

U. I. DEPOK POWER SUPPLY SYSTEM

water main serving the Faculty of Social and Political Sciences and the Faculty of Letters runs near the project site and it is possible to branch out from this water main to supply water to the Center.

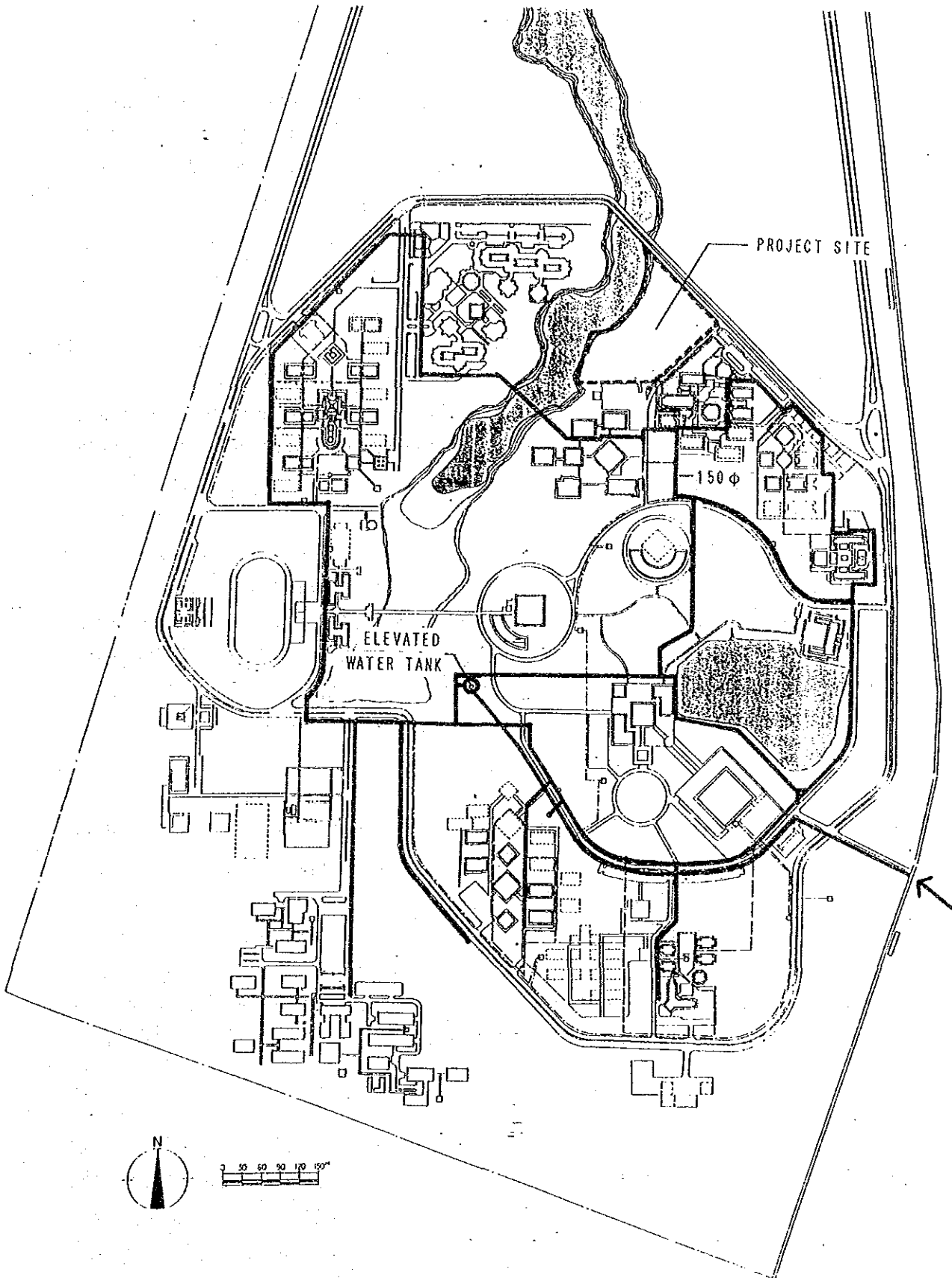
5) Drainage

There are drain ditches along campus roads. These ditches are for rain water only. Bilge and miscellaneous waste water are returned to the ground through a sewage purifier and a penetration tank.

6) Telephone

There is no plan to control the telephone lines of the whole campus but is planned that each department brings in its required number of lines.

However, PERUMTEL does not have many surplus lines and so there are only 60 lines for the campus instead of the planned 120 lines.



U. I. DEPOK WATER SUPPLY SYSTEM

3.3.4 Outline of Facilities and Equipment

The desirable scope of the facilities to be constructed and equipment to be provided has been examined based on the personnel plan, project implementation plan and original request of the Government of Indonesia. The following facilities and equipment are deemed necessary in order to allow the Center to properly function.

(1) Facilities

1) Administration

Offices for senior administrative staff and rooms relating to administrative work: Executive Director's Office, Vice-Executive Director's Office, Administration Office and Meeting Rooms, Reception Room, Printing Room, etc.

2) Graduate Programmes and Research

Rooms relating to the graduate programmes and research: Director of Japanese Studies' Office,, Lecturers' Room, Graduate Students' Room, Researchers' Room, Classrooms, Seminar Hall and Lecture Hall, etc.

3) Library

Rooms relating to the collection of reference materials and publications, etc.: Reading Room, Open Stacks, Reference Room, Librarian's Office, Video Library and Stack Room, etc.

4) Welfare and Other Facilities

Rooms relating to welfare and maintenance: Canteen, Storages, Workers' Rest Room, Machine Room, Rest Rooms, Hall, Corridors and Staircases, etc.

5) Accommodation

Rooms relating to accommodation facilities for visiting scholars and/or seminar participants:: Bedrooms, Lounge, Laundry and Warden's Room.

(2) Equipment

1) Studio/Control Room Equipment and Outdoor Production Equipment

Given the present stage of graduate education and Japanese studies, it is vital to emphasise the import of teaching software and research materials from Japan. As it appears neither necessary nor urgent to produce AV software locally, studio equipment will not be provided. However, a portable camera and a simple editing system will be provided as part of the AV reference section. The provision of equipment will be based on an 8mm civil use video camera which is selected in view of easy operation. Equipment to convert NTSC visual signals (used in Japan) to PAL visual signals (used in Indonesia) will also be provided to assist the creation of a video collection.

2) AV System

The original request anticipated the installation of an AV system in not only the AV Room but also in all classrooms. As the Center will be geared to providing post-graduate education and to conduct research, the installation of an AV system in every classroom is deemed unnecessary. Therefore, a simple AV system will be installed in the Seminar Hall with a seating capacity of 200. 2 - 3 portable sets will be provided for use in lecture-rooms and their operation is controlled by the administration of the Center.

3) Language Laboratory System

As no conversation training as part of language education will be conducted at the Center, a LL system for such purposes will not be provided. Nevertheless, approximately 3 sets of CAI (computer assisted instruction) systems will be installed in the Library to assist the learning of Kanji by graduate students as well as researchers. In addition, some 3 AV booths will be installed in the Library to assist the learning of Japanese using AV materials.

4) Library

The Library is planned to have some 20,000 books. Stacks for these books and furniture for 20 reading seats will be provided together with the Video Library, AV booths and CAI booths described in 3) above. Following the completion of construction work, the feasibility of donating the books required for Japanese studies, of which there is currently an acute shortage, will be examined to make the Japanese Studies Programmes take off quickly and smoothly.

5) Printing Equipment

Simple printing equipment and a binding machine will be provided for the printing of texts, seminar papers, research papers and reports, etc.

6) Data Processing Equipment

Micro computers will be provided to process data relating to the management of the Library, research and administrative activities. The number of computers will be decided based on the required volume of data processing. The University of Indonesia has requested the establishment of a computer network system for the Center to connect these computers. However, it has been decided that the introduction of such a system will be reviewed in the future and only the necessary electrical wiring system connecting various rooms will be installed for the time being. The reason for this decision lies with the complicated nature of such a system. On one hand, it is essential to install micro computers run by Japanese to assist the Japanese studies programmes using Japanese and to conduct documentation control mainly in Japanese. On the other hand, similar computers which are run in English or Indonesian are required to assist research in other fields. Although it is technically feasible to combine these 2 types of computers with different operation systems, it is practically meaningless to try to run a combined system because of operation difficulties and the time and money consuming nature. In the selection of micro computers, it is desirable to select one of the most popular models. Nevertheless, the keyboards and printers to be used to handle Japanese must be imported from Japan, raising a question of their maintenance in the future.

Based on the above examination results, the following equipment will be provided for the Center.

- data processing micro computers
- audio visual equipment
- printing equipment
- office equipment and furniture
- library equipment and books

3.3.5 Maintenance Plan

(1) Budget

Upon completion, the Center will have a total floor area of approximately 5,000m² which is some 3% of the total floor area of facilities on the Depok campus of approximately 150,000m². Building maintenance is centrally conducted by the relevant section of the University rather than by each faculty. Accordingly, the maintenance of the Center will also be conducted by the University and extra funding in the region of some 3% of the current maintenance budget will be required. In the estimated described later, the Centre's maintenance cost, including the personnel cost of administrative staff, will be less than 1% of the University's annual budget and can be reasonably met by the University without external financial support (the annual budget of the University of Indonesia, including maintenance expenditure, is some 2.1 billion yen).

The Centre's teaching staff will be selected by the Rector from those currently engaged in teaching and/or research at the University of Indonesia and their appointment will be an additional assignment. As it is planned to fill most clerical positions at the Center by transferring the existing administrative staff for the Graduate Programme, the University will not face a substantial increase of the personnel cost.

The operational cost of the Center will be met by the University and also by a special fund provided by the Directorate General of Higher Education via the University account. The Memorandum of Programme Coordination of 1992, issued by the Director General of Higher Education, promises special budgetary discretion for those programmes which commenced with international assistance.

- Rough Estimate of Administrative Cost

Floor Area of the Center	:	approximately 5,000m ²
Number of Administrative Staff	:	30
a) Personnel Cost	:	Rp 100,000,000
b) Expendables and Fixtures	:	Rp 4,000,000
c) Utilities Cost	:	Rp 62,500,000
(Electricity	:	Rp 54,000,000)
(Water	:	Rp 3,100,000)
(Telephone	:	Rp 5,400,000)
d) Maintenance	:	Rp 73,400,000
Total	:	Rp 239,900,000 /year

- Budget for Graduate Programme for Japanese Studies

The annual operation cost of the Graduate Programme which is currently teaching 22 master's degree course students (S2: 10 in the First Class and 12 in the Second Class) is slightly less than 10 million yen, including the honorarium of teaching and administrative staff, cost of teaching materials and cost of expendables, transportation and miscellaneous. The Programme anticipates the acceptance of 5 students for the doctor's degree course (S3) to commence in September, 1993 and this will increase the annual budget requirement by some 20%.

