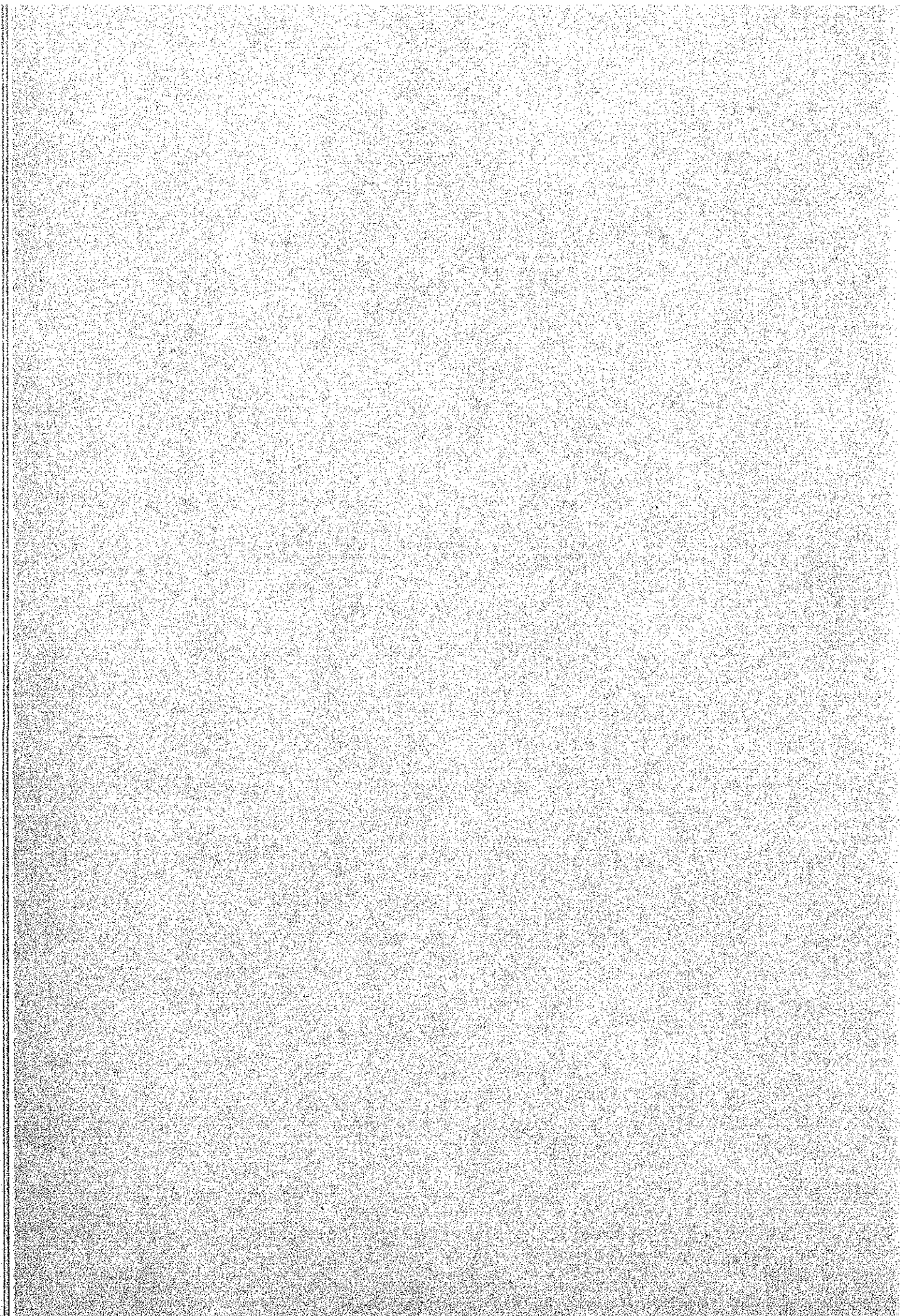


CHAPTER 2: BACKGROUND OF THE PROJECT



CHAPTER 2: BACKGROUND OF THE PROJECT

As a means to learn Japanese technology and work ethics under the Look East Policy, the Government of Malaysia is planning to send Malaysian students to Japanese universities at its own expense. To cooperate for the plan, the Government of Japan is considering acceptance of about 50 Malaysian undergraduate students annually. It is yet necessary for the prospective Malaysian students, whose language and culture are very different from those of Japanese, to be trained to Japanese language, etc. in Malaysia in order to avoid their shock and confusion in the Japanese university life. In this consideration, the University of Malaya and the National University of Malaysia opened preparatory courses for entry into Japanese universities in 1982 (currently 25 students studying at each course). These courses, which are offered as of the Pre-university program, are to give Malaysian secondary school graduates a 2-year education of Japanese language and other subjects similar to those given at Japanese high schools. In the course at the University of Malaya, for instance, students of natural science major only are given instruction in English, physics, chemistry and mathematics as well as Japanese language and culture. In future, not only Japanese language and culture but also other subjects will be taught in Japanese. Some Japanese instructors sent by the Japanese Government have already been teaching at the course. In future, eight instructors of general subjects and four instructors of Japanese language will be sent from Japan. Unification of these preparatory courses each at the University of Malaya and at the National University of Malaysia is also considered by the Malaysian counterparts.

According to the Malaysian side, the Japanese Language Centre Project at the University of Malaya covers 1) a course to prepare Malaysian students for entry into universities in Japan (2-year course with 100 students each year) and 2) a course to train Malaysian teachers who will be responsible for teaching Japanese as a second language in secondary schools in Malaysia (1-year course with 100 trainees).

The site for this project is given on the campus of the University of Malaya. Yet, each of these courses involves the following problems:

1) Japanese university preparatory course:

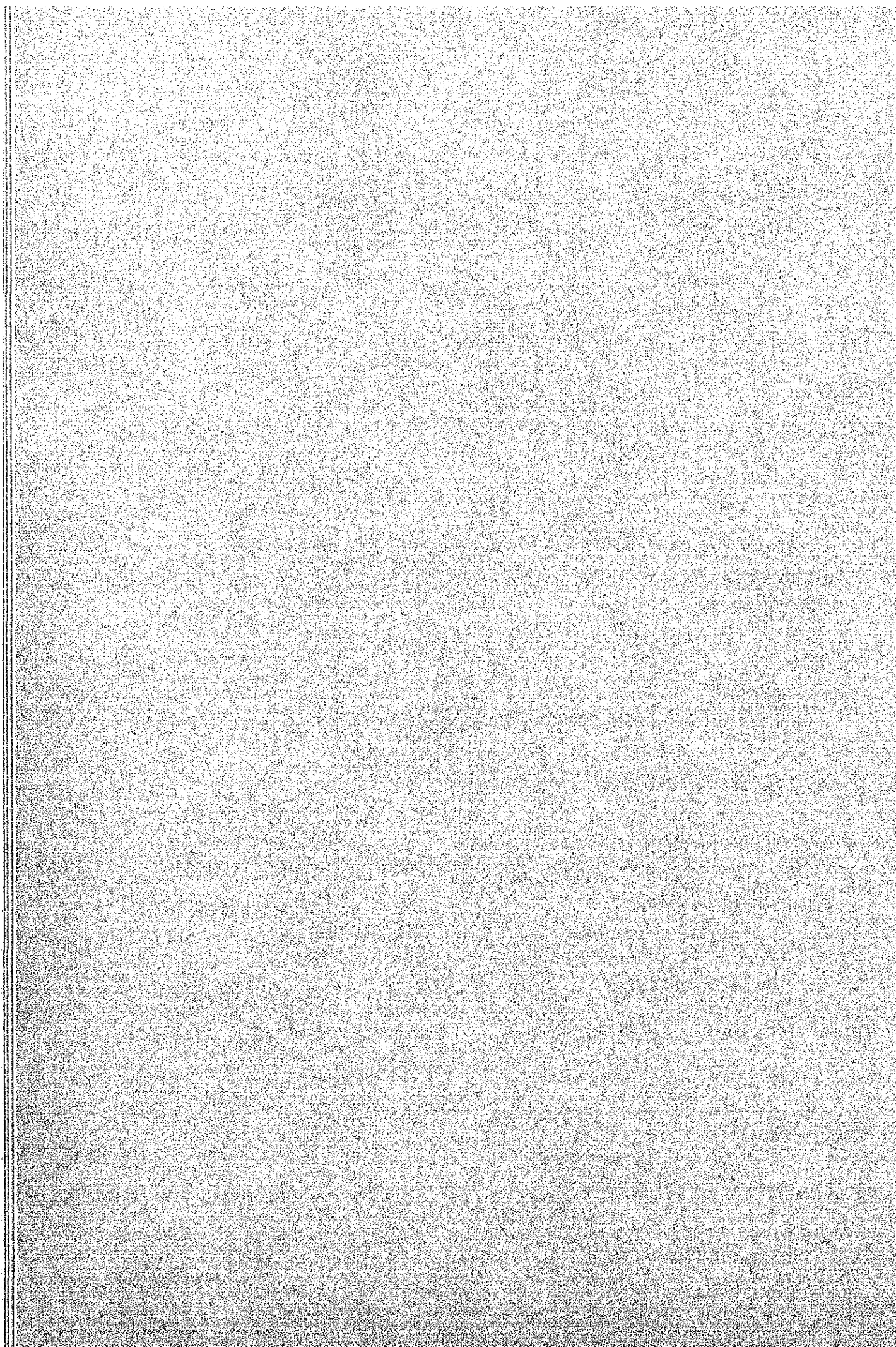
Because of immaturity of the educational program, shortage of teaching staff and limitation of admission capacity by Japanese universities (about 50 students per annum), the project cannot be launched with 100 students.

