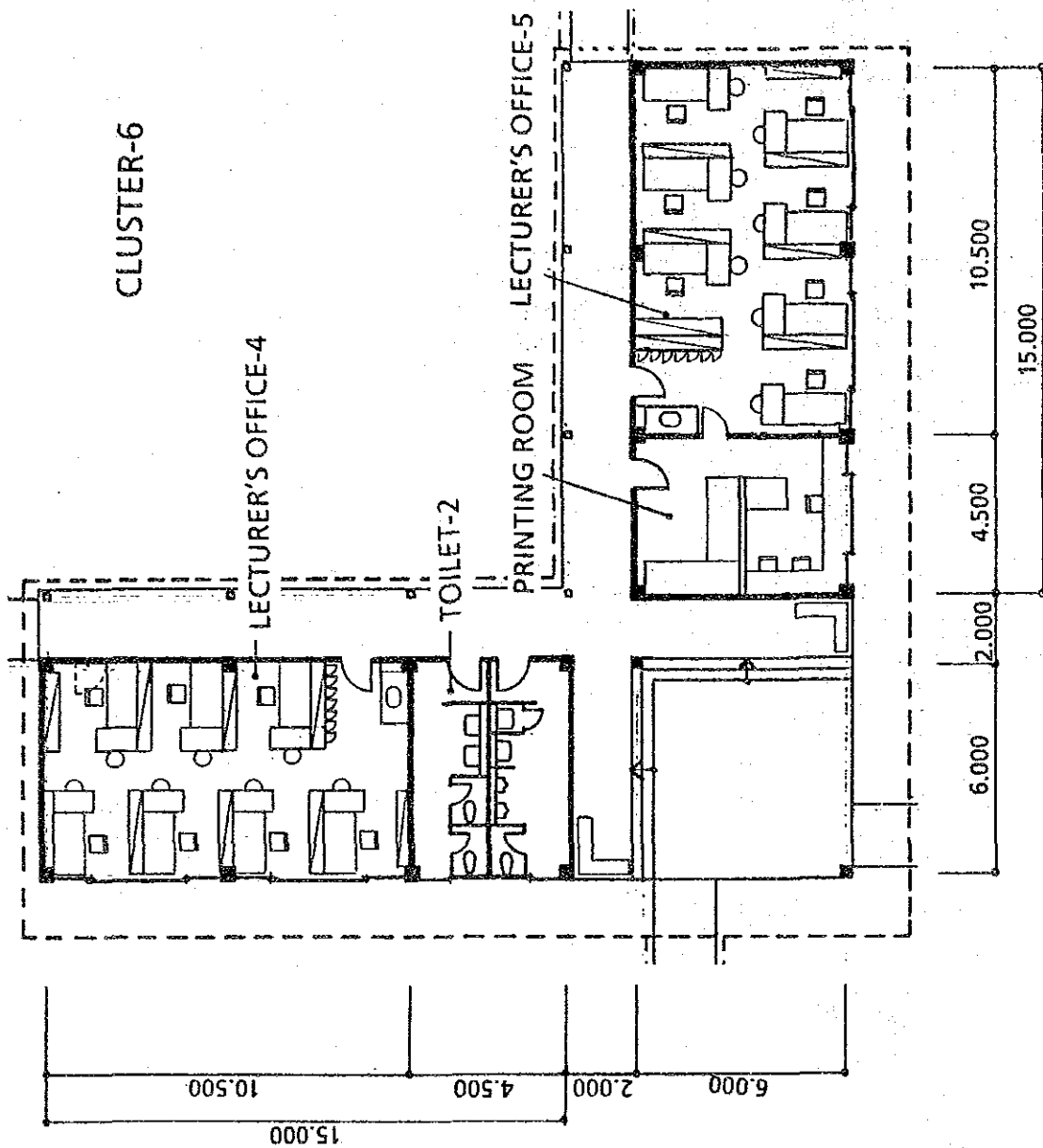
5) Providing washing stand for lecturers

A washing stand will be newly installed at the open space between Lecturer's Office - 2 and Lecturer's Office - 3. It will also be used by the students.