The operation cost of the Graduate School is met by tuition fees and financial assistance provided by such international organizations as the World Bank. In the case of the Japanese Studies Programme, the entire cost has been met by the Japan Foundation right from the beginning.

Operating Cost of Graduate Programme for Japanese Studies

(Unit: Rp)

Item	Expenditure in 1991/92 Academic Year	Budget for 1992/93 Academic Year
1. Remuneration	41,632,000	58,916,400
2. Education and Research Materials	11,375,000	19,500,000
3. Administration	24,580,000	15,000,000
4. Student Registration	1,500,000	2,850,000
5. Student Scholarships	51,520,000	69,400,000
	130,607,000	165,666,400

Source: LAPORAN PENGGUNAAN DANA PROGRAM KAJIAN JEPANG

- Budget for Research Programmes

Research fellows at the Center will be appointed by the Rector from existing staff members of the faculties. Therefore, there will be no substantial increase in the personnel cost.

In regard to the distribution of the work load among research fellows at the Center who also teach undergraduates, it is planned to decide this through individual consultations with the Deans of the respective faculties.

Research programmes at the Center will be introduced in 4 academic fields and the following budget for each research field has been suggested.

<u>Item</u>	<u>Rp/month</u>	<u>Rp/year</u>
Teaching Materials	950,000	11,400,000
- Original Materials	250,000	
- Editing of Materials	200,000	
- Copying	500,000	
Research Materials	5,000,000	60,000,000
- Primary Collection of Data	2,500,000	
- Secondary Collection of Data	1,250,000	
- Data Processing	1,250,000	
<u>Travel and Transport</u>	<u>833,333</u>	<u>10,000,000</u>
Total	6,783,333	81,400,000

The annual budget size of the research programmes will be Rp 325,600,000

$$\text{Rp } 81,400,000/\text{year} \times 4 = \text{Rp } 325,600,000/\text{year}$$

It is anticipated that the operation cost of the research programmes will be basically met by university funding as well as funds provided by the Indonesian community and international organizations. Government Regulations No. 30 of 1990 regarding higher education authorise universities to accept, save and spend direct funding by the community as a measure to ensure the financial autonomy of universities. Funding by the community means the following types of revenue.

- (1) Donations from the Education Fund
- (2) Entrance examination fees
- (3) Income associated with commissioned work which is in conformity with the missions and functions of a university
- (4) Income from the sale of achievements of university management
- (5) Donations, in money or kind, from individuals, government organizations and NGOs
- (6) Others

Some research centres show a remarkably high performance in the generation of external revenue. In the case of the IUC Computer Science for example, 70% of its budget comprises external revenue. The possibility of expanding the scope of research work at the Center for Japanese Studies by raising the necessary funds through externally commissioned work and donations, etc. is currently under consideration.

(2) Operation Plan

The Center for Japanese Studies will be operated by 68 staff members as described in 3.3.1.

Job Title	No.	Job Description
[Administration]		
Executive Director	1	Overall running of the Center
Vice-Executive Director	2	Assistant to the Executive Director
Secretary	2	Secretarial work for the above two staff members
Clerk	12	Responsible for the running of the Center in the fields of accounting, personnel affairs, general affairs and public relations, etc.
Librarian/Information Officer	6	Library work, data arrangement and printing, etc.
Cleaner/Security Man	10	Cleaning and security of the Center
[Education and Research]		
Graduate Programme		
Programme Director	1	Overall running of the Japanese Studies Programme
Programme Clerk	4	Administrative work relating to the Japanese Studies Programme
Academic Adviser	1	Adviser for the Japanese Studies Programme
Japanese Studies Researcher	24	Appointed by the Rector to conduct research work relating to Japan. Visiting professor from abroad and engaged in post-graduate education, academic guidance for researchers and joint research
Visiting Researcher	6	Assigned by the faculties to teach graduate students
Lecturer	(13)	

All positions at the Center, excluding secretaries, clerks, librarians and cleaners (security men), totalling 30 in the administration sector, will be filled by current employees of the University. In fact, some positions among the 30 indicated above may be filled through internal transfer.

(3) Maintenance Plan

The facilities of the Center will be classified into 4 sectors, i.e. administrative sector, graduate education sector, research sector and welfare and accommodation sector. The facilities and equipment relating to graduate education programmes and research programmes will be controlled by the administrative sector under the auspices of the Executive Director.

As the Head Office of the University and not each faculty is responsible for the maintenance of technical facilities at the Depok campus, the New Campus Construction Project Bureau will conduct the technical maintenance, i.e. building and building services-related maintenance, of the Center in cooperation with the University's Head Office. Consequently, it will be unnecessary for the Center to recruit its own technical maintenance staff.

1) Building Maintenance

The key components of building maintenance are daily cleaning, repair of damaged or naturally deteriorated sections and security to prevent crime. Daily cleaning gives a good impression to building users as well as visitors and the clean state of a building encourages people to use it with care. Cleanliness is also important to maintain a good research environment. It leads to the early detection of damage or faults and, therefore, to early repair, prolonging the life of building services and research equipment. Repair work is mainly conducted for both exterior and interior finishing materials which protect the building structure. The types of regular inspection and repair which crucially affect the life of a building are outlined below.

(Exterior)

- Repair and repainting of the exterior (every 5 years)
- Inspection and cleaning of gutters and drains (every month)
- Inspection and repair of sealing around exterior joinery (every year)
- Repainting of exterior joinery (every 5 years)
- Inspection and cleaning of side ditches and manholes, etc. (every month)
- Tending of plants and trees (as required)

(Interior)

- Redecorating (as required)
- Repair and repainting of interior walls (as required)
- Replacement of ceiling materials (as required)
- Readjustment of interior fixtures (as required)

With regard to security, entrance checks will be necessary in view of the Centre's use by many, unspecified people. Sufficient care should also be taken in regard to night security as the Center will have guests and visitors staying at its own hostel.

In the case of building service facilities, the repair and replacement of parts will figure in the maintenance work together with daily control and regular inspections. The life of building equipment depends on not only the actual length of operation but also on proper handling and regular inspection, oiling and repair, etc. While daily control will be conducted by the Centre's staff, regular inspections will be conducted by engineers of the Facilities Department of the University. All maintenance work will be conducted in accordance with the University's own standards and operation manuals will be handed over to the University upon completion of the building construction work. The general lives of main equipment are given below.

(Electrical)

- Switchboards	20 - 30 years
- Fluorescent lamps	3,000 - 10,000 hours
- Incandescent lamps	1,000 - 1,500 hours
- Mercury vapour lamps	6,000 - 12,000 hours
- Telephone switchboards	40 years

(Water Supply and Drainage)

- Pumps	10 - 15 years
- Sanitary fixtures	25 years
- Fire-fighting appliances	20 years
- Gas appliances	6 years
- Septic tanks	7 years

(Air-Conditioning)

- Piping	10 - 15 years
- Ventilation fans	10 - 15 years
- Air-conditioners	5 - 10 years

Equipment requiring inspection includes micro computers, printers and copiers. It will be necessary for the Center to sign maintenance agreements with the manufacturers' agents in view of ensuring their proper maintenance as adopted by other facilities and research centres of the University of Indonesia. Daily maintenance work to be conducted by the Centre's staff vis-a-vis this equipment will be basically restricted to cleaning.

2) Estimate of Maintenance Cost

The likely maintenance cost level of the Center upon its completion and handing over to the Indonesian side is estimated below. Items of expenditure are classified into the personnel cost, operation cost, maintenance cost and consumables and fixtures cost.

① Personnel Cost

The personnel cost of new recruits for the administrative sector based on the staff assignment plan is calculated below.

b. Accommodation Building (Hostel)

Working Hours:

- 18:00 : 3 hrs x (365 - 200 days) = 495 KWH/year
- 18:00 - 22:00 : 4 hrs x 365 days = 1,460 KWH/year

o LWBP

- Lighting and outlet use : 30 KW x 0.5 x 0.8* x 495 hrs = 5,940 KWH/year
- Air-conditioning, etc. : 14 KW x 0.8 x 0.8* x 495 hrs = 4,435 KWH/year

10,375 KWH/year

≠ 10,000 KWH/year

* Ratio of use of all the Centre's relevant facilities.

o WBP

- Lighting and outlet use : 30 KW x 0.6 x 0.8* x 1,460 hrs = 21,024 KWH/year
- Air-conditioning, etc. : 14 KW x 0.7 x 0.8* x 1,460 hrs = 11,446 KWH/year
- Hot water supply ; 96 KW x 0.5 x 0.8* x 2 hrs x 300 days = 5,940 KWH/year

55,510 KWH/year

≠ 55,000 KWH/year

c. Total Electricity Consumption of the Center

LWBP : 99,000 KWH/year x 10,000 KWH/year = 109,000 KWH/year

WBP : 3,000 KWH/year x 56,000 KWH/year = 59,000 KWH/year

B. Calculation of Electricity Charge

a. Metering Charge

LWBP : 109,000 KWH x Rp 115/KWH = Rp 12,535,000

WBP : 59,000 KWH x Rp 284.5/KWH = Rp 16,758,500

Rp 29,320,500

≠ Rp 30,000,000

b. Street Lighting Contribution (3% of metering charge)

Rp 30,000,000 x 0.03 = Rp 900,000

c. Basic Charge

345 KVA x Rp 5,520 x 12 months = Rp 22,852,800

d. Total Electricity Charge

Rp 30,000,000 + Rp 900,000 + Rp 22,852,800 = Rp 53,752,800

≠ Rp 54,000,000

ii) Telephone Charge

The local call charge in Depok is Rp 100/call. The local call charge based on 1,500 calls/month is tripled to cover both long distance and international calls in the light of examples of similar institutions in Indonesia.

$$1,500 \times \text{Rp } 100 \times 3 \times 12 \text{ months} = \text{Rp } 5,400,000/\text{year}$$

iii) Water Charge

The water consumption volume is firstly calculated based on the number of persons using the Center and the average water consumption/capita.

a. Administration, Research and Graduate Programme Buildings

- Administration : 32 persons x 120 litres/day = 3.84 m³/day

- Research : 36 persons x 120 litres/day = 4.32 m³/day

- Graduate Programme : 30 persons x 120 litres/day = 3.60 m³/day

11.76 m³/day

Annual Consumption : 11.76 m³/day x 300 days = 3,528 m³/year

≠ 3,600 m³/year

b. Accommodation Building (Hostel)

24 persons x 300 litres/day = 7.2m³/day

Annual Consumption : 7.2m³ x 300 days = 2,160m³/year

c. Seminar period

200 persons x 30 litres/day x 2 days/month x 12 months = 144m³/year

d. Water Charge

(3,600 + 2,160 + 144) m³/year x Rp 525/m³ = Rp 3,099,600

≠ Rp 3,100,000

iv) Total Operation Cost

③ Maintenance Cost

i) Building Maintenance Cost

The building maintenance cost of Rp 24 million/year for the Japanese language Center at the University of Padjadjaran (established in 1987 with the total floor area of 3,200m²) is used to calculate the corresponding maintenance cost for the center.

$$\text{Rp } 24,000,000 \times 1.6 = \text{Rp } 38,400,000/\text{year}$$

ii) Building Services Equipment Maintenance Cost

The building services equipment maintenance cost will stay at a minimum for the first 5 years of operation and will increase thereafter due to the replacement of parts or equipment. The annual cost is generally 3 - 5% of the original equipment cost.

$$\text{Rp } 15,000,000/\text{year}$$

iii) Equipment Maintenance Cost

Main office equipment include micro computers, AV equipment and printing equipment. The annual maintenance cost of such equipment is generally 2% of the original equipment cost.

$$\text{Rp } 20,000,000 / \text{year}$$

④ Consumables and Fixtures

The budget for the Graduate Programme for the first half of the 1991/92 academic year consists of the following figures.