2) Secondary school teachers training course:

It is in basic agreement among Malaysian authorities concerned that Japanese, French and Arabic be taught as second languages of selectives at 780 secondary schools scattered over the country. However, no concrete program to train Japanese language teachers for these schools has been considered so far.

Taking these problems into consideration, the Government of Japan has decided to make basic design only for the Centre facilities of 100 students (about 50 students each year) to prepare for entry into Japanese universities, leaving the remainder of the project to future consideration by the Malaysian counterparts. Also, making allowance for future expansion of the Project by the Malaysian counterparts, the basic design was so made as to be adaptable to the expansion.

CHAPTER 3: SITE CONDITIONS



CHAPTER 3: SITE CONDITIONS

3-1 SITE DESCRIPTION AND SURROUNDINGS

The proposed Centre will be constructed on the campus of the University of Malaya at the south-west end of Kuala Lumpur. The site selected for the Centre is located to the east of the existing Pre-University facilities across the road. This selection will be favorable in view that the Project will be implemented as a part of the Pre-University program.

The site is of rectangular shape with an area of about 5.8 acre (23,000 m²) and slopes down in tiers from north-west to south-east with a level difference of about 15 meters.

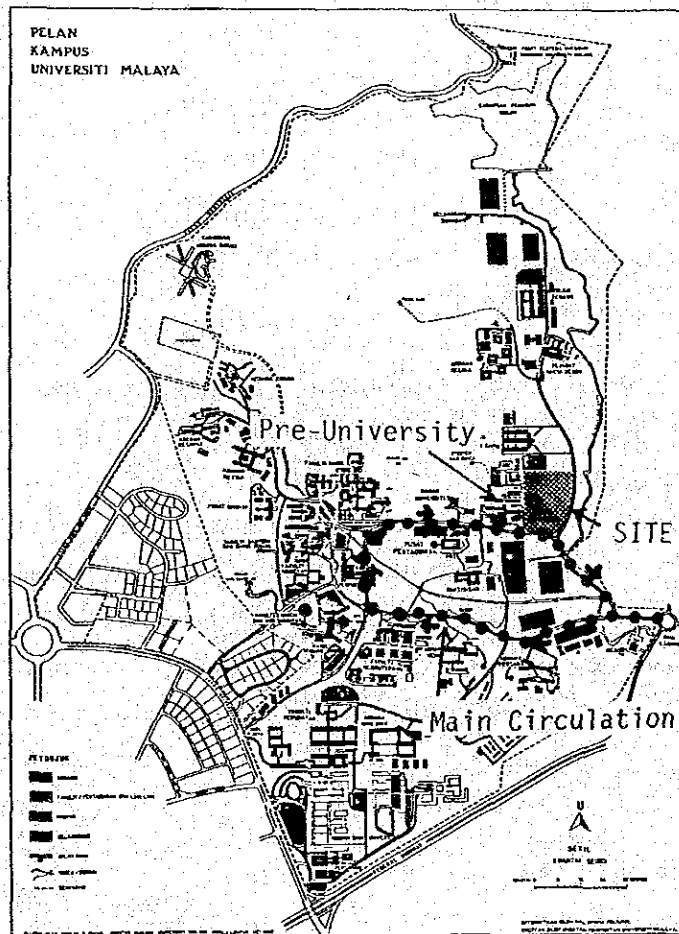


Fig. 3-1-1 The University of Malaya Campus Plan

The south end of the site faces a one-way ring road which makes the main circulation on the campus. There is a stream in the east of the site beyond the road. In the north, a new building of Institute of Advance Studies in Science and parking lots are under construction.

There are some experimental chicken houses and feed plant cultivation area on the site. For construction of the Centre, the existing shrubbery can be removed, if necessary, while trees along the east road will be preserved. The University of Malaya promised that removal of obstacles and site preparation be completed before the construction.

3-2 NATURAL CONDITIONS

3-2-1 Climatic Conditions

Kuala Lumpur lies in the tropical zone which is featured by high temperature, high humidity and heavy rain.

The meteorological data obtained in Kuala Lumpur are shown in Appendix and the climatic conditions on the site may be summarized as follows:

Daily temperature range:	Mean	26.3°C
	Max.	32.1°C
	Min.	27.6°C

Relative humidity:	Mean 84%
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Rainfall:	Max. in one hour	70mm
	Max. in one day	108mm

Wind velocity:	Max. in one month	17m/s (Oct.)
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Prevailing wind direction:

March - Sep. from South

Oct. - Feb. from Northwest

Earthquake: None in the record

3-2-2 Geological Conditions

According to the boring test made at the neighboring site, the site stratum is considered to consist of layers of clayey silt and clayey sand. The Mackintosh soil test results obtained at the site showed that the N-values by standard penetration tests were 20 - 40 at 3 - 4 m 50 - 70 at 4 - 6 m and 300 at 6m below the ground surface respectively. Accordingly, the allowable bearing capacity of soil in this area is estimated to be 5.0 - 10.0 t/m².

Since the proposed buildings are single-storied reinforced concrete or brick masonry structures, they can stand on such foundations directly. The soil test results are shown in Appendix.

3-3 UTILITIES

3-3-1 Electricity

The existing power distribution lines around the proposed site are as shown in Appendix. There run super-high tension power cables (11kV) about one meter underground along the surrounding roads. A new super-high tension power cable will be extended to the proposed site by the Malaysian Government. Power is single phase 240 volts and 3 phase 415 volts at 50 Hz in frequency.

3-3-2 Telephone

There are three cables of telephone trunk line about one meter underground along the east and south roads. An automatic telephone exchange is installed in PUSAT ASASI SAINS, the building located on the west of the site. Two out of these cables will be extended to the proposed site.

3-3-3 Water Supply

The existing water supply pipes around the proposed site are as shown in Appendix. Main city water pipes run about one meter underground in the campus of the University of Malaya. The diameters of these pipes, all made of cast iron, are 200 mm on the east of the site, 150 mm on the south and 100 mm on the west respectively. The city water is of normal quality. The water pressure is about 3.8 kg/cm²G at the peak load time, so that no pumping will be necessary.

3-3-4 Drainage and Sewage

Waste water from the existing facilities near the site is gathered by gravity at the basin placed at the south-east corner of the site through the V-shaped ditches and discharged to the on-campus stream.

Sanitary sewage is discharged via sewage pipes with a diameter of 150 mm running about one meter underground across the proposed site and connecting with the septic tank outside the site.

Local regulation requires that sewage be treated not to contain more than 50 ppm by BOD standard.

3-3-5 Gas

There is no city gas supply system around the proposed site. Propane gas in cylinders is easily available for kitchen use in the University of Malaya.

3-3-6 Telecommunications

There are 2 TV channels in color and 2 AM and 1 FM radio channels in Kuala Lumpur area.