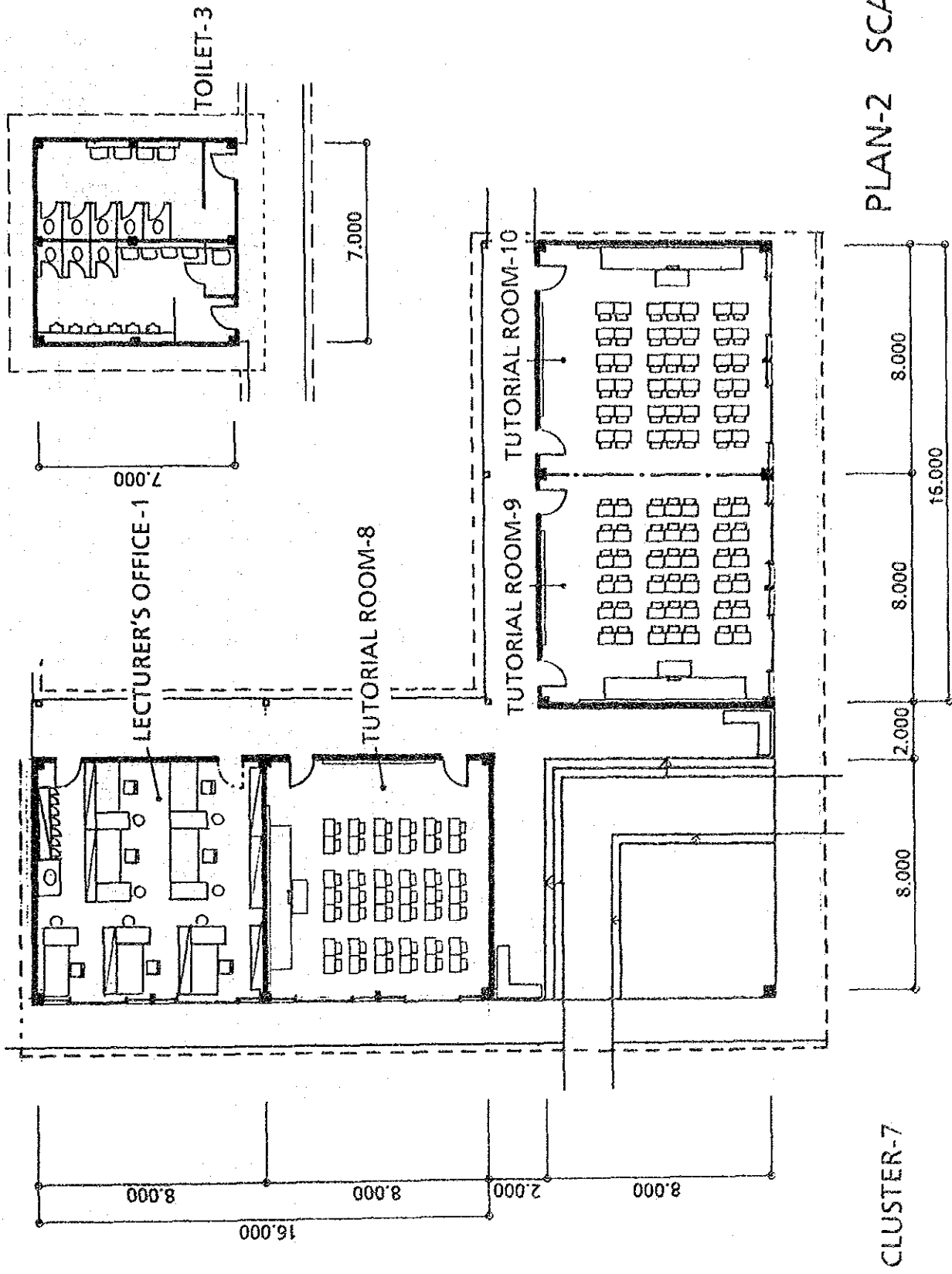
4-3 Basic Design Drawings

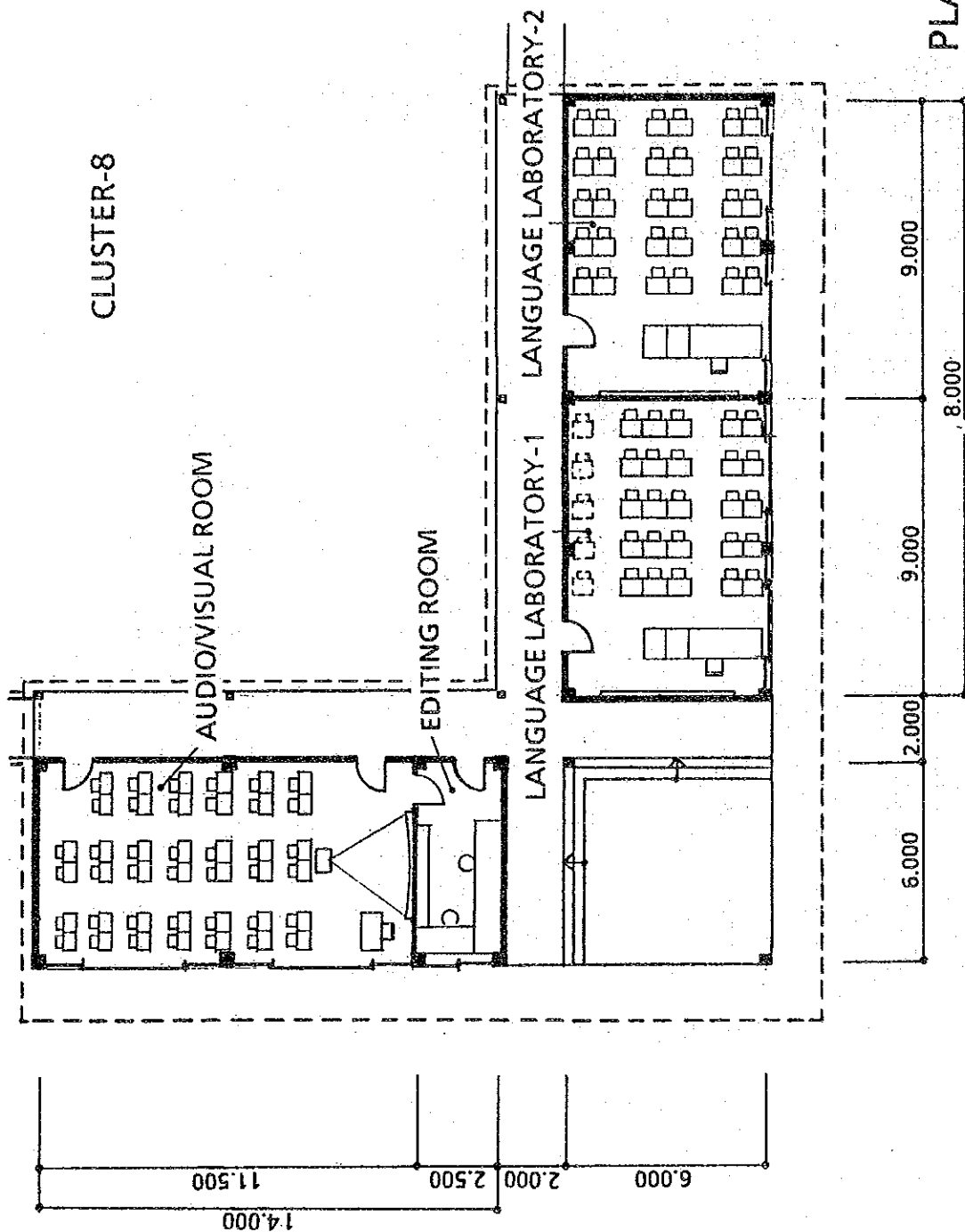


SITE PLAN SCALE 1 : 800



PLAN-1 SCALE 1 : 200





PLAN-3 SCALE 1:200

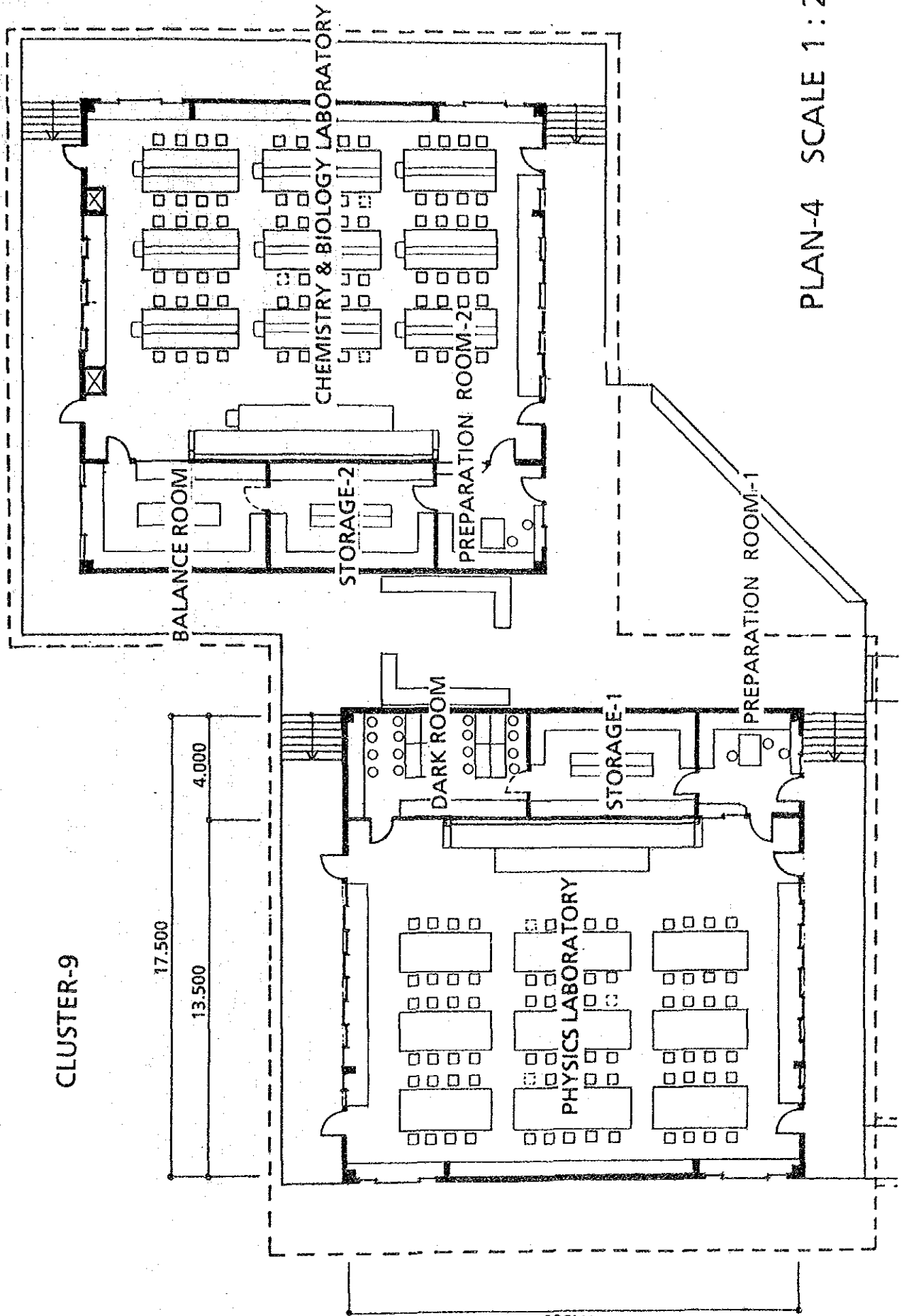
CLUSTER-9

17.500

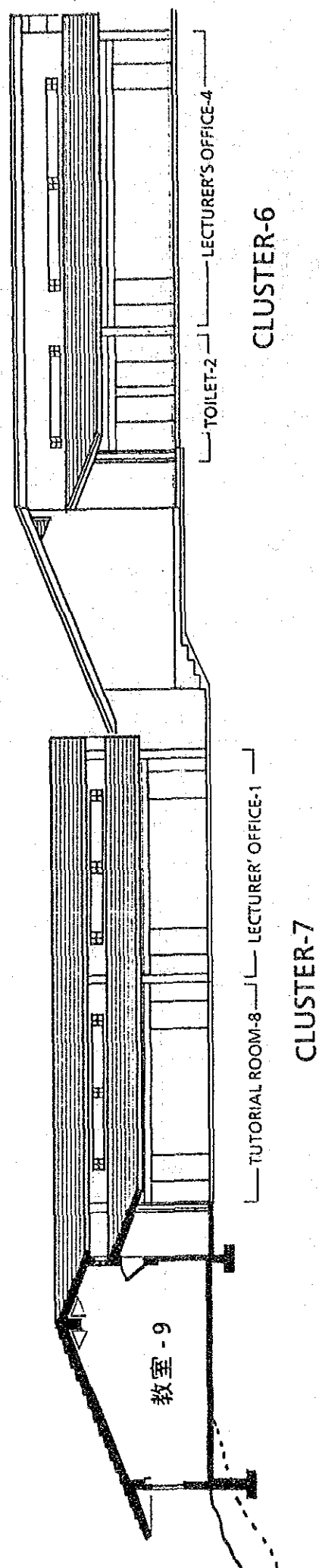
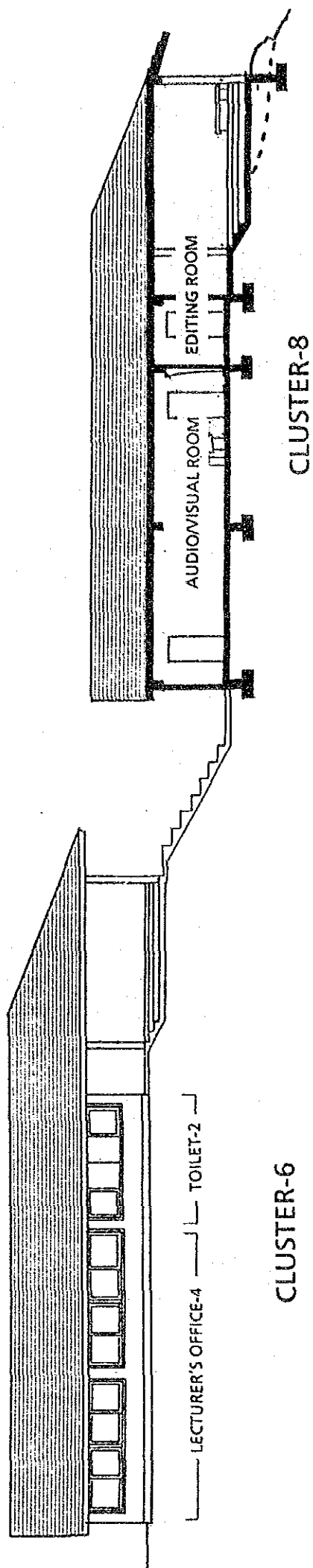
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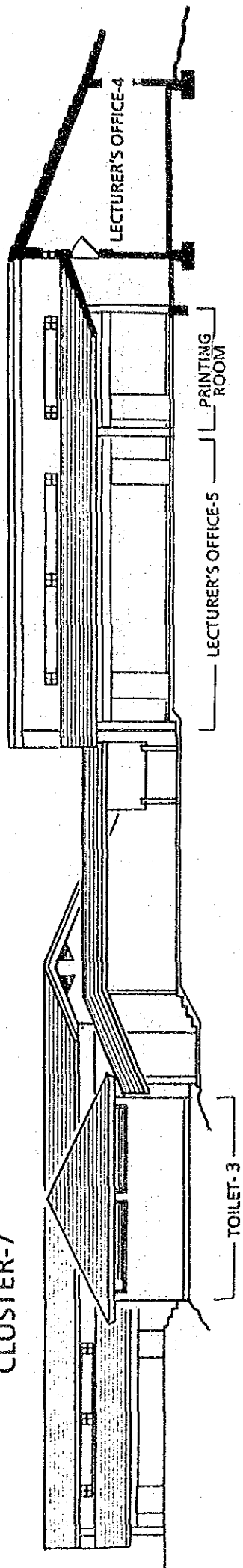