- Office supplies	Rp 3,000,000
- Office fixtures	Rp 9,000,000
- <u>Consumables</u>	<u>Rp 25,000,000</u>
	Rp 37,000,000

Assuming an annual inflation rate of 15%, this figure is translated to Rp 112,500,000/year today.

$$\text{Rp } 37,000,000 \times 2 \times (1.15)^3 = \text{Rp } 112,500,000$$

As there are 36 graduate programmes, the proportion for the Japanese Studies Programme is Rp 3,125,000/year.

$$\text{Rp } 112,500,000/\text{year} \div 36 = \text{Rp } 3,125,000/\text{year}$$

This figure is multiplied by 1.3, i.e. 30% extra funding, to take the increased activities following the establishment of the Center into account.

$$\begin{aligned} \text{Rp } 3,125,000/\text{year} \times 1.3 &= \text{Rp } 4,062,500/\text{year} \\ &\neq \text{Rp } 4,000,000/\text{year} \end{aligned}$$

⑤ Total Cost

Personnel Cost	: Rp 100,000,000
Operation Cost	: Rp 62,500,000
Maintenance Cost	: Rp 73,400,000
<u>Consumables Cost</u>	<u>: Rp 4,000,000</u>
Total	Rp 239,900,000

Together with the annual operation cost of the research sector of Rp 325,600,000 as estimated earlier, the total annual operation cost of the Center will be Rp 565,500,000 (Rp 239,900,000 + Rp 325,600,000). From the second year onwards, an annual increase of 15 - 20% will be necessary to take inflation and salary increases, etc. into account.

The expected increase of the annual operation and maintenance cost by some Rp 570 million due to the opening of the Center will account for approximately 1.56% of the total budget of the University of Indonesia of Rp 36.5 billion. As this increase is minimal vis-a-vis the total budget and it has been confirmed that special appropriation is forthcoming for any project initiated with the assistance of an international aid organization, such as the present Project, no serious problems are anticipated in terms of budgetary appropriation for the Center. In addition, the Graduate Programme for Japanese Studies has been enjoying financial assistance in the amount of some 10 million yen/year provide by the Japan Foundation as a grant for a central institution for Japanese studies and it is hoped that this assistance will continue in the future.

CHAPTER 4

BASIC DESIGN

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4.1 Basic Policies

The Center is expected to implement graduate level Japanese studies programmes at the University of Indonesia and to become the central core of Japanese studies in Indonesia in the long-term, promoting a comprehensive range of research on Japan. The planned location of the Center is the lush, green Depok campus, the development of which is underway based on the master plan to relocate the University of Indonesia. The basic design for the Center is in conformity with the following basic policies which take into consideration the functionality and durability of the facilities in view of the future development of the Centre's academic activities and also the need to secure a superior environment.

(1) Conformity with University's Master Plan

The construction of the Depok campus has been making steady progress upto the present in conformity with the master plan prepared in 1984 to relocate and consolidate the University of Indonesia at the Depok campus. All the University facilities are located inside the ring road and the faculty buildings are basically clustered along the east-west axis. In preparing the basic design for the Center, the first priority is given to the harmonious locationing of the new facilities vis-a-vis the overall layout plan of the University to meet the principles and concepts adopted by the master plan.

(2) Design Criteria

In the design of the facilities for the Depok campus, certain criteria have been upheld. These are "symbolic value", "emphasis on the basic functions required of educational facilities and on humanity", "technical excellence" and "economy".

The special design feature of these facilities is the adoption of a different traditional roof design for each faculty with the purpose of expressing the image of Indonesia as a whole. The following 3 architectural elements have been adopted to achieve "unification with diversity".

- 1) Roof: Roofs are sloping at an angle of not less than 30° and are accompanied by long eaves to represent a head.
- 2) Space: Structural bodies and exterior walls to represent a body have space for good ventilation.

3) Base: Piers, foundations and independent columns are used to represent legs.

The architectural design of the Center must take these elements into consideration in order that the Center is in harmony with other buildings on the campus.

(3) Functionality

Various activities relating to graduate education and general Japanese studies will take place at the Center in conjunction with the various faculties and, at times, external organizations. All the facilities of the Center will, therefore, be functional in view of their convenient use.

(4) Comfort Vis-a-Vis Climate

Natural lighting and natural ventilation will be adopted where possible to secure a comfortable environment with minimum dependence on machinery while taking such climatic conditions as the sunlight strength, rain, high temperature and high relative humidity into proper consideration. The surrounding greenness will be actively utilised to create a pleasant environment.

(5) Easy and Low Cost Maintenance

The design will emphasis energy saving features, simple building service systems and the durability of the materials used. The selection of building materials will favour local materials and construction methods where possible while ensuring the construction of reliable buildings from the maintenance point of view.

4.2 Examination of Design Conditions

4.2.1 Planned Buildings

The Center will comprise several groups of facilities, i.e. graduate education facilities for the graduate programmes, research facilities for the Japanese studies programmes, information facilities to assist the above programmes, welfare facilities (including accommodation facilities) and the facilities required to operate and control all the facilities. Given the relatively large elevation gap and large number of trees at the site, grouping of all the required facilities into several separate buildings appears appropriate. This grouping will be based on the prospective function of each room or facility to ensure maximum convenience. As a result, the following buildings are planned.

- Administration Building
- Education and Research Building
- Seminar Hall Building
- Welfare Building
- Accommodation Buildings (Hostel)

4.2.2 Decision on Room Size

The floor area of each room is decided based on the unit system which adopts a structurally rational span (6.0 - 8.0m) while clarifying the required function(s) of each room. The room area is also based on the staff assignment plan given in the original request of the Government of Indonesia and the decision on room size also refers to the design standards of the University's master plan (hereinafter referred to as the University Design Standards). The function and floor area of the main rooms are as follows.

(1) Administration

1) Administration Office

A total of 12 persons will work in the administration office, i.e., 7 clerks, 2 accountants and 3 typists. While 45 m²/person is the Indonesian standard for office design, 6.0 m²/person is adopted to cater for the possible space requirement for additional staff in the future following the likely increase of the Centre's activities. The resulting floor area of the administration office is 72 m².

2) Executive Director's Office, Vice-Executive Director's Office and Secretarial Offices

The University Design Standards put the standard room area for such senior staff as the Executive Director and Vice-Executive Director of the Center at 20 m². 27 m²/room is adopted to allow space for meetings for the Executive Director and 20m²/room for Vice-Executive Director. 2 secretarial offices are combined together to make one room with a floor area of 18m² and reception work will be shared between them.

3) Reception Room

The reception room for 5 - 10 visitors is given a floor area of 27m².

4) Meeting Rooms

One small meeting room of 27m² for small staff meetings and one large meeting room for larger meetings of researchers and others are planned. The latter may be used for small academic conferences or workshops involving both internal and external researchers. Assuming a room size capable of accommodating 40 persons which is similar to the total number of staff of the education and research sector of the Center, 96m² is adopted based on a reasonable floor area range of between 85m² and 110m² as shown in Architectural Design Data Collection 4.

5) Printing Room

A printing room of 30m² is planned to house simple printing and binding equipment.

(2) Graduate Programme

1) Japanese Studies Director's Office, Japanese Studies Chief Officer's Office and Academic Advisers Office

The floor area of these rooms is set at 18m² which is the standard size for a single room for a researcher.

2) Teacher's Room

While 19 teachers are involved in the graduate programmes of the Centre's Japanese studies, all except one are professors, lecturers and visiting professors of the University of Indonesia. Many of them are already allocated individual rooms in the Center as researchers of the Centre's research programmes. Given the planned number of daily lectures, the size of the teacher's room will be adequate if it can accommodate 1 or 2 lecturers from outside. The floor area of this room is, therefore, set at 12m².

3) Master's Degree Students' Rooms (S2)

22 students are currently studying for their master's degree and new students will be accepted every 2 years for some time to come. Because the length of their stay varies from 2 to 4 years and also because of the planned annual acceptance in the future, 2 rooms, each capable of seating 20 students (10 for each year of the 2 year course) are planned. Based on a floor space of 3.0 m²/person, the adopted room size is 60m².

4) Doctor's Degree Student's Room (S3)

It is currently planned to accept 5 doctoral students every 3 years. In view of the required research environment and possible intake increase, the floor area of this room is set at 36m² to seat 10 students at a time (3.6 m²/person).

(3) Research

1) Researchers' Rooms

Single rooms for chief researchers and joint rooms for other researchers are planned. The single room floor area is set at 18m² (minimum space unit: module) based on the University Design Standards for a professor's room of 18 - 21m². The joint room floor area is a multiple of this module and, if necessary, the joint rooms can be divided into single rooms while being flexible enough to meet variations in the number of researchers. As the proposed number of researchers is 24, one research group consists of one chief researcher and an average of 5 researchers. The basic floor area/person for the joint rooms is set at 10m² based on the relevant University Design Standards of 9 - 11m². As the floor area of 55m² for 5 researchers is equivalent to 3 modules, each group is allocated 4 modules of floor area, i.e. 72m². The total floor area for researchers' rooms is, therefore, 288m² (72m² x 4).

2) Visiting Professors' Rooms

While the Graduate Programme for Japanese Studies currently has 4 visiting lecturers from Japan, it is planned to increase the number in the future. 6 rooms of 18m², totalling 108m², are planned to accommodate visiting professors.

(4) Classrooms and Seminar Rooms

1) Classrooms

In accordance with the curriculum for the master's degree course, 2 classrooms with a seating capacity of 10 or more each are planned. The basic calculation unit is 2.8 m²/person as employed by the University Design Standards. While the prospective floor area of one classroom is 28 - 36m² (2.8 m²/person x 10 or 12), 36m², i.e. equivalent to 2 structural modules, is adopted.

2) Small Seminar Rooms

4 small seminar rooms are planned for use for meetings/seminars for doctoral programmes and for research groups. While the basic floor area is 28m^2 each to seat 10 persons ($2.8\text{m}^2/\text{person} \times 10$), this is changed to 27m^2 to make it 1.5 times the module size.