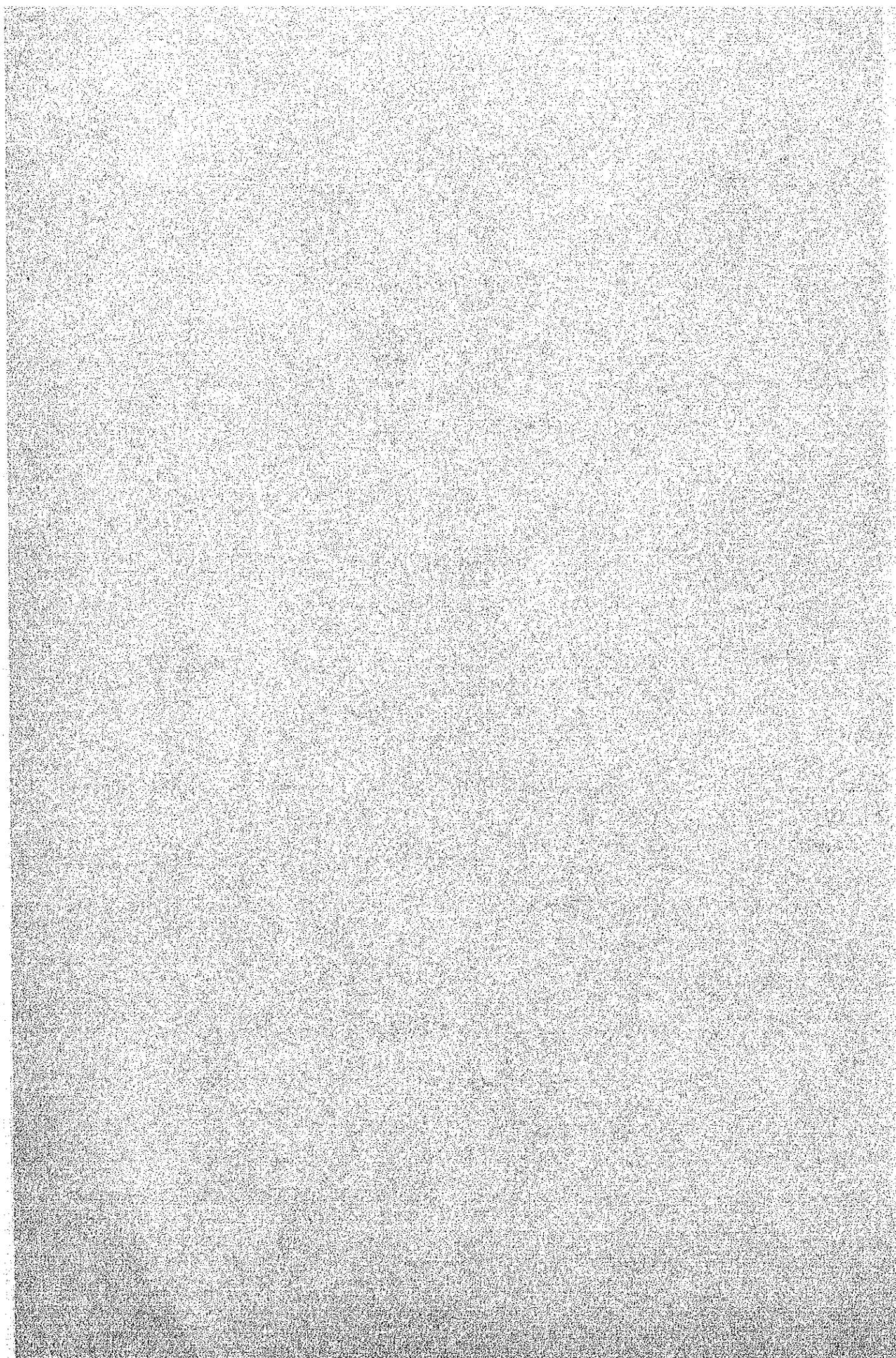
3-3-7 Garbage Disposal

There is a garbage collection area around the corner of PUSAT ASASI SAINS, the building located on the west of the site. Garbage is collected by trucks five times a week. There is no incinerator near the proposed site.



Site

CHAPTER 4: THE JAPANESE LANGUAGE CENTRE PROJECT



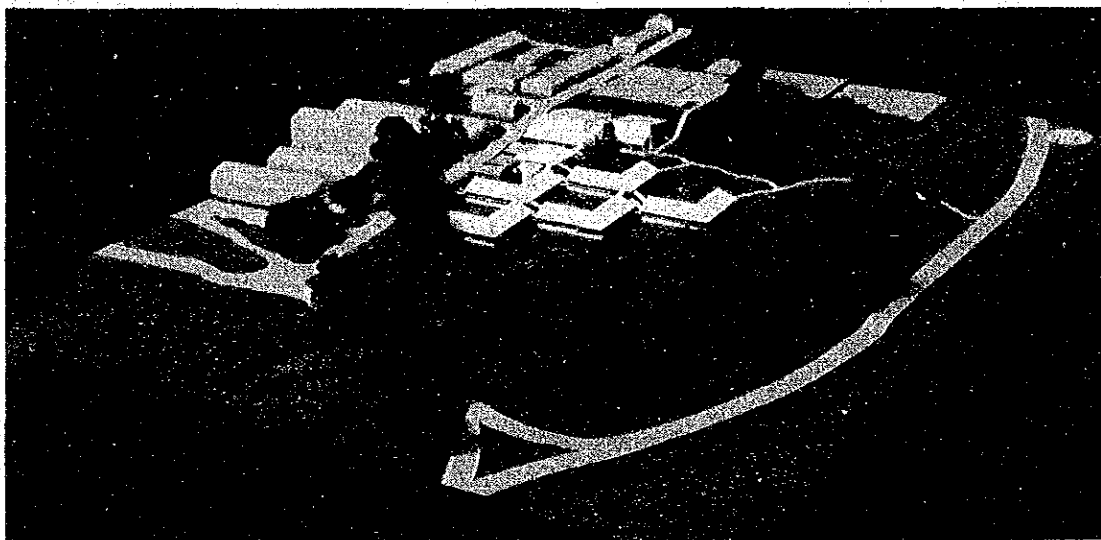
CHAPTER 4: THE JAPANESE LANGUAGE CENTRE PROJECT

4-1 OBJECTIVES AND ESTABLISHMENT SCHEME

In the light of the "Look East Policy", the Government of Malaysia is planning to send Malaysian students to Japanese universities in order to acquire Japanese technology, working ethics and culture. This Project aims at establishing the Japanese Language Centre to be utilized for the preparatory course for entry into Japanese universities which has been set up recently as a part of Pre-University programs at the University of Malaya. The Centre under consideration in this report is intended to accommodate 100 students to study in the two-year preparatory course for entry into Japanese universities. The Centre facilities to be built under the Japanese grant aid will be used for teaching the Japanese language to Malaysian youth and will cover the following:

- one Lecture Theatre (300 seats)
- one Classroom (150 seats)
- six Tutorial Rooms (25 seats x 4, 10 seats x 2)
- one Language Laboratory (25 booths)
- one Library
- one Coordinator's Office
- one Administration Office
- one Reception Room for Visitors
- three Lecturers' Offices
- one Meeting Room
- one Common Room
- one Workshop

The University of Malaya has a future plan to increase the number of students up to 100 annually and also to establish a one-year course, with an annual capacity of 100 persons, to train Malaysian teachers who will be responsible for teaching Japanese as a second language in secondary schools in Malaysia. Therefore, the proposed facilities have been so planned as to be adaptable to future expansion in harmony with the whole site plan.



4-2 BASIC DESIGN OF CENTRE FACILITIES

4-2-1 Design Principles

The basic design has been governed by the following design principles to create a good educational environment for Malaysian students to study Japanese language:

- (1) Facilities should be such that the requirements of the users are fully covered by their functions.
- (2) Environmental conditions, both natural and man-made, should be fully considered.
- (3) Facilities should be compatible with local conditions, and easy to use and maintain.
- (4) Facilities should be designed so that they may be constructed at a minimum cost without undue difficulty. For this purpose, due consideration should be given to the use of local construction techniques and practices, and materials approved by SIRIM and JKR.
- (5) Facilities should be adaptable to future expansion and modification.
- (6) Facilities should be so designed as to make full use of the present site configuration.
- (7) Malaysian laws and regulations should be applied to the design unless exempted by the Malaysian authorities.