PLAN-4 SCALE 1:200



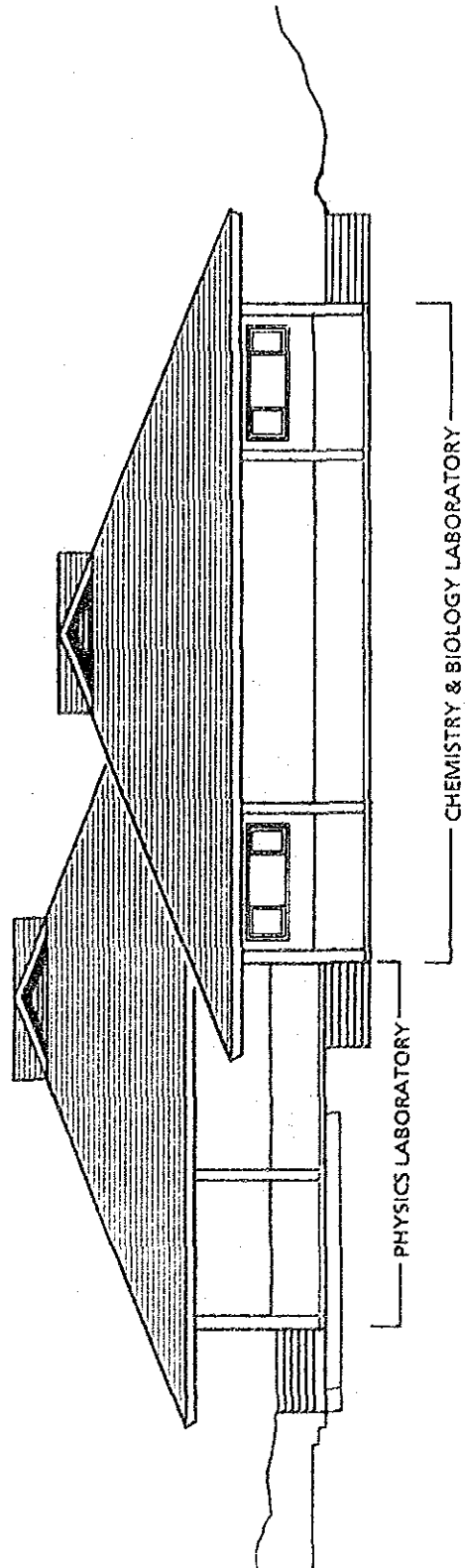
SECTION & ELEVATION -1 SCALE 1 : 200

CLUSTER-7

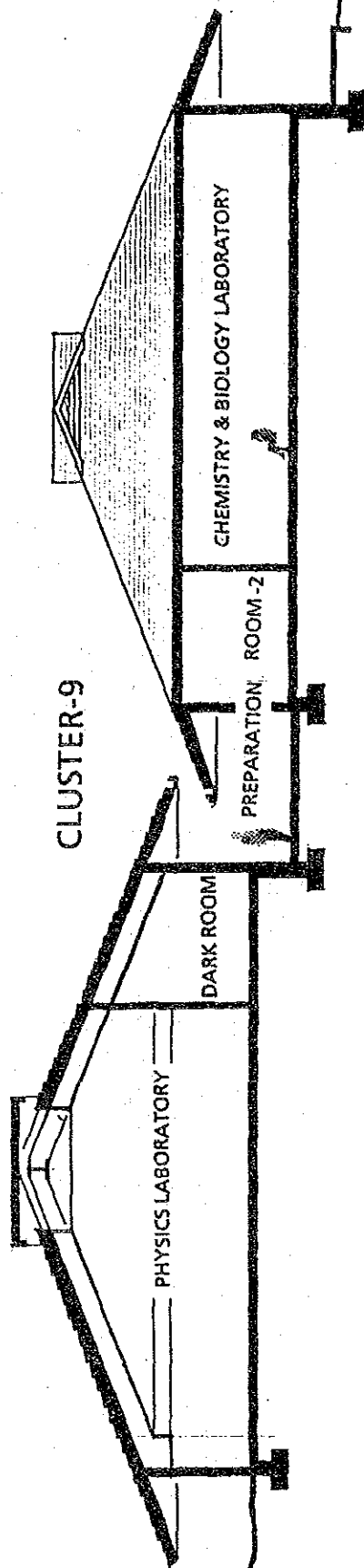


CLUSTER-6

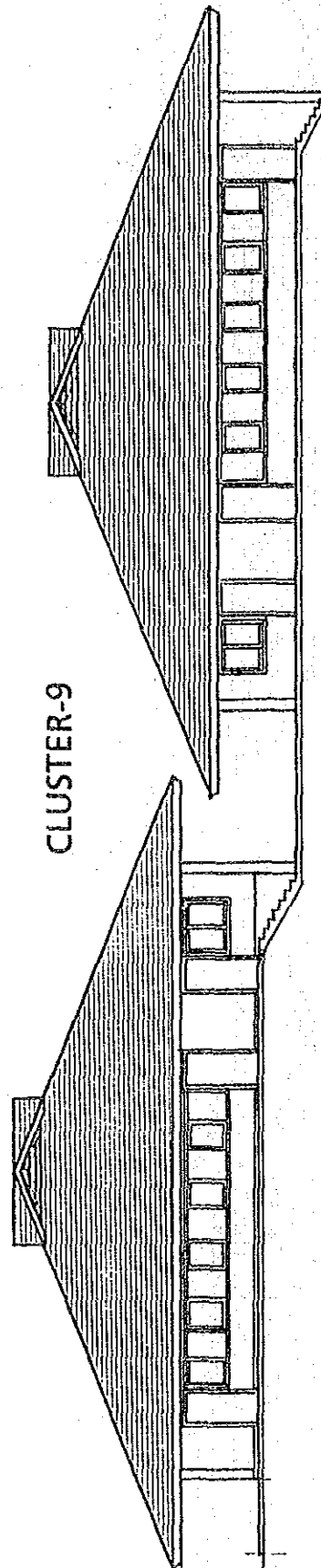
CLUSTER-9



SECTION & ELEVATION -2 SCALE 1:200



CLUSTER-9



CLUSTER-9

SECTION & ELEVATION -3 SCALE 1 : 200

4-4 Maintenance and Operations

4-4-1 Operation Plan

After the work related to the facilities and equipment of the Project is completed and they are handed over to the Malaysian side, the agency responsible for their operations and maintenance will be the University of Malaya. The Director of the Centre for Foundation Studies in Science will supervise the management of the JLC with the Deputy Director taking charge of the administrative works. (Refer to Fig. 4-20)

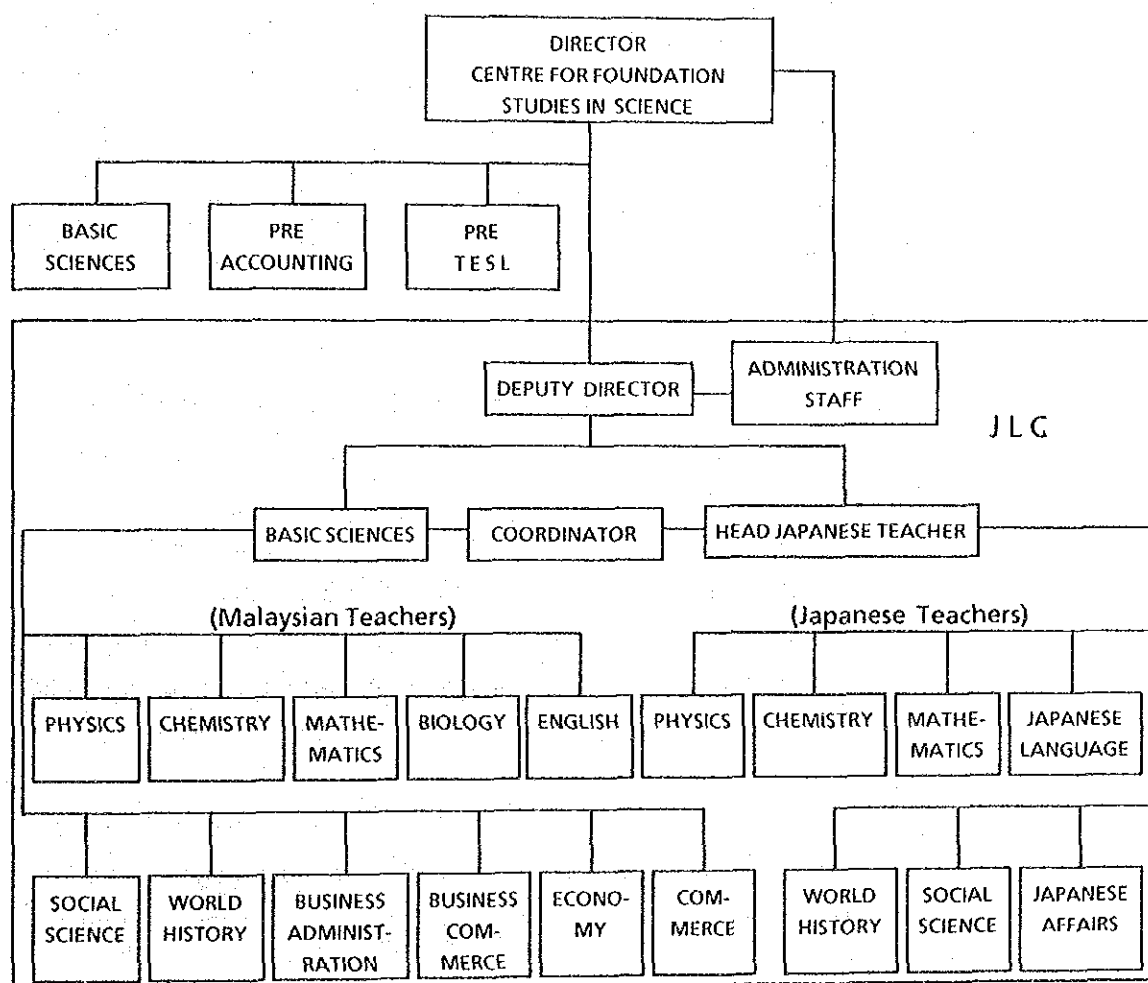


Fig. 4-20 Organization for Operation

The administration staff of JLC consists of 4 persons (one assistant registrar, one typist, one technician and one attendant).

4-4-2 Maintenance Plan

Maintenance work for the facilities and equipment will be carried out by the Estate Office which takes charge of the overall maintenance of facilities for the University of Malaya.

(1) Buildings

Maintenance of buildings consists mainly of daily routine work such as cleaning, repair of wear and tear due to utilization, and of deterioration arising from breakage and aging. Repair works involving the structural components will not be necessary up to 30 years after the completion of the building, and repairs will be mainly concentrated on interior and exterior finishings.

In the inspection and repair of the buildings, periodic execution of the following items is required.

(Exterior)

- Repair and repainting of exterior finish and inspection of cracks in concrete (once every 5 years)
- Repairs, and inspection of roof
..... (inspection: once every 2 years)
- Periodical cleaning of downspouts, drains, etc.
..... (once a month)
- Inspection and repair of sealing of exterior doors and windows (once a year)
- Repainting of exterior doors and windows
..... (once every 3 years)
- Periodical inspection and cleaning of drainage gutters, manholes, etc. (once a month)

(Interior)

- Repair and repainting of interior walls
..... (when occasion calls)
- Refurnishing of interior ceiling materials
..... (when occasion calls)

- Adjustment of doors and sashes, replacement of hardware
... (adjustment; once a year, others: as occasion calls)

(2) Utility Service Systems

With respect to the various utility service systems such as electric power, airconditioning and plumbing systems, periodic inspections of utility service equipment and repair in case of failure will be necessary in addition to daily operation control. It is important to form a maintenance system to prevent breakdowns and accidents and to ensure smooth operation of facilities by operating the equipment properly and carrying out daily inspections, lubrication, adjustment, painting and repairs as required. General equipment are to be replaced at the end of their life span indicated below:

(Electrical Equipment)

- Panel Board 20 to 30 years
- Fluorescent Lamps 5,000 to 10,000 hours
- Incandescent Lamps 1,000 to 1,500 hours

(Plumbing Equipment)

- Tanks 10 to 15 years
- Pipes and Valves 10 to 15 years
- Plumbing Fixtures 25 years
- Fire Extinguisher 20 years

(Airconditioning Equipment)

- Pipes 10 to 15 years
- Split type Cooler approx. 5 years

4-4-3 Estimated Costs of Operations and Management

An estimate was made of the annual costs for operation and management to be covered by the Malaysian side after the completion of the extension of the facilities of JLC.