3) Medium-Size Seminar Rooms

2 medium-size seminar rooms to seat 40 persons each are planned with a floor area of 72m^2 each ($1.8\text{ m}^2/\text{person} \times 40$ based on the standard lecture room unit of $1.7 - 2.0\text{ m}^2/\text{person}$ employed by the University Design Standards).

4) Seminar Hall

The floor area of the lecture hall is set at 340m^2 ($1.7\text{m}^2/\text{person} \times 200$ based on the UNESCO standard of $1.7\text{ m}^2/\text{person}$ and the University Design Standards of $1.0\text{ m}^2/\text{person}$ for a large lecture hall) to seat 200 persons. An additional 42m^2 is provided for house a control room and equipment.

(5) Library

1) Reading Room

The reading room consists of reading space and open stacks, etc. The reading space has 20 seats to cater for some 30% of the total number of researchers and graduate students. The basic unit is $3.0\text{ m}^2/\text{seat}$ based on $2.5 - 3.5\text{ m}^2/\text{person}$ suggested by Architectural Design Data Collection 4 and the total reading space is 60m^2 ($3.0\text{m}^2 \times 20$). The open stacks have a floor area of 168m^2 to store 20,000 books (based on $120\text{ books}/\text{m}^2$ for a multiple shelved stack). The total reading room area is, therefore, 228m^2 .

2) Reference Area

A floor area of 24m^2 is planned for the reference area.

3) Office

A basic unit of $6\text{ m}^2/\text{person}$ is adopted for the library office to accommodate 6 librarians and various equipment. The total floor area is 36m^2 ($6.0\text{ m}^2/\text{person} \times 6$).

4) Information Center

A floor area of 18m² is planned for the information center with a publication sales desk.

5) Stack Room

The floor area of the stack room is set at 18m², assuming the use of movable stacks.

6) AV Library

The floor area of the AV library is set at 24m² with 5 video booths, approximately 5 language training booths and an AV software storage.

(6) Canteen

The canteen is designed to serve mainly the staff and students of the Center as well as visitors. The floor area is set at 90m² to seat 30 persons (3.0m² x 30). Additional canteen facilities include an office, a rest room for canteen workers, a food storage and a rest room.

(7) Accommodation (Hostel)

While the original request asked for a 50 bed overnight accommodation facility, it has been agreed through subsequent consultations between the Japanese and Indonesian sides to provide a 24 bed accommodation facility. 6 beds will be occupied by visiting professors throughout the year and 18 beds will be for those researchers who take up teaching positions with universities and other institutions in Indonesia after completing graduate programmes at the University of Indonesia and who temporarily visit the University to teach intensive courses or for Indonesian or foreign researchers and scholars visiting the Center for seminars and conferences, etc.

1) Bedrooms

The floor area for bedrooms for visiting professors is set at 36m² each while the floor area for other rooms is set at 24m² each. The total bedroom floor area is 648m² (36m² x 6 + 24m² x 18).

2) Laundry

The floor area of the laundry is set at 24m².

3) Others

A total of 72m² is provided for the warden's office, rest room for workers and linen storage, etc.

(8) Hallways and Corridors, etc.

The floor area of hallways and corridors, etc. largely depends on the building layout, the type of corridors (double-loaded corridors or side corridors) and ground plan. In the case of the Center, the relative ratio of hallways and corridors, etc. in terms of the floor area is set at 35 - 40% because of the independence of each building and the adoption of side corridors to facilitate natural ventilation and natural lighting.

The floor areas of the original Indonesian request and those of the basic design are compiled in Table 4-1.

Table 4-1 List of Proposed Facilities (and Floor Area)

(Unit: m²)

Facility	No.	Original Request	Basic Design	Remarks
[Administration]				
Exec. Director's Office	1	30	27	
Vice-Exec. Director's Office	1	25	40	2 rooms × 20m ²
Director of Japan. Studies Office	1	25	-	chief researcher's room
Director of Japan. Language Office	1	25	-	withdrawn
Associate Director's Offices	4	90	-	chief researchers' rooms
Secretaries' Room	1	20	18	
Reception Room	1	50	27	large meeting room to be used to receive a large number of people
Administration Office	1	90	72	6 m ² /person x 12
File Room	-	25	18	
Copying Room	-	20	3	
Utility Room	-	3	3	
Printing Room	-	40	30	
Meeting Room	-	100	27	small meeting room
			96	large meeting room
Sub-Total		(530)	(361)	

Table 4-1 Cont.

[Education and Research]				
Professors' Rooms	18m2x6	108	72	4 chief researcher's rooms (18m2 each)
Researchers' Rooms	12m2x6	72	216	54m2/research group x 4 groups
Visiting Scholars' (Professors') Rooms	12m2x6	72	108	18m2 x 6
Graduate Programme Director's Office		-	18	
Graduate Programme Chief Officer's Office		-	36	
Academic Adviser's Office		-	18	
Part-Time Teachers' Room		-	12	
Master's Degree Students' (S2) Room		-	60	
Doctor's Degree Students' (S3) Room		-	36	
Classrooms	6	240	72	2 classrooms for master's degree course
Seminar Rooms (Small)	5	150	108	4 rooms
Seminar Rooms (Medium Size)		-	144	2 rooms with 40 seats each
Lecture Hall		360	380	200 seats, including control room, storage and equipment space
Language Laboratory		90		withdrawn
AV Room		50		to be an AV library as part of the library
Computer Room		80		PC (micro computer) to be installed in individual rooms
Video Production Studio		50	-	withdrawn
Control Room		25	-	withdrawn
Library		400	431	
- Reading Area			66	20 seats
- Open Stacks			168	120 books/m2
- Reference			24	
- Information Counter			18	
- Office			36	librarian's office (data collection and publication)
- Stack Room		20	18	
- Hallway, etc.			59	
Sub-Total		(1,717)	(1,711)	
[Accommodation]				
Bedrooms	50 beds	900	648	24 beds
Lounge		80	-	required function met by the canteen and balcony
Laundry		30	24	
Various Rooms		-	72	
Japanese Tea Room		50	-	withdrawn
Sub-Total		(1,060)	(744)	
[Welfare]				
Canteen		150	90	30 seats
Kitchen		-	30	
Pantry		20	-	
Rest Room		75	133	
Storage		75	63	
Machine Room		100	28	
Hallways, Corridors and Staircases, etc.		2,305	1,884	30% of the total floor area
Sub-Total		(2,725)	(2,229)	
Total		6,032	5,045	

4.3 Basic Plan

4.3.1 Site Plan and Layout of Facilities

(1) Campus Layout, Approach Roads and Flow Lines

The master plan for the Depok campus envisages the faculty buildings clustered inside the ring road which runs along the perimeter of the campus premises. Each faculty area is directly accessible from the ring road and parking areas are provided. Such administration facilities as the head office building, auditorium, main library and computer center are located along the inner ring road so that the walking distance between them and any faculty area is roughly the same. The facilities located outside the ring road are of a different character to the University's academic education facilities, including the Polytechnic which had already been constructed at the initial stage of the University's relocation, some sporting facilities and the University's teaching hospital to be constructed in the future.

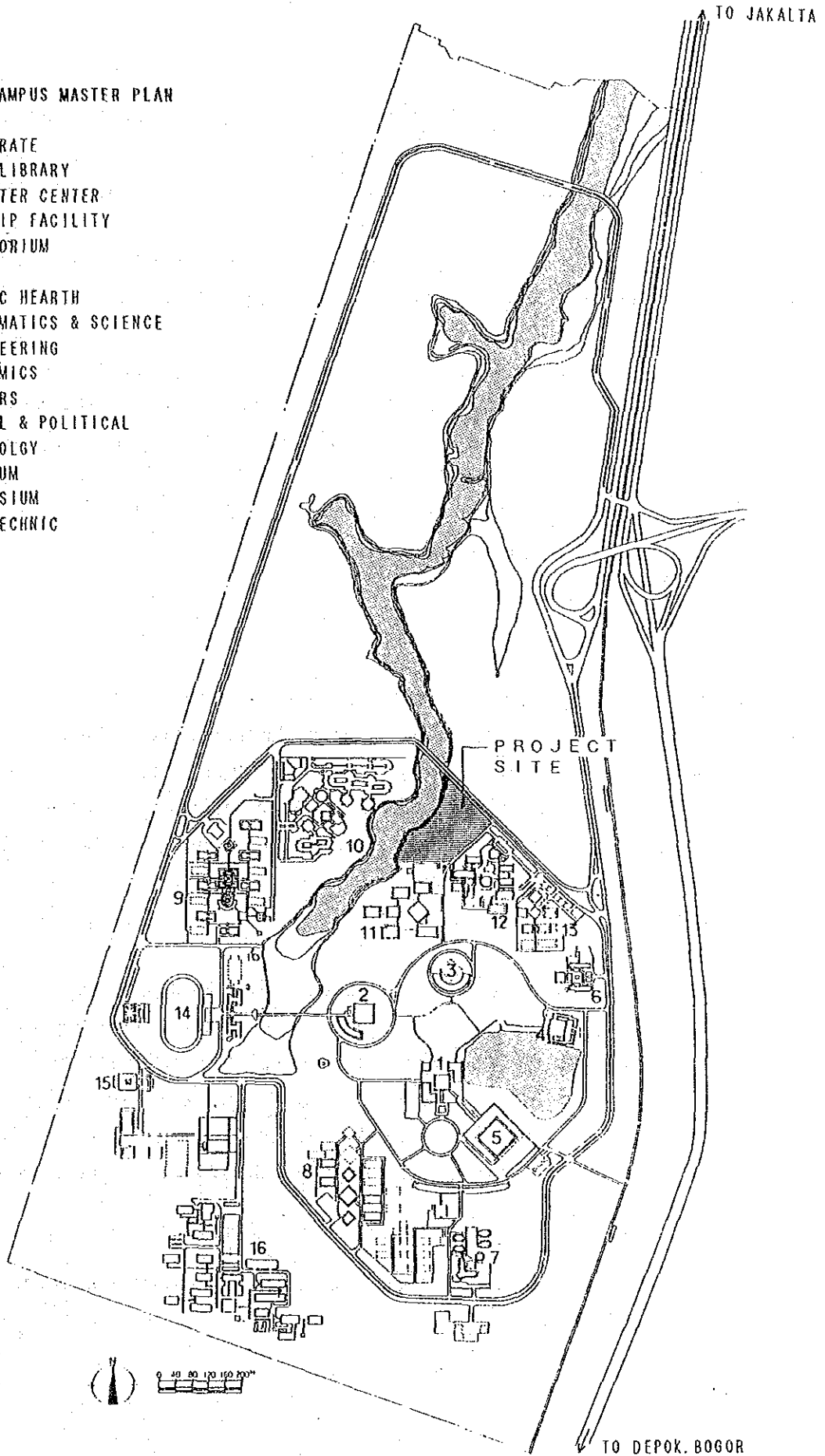
The first important issue to be examined in determining the Centre's layout is the location of the approach roads and examination of the following points is essential.