4-2-2 Building Design

(1) Block Layout

- 1) A cluster system has been adopted to arrange buildings on the terraced ground, to facilitate gradual extension and to make a comfortable educational environment.
- 2) The buildings will be laid out in the west part of the site to keep close interaction with the Pre-University facilities which adjoin the proposed site. Main approach to the buildings will be made from the west road.
- 3) The filled-up ground in the north-west area of the site will not be suitable for construction of the buildings without piling and be reserved for parking lots.

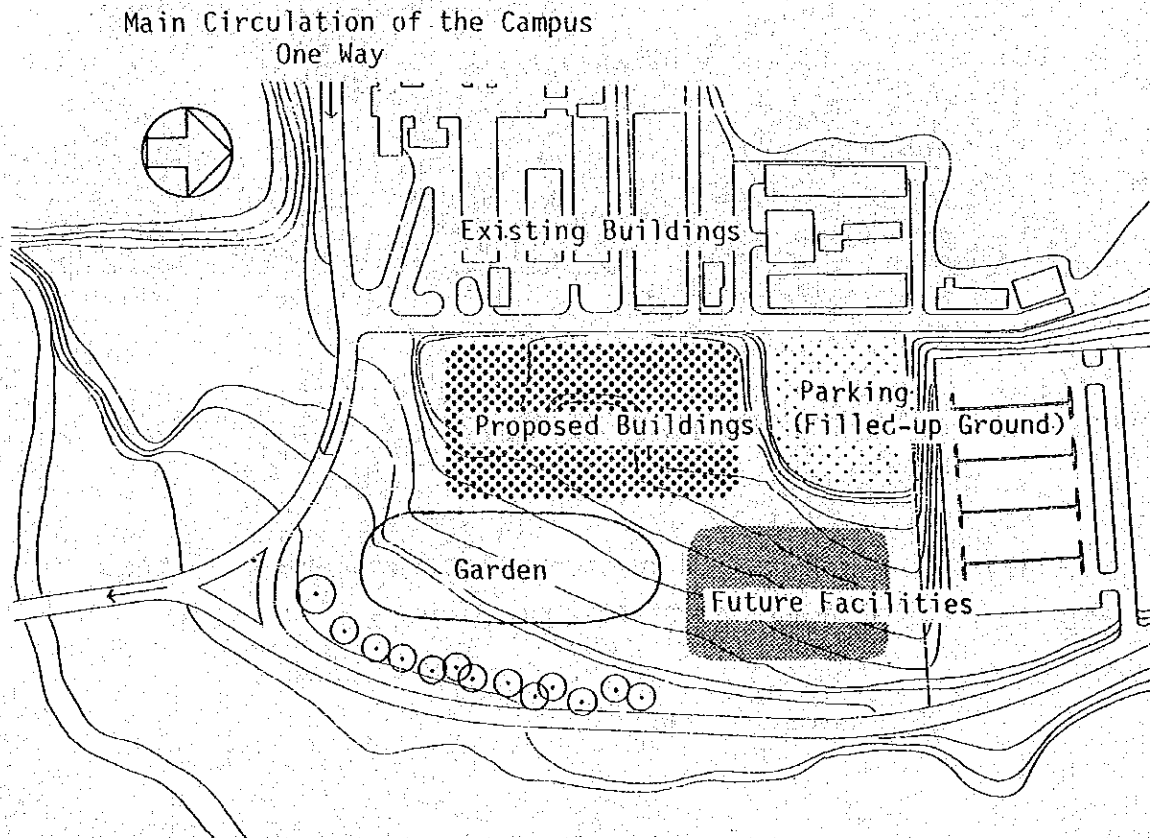


Fig. 4-2-1 Land Use Plan

- 4) A lot for future facilities will be reserved in the north-east area of the site.
- 5) The tall trees along the east road will be preserved and the south-east area will be used as a garden for landscaping purpose.

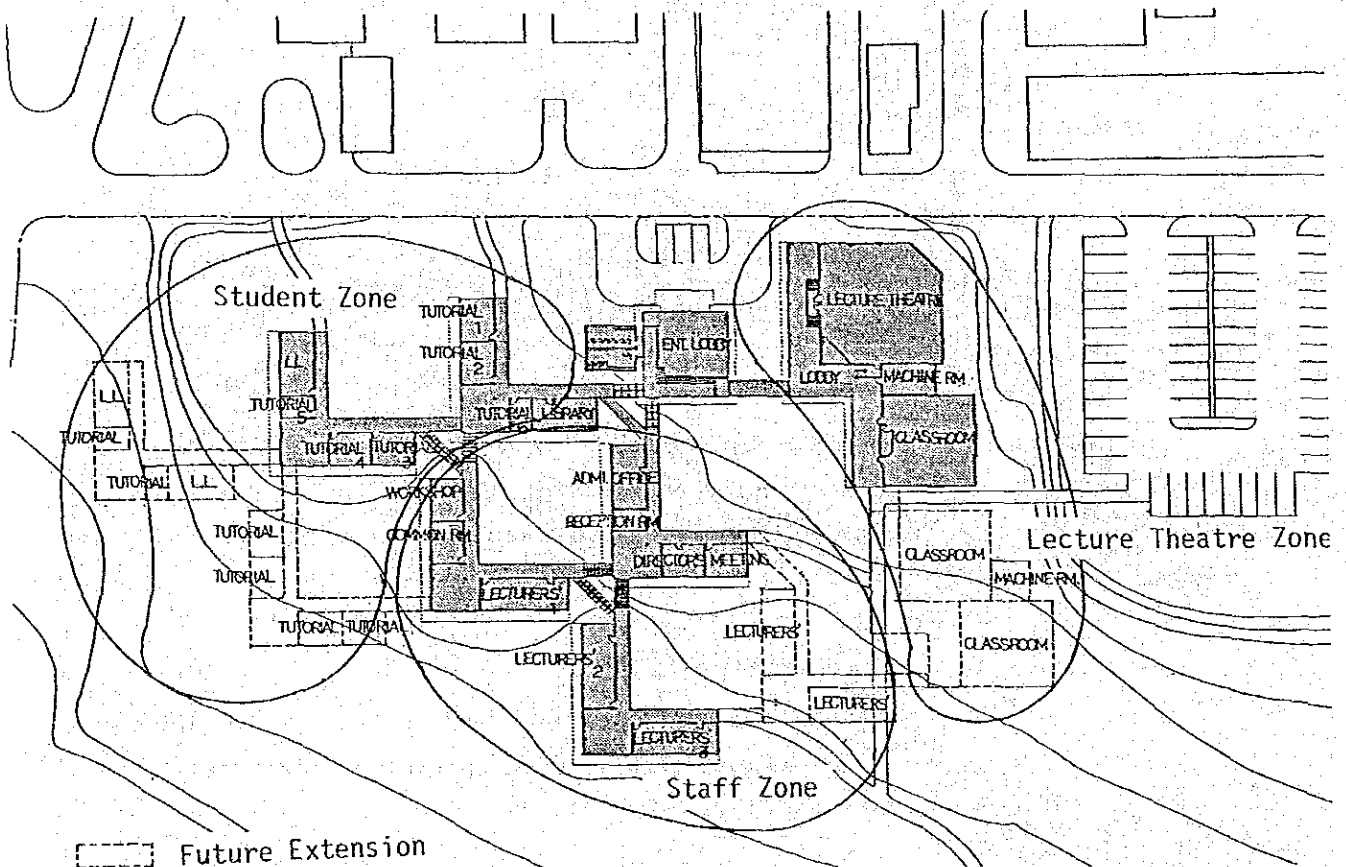


Fig. 4-2-2 Zoning and Future Extension

(2) Architectural Planning

1) Staff Zone and Students Zone.

- a) For designing of the Staff Zone and the Students Zone, the same moduler unit will be employed to secure the inter-changeability of function and flexibility for future expansion.

- b) The modular unit is 10' x 15' (approximately 3m x 4.5m) which is common to the facilities in the University of Malaya.