(based on prices as of March 1988)

(1) Personnel Costs	792,000 M\$/year
(2) Teaching Material Costs	25,000 M\$/year
(3) Operation Costs for Facilities	145,000 M\$/year
(4) Costs for Maintenance and Repair	20,000 M\$/year
(5) <u>Miscellaneous Costs</u>	<u>8,400 M\$/year</u>
Total	990,400 M\$/year

The annual costs required for operation and management after the extension of the facilities will be M\$990,400, representing an increase of approximately 44% over the costs covered in 1987 (M\$686,112). Out of the increase of 44%, approximately 31% covers the costs for employing 8 additional Malaysian lecturers and approximately 10% represents the increase in the operation costs for facilities (electricity, water). The following is the breakdown of the annual operation and management costs:

(1) Personnel Costs: 792,000 M\$

Deputy Director(1)	6,000M\$/mon. × 1 person × 12 mon. =	72,000M\$
Lecturers(18)	3,000M\$/mon. × 18 person × 12 mon. =	648,000M\$
<u>Staff(4)</u>	<u>1,500M\$/mon. × 4 person × 12 mon. =</u>	<u>72,000M\$</u>
Total		792,000M\$

(2) Teaching Material Costs: 25,000 M\$/year

The cost is estimated from the amount of expenditure per student for printing, equipment and consumables during the past four years.

$$200 \text{ (students)} \times 125\text{M\$/student}\cdot\text{year} = 25,000 \text{ M\$/year}$$

(3) Costs for Operation of Facilities: 145,000 M\$/year

1) Costs for Electricity

a) Costs for the expanded area

lighting and servicing outlets $70\text{KW} \times 300\text{days} \times 8\text{HR} \times 0.6 \times 0.24\text{M\$/KWH}$
 $= 24,192 \text{ M\$/year}$

power for air-conditioning $100\text{KW} \times 300\text{days} \times 8\text{HR} \times 0.7 \times 0.24\text{M\$/KWH}$
 $= 40,320 \text{ M\$/year}$

LL & A/V equipment $5\text{KW} \times 300\text{days} \times 4\text{HR} \times 0.5 \times 0.24\text{M\$/KWH}$
 $= 720 \text{ M\$/year}$

Science Laboratory equipment $15\text{KW} \times 300\text{days} \times 3\text{HR} \times 0.3 \times 0.24\text{M\$/KWH}$
 $= 972 \text{ M\$/year}$

Total $= 66,204 \text{ M\$/year}$

b) Costs for the existing facilities

70,000 M\$/year (expenditure for 1987)

c) Total costs for electricity after extension of the facilities

$66,204 \text{ M\$/year} + 70,000 \text{ M\$/year} = 136,204 \text{ M\$/year}$

2) Costs for Water

a) Costs for the expanded area

$15.925 \text{ m}^3/\text{day} \times 300 \text{ days} \times 0.55 \text{ M\$/m}^3 = 2,628 \text{ M\$/year}$

b) Costs for the existing facilities

6,800 M\$/year (expenditure for 1987)

c) Total costs for water after extension of the facilities

$2,628 \text{ M\$/year} + 6,800 \text{ M\$/year} = 9,428 \text{ M\$/year}$

3) Costs for Operation of Facilities

$136,204 \text{ M\$/year (electricity)} + 9,428 \text{ M\$/year (water)}$
 $= 145,632 \text{ M\$/year (approximately } 145,000 \text{ M\$/year)}$

4) Costs for Maintenance and Repair: 20,000 M\$/year

The required costs for maintenance and repair of the facilities increase with the number of years after completion. The costs for repair works and exchange of parts, which is expected to be small up to around the fifth year after completion of the building, will gradually go up thereafter. The following is the estimated annual maintenance and repair costs adopting 5M\$/m² as the average rate for the first 20 years.

$$\begin{aligned} & 5\text{M}\$/\text{m}^2 \text{ year} \times 4,000\text{m}^2 \text{ (approx. } 2,000\text{m}^2 \text{ for existing} \\ & \text{facilities} + \text{approx. } 2,000\text{m}^2 \text{ for the expanded area)} \\ & = 20,000 \text{ M}\$/\text{year} \end{aligned}$$

5) Miscellaneous Costs: 8,400 M\$/year

The cost is estimated from the expenditures for miscellaneous costs (travelling and transportation, communication, furniture, etc.) during the past four years (1984 - 1987).

$$700 \text{ M}\$/\text{month} \times 12 \text{ months} = 8,400 \text{ M}\$/\text{year}$$

4-5 Implementation of the Project

4-5-1 System of Implementation

(1) Executing Agency

The executing agency of the Project is the University of Malaya, Ministry of Education, with the Economic Planning Unit, Prime Minister's Department, functioning as the organization responsible for the Project.

(2) Consultant

Detailed design and supervision of construction works will be carried out comprehensively by the consulting firm assigned for the basic design, in accordance with the guidelines of the Japanese Grant Aid Program.

The Japanese consultant firm will conclude a contract with the University of Malaya in line with the required procedures for the Japanese Grant Aid Program, promptly after the Exchange of the Notes between the two governments. The services to be rendered by the Consultant shall be as follows:

1) Detailed Design Stage

Preparation of detailed design documents consisting of drawings, specifications and other technical documents, as well as the procedures for applying for permission for construction works.

2) Tendering Stage

Assistance in the works related to tendering for the selection of a contractor for the execution of the Project.

3) Construction Stage

The facilities for the project neither have unique architectural features nor require construction techniques of a particularly high level. Consequently, it is not necessary for the consultant to be constantly on the site for supervision. It is therefore assumed from the overall technical requirements that the supervision work for the Project can be sufficiently covered by consultation services from Japan on a visiting basis instead of having the representative of the consultant stationed in Malaysia.

(3) Contractor for the Construction Works

Construction of the building facilities and procurement and local delivery of the required equipment will be carried out by a Japanese contractor. The contractor is required to complete the construction works within the designated period and hand over the facilities and equipment to the University of Malaya, the executing agency for the Project.

(4) System of Implementation of the Project

The project will be implemented by the following system organized by the University of Malaya (executing agency), the consultant in charge of supervision and the contractor appointed for the construction works.

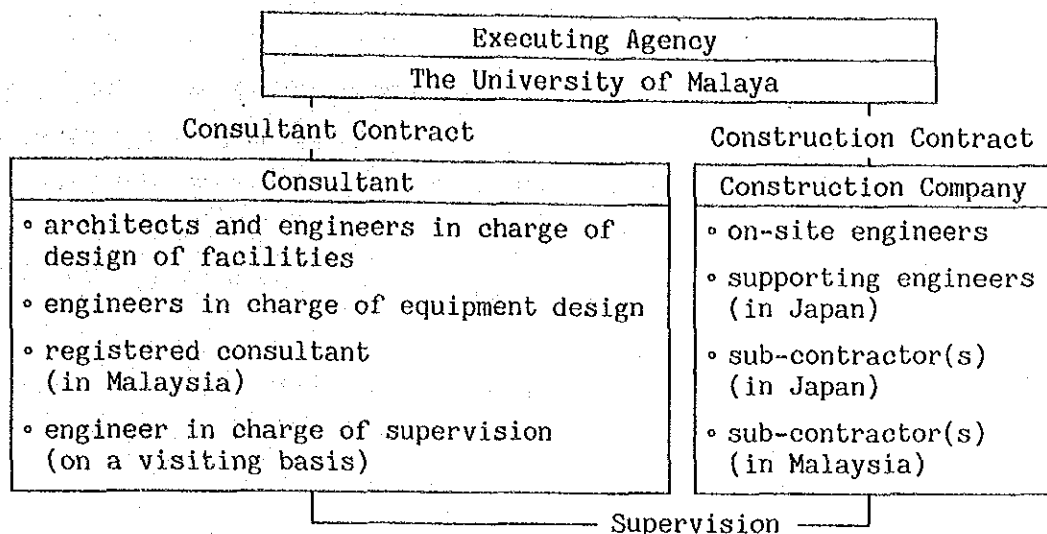


Fig. 4-21 System of Implementation

4-5-2 Scope of Work

The scope of work to be undertaken for the Project is as follows.

(1) Works to be undertaken by the Japanese side

- 1) Construction of new facilities
- 2) Provision of educational equipment
- 3) Rehabilitation of existing facilities
- 4) Construction of a parking Lot
- 5) Construction of roads within the site
- 6) Provision of essential furniture
- 7) Consulting services (detailed design, tendering and supervision)

(2) Works to be undertaken by the Malaysian side

- 1) To secure the land necessary for the extension of the facilities and to clear, fill and level the site.

- 2) To provide a yard for storing materials and equipment required for the construction works.
- 3) To provide drainage and sewage pipes from the septic tank, and a gathering basin to the city sewer pipe, and to wire telephone lines to the new terminal board.
- 4) To provide some of the furniture and furnishings, curtains, utensils, office supplies.
- 5) To bear the following commissions of the Japanese foreign exchange banks for the banking services based upon the Banking Arrangement.
 - Advising commission for Authorization to pay (A/P)
 - Payment commission
- 6) To ensure prompt unloading, tax exemption and customs clearance at ports of disembarkation in Malaysia and prompt internal transportation therein of the products and related equipment purchased under the Grant.
- 7) To exempt Japanese nationals from customs duties, sales tax, excise duties, internal tax and other fiscal levies which may be imposed in Malaysia with respect to the supply of the products and services under the verified contracts.
- 8) To accord without delay to Japanese nationals whose services may be required in connection with the supply of the products and related equipment and services under the verified contracts such facilities as may be necessary for their entry into Malaysia and their stay therein for the performance of their work.
- 9) To bear all expenses other than those to be borne by the Grant, necessary for construction of the facilities and transportation and installation of equipment.

4-5-3 Plan for Construction Work

The construction work for the Project consists of extension of facilities adjacent to the existing ones and rehabilitation of the existing facilities. Since the existing facilities will continue to be used while construction work for the expanded area is under way, the following considerations must be given for implementation of the work.

(1) To secure the safety of students

The expanded area will be separated from the existing facilities by a temporary enclosure, and the traffic line for delivery of materials and equipment within the site shall not cross the traffic line of students.

(2) To take necessary measures to minimize noise during the construction works that may disturb the students studying in the existing facilities.

(3) To carry out rehabilitation work during holidays after the semesters and also study the possibility of temporarily converting meeting rooms and counseling room, etc. into tutorial rooms.

(4) To maintain close communications with JLC for carrying out the construction work.

The specific contents, impact, safety measures, etc. of the construction work shall be discussed in detail with JLC for implementation of the construction work.

Table 4-3 Schedule of Construction Works

[illegible]

4-5-4 Overall Schedule

The period of the construction works is estimated to be approximately 14 months after the Exchange of Notes (E/N).

(1) Consultant Contract and Approval

(2) Detailed Design

After the conclusion of the consultant contract, the detailed design will be drawn up and the approvals of relevant authorities will be obtained.

(3) Tendering and Contract

Announcement of tendering, screening of tenderers' qualifications, invitation to tender, presentation and explanation of documents for cost estimation, tendering, evaluation and signing of the contract are to be carried out successively.

(4) Approval of Contract for Construction

(5) Construction Works

After the completion of the construction works, inspection and trial operations are to be conducted in the presence of the consultants and relevant parties to confirm that the completed works conform to the contract documents. The Project is to be regarded as complete at the time of handing-over to the executing agency.