- ① Connection to the flow lines on the campus
- ② Functional and spatial connection between the Center and the adjoining Faculty of Letters and Faculty of Social and Political Sciences
- ③ Harmony between the Centre's buildings and the site conditions and surrounding environment

As the project site borders 2 roads, i.e. the inner ring road and the approach road to the Faculty of Letters, 2 basic ways of approaching the site are feasible. One is direct approach from the inner ring road which is the main flow line on the campus (Approach Alternative A) and the other is access to the site from the parking area of the Faculty of Letters via the latter's approach road (Approach Alternative B).

UI DEPOK CAMPUS MASTER PLAN

- 1. RECTORATE
- 2. MAIN LIBRARY
- 3. COMPUTER CENTER
- 4. WORSHIP FACILITY
- 5. AUDITORIUM
- 6. LAW
- 7. PUBLIC HEARTH
- 8. MATHEMATICS & SCIENCE
- 9. ENGINEERING
- 10. ECONOMICS
- 11. LETTERS
- 12. SOCIAL & POLITICAL
- 13. PSYCHOLOGY
- 14. STADIUM
- 15. GYMNASIUM
- 16. POLYTECHNIC



1) Approach Alternative A

This pattern of approach (direct approach from the ring road) is the common approach which is, in principle, adopted by all the faculties. The only exception is the Faculty of Letters which adjoins the project site and the entrance parking area is located some 150m inside the ring road. Direct approach from the ring road has the simple advantage of easy access by visitors to the Center. This approach is less advantageous, however, in terms of creating efficient connections with other facilities on the campus, such as the adjoining Faculty of Letters and administrative quarter. The fact that direct approach would make the back of the Center face the entrance area of the Faculty of Letters particularly negates the possibility of creating a functionally related group of faculties. Given the prospect of a relatively small number of users of the Center compared to other faculties due to its assigned functions, direct approach from the ring road does not command high priority. Moreover, direct approach necessitates major land preparation work as the ground of the site is some 3m higher than the ring road, unlike the site of the Faculty of Letters and the Faculty of Social and Political Sciences.

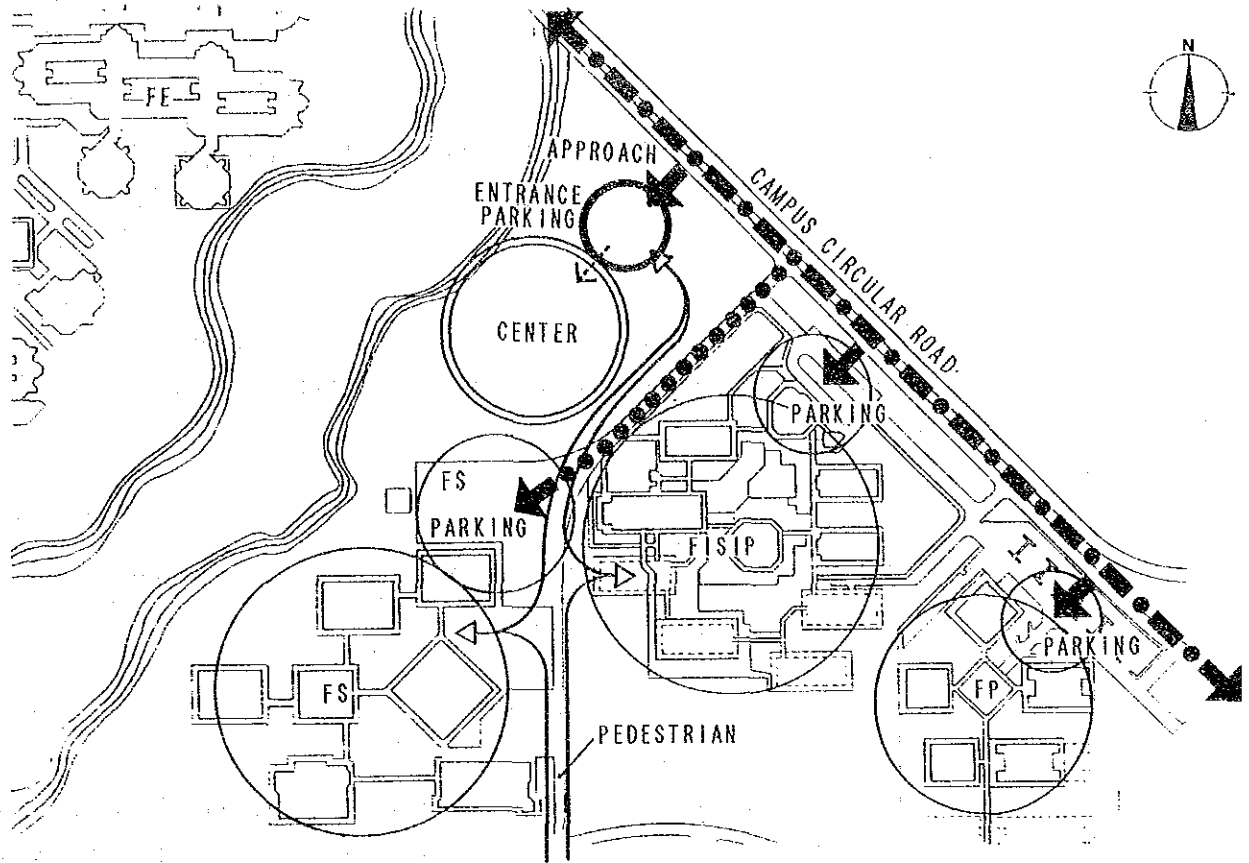
2) Approach Alternative B

The entrance and parking area of the Faculty of Letters are located some 150m inside the ring road and are, therefore, near the foot paths connecting the faculty to the administrative facilities. It is desirable to locate the approach road to the Center next to the open car park space in front of the entrance of the Faculty of Letters. Given the Centre's function as a core facility for interdisciplinary and multi-disciplinary Japanese studies, close connection to the Faculty of Letters and Faculty of Social and Political Sciences via the open entrance space is essential to increase mutual exchanges and user convenience.

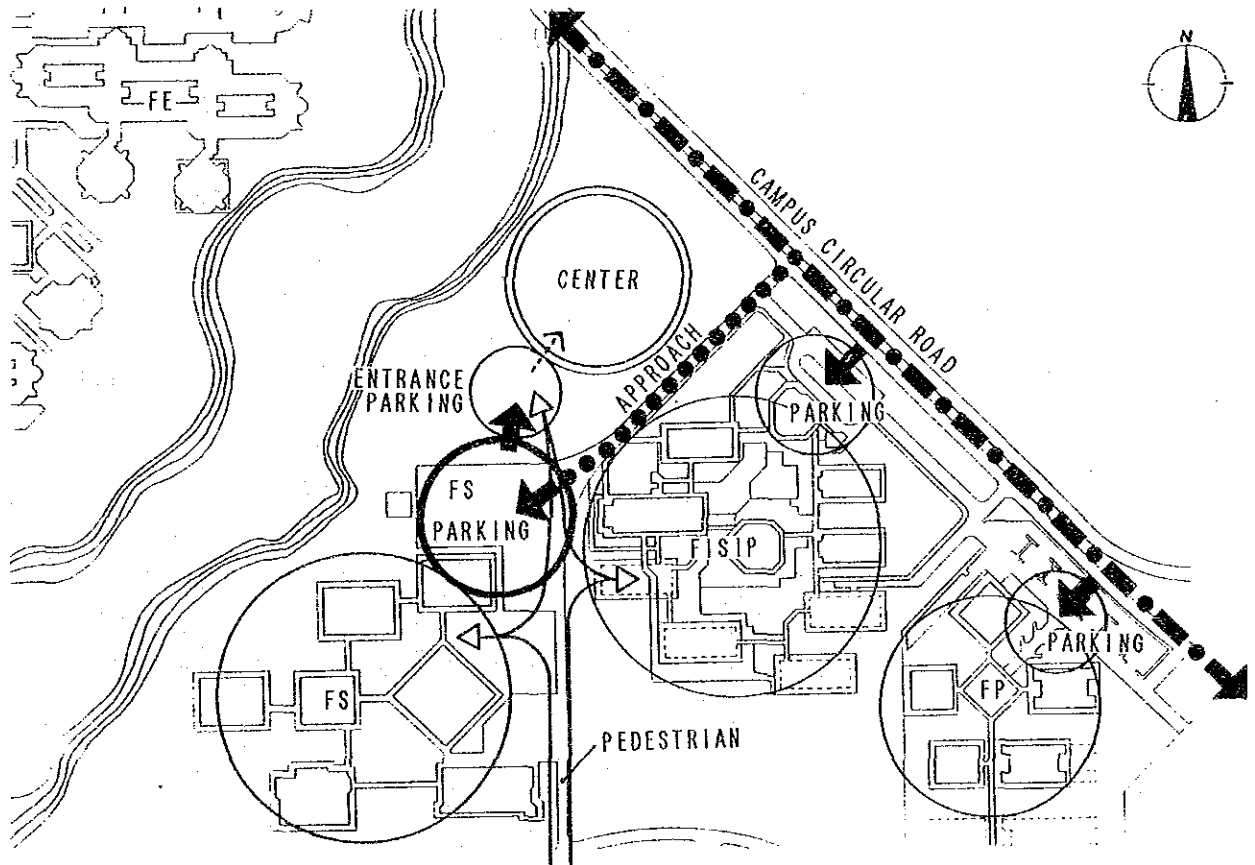
While the Project involves the minimum requirement of initiating Japanese studies at the Center, the planning of a shared entrance space is useful from the viewpoint of creating a set of facilities comprising the Center and the 2 faculties for use for national or international conferences and symposiums. Furthermore, as the project site is located on the north-south axis of the campus, approach to the Center via the open space in front of the entrance of the Faculty of Letters means that this approach is right on this axis, increasing the symbolic implications of the Center in the overall layout of the campus.

Approach Alternative B is, therefore, adopted for the Project because of its general superiority vis-a-vis Approach Alternative A.

ALTERNATIVE A



ALTERNATIVE B



(2) Layout Axes Envisaged by Master Plan

The master plan envisages the following 3 axes in the layout plan for the campus.

1) North-South Axis

The main facilities of the University, particularly the Rectorate building which is the symbol of the University, are located on this axis to give the University a symbolic facade (front).