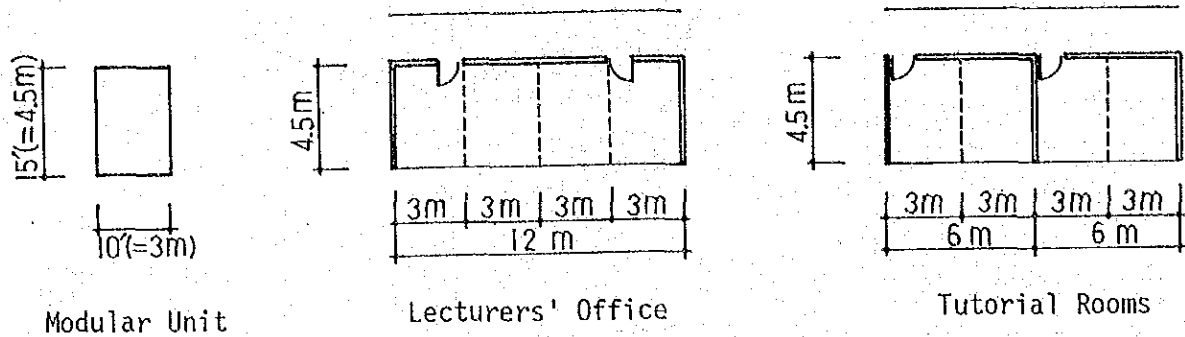


Fig. 4-2-3 Module

- c) Circulation will be made by a side corridor system so that natural ventilation, daylighting and noise protection can be achieved.
- d) Each cluster is arranged in L-shape by two blocks, each of which consists of 4 modular units of 3m x 4.5m. This arrangement has the following merits:
- . All rooms face south or east and are protected against direct sun beam.
 - . Future expansion will be made easily by providing another cluster with connecting corridor.

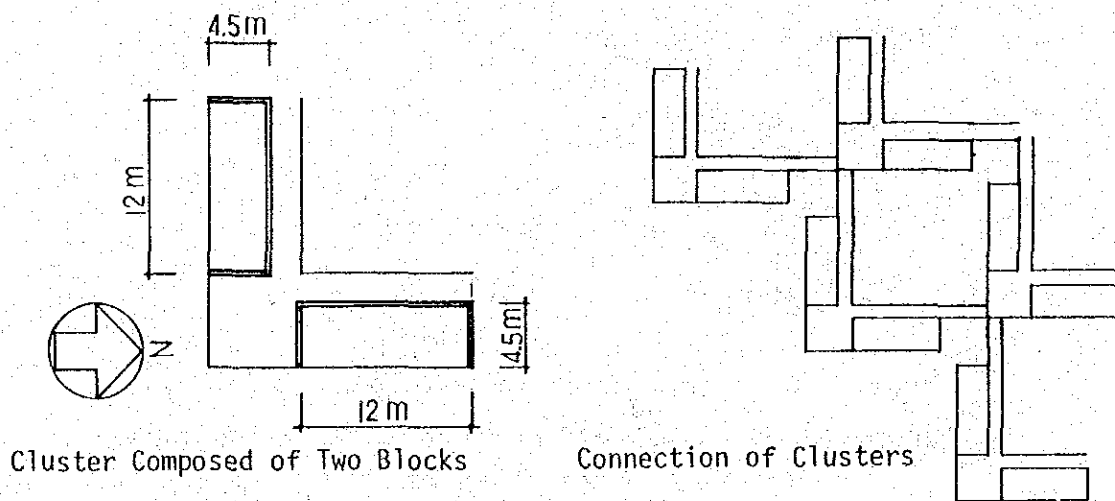


Fig. 4-2-4 Cluster Composition

- e) Sloping roofs will be provided for rain protection, and eaves will be used for sun control.

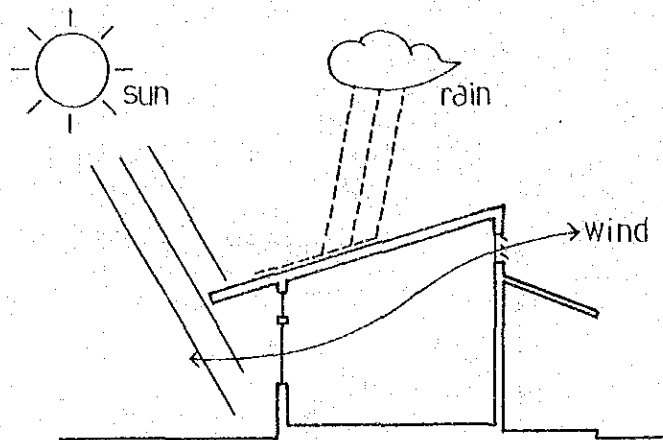


Fig. 4-2-5 Section

2) Lecture Theatre and Classroom

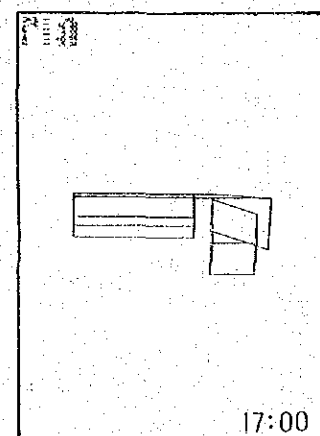
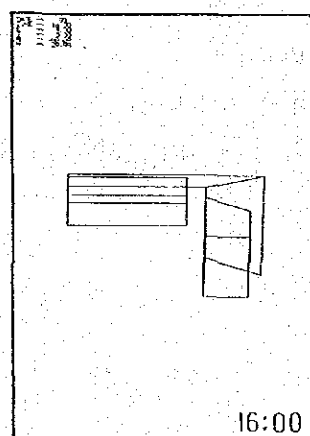
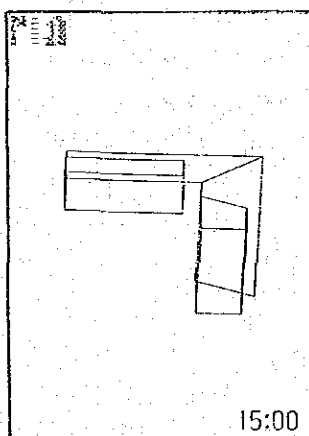
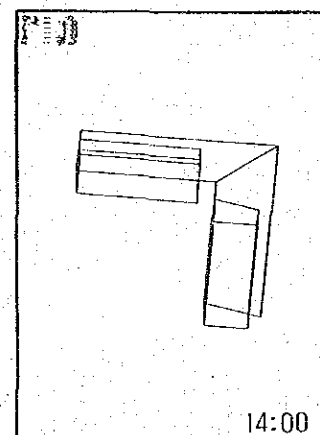
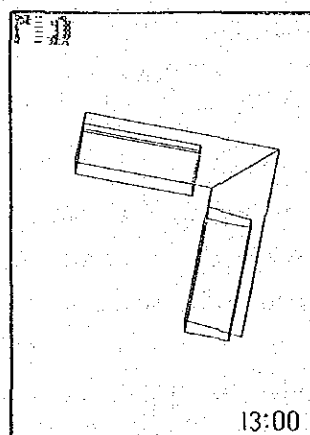
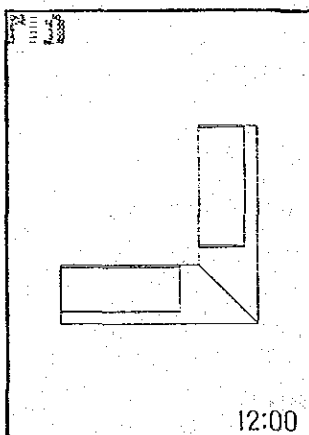
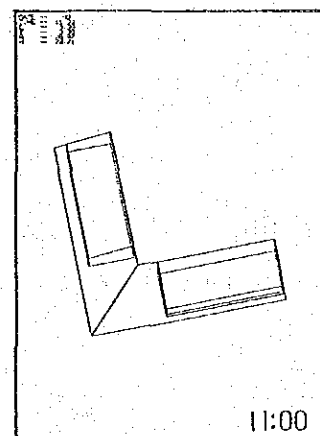
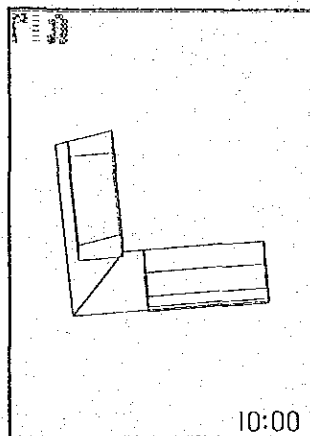
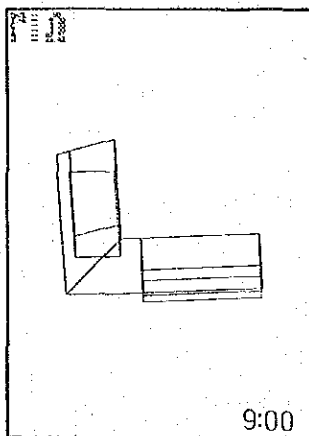
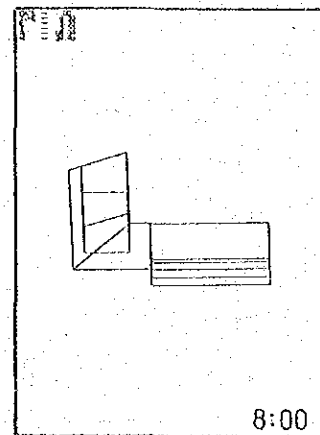
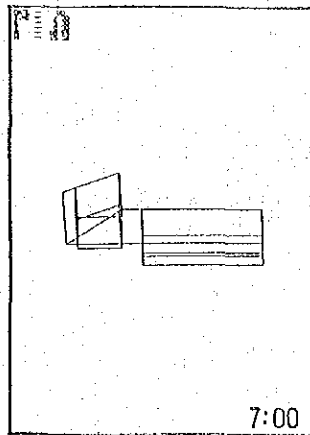
- a) Lecture Theatre will be intended for multiple purposes including primarily lecture and conference, and have a capacity for 300 persons. It will be furnished with seats fixed on the stepped floor.
- b) Classroom will also be intended for multiple purposes including primarily lecture and conference, and will have a capacity for 150 persons. It will be furnished with movable chairs.
- c) Lecture Theatre will have a projection room and be usable with audio-visual aids.
- d) Both, though provided with air conditioning system, will be so designed as to be usable with natural ventilation and daylighting.