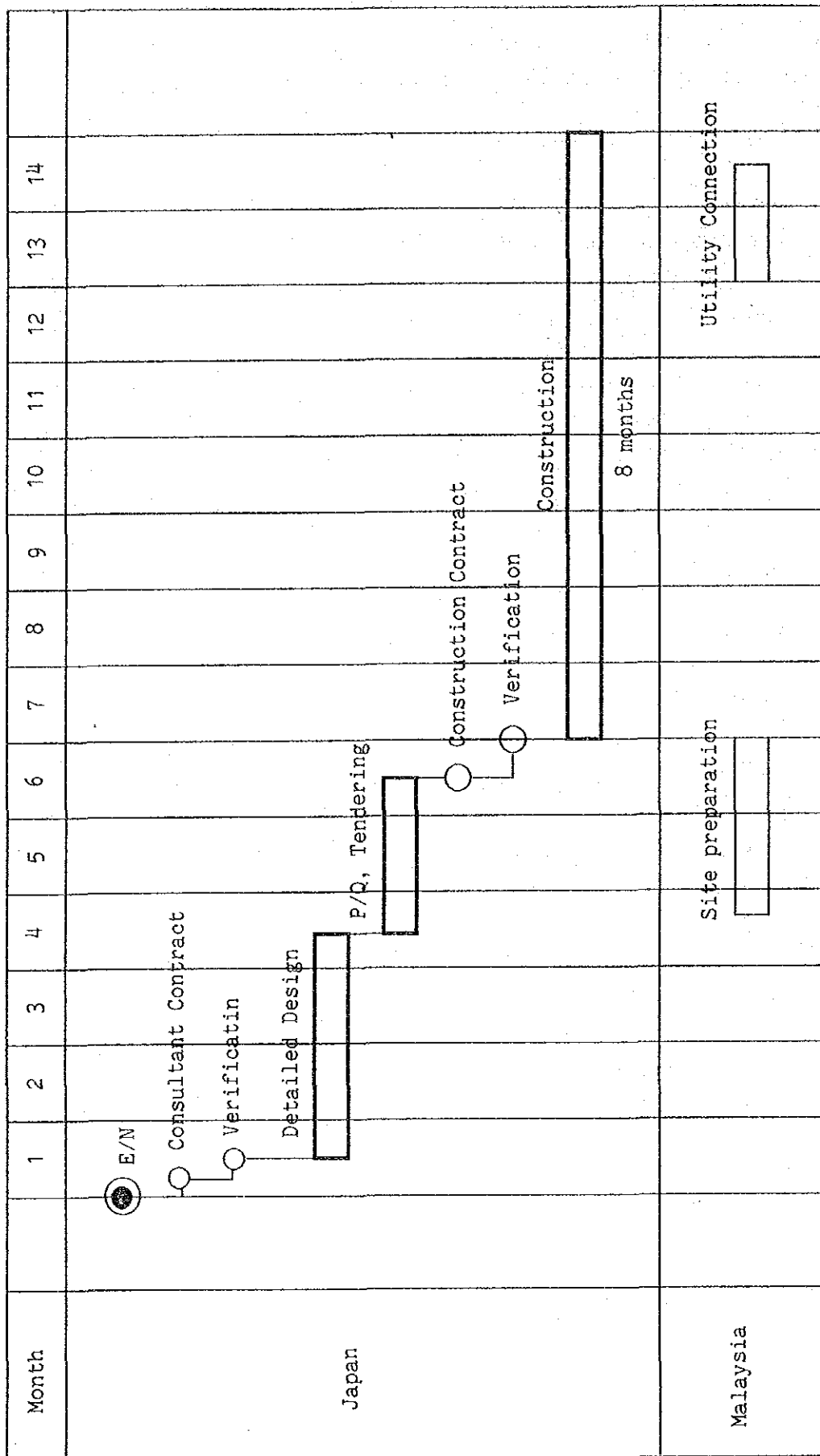


Table 4-4 Schedule of the Project

4-6 Total Estimated Costs

The estimated costs to be covered by the Malaysian side are approximately M\$70,700, the breakdown is as shown below.

1)	Site Clearance	M\$46,000
	cutting, approx. 2,400m ³	
	filling, approx. 1,600m ³	
	disposal of surplus earth, approx. 1,040m ³	
2)	Connection of sewage pipe	M\$9,000
	to city sewer main 8"φ x 20m	
3)	Removal of concrete foot path	M\$9,000
	2m(W) x 25m(L) x 0.2m(D)	
4)	Planting H=2m x 50	M\$4,000
5)	Concrete cover of ditch	M\$2,700
	at the entrance of parking lot	
Total		M\$70,700

CHAPTER 5 PROJECT EVALUATION

CHAPTER 5: PROJECT EVALUATION

Since its establishment in 1984, the Japanese Language Centre (JLC) of the University of the University of Malaya has played a vital role as the central facility in Japan for students preparing to study at Japanese universities in line with the "Look East" policy of the Government of Malaysia.

The existing facilities and equipment have been fully utilized since their handing over to the Malaysian side and new problems are now emerging because of the increasing number of students such as the shortage of classrooms which is tentatively being compensated for by utilizing other facilities of the University of Malaya.

The Project, which aims at furnishing sufficient facilities and equipment for JLC, is a necessary as well as an urgent program for enhancing the effects of the training carried out at JLC.

The scale and grade of the facilities and equipment plan for the Project have been drawn up with consideration on the current situation of utilization of the existing facilities and equipment. Moreover, the Project covers the required and sufficient conditions to enable a comprehensive utilization of the existing facilities and the facilities to be newly extended or refurnished. Neither are any new problems expected in operations and maintenance, because the same system that is currently being adopted can be carried over after the extension of the facilities.

Adequate plans have been drawn up for the method of implementation, scope of works and period of construction works, and the budgetary measures to be taken for the costs to be covered by the Malaysian side have also been confirmed in the Minutes of Discussions. Furthermore, appropriate measures are to be taken in the construction works to make it possible to carry out the extension and rehabilitation works for the facilities without causing major disturbance to the teaching programs being carried out concurrently in the existing facilities.

Implementation of the Project will not only solve the problem of shortage of classroom facilities, but will also promote a more effective and efficient education at JLC. This will, in turn, lead to more fruitful

results in the plan to send Malaysian students to study in Japan. The Project conforms to the "Look East" policy of the Government of Malaysia and is anticipated to contribute substantially to establishing an even closer relationship between Malaysia and Japan.

CHAPTER 6 CONCLUSIONS AND RECOMMENDATIONS

CHAPTER 6: CONCLUSIONS AND SUGGESTIONS

6-1 Conclusions

Since its opening in 1984, the Japanese Language Centre (JLC) of the University of Malaya has been producing many fruitful results as the central facility for Malaysian students preparing to study at Japanese universities. The major objective of this Project is to expand and rehabilitate the existing facilities that are currently incapable of sufficiently meeting the demands of JLC for carrying out its teaching programs. Implementation of the Project will lead to more efficient education in the Japanese language and other general subjects, thereby enhancing the effects of the Malaysian students' studies in Japan and will contribute in the long run to the establishment of goodwill and friendly relations between Japan and Malaysia. The results of this basic study indicate that the Project possesses sufficient value to be executed as a Japanese Grant Aid Project. It is therefore proposed that action be taken to realize the early implementation of the Project.

6-2 Recommendations

The following suggestions are made to the Government of Malaysia for implementation of the Project.

- (1) To enable students to acquire through only two years of preparatory education a sufficient knowledge of the Japanese language to understand lectures at Japanese universities, it is desirable to provide a number of opportunities for students to learn the basics of the Japanese language before they enter JLC.
- (2) Audio-visual equipment for the language classes as well as general subjects will be installed in the Language Laboratories and Audio Visual Room. It is necessary to procure or make many kinds of video tape for teaching for efficient use of this equipment, and this calls for some cost and manpower. It is thereby recommended that the Malaysian

side will take adequate measures for it including budgetary ones.

APPENDICES

I. MINUTS OF DISCUSSION

MINUTES OF DISCUSSIONS

ON

THE PROJECT

FOR

THE EXTENSION OF JAPANESE LANGUAGE CENTER

AT UNIVERSITY OF MALAYA

IN

MALAYSIA

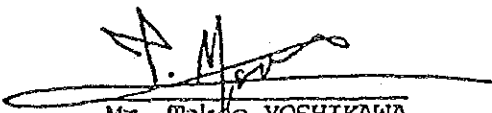
FEBRUARY 1988

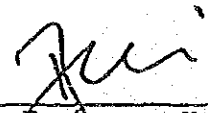
MINUTES OF DISCUSSIONS
ON
THE PROJECT
FOR
THE EXTENSION OF JAPANESE LANGUAGE CENTER
AT UNIVERSITY OF MALAYA
IN
MALAYSIA

In response to the request by the Government of Malaysia, the Government of Japan decided to conduct a basic design study on the Project for the Extension of Japanese Language Center at University of Malaya (hereinafter referred to as "the Project") and, through Japan International Cooperation Agency, sent the Basic Design Study Team (hereinafter referred to as "The Team") headed by Mr. Takeo YOSHIKAWA, Assistant Director of Second Southeast Division, Asian Affairs Bureau, Ministry of Foreign Affairs, to Malaysia to conduct the study from January 28 to February 11, 1988.

The Team had a series of discussions and exchanged views on the Project with the Authorities concerned from the Government of Malaysia, headed by the Royal Professor Ungku A. Aziz, the Vice Chancellor, University of Malaya.

As a result of the study, both parties agreed to recommend to their respective Governments that the major points of understanding reached between them, attached herewith, should be examined towards the realization of the Project.


Mr. Takeo YOSHIKAWA
Leader, Basic Design Study Team
Japan International Cooperation
Agency.


Royal Professor Ungku A. Aziz
Vice Chancellor
University of Malaya.


Miss Wong Peg Har
Representative, of Economic Planning Unit,
Prime Minister's Department,
Malaysia.

ATTACHMENT

1. The objectives of the Project were confirmed as follows:

To expand the existing facilities of the Japanese Language Center at University of Malaya (JLC) in order to cope with increasing students who intend to study in Japan and to provide them with sufficient preparatory education.

2. Project site was confirmed as shown in Annex 1.
3. The requirements of the Government of Malaysia were clarified as follows:

(1) Construction of the following additional buildings including electrical and mechanical installations and essential furniture.

- 1) 1 Lecture Theatre
- 2) 5 Tutorial Rooms
- 3) 1 Language Laboratory
- 4) 2 Lecturer's Rooms
- 5) 3 Science Laboratories (Physics, Chemistry, Biology) affiliated each with a preparatory room
- 6) 1 Study Room affiliated with small Library
- 7) 1 Audio Visual Room
- 8) 1 Printing Room

(2) Provision of educational equipment for the following additional buildings

- 1) Lecture Theatre
- 2) Tutorial Rooms
- 3) Language Laboratory
- 4) Science Laboratories
- 5) Others

Note:

The Malaysian side expressed a desire to revise content of its request on capacities of science laboratories.

The Team stated that the Japanese side would consider the request newly submitted by the Government of Malaysia, and the relation to this request, there might be a possibility for admenments of the project plan due to budgetary limitations of the Government of Japan.

4. The responsible agency and organization of the Government of Malaysia for the implementation of the Project are as follows:

(1) Responsible Agency:

Economic Planning Unit, Prime Minister's Department,
Malaysia.