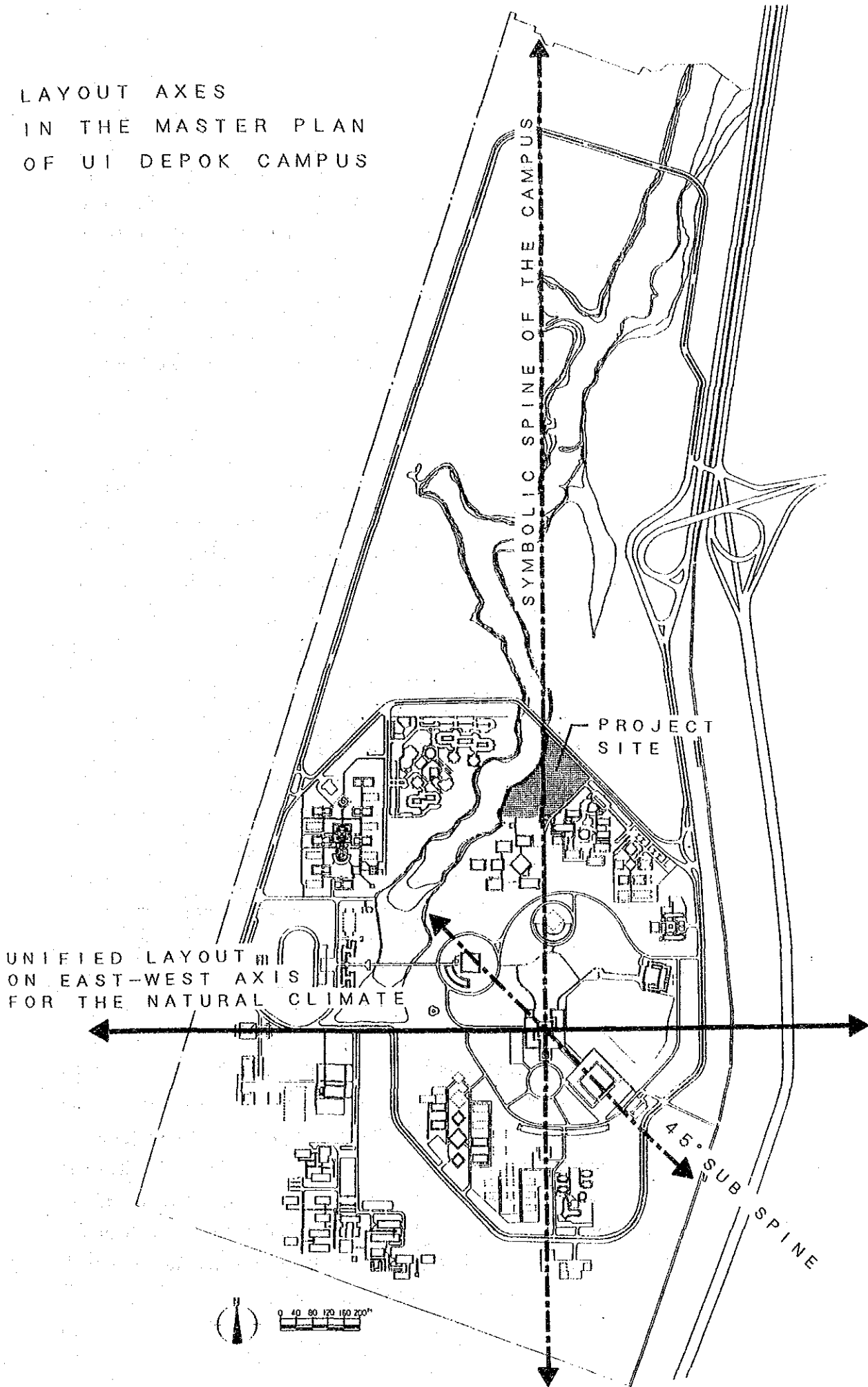
2) Auxiliary Axis

The auditorium and main library are located along this axis at a 45° angle to the north-south axis to create spatial and visual diversity on the campus.

3) East-West Axis

All long axes of the faculty buildings are planned to stretch in the east-west direction to shut out strong sunlight in the most effective manner. It is necessary to take these 3 axes into consideration in planning the layout of the Center. In regard to the north-south axis in particular, the creation of an entrance facing the entrance parking area of the Faculty of Letters is highly desirable in terms of the symbolic implications as it faces the main entrance of the head office building.

LAYOUT AXES
IN THE MASTER PLAN
OF UI DEPOK CAMPUS



(3) Zoning of the Site

The project site borders the ring road to the northeast and adjoins the Faculty of Letters and Faculty of Social and Political Sciences to the south and southeast respectively. To the northwest and west, the ground slopes downward to a lowland swamp (valley) facing the new complex of the Faculty of Economics on the opposite side of the valley. The slope towards the swamp has many trees, mainly tall rubber trees. The facilities of the Center are largely classified into administrative, research and accommodation facilities based on the prospective activities and functions. Zoning of the site for these facilities takes these site characteristics and environmental conditions into consideration.

As approach to the Center is from the Faculty of Letter's side as discussed in (1) above, the administrative facilities, including the open access area and car park, are located in the southern part of the site. The research facilities are located in the eastern part of the site where the ground is relatively flat with space for future extension while the accommodation facilities are at a slight distance from the other facilities and are located in the western part of the site to create a quiet environment with lush greenery.

(4) Facility Layout

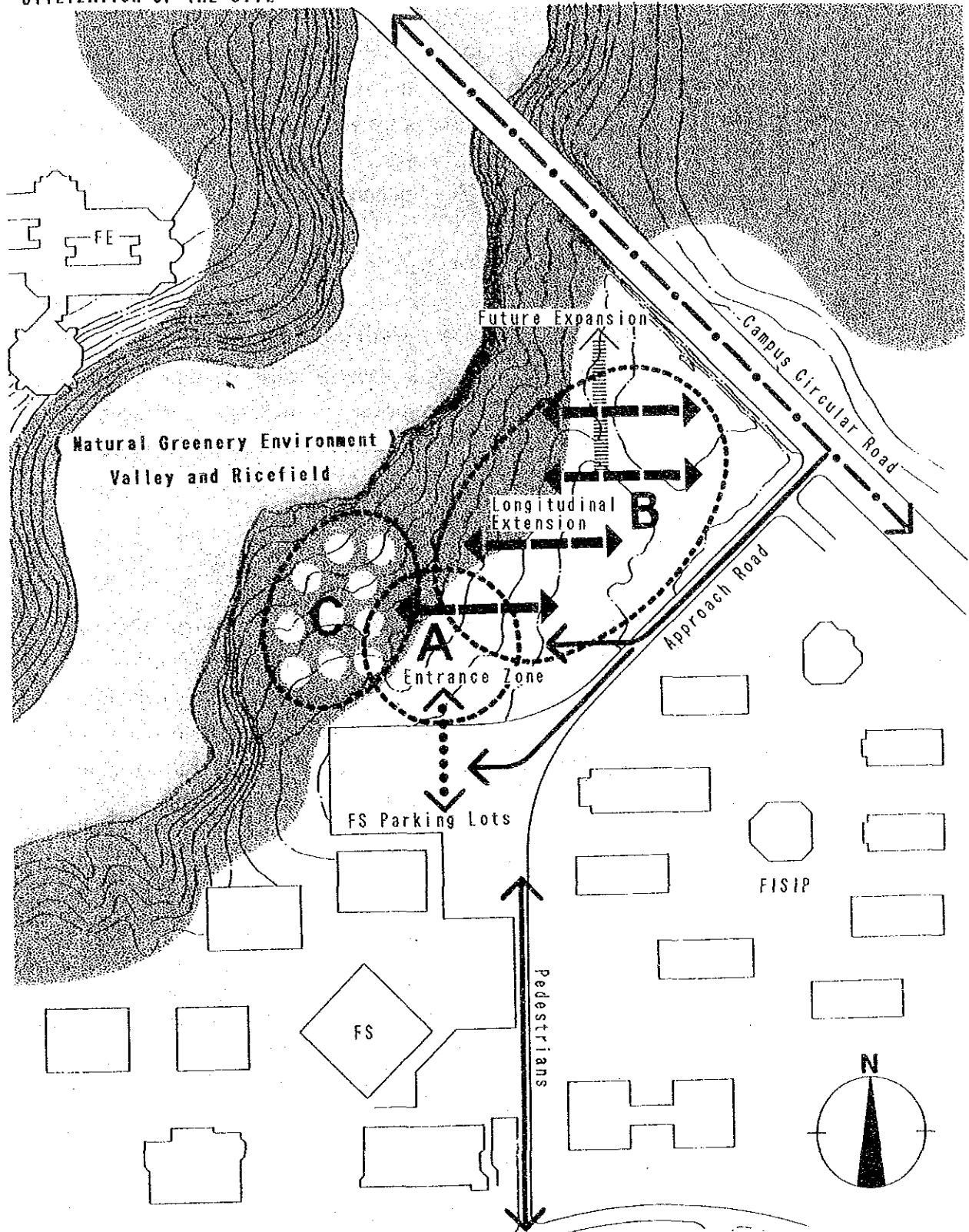
1) Administration Building

The administration building faces the car park of the Faculty of Letters to ensure a large approach space to the building. It can be easily accessed by car from the ring road and on foot from other parts of the University, including the adjoining Faculty of Letters and Faculty of Social and Political Sciences. It forms the main entrance to the Center and is located at the heart of the flow lines to the Center.

2) Research Building

The research building contains various rooms for educational and research activities and the library and is the focal point of the Centre's academic activities. The building has 2 storeys and a courtyard. The graduate education sector with the relatively busy movement of people is located on the ground floor while the research sector is located on the first floor. The library is located on the far side of the courtyard to offer convenience and quiet environment, emphasizing its research functions and difference from ordinary public libraries. Given the sloping site, the location of the research building is level to the site of the administration building and entrance area for easy access by the physically handicapped.

UTILIZATION OF THE SITE



- A** : Entrance zone for approach and administration building.
- B** : Academic and research facilities zone on a relatively flat area.
- C** : Accommodation zone to reserve residential surroundings in the trees.

3) Seminar Hall Building

The location of the 200 seat seminar hall building is easily recognisable by outsiders. In fact, it occupies the central position on the project site and is in the courtyard between the administration building and research building. Utilizing the ground's dip toward the north, the seminar hall is designed to allow smooth access by many visitors walking downward. The interior also uses the sloping ground in the form of an amphitheatre.