Fig. 4-2-6

Computer Aided Shade Study-1

Vernal Equinox Day

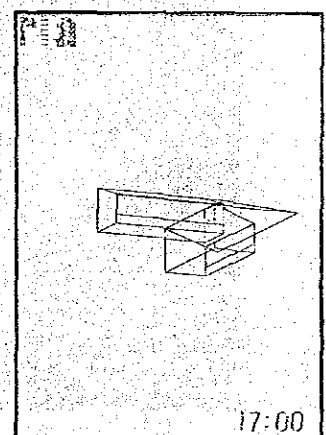
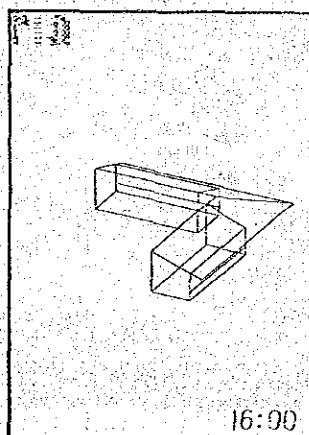
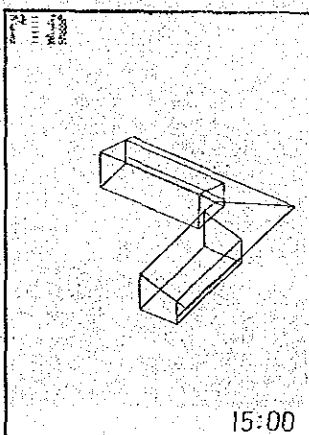
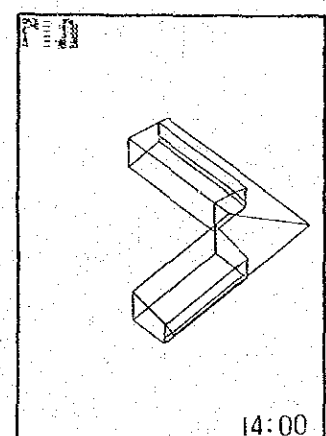
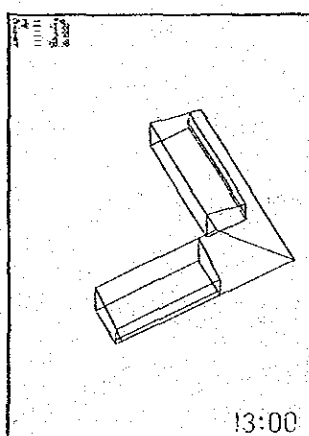
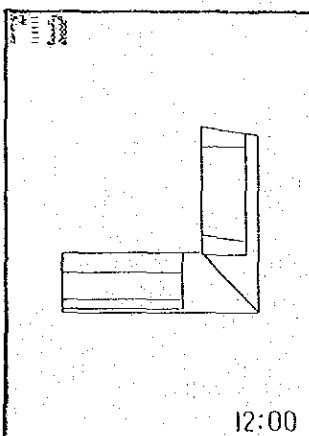
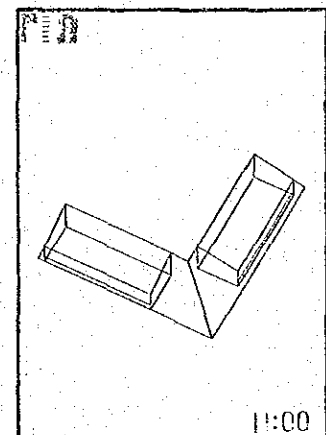
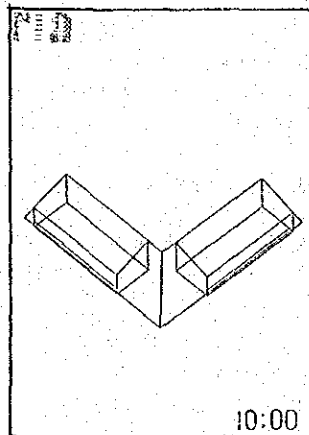
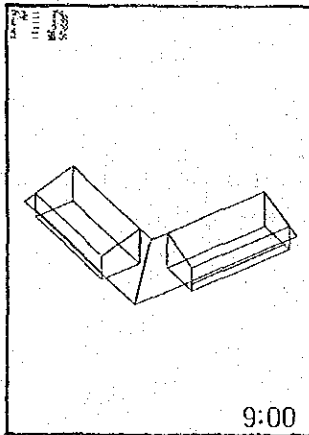
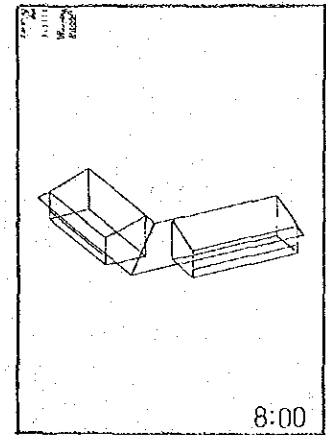
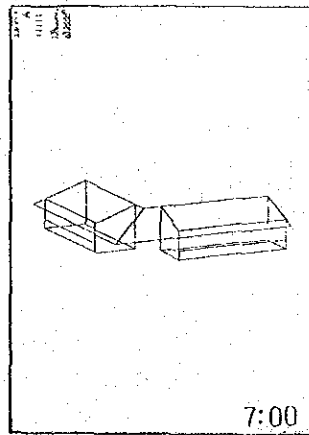
from 7:00 AM to 5:00 PM



Computer Aided Shade Study-2

Winter Solstice

from 7:00 AM to 5:00 PM



3) Floor Area

<u>Rooms</u>	<u>Floor Area</u> (m ²)	<u>Remarks</u>
Lecture Theatre	275	300 seats
Classroom	155	150 seats
Tutorial Room	150	25 sets x 4, 10 seats x 2
Language Laboratory	50	25 booths
Library	30	
Coordinator's Office	35	
Administration Office	45	
Lecturers' Office	170	
Meeting Room	25	
Reception Room	15	
Workshop	30	
Common Room	30	
Storeroom	15	
Machine Room	75	
Toilet	40	
Lobby and Corridor	230	
Total:	1,370	



4-2-3 Structural Design

(1) Basic Approach

- 1) Structural System should be compatible with the size, layout and mode of use of the building facilities.
- 2) Structural system should be compatible with the locally available materials approved by SIRIM and JKR, construction techniques, and labor quality.