(2) Executing Agency and organization:

University of Malaya, Ministry of Education, Malaysia.

5. Operational and administrative Structure of JLC was confirmed as shown in Annex II.

6. The undertakings of both Governments for the Project were confirmed as listed in Annex III.

Each side shall take necessary measures for the implementation of the Project on condition that the Grant Aid by the Government of Japan is extended to the Project.

7. The expected overall schedule for the Project was confirmed as shown in Annex IV.

8. Budgetary status of JLC and measures for the Project of the Government of Malaysia were confirmed as follows:

1) Budgetary status

Budgetary status of JLC from the time of establishment from 1984 to 1987 as shown in annex V.

2) Measures for the Project

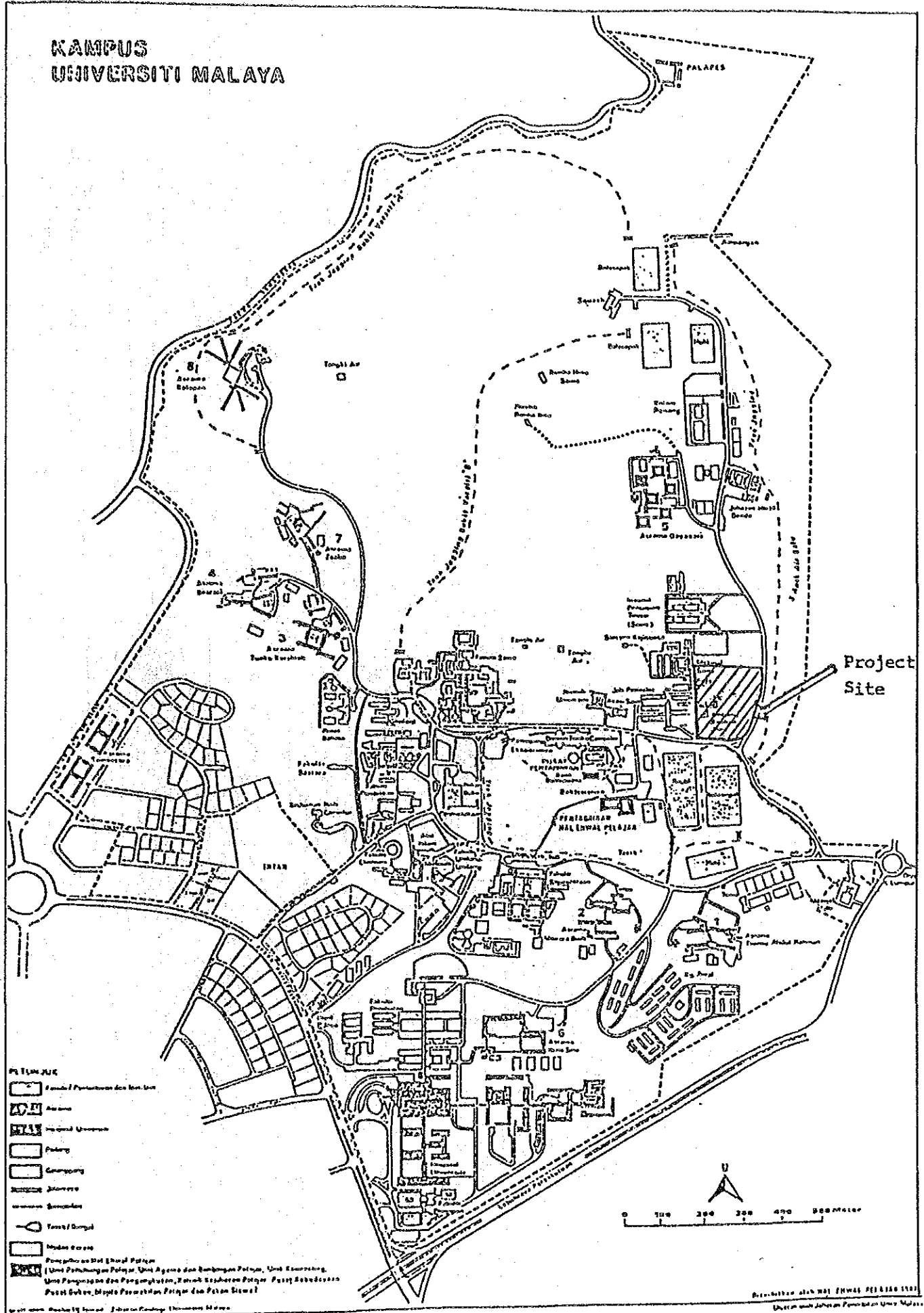
It was confirmed that the Government of Malaysia will take necessary budgetary measures in compliance with the progress of the Project.

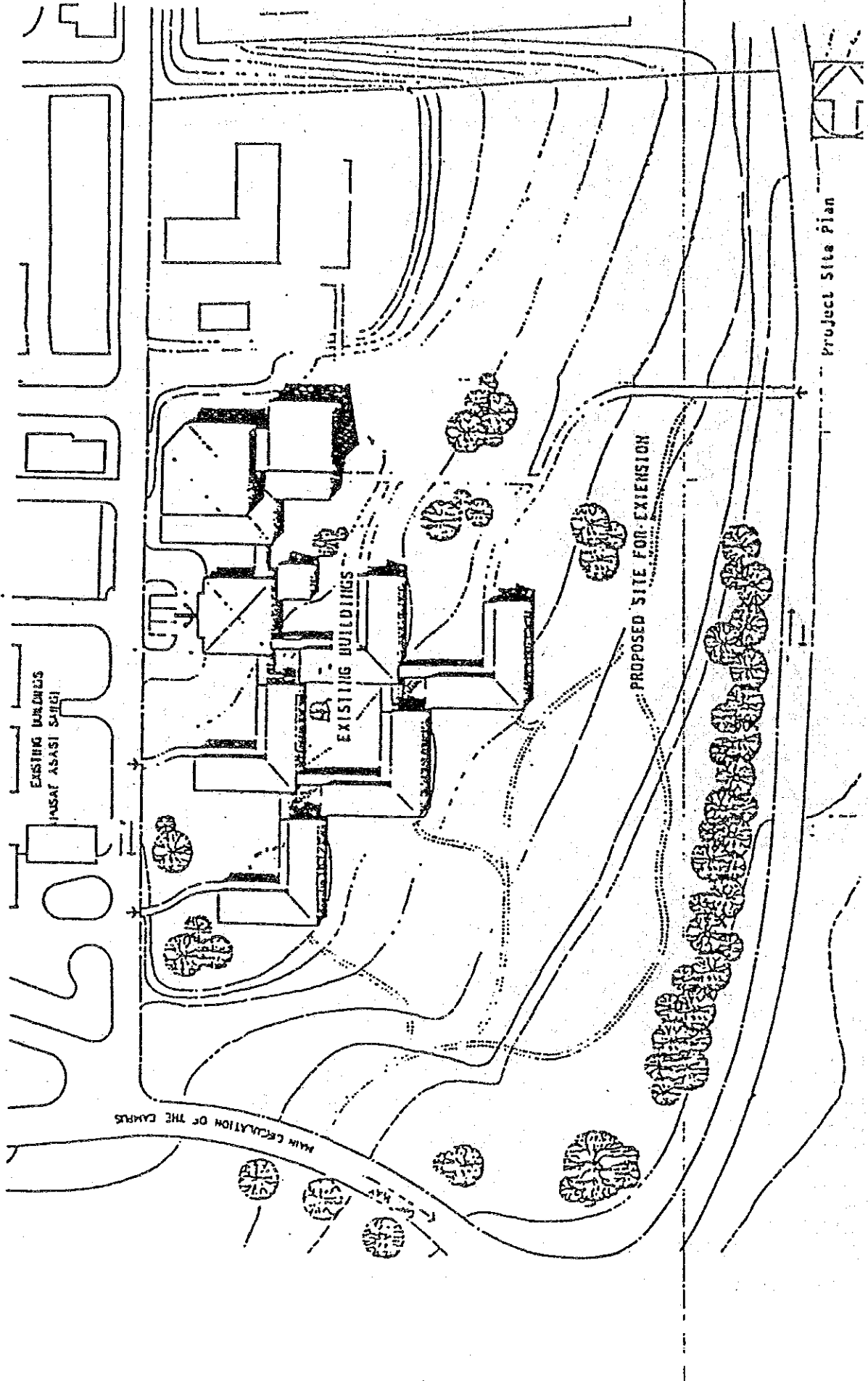
9. Legal procedures of building works is confirmed as follows:

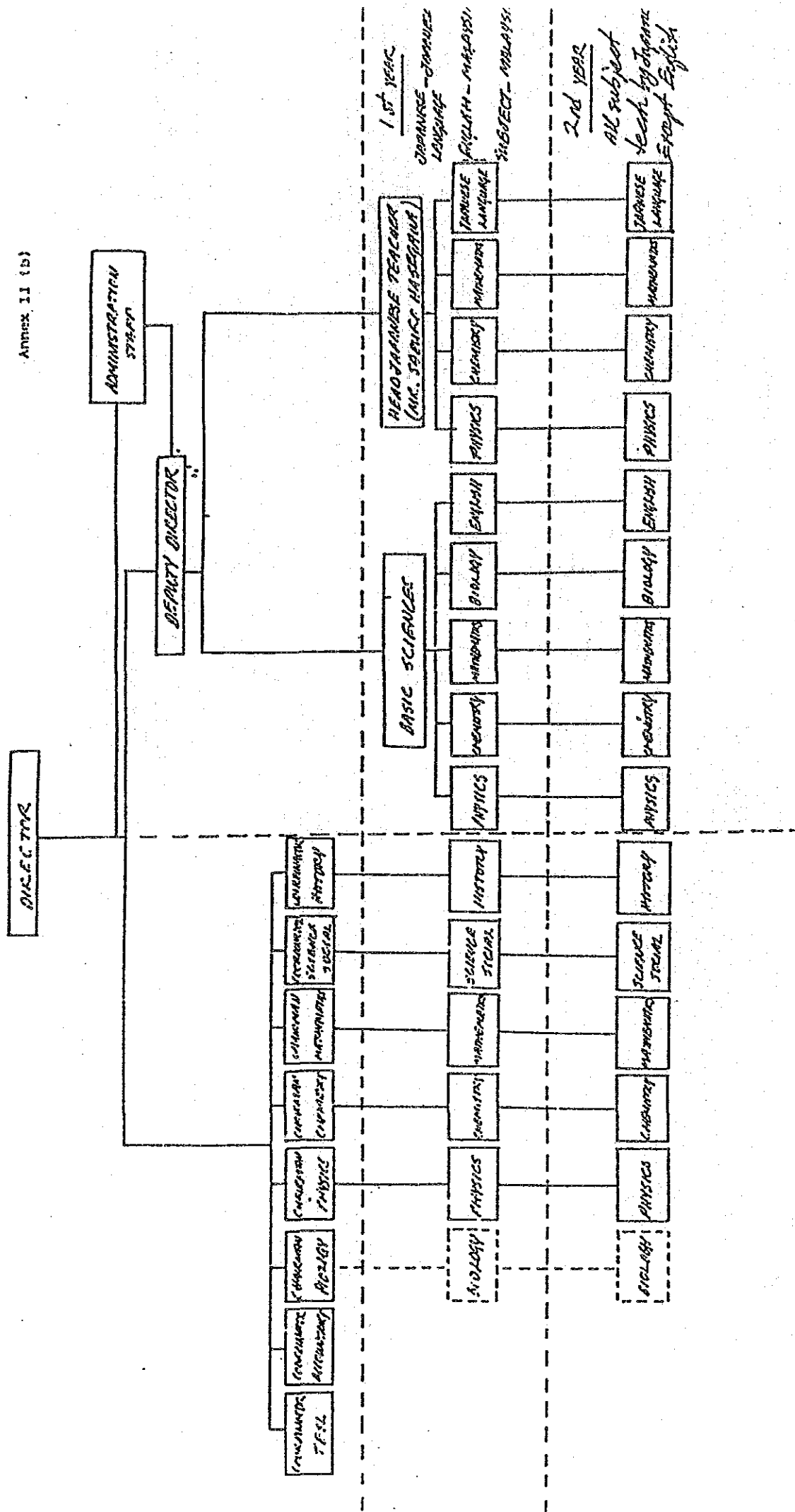
- (i) All building procedures should comply with Kuala Lumpur City Hall requirements.
- (ii) Building approval should be applied for by an architect registered with the Malaysian Board of Architects on behalf of the Japanese Side.