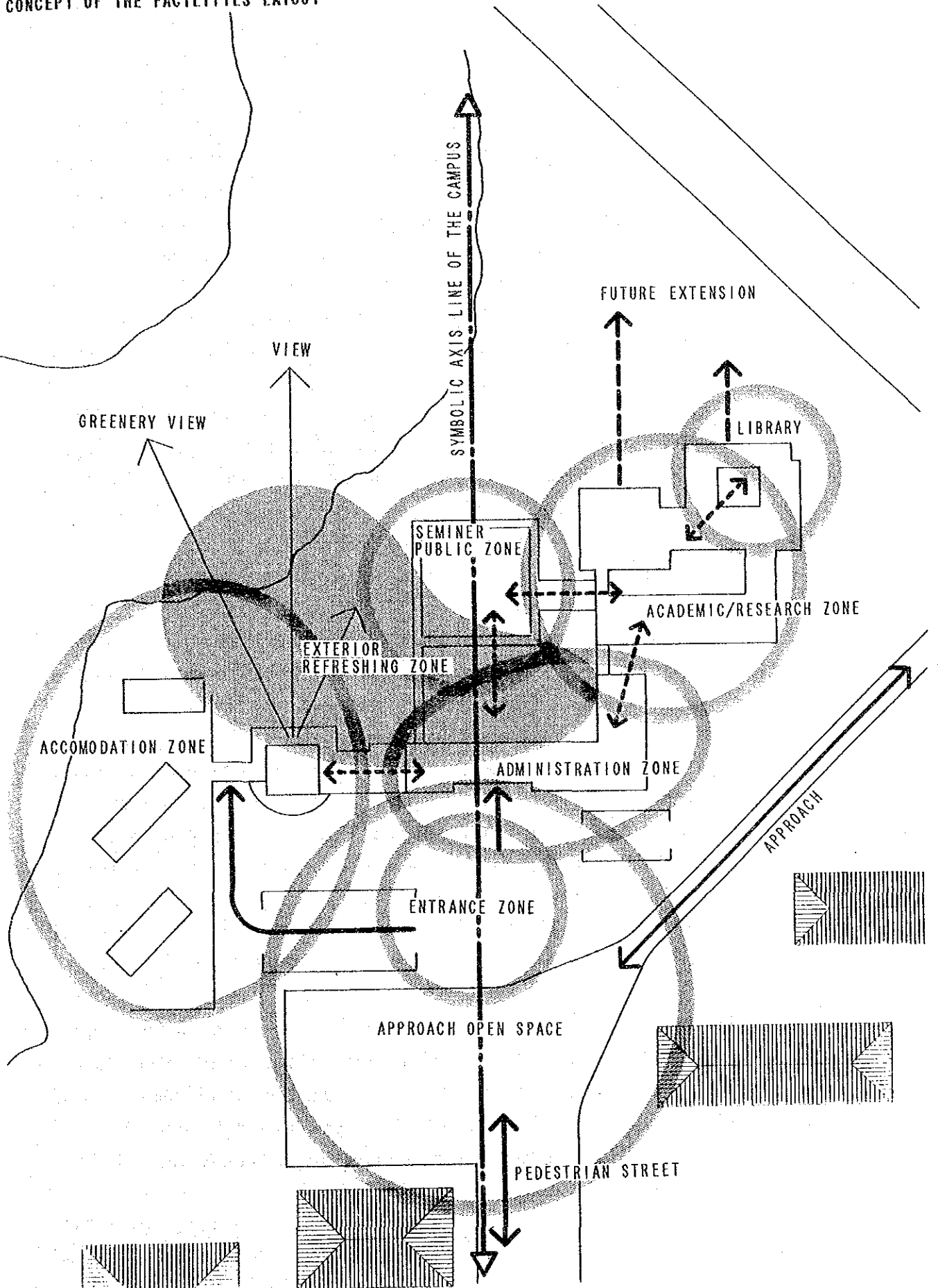
4) Canteen Building

The location of the canteen building allows long views across the valley with beautiful scenery created by the existing trees. In addition to being a place for daily communication and refreshments for the Centre's staff, the canteen will also be used by overnight visitors for meals and relaxation. The location is, therefore, between the accommodation (hostel) building and the administration building for convenience.

5) Accommodation (Hostel) Buildings

By definition, the accommodation buildings require a certain degree of privacy and a quiet environment. Its own approach road is also necessary. To meet these conditions, the location of the accommodation building is to the left of the entrance zone (and administration building) and facing the valley. These buildings are scattered among existing trees to achieve maximum harmony and to adapt to the sloping ground. A foot bridge is planned to connect these buildings and the canteen building.

CONCEPT OF THE FACILITIES LAYOUT



4.3.2 Architectural Plan

(1) Floor Plan

In principle, each building is designed to obtain natural ventilation and natural lighting in the most effective manner. Single load walkways are adopted as the basic system to serve various rooms and double load walkways are avoided where possible. These walkways have sufficiently wide eaves to shut out rain. The overall layout is a courtyard, in which the lecture hall is located, bordered by an L-shaped open gallery in view of the smooth movement of people between different buildings and their enjoyment of the lush, green landscape around the Center while walking along the gallery. The research building also has a gallery circling a small courtyard to facilitate good natural ventilation and natural lighting. The courtyard is also expected to create a varied, relaxing space. As the lecture hall, canteen and accommodation buildings are constructed at different ground surface levels because of the sloping site, sloped connection passages or similar are provided for the smooth movement of the physically handicapped between the buildings.

1) Administration Building

The administration building has 2 storeys and houses various administration rooms, meeting rooms and 40 seat seminar rooms. The entrance hall has an open view towards the courtyard so that visitors arriving at the Center can easily recognise their respective directions at a glance. The hall is sufficiently large enough to process a large number of people arriving at the Center at the time of large seminars, conferences or similar events and its use as a display area is also planned. The administration office is located on the ground floor facing the entrance hall while the Executive Director's Office, Vice-Executive Director's Office and meeting rooms, etc. are located on the first floor. The 2 40 seat seminar rooms are located on the ground floor near the entrance hall as most participants are expected to be outsiders.

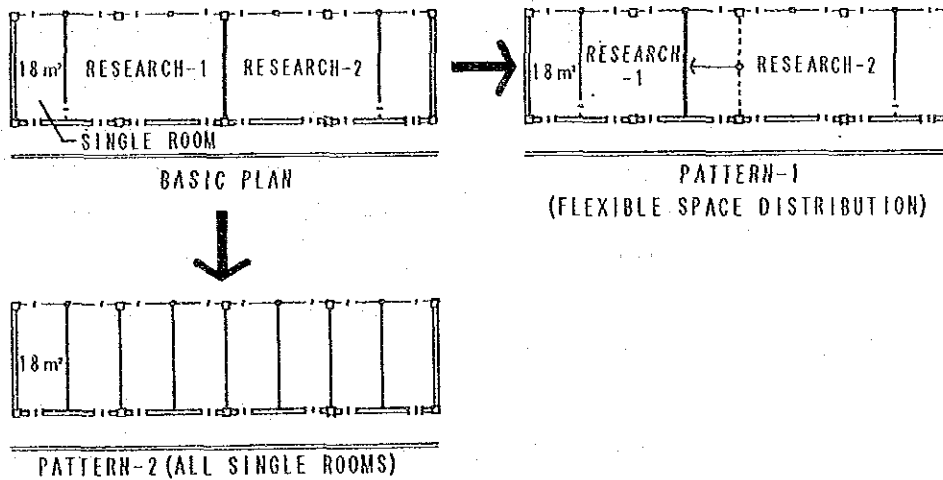
2) Research Building

The research building houses rooms relating to the master's degree and doctor's degree courses, rooms for researchers of the 4 research groups, visiting professors' rooms and library-related rooms. Based on the functions of these rooms and their use, the construction of two 2-storey buildings appears desirable. Rooms relating to graduate programmes are located on the ground floor in view of the relative business and researchers' rooms, presumably less busy, are located on the first floor to secure the necessary environment.

The master's course students' rooms are located on the first floor together with classrooms and seminar rooms in view of the relatively large number of lectures. In comparison, doctor's degree students are mainly involved in their own research and the writing of a doctoral thesis. Consequently, the room for doctoral students is grouped with the rooms for visiting professors and other graduate programme-related rooms.

Researchers' rooms, 2 visiting professors' rooms and 2 seminar rooms are located on the first floor. There is a single room for the chief researcher and a researcher's common room for each research group. A basic floor area unit of 18m² is adopted for the floor plan so that partitions can be easily erected to divide the common room (54m²) into 3 single rooms if necessary in the future. The entire space is designed to allow flexible space distribution to correspond to the number of research staff in each group.

• LAYOUT OF RESEARCHERS' ROOM



[Library]

The library has open stacks, a reading area, reference room, AV library, office and stack room. For the convenience of both researchers and students, the library is located on the ground floor. The design allows for future extension if required and has an independent small courtyard to maximise natural lighting.

3) Seminar Hall Building

The central function of this building is to house the 200 seat lecture hall which is accompanied by a foyer, rest room, control room, equipment storage and machine room. Using the natural slope of the ground, an amphitheatre design is adopted to locate the stage at the lowest level. Seats are arranged in a fan shape and the number of stepped seats is restricted to not more than 10 to facilitate communication between the lecturer and audience.

It is desirable for those people sitting in the hall to be able to see the trees outside to enhance the impression of the seminar hall being located in the midst of attractive greenery. Large windows and openings are introduced for this purpose. Special attention is also paid to the chairs which should be comfortable enough for people to sit through a long lecture or discussion. Given the standard setting of the existing buildings on the campus, chairs are provided with a small, collapsible writing table. An open foyer and exterior balcony are also provided so that the beautiful surroundings of the lecture hall can be enjoyed and in view providing an attractive place for relaxation during breaks.

4) Canteen Building

While making the best use of the green surroundings, the canteen building is designed to incorporate as much open space as possible, taking the climatic conditions into consideration, similar to the existing canteen buildings of the faculties. The building is surrounded by a terrace which is intended to create a level floor on the slope and also to actively incorporate external space to create a pleasant atmosphere. It has a simple arbour appearance to symbolise the Indonesian climate and is located halfway between the administration building and the accommodation zone. As the management of the canteen will be entrusted to an outside body, a simple office is added to the kitchen area. Entrance to the accommodation zone, warden's office (hostel reception) and workers' rest room is located next to the canteen building.

5) Accommodation Buildings (Hostel Buildings)

People using these facilities will mainly be visiting professors from abroad who are expected to stay all year round and temporary visitors to the Center. In regard to long stay visitors, the hostel will be their home and sufficient space is consequently allocated to the bedrooms for these visitors to provide a bedroom and living room together with a toilet and bath. Bedrooms for short stay visitors consist of a bedroom, toilet and shower. A long column base is introduced to deal with the sloping ground to make a level floor and to copy the traditional high floor design. The buildings have an open, single load corridor and balcony on the other side of the bedrooms to create a pleasant atmosphere to match the local natural conditions. Because of the sloping ground and the need to conserve as many existing trees as possible, several small 2-story buildings are planned instead of a single large building.

(2) Elevation and Section Planning

The elevation and section planning for the Center buildings seeks maximum rationality to suit the natural climate of the area and both maximum economy and durability to minimise the

maintenance requirements. Moreover, it incorporates the basic design concept that the design of the University's buildings should actively illustrate Indonesian architecture.