(2) Design of Structures

- 1) Walls will be of reinforced concrete and/or bricks.
Roofs will be framed by wood or steel.
- 2) Foundations will be of reinforced concrete with connecting beams and be placed without piling, because the buildings are of single-story with light-weight roof.
- 3) Design standards to be used:

The structural design of this project will conform to the Uniform Building by Laws and British code of Practice and British Standards.

(3) Design Loads

a) Live Loads

	<u>Distributed Load</u>	<u>Concentrated Load</u>
Roof	25.5 kg/m ²	91.8 kgf
Classroom	306 kg/m ²	275 kgf
Lecture Theatre	510 kg/m ²	-

b) Seismic Load

In view that Kuala Lumpur has never experienced any strong earthquake in its history, no seismic consideration will be given in the design.

c) Wind Load

The values given by the "Uniform Building By-laws" are to be used.

4-2-4 Utility Design

(1) Electrical System

a) Power Supply System

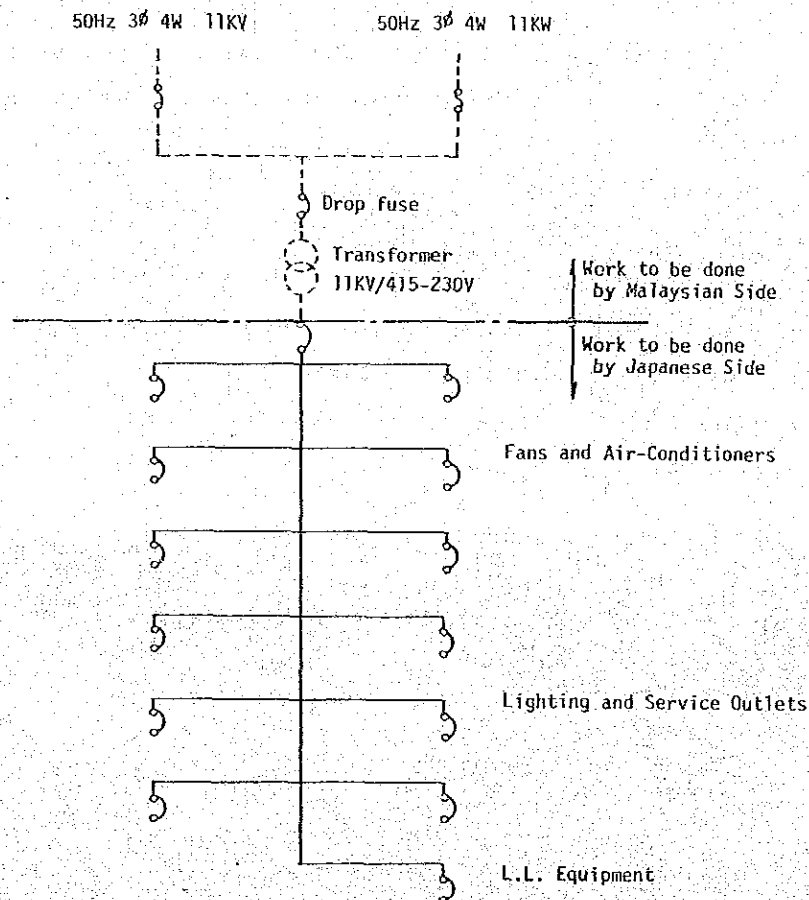


Fig. 4-2-8 Power Supply System

A new transformer with the incoming power cables will be provided by the Government of Malaysia. Power will be received at the main intake panel in the Machine Room from the transformer.

The supply voltage will be single phase 240V and 3 phase 415V. The frequency will be 50 Hz.

System design loads are estimated as follows, totaling approximately 190 KVA.

. Lighting and service outlets	60 KVA
. Airconditioning and ventilation	120 KVA
. Language laboratory equipment	10 KVA
Total:	190 KVA

The new transformer, however, should have a enough capacity for the growing power demand when the buildings are extended.

b) Power Mains

The power mains will be extended from the distribution panels in the Machine Room as far as the power control panels, lighting panel, and L.L. equipment panel boards. Wiring will be generally installed in metal ducts or cable racks. The supply voltage will be 3 phase 415 V for motors and single phase 240V for lighting and service outlets.

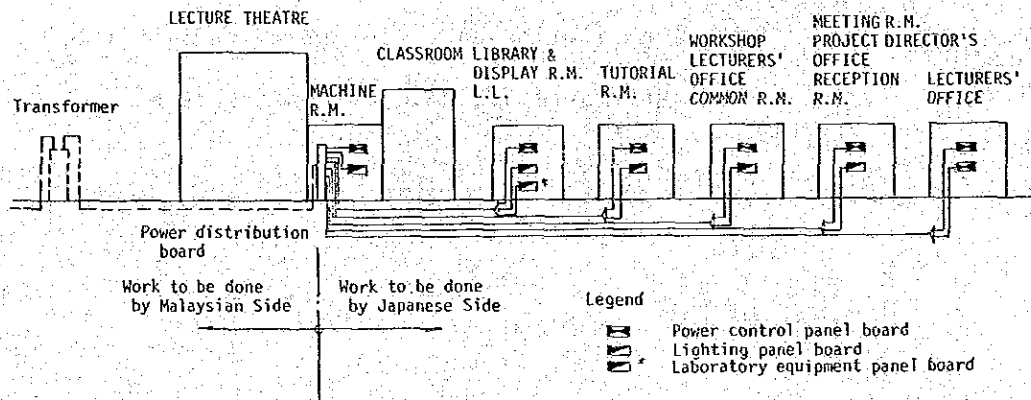


Fig. 4-2-9 Power Resier Diagram

c) Lighting and Service Outlets

Natural light will be utilized as much as possible throughout the building. For electrical lighting, fluorescent lamps will be used in most places while incandescent lamps will be used in some places. The average intensities of illumination in the main rooms will be as follows.

. Lecture Theatre, Classroom	400 Lx
. Tutorial Room, Language Laboratory	500 Lx
. Offices, Meeting Room, Reception Room	500 Lx
. Toilets, Corridors	100 Lx
. Machine Room, Storeroom	200 Lx

Service outlets comprise general outlets. Most outlets will be of single phase 240V in principle.

d) Wiring and Conduiting to Motors

Wiring and conduiting from power control panels will be provided to supply power to air-conditioning units and ventilating fans. The supply voltage will be as follows.

. Ventilating Fans (including ceiling fans)	1 ϕ 240V
. Refrigerators and Air-conditioners	3 ϕ 415V

e) Telephone System

From the existing telephone exchange in the building to the west of the site, two cables of trunk lines will be extended to the main terminal board in the Centre by the Malaysian side. About 30 extensions will be required in the Centre buildings. Wiring and conduiting will be made from the board to telephone units.

f) TV and Radio Antenna System

TV and Radio Antenna and necessary outlets will be provided in the Language Laboratory.

(2) Air-conditioning, Ventilation System

a) Heat Source

Electricity is used for refrigeration, whose capacity will be estimated at approximately 70 USRT in total.

Two package type air-conditioners will be installed in the Machine Room for Lecture Theatre and Classroom.