The University of Malaya undertake to obtain expeditious approval for the building.

KAMPUS
UNIVERSITI MALAYA





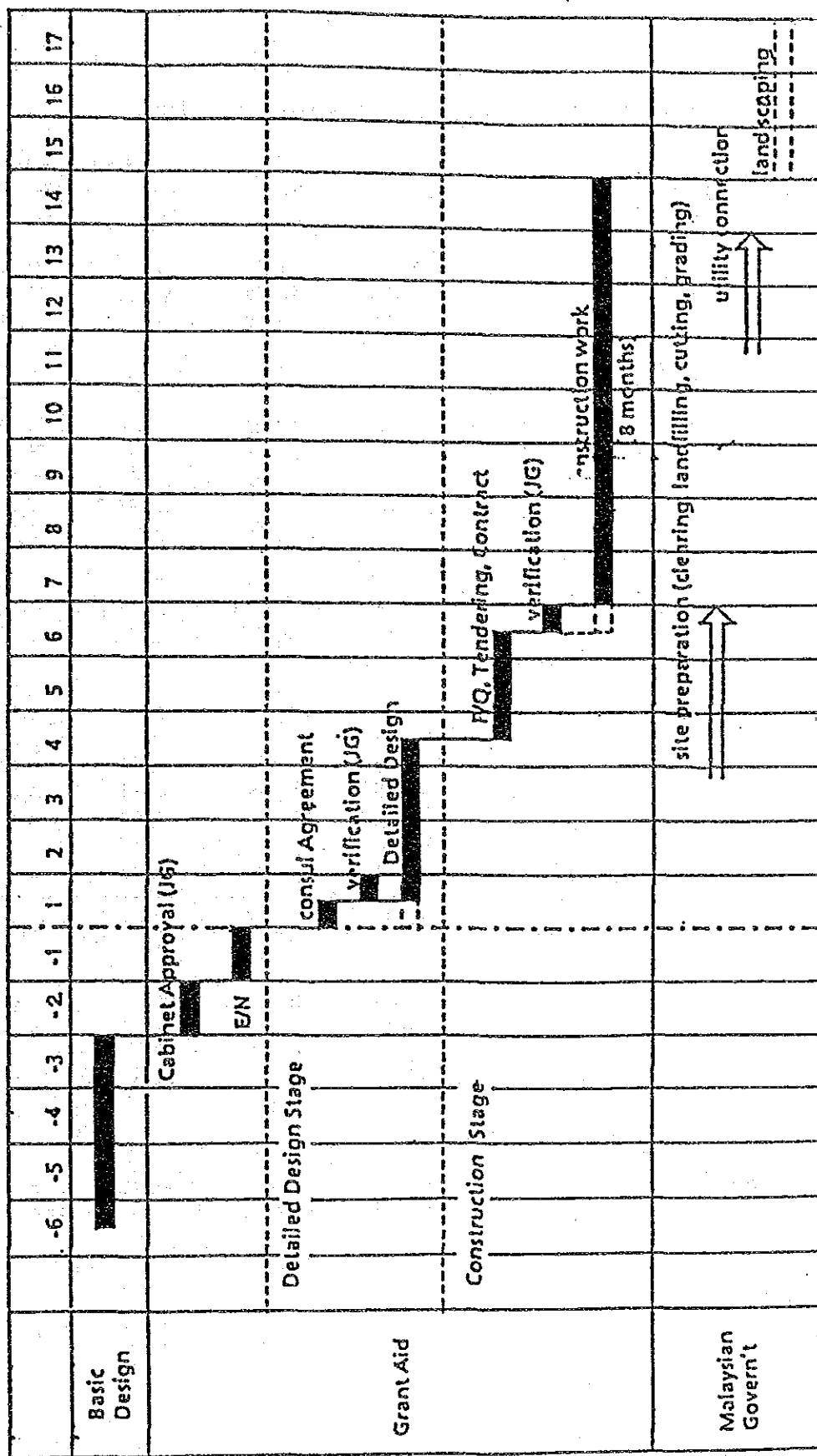


Major Undertakings to be Taken by Both Governments

No.	Items	To be covered by Grant Aid	To be covered by Malaysian Side
1.	To secure land lot		○
2.	To clear, level and reclaim the site		○
3.	To construct the gate and fence in and around the site (if necessary)		○
4.	To construct the parking lot (if additional lots are necessary)	○	
5.	To construct the road		
	1) Within the site	○	
	2) Outside the site (if necessary)		○
6.	To construct the buildings	○	
7.	Furniture and Equipment		
	a. Essential Furniture and Furnishings	○	
	b. Educational equipment	○	
	c. Other furniture & Furnishing, curtains, utensils, office supply, etc.		○
8.	To provide facilities for distribution of electricity, water supply, drainage and other incidental facilities		
	1) Electricity		
	a. The main circuit breaker	○	
	b. The power main from existing transformer to new distribution board	○	
	2) Water Supply		
	a. The city water distribution main to the site		○
	b. The supply system within the site	○	
	3) Drainage		
	a. The drainage system (for toilet sewer, ordinary waste, storm drainage and others) to the septic tank	○	
	b. Septic tank (if necessary)	○	
	c. The drainage city main (for storm, sewer and others) to the septic tank		○
	4) Gas Supply system within the site (if necessary)	○	
	5) Telephone System		
	a. The telephone trunk line to the main distribution frame/panel (MOF) of the building (if necessary)		○
	b. The MOF and the extension after the frame/panel	○	

No.	Items	To be covered by Grant Aid	To be covered by Malaysian Side
9.	Consulting Services		
	1) Detailed Design for the work to be undertaken by the Japanese side	○	
	2) Supervisory Services (including tendering) for the work to be undertaken by the Japanese side	○	
10.	To bear the following commissions to the Japanese foreign exchange bank for the banking services based upon the B/A		
	1) Advising commission of A/P		○
	2) Payment commission .		○
11.	To ensure unloading and customs clearance at port of disembarkation in recipient country		
	1) Marine (Air) transportation of the products from Japan to the recipient country	○	
	2) Tax exemption and custom clearance of the products at the port of disembarkation.		○
	3) Internal transportation from the port of disembarkation to the project site	○	
12.	To accord Japanese nationals whose services may be required in connection with the supply of the products and the services under the verified contracts such facilities as may be necessary for their entry into Malaysia and stay therein for the performance of their work		○
13.	To maintain and use properly and effectively the facilities constructed and equipment purchased under the Grant		○
14.	To bear all the expenses other than those to be borne by the Grant, necessary for construction of the facilities as well as for the transportation and the installation of the equipment		○
15.	To exempt Japanese nationals from customs duties, sales tax, excise duties, internal taxes and other fiscal levies which may be imposed in Malaysia with respect to the supply of the products and services under the verified contracts		○
16.	To provide enough spaces for materials and equipment stock necessary for execution of the Project		○

Annex IV



JG: Japanese Government E/N: Exchange of Notes

Tentative Overall Schedule

SUMMARY OF EXPENDITURE FOR THE JAPANESE LANGUAGE CENTRE FOR THE PERIOD 1984 - 1987

SALARIES AND OTHER ALLOWANCES	1984	1985	1986	1987
*****	\$	\$	\$	\$
Salaries	287,677	308,507	317,731	344,278
Employee's Provident Fund	26,063	27,000	27,093	28,449
Pension Fund	2,000	2,186	2,726	3,266
Allowances				
Overseas Allowance (Japanese Language Teachers)	67,763	69,148	70,360	72,000
Visiting Allowance (Japanese Language Teachers)	98,153	92,407	86,382	80,073
Entertainment Allowance	9,197	9,387	9,578	9,774
Service Allowance	25,996	27,547	28,109	28,683
Divisional Headship Allowance (5)	2,823	2,881	2,940	3,000
Part-time Teaching (Pengajaran Sanbilan)	11,375	11,375	8,775	8,775
	534,033	530,440	533,897	578,297
EXPENDITURE				
Travelling and Transportation	3,416	3,617	3,842	2,375
Communication	107	229	326	232
Printing Services	687	805	976	615
Supplies and Materials	18,093	23,778	23,261	23,684
Other Services	1,565	2,480	2,289	2,383
Furniture and Equipaent, and Animal Husbandry	1,591	1,628	1,660	1,721
	27,461	34,237	34,353	31,013
UTILITIES				
Electricity	42,000	56,396	65,168	70,000
Water	4,187	3,223	5,196	6,800
	46,187	59,621	70,364	76,800
Total Expenditure For Establishaent of the Japanese Language Center	\$607,703	\$644,298	\$658,614	\$685,112
	*****	*****	*****	*****

II. LIST OF MEMBER OF THE STUDY TEAM

MEMBER LIST

- | | | |
|---|--------------------------|---|
| ① | Mr. Takeo Yoshikawa | Team Leader:
Assistant Director
Second Southeast Division
Asian Affairs Bureau,
Ministry of Foreign Affairs |
| ② | Mr. Keiichi Aragane | Project Coordinator:
Hachioji International Training Centre
Japan International Cooperation Agency |
| ③ | Mr. Nobuhiro Komatsubara | Architect:
Nikken Sekkei Ltd. |
| ④ | Mr. Koichiro Shikida | Architect:
Nikken Sekkei Ltd. |
| ⑤ | Mr. Eiji Sudo | Quantity Surveyor
Nikken Sekkei Ltd. |
| ⑥ | Mr. Yasumasa Kobayashi | Electric Engineer:
Nikken Sekkei Ltd. |
| ⑦ | Mr. Teruo Yabana | Educational Equipment Specialist:
System Science Consultant Inc. |

III. ITINERARY OF THE STUDY TEAM

- (1) Jan. 28, 1987 : Arrive in Kuala Lumpur
(Thur.)
- (2) Jan. 29, 1987 : Courtesy call at Embassy of Japan, JICA
(Fri.) : Courtesy call at UM (University of Malaya),
confirmation and discussion on the request
- (3) Jan. 30, 1987 : Discussion with UM, EPU (Economic Planning Unit,
(Sat.) Prime Minister's Department), MOE (Ministry of
Education)
- (4) Jan. 31, 1987 : Meeting with JOCV (Japan Overseas Cooperation
(Sun.) Volunteers)
: Quantity Surveyor Mr. Sudo, Electric Engineer Mr.
Kobayashi, and Educational Equipment Specialist
Mr. Yabana arrive in Kuala Lumpur
- (5) Feb. 1, 1987 : Survey of cost of construction material
(Mon.)
- (6) Feb. 2, 1987 : Meeting with Japanese teachers of JLC (Japanese
(Tue.) Language Centre)
- (7) Feb. 3, 1987 : Discussion on the request with UM
(Wed.) : Luncheon under the auspice of JICA
- (8) Feb. 4, 1987 : Discussion on the draft of Minutes with UM
(Thur.) : On-site studies of JLC facilities
- (9) Feb. 5, 1987 : Signing of the Minutes of Discussion
(Fri.) : Report to JICA and Embassy of Japan
- (10) Feb. 6, 1987 : Meeting with local architect
(Sat.) : On-site studies of Science Laboratories of Asasi
Sains
: Team Leader Mr. Yoshikawa, Project coordinator
Mr. Aragane return to Japan

- (11) Feb. 7, 1987 : Study on site plan, facilities and cost study of
(Sun.) materials and equipment
- (12) Feb. 8, 1987 : Survey on applicable law and regulation
(Mon.) : Site survey in detail
- (13) Feb. 9, 1987 : Discussion with UM and Japanese teachers of JLC
(Tue.)
- (14) Feb. 10, 1987 : Confirmation of the outcome of the study by UM
(Wed.) : Explain the outcome of the study to Japanese
Teachers of JLC
: Report to Embassy of Japan and JICA
- (15) Feb. 11, 1987 : Leave Kuala Lumpur, arrive in Tokyo
(Thur.)

IV. LIST OF PERSONS INTERVIEWED

① University of Malaya

Royal Professor Ungku A. Aziz	: Vice Chancellor
Assoc. Professor Wohd Said Kadis	: Director, Pusat Asasi Sains
Assoc. Professor Dr. Aazizah Ahamad	: Acting Director, Pusat Asasi Sains
Dr. Mohd Zambri Zainuddin	: Acting Deputy Director, Pusat Asasi Sains
Roshani Abdul Azia	: Assistant Registrar, Pusat Asasi Sains
Faizah Yunus	: Assistant Registrar, Pusat Asasi Sains
Hubert Kok Woo Seng	: Deputy Bursar
Teoh Kian Koon	: Resident Engineer
Chee Peng Koon	: Senior Electrical Engineer

② Economic Planning Unit (EPU)

Wong Peg Har	: Principal Assistant Director
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③ Public Services Department (PSD)

Abdul Abas Abdul Rahman	: Principal Assistant Director
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④ Ministry of Education

Nordin Che Ngah	: Principal Assistant Director
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⑤ Embassy of Japan in Malaysia

Mr. Tetsuo Sugiura	: First Secretary
Mr. Takashi Goto	: First Secretary

⑥ JICA Malaysia Office

Mr. Takao Matsuzaki	: resident representative
Mr. Keizo Kagawa	: Assit. Resident Representative
Mr. Uji Asano	: Resident Officer

⑦ Japanese Teachers of JLC

° Dispatched from Japan Foundation

Mr. Saburo Hasegawa	: Head of Teachers Japanese Affairs
Mr. Shigeo Itaya	: Physics
Mr. Toshiaki Sato	: Physics
Mr. Hiroshi Miyamoto	: Mathematics
Mr. Akeshi Yoshida	: Mathematics
Mr. Kageaki Date	: Mathematics
Mr. Toshikazu Fukui	: Chemistry
Mr. Hiroshi Nagai	: Chemistry
Mr. Itsuro Iwanaga	: World History
Mr. Satoshi Kurihara	: Social Science

° Dispatched from Ministry of Education, Japan

Mr. Toshio Hara	: Deputy Head of Teachers Japanese Language
Mr. Teruyoshi Hara	: Japanese Language
Miss Sachiko Masuda	: Japanese Language
Miss Ukiko Hagi	: Japanese Language
Mr. Shin Nitokuri	: Japanese Language
Miss Chizuko Osawa	: Japanese Language
Miss Kyoko Okamura	: Japanese Language
Miss Naomi Hatta	: Japanese Language
Mr. Tatsuya Nakagomi	: Japanese Language

V. CURRICULUM OF JLC

PUSAT ASASI SAINS UNIVERSITI MALAYA

① Time Table for the Special Preparatory Programme for Entrance Into Japanese Universities Semester I (Science Stream) Session 87/88

	Time	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	8.00-9.00	Japanese Language N1 (1J)	Japanese Language N1 (1J)	English G1(ADK1)DK2	Japanese Language N1 (1J)	Japanese Language N1 (1J)	Japanese Language N1 (1J)
2	9.00-9.50	N2 (2J) N3 (5J) N4 (LL)	N2 (2J) N3 (5J) N4 (LL)	G2(ADK2)DK3 G3(BK)	N2 (2J) N3 (5J) N4 (LL)	N2 (2J) N3 (5J) N4 (LL)	N2 (2J) N3 (5J) N4 (LL)
3	10.10-11.00	Chemistry Tutorial G1(1J) G2(2J) G3(5J)	Mathematics Tutorial G1(7) G2(8) G3(9)	Mathematics Lecture (DK1)	Physics Tutorial G1(1J) G2(4J) G3(5J)	Mathematics Lecture (DK1)	Physics Lectures (DK1)
4	11.10-12.00	Chemistry Lecture (DK1)	Mathematics Lecture (DK1)	Physics Lecture (DK1)	Mathematics Lecture (DK1)	Chemistry Lecture (DK1)	Mathematics Lecture (DK1)
5	12.10-1.00	Mathematics Lecture (DK1)	Physics Lecture (DK1)	Chemistry Lecture (DK1)	English G1(1J) G2(2J) G3(5J)		
6	2.10-3.00	Chemistry Laboratory (MK4)	Japanese Language N1 (1J) N2 (2J) N3 (5J) N4 (LL)	Physics Laboratory (MF2) G1 G2 G3	Japanese Language N1 (1J) N2 (2J) N3 (5J) N4 (LL)		
7	3.10-4.00	G1 G2 G3					
8	4.10-5.00				Japanese Affairs DKA/16		

Key: 1J, 2J, 3J, 4J, 5J - Tutorial rooms, Ambang Asuhan Jepun.
LL - Language Laboratory, Ambang Asuhan Jepun.

JLC

DK1 - Lecture Theater 1, Postgraduate Centre.
MK4 - Multi-purpose laboratory.
(Faculty of Education) - near Pusat Asasi Sains.
MF2 - Physics Laboratory 4, Pusat Asasi Sains.
BK - Bilik komputer

PUSAT ASASI SAINS
UNIVERSITI MALAYA

② Time Table for the Special Preparatory Programme for Entrance Into Japanese Universities
Semester I (Social Science Stream) Session 87/88

	Time	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	8.00-9.00	Japanese Language	Japanese Language	English	Japanese Language	Japanese Language	Japanese Language
2	9.00-9.50	N5 (3J)	N5 (3J)	G4(3J)	N5 (3J)	N5 (3J)	N5 (3J)
3	10.10-11.00	Social Science	Mathematics G4(3J)	Mathematics G4(3J)	Social Science G4 (3J)	Mathematics G4(3J)	Mathematics G4(3J)
4	11.10-12.00	G4 (3J)	Social Science	Social Science	Mathematics G4(3J)	Social Science G4 (3J)	
5	12.10-1.00		G4 (3J)	G4 (3J)	English G4(3J)		
6	2.10-3.00		Japanese Language		Japanese Language		
7	3.10-4.00		N5 (3J)		N5 (3J)		
8	4.10-5.00				Japanese Affairs DKA/(16)		
9	5.10-6.00	World History	World History	World History	World History		
10	6.10-7.00	G4 (3J)	G4 (3J)	G4 (3J)	G4 (3J)		

Key - 3J - Tutorial Room 3, Ambang Asuhan Jepun. JLC

PUSAT ASASI SAINS
UNIVERSITI MALAYA

③ Time Table for the Special Preparatory Programme for Entrance Into Japanese Universities
Semester III (Science Stream) Session 87/88

	Time	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	8.00-8.50	Chemistry ADK 1 & ADK 2	Physics ADK 1 & ADK 2	Japanese Language N1 (LL) N2 (2J) N3 (5J) N4 (1J)	Japanese Affairs ADK 1	Chemistry ADK 1 & ADK 2	Physics ADK 1 & ADK 2
2	9.00-9.50				English K1 (20) K2 (21) K3 (ADK 2)		
3	10.10-11.00	English K (ADK1) K (LL) K (ADK2)	Japanese Language N1 (LL) N2 (2J) N3 (5J) N4 (1J)	Mathematics ADK 1 & ADK 2	Mathematics ADK 1 & ADK 2	Japanese Language N1 (LL) N2 (2J) N3 (5J) N4 (1J)	
4	11.10-12.00						
5	12.10-1.00						
6	2.10-3.00	Mathematics ADK 1 & ADK 2	Chemistry ADK 1 & ADK 2	Japanese Language N1 (LL) N2 (2J) N3 (5J) N4 (1J)	Physics ADK 1 & ADK 2		
7	3.10-4.00	Japanese Language N1 (LL) N2 (2J) N3 (5J) N4 (1J)	Mathematics ADK 1 & ADK 2		Physics ADK 1 & ADK 2	Chemistry ADK 1 & ADK 2	
8	4.10-5.00						

Key: ADK 1, ADK 2 - Lecture Theatre 1 & 2, Ambang Asuhan Jepun.
1J, 2J, 5J - Tutorial Rooms 1, 2, 5 Ambang Asuhan Jepun.
LL - Language Laboratory.

JLC

20, 21 - Tutorial Rooms Pusat Asasi Sains.

PUSAT ASASI SAINS
UNIVERSITI MALAYA

④ Time Table for the Special Preparatory Programme for Entrance Into Japanese Universities
SemesterIII(Social Science Stream) Session 87/88

	Time	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	8.00-8.50	Social Science	World History	Japanese Language	Japanese Affairs ADK1	World History	Mathematics
2	9.00-9.50	(6J)	(6J)		English K4 (6J)	(6J)	
3	10.10-11.00	English	Japanese Language	Social Science	Mathematics	Japanese Language	(6J)
4	11.10-12.00	K4 (6J)	(6J)	(6J)	(6J)	(6J)	Japanese Language
5	12.10-1.00						(6J)
6	2.10-3.00	World History (6J)	Mathematics (6J)	Japanese Language	Social Science (6J)		
7	3.10-4.00	Japanese Language	Social Science	(6J)	World History		
8	4.10-5.00	(6J)	(6J)	Mathematics (6J)	(6J)		

Key 6J - Tutorial Room 6, Ambang Asuhan Jepun. JLC

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