A unit cooler will be installed locally in other rooms in the buildings.

b) Air Conditioning

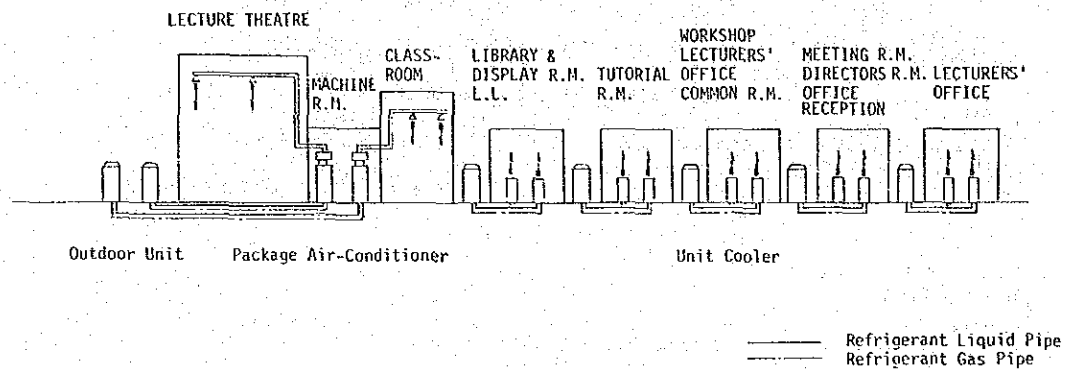


Fig. 4-2-10 Air-Conditioning System

For air conditioning, the design conditions are taken as follows:

- . Indoor temperature : $26 \pm 2^{\circ}\text{C}$
- . Indoor relative humidity : $60 \pm 5\%$
- . Outdoor temperature : 35°C
- . Outdoor relative humidity : 70%

c) Ventilation

Ventilating fans will be installed in the rooms where no air-conditioning will be provided. Air-conditioning and ventilating systems in each room are as follows.

Location	Number of Rooms	Total Floor Area (m ²)	Package A/C	Unit Cooler	Venti-Fans	USRT
Lecture Theatre	1	275	○			20
Classroom	1	155	○			10
Tutorial Rooms	6	150		○		15
Language Laboratory	1	50		○		3
Coordinator's Office	1	35		○		2
Administration Office	1	45		○		2
Lecturers' Offices	3	170		○		10
Meeting Room	1	25		○		2
Reception Room	1	15		○		1
Workshop	1	30		○		1
Library	1	30		○		2
Common Room	1	30		○	○	2
Storeroom	1	15		○		
Machine Room	1	75			○	
Toilet	1	40			○	
TOTAL		1,140				70

(3) Plumbing System

a) Water Supply

The Malaysian side will undertake to provide the service line up to the external wall of the buildings from the existing water pipe. Water will be distributed to each demand point in the buildings. City water consumptions are roughly estimated as follows:

. Lecturers & staff

$$30 \text{ persons} \times 0.1 \text{ m}^3/\text{man day} = 3 \text{ m}^3/\text{day}$$

. Students

$$100 \text{ " } \times 0.08 \text{ " } = 8 \text{ " }$$

. Others (Kitchen, etc.)

$$= 4 \text{ " }$$

$$\text{Total: } 15 \text{ m}^3/\text{day}$$

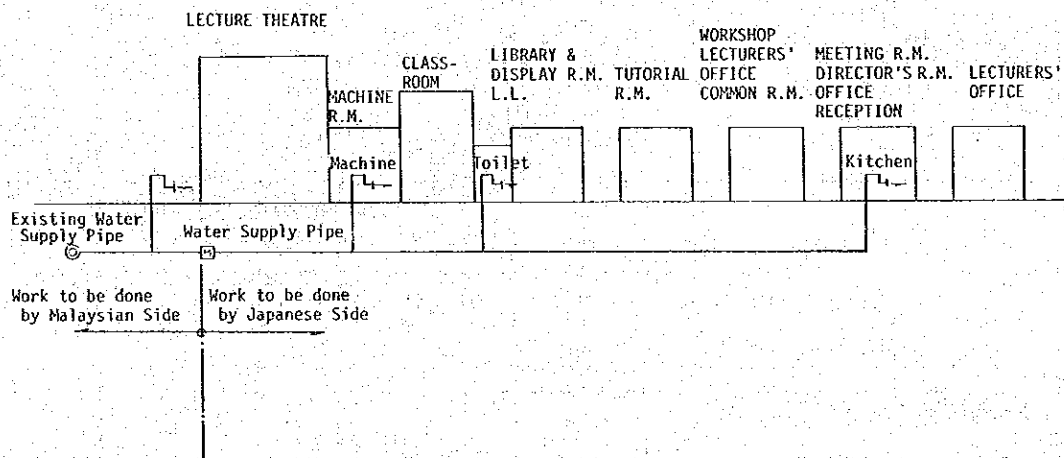


Fig. 4-2-11 Water Supply System

b) Hot Water

Electric hot water tank will be installed in the kitchen. Hot water consumption is roughly estimated as follows:

$$\text{Kitchen } 50 \text{ persons} \times 0.005 \text{ m}^3/\text{manday} = 0.25 \text{ m}^3/\text{day}$$

c) Drainage and Sewage System

Waste water and sanitary sewage from the buildings will be discharged separately.

The waste water will be drained by gravity to the gathering basin to be provided outside the building. The Malaysian side will undertake to connect the waste water line from the basin to the existing ditches around the proposed site.

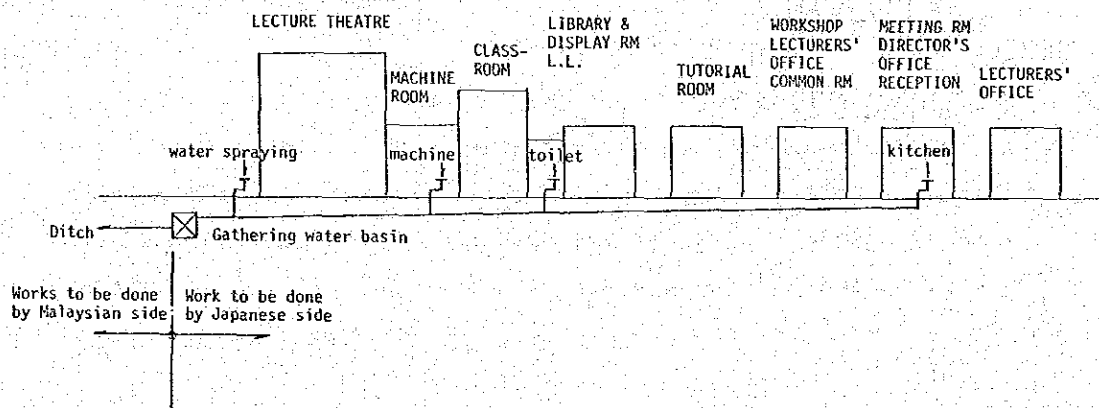


Fig. 4-2-12 Waste Water System

The sanitary sewage line will be laid and connected to the septic tank to be provided for biological treatment. The Malaysian side will undertake to discharge the sewage water from the septic tank into the city pipe in the campus. Volumes of waste water and sanitary sewage discharged daily are roughly estimated as follows:

	Waste Water	Sewage
. Lecturers & staff	1 m ³ /day	2 m ³ /day
. Students	2 "	6 "
. Others	4 "	
Total:	7 m ³ /day	8 m ³ /day

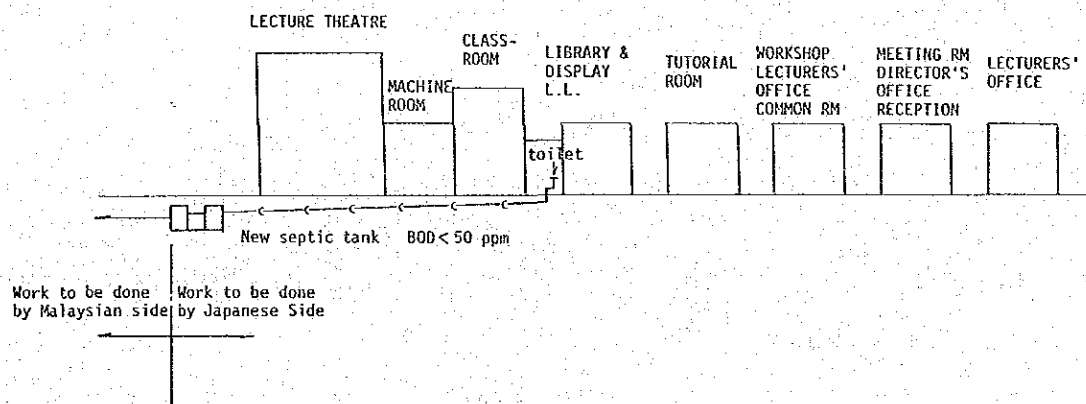


Fig. 4-2-13 Sanitary Sewage System