1) Exterior Design Elements

Buildings on the Depok campus have a variety of sloping roofs (30° - 60°) which play an important role in unifying the diversity of traditional architectural designs. Independent columns and lines of columns are adopted to metaphorically suggest the traditional high floor design with supporting legs. A sloping roof of 45° is planned for the roofs of the Centre's buildings to represent both a slanting roof, one of the most typical traditional architectural designs in Indonesia, and geometrical expression of the modern architecture. While this type of slanting roof is based on Indonesia's traditional architecture which emphasises volume and shape, it is a rational choice in view of its high heat insulation ability provided by a large quantity of air in the loft. A steep slope is also necessary to prevent the infiltration of rainwater through the tiled roof. The roof extends over a single load walkway to provide wide eaves which protect the inside of the building from rain and strong sunlight. The edge of the eaves along the walkway is supported by a line of thin independent columns to represent traditional architectural design. Similar columns of different lengths are used to support the accommodation buildings on the sloping ground to give them the appearance of traditional, high floor houses.

2) Ceiling Height and Building Height

While all the building represent the specific functions of the Center, each building is planned to have 2 storeys to provide optimal size and ease of use. A high ceiling with a large air volume is desirable to facilitate natural ventilation in view of comfort. Consequently, a ceiling height of 4m is planned for the ground floor of the administration and research buildings. The height of the eaves should be high enough to allow the ceiling height of the first floor to be similar to that of the ground floor. In the case of the accommodation buildings, ceiling heights of 3.0m and 3.5m are planned for the ground floor and first floor respectively to provide comfortable living space. The lecture hall building and canteen building are provided with an arbour style, simple high roof to symbolise the Center in accordance with the design concept for all existing facilities to have their own symbolic buildings.

(3) External Works Planning

One important requirement for external works for the Center is the provision of a carefully prepared rainwater drainage plan to deal with torrential rain as the ground slopes from the approach area toward the swamp to the northwest with an elevation difference of some 10m. Natural permeation is planned as the main rainwater drainage method and drainage trenches are

introduced around the buildings to facilitate natural permeation via seepage pits. Any overflow is discharged to the valley.

The layout of the Centre's buildings intends the use of the existing sloping ground as much as possible. Nevertheless, a certain degree of earth work and the erection of retaining walls are required for the levelling and landscaping of the approach area, approach road, foot paths, car park and courtyards. Further care is required to properly prepare the tree base so that existing trees are preserved where possible to create a comfortable green environment around the buildings.

(4) Structural Planning

1) Basic Structural Design Requirements

The basic structural design requirements are reliability and economy. General standards/methods are adopted to select the structural design standards, external forces and structural form.

2) Structural Form

Building	Number of Storys	Structural Form
Administration Building Research Building	2 storys above ground	RC rigid Rahmen frame with steel structure for roof support
Lecture hall Building	one story above ground (2 storys in part)	RC rigid Rahmen frame with steel structure for roof support
Canteen Building	one story above ground	RC rigid Rahmen frame with steel structure for roof support
Accommodation Buildings	2 storys above ground	RC rigid Rahmen frame with steel structure for roof support

3) Foundations

According to the boring data, soft layers consisting of clayey silt and silty sand exist upto a depth of 22 - 24m below the ground surface with a sand rock layer (N: more than 100) underneath. Pile foundations using the sand rock layer as the bearing layer are, therefore, adopted.

4) Basic Structural Design Components

① Structural Materials

Structural materials are procured locally.

- o Concrete (strength: K 225 kg/cm²)
 - Cement: standard Portland cement
 - Coarse aggregate: river gravel and crushed stone
 - Fine aggregate: river sand
- o Reinforcing Bards
 - Deformed steel bars: BJTD 30 - D10, D13
BJTD 40 - D16, D19, D22, D25
- o Steel Frame
 - Angle steel, H-shaped steel: SS400

② Design Standards

The design standards for the Project are the Indonesian standards for design load and structural design while the ACI (American building codes for reinforced concrete) are referred to when such reference is deemed appropriate. The Japanese design standards are also referred to in the design of steel-frame structures.

- i) Load and External Force Regulation N118 - 1983
(Peraturan Pembebanan Indonesia Untuk Gedung 1983)
- ii) Reinforced Concrete Structure Design Standards N12 - 1971
(Peraturan Beton Bertulang Indonesia)
- iii) Design Standards for Steel Structures
(Architectural Institute of Japan)

③ Design Load and External Forces

The following loads and external forces are taken into consideration in the building structure design.

i) Dead Load

The weight of structural materials, finishing materials and all other items fixed to the building are properly estimated.

ii) Live Load

Room	kg/cm ²
Administration Office, Classrooms, Researchers' Rooms and Bedrooms, etc.	250
Library	400
Lecture Hall	500

iii) Wind Load

The wind load (P) is mainly considered at the time of designing a roof supporting steel structure.

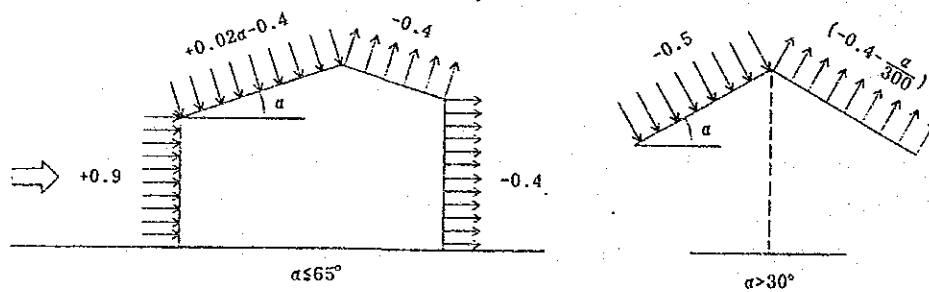
$$P = C \times q \times A$$

where, C : wind pressure coefficient

q : dynamic pressure of wind (25kg/m²)

A : surface area (m²)

The wind pressure coefficient for different parts of the building is given below.



iv) Seismic Force

The project site is located in Zone 4 on the Seismic Zoning Map given below. The basic seismic coefficient is 0.05 (0.2 for Japan). As the buildings have 2 storeys with a RC structure, the seismic force is estimated as follows.

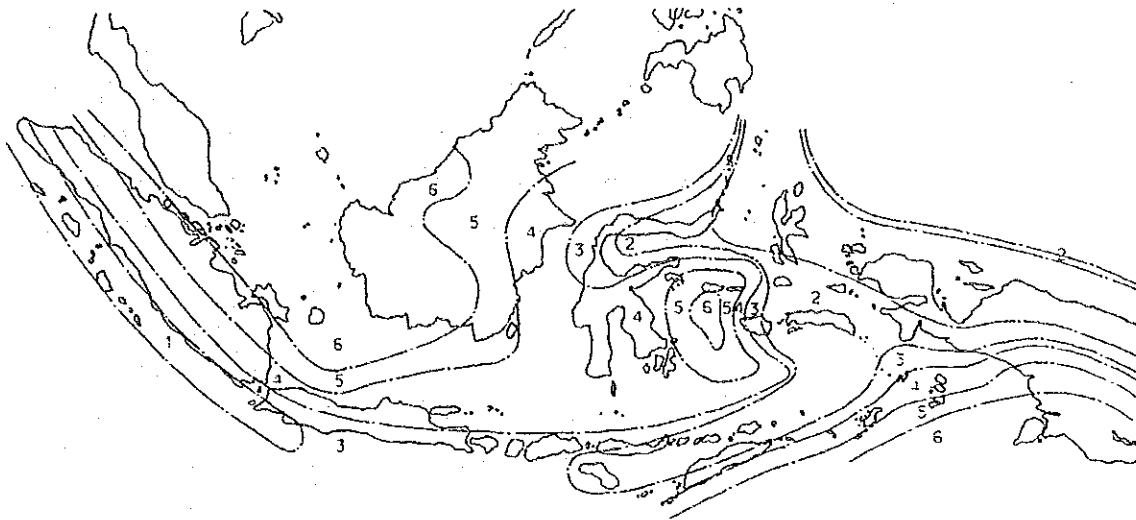
$$V = C_2 \times I \times W_t$$

where, V : base shear

C : basic seismic coefficient (0.05: for buildings constructed on soft ground)

I : building importance factor (1.0 for research facilities)

W_t : building weight



Seismic Zoning Map

(5) Building Services Plan

1) Air-Conditioning and Ventilation

In principle, natural ventilation is the means of creating a pleasant environment at the Center without relying on mechanical air-conditioners. Only the seminar hall, library, meeting rooms and visiting professors' bedrooms are provided with air-conditioning. An air-conditioning package with ducts is installed in the lecture hall while a separate type air-conditioner is installed in the other rooms mentioned above. A mechanical ventilation system is installed in the case of those rooms whose functions necessitate such installation. The prospective areas for mechanical ventilation are rest rooms and the kitchen of the canteen.

2) Plumbing Work

① Water Supply

Water is firstly supplied to the looped water main system (150mm) from the elevated water tank (300m²) on the campus and reaches each building via branch pipes (65mm) using the gravity method. The maximum water consumption is assumed to occur at the time of a seminar with some 200 participants.

- Seminar participants : 200 x 60 litres/day = 12.0m³/day
- Staff/students : 90 x 120 litres/day = 10.8m³/day
- Hostel : 24 x 300 litres/day = 7.2m³/day
- Total : 30m³/day

The water consumption on an ordinary day is estimated to be 18m³ (consumption by staff/students and hostel).

② Hot Water Supply

i) Research Building

An electric water heater is installed in each kitchenette.

ii) Canteen Building

No water heater is provided as an ordinary gas hob is provided in the kitchen.

iii) Accommodation Buildings

An independent electric water heater with a storage tank is installed in each shower room or bathroom.

③ Water Drainage

3 channels of water drainage are introduced.

- Rainwater drainage: in principle, natural permeation is anticipated with any overflow being discharge to the valley to the northwest of the project site
- Sanitary sewage and miscellaneous waste water: separate channels serving each building converge outside for joint treatment at the septic tank before discharge for natural permeation

The treatment system deals with both sanitary sewage and miscellaneous waste water prior to the discharge of the treated water for natural permeation. 2 septic tanks are provided to serve the research building and accommodation buildings respectively because of the different ground levels of these 2 types of facilities and because of their distance.

④ Sanitary Facilities

Sanitary facilities are designed and selected to ensure comfortable use in view of the local customs.

- Toilet bowls: in principle, Western type bowls are provided while a small number of local type bowls are also provided; each booth is provided with a water faucet
- Urinal stalls: wall type stalls with an integrated special nozzle are provided
- Washing vessels: washing vessels are provided in the rest rooms and the kitchen, etc.
- Scrub-up sinks: scrub-up sinks are made of either terrazzo tiles or stainless steel
- Showers: manual mixing type showers are provided
- Bathtubs: bathtubs are provided in the visiting professors' rooms

⑤ Gas Supply

LPG is supplied to the kitchen using cylinders.

⑥ Fire Hydrants

Fire hydrants are provided both indoors and outdoors pursuant to the relevant regulations.

3) Electric Installation

① Trunk Facilities

- Power Facilities

Power supply to the campus is made from the primary substation of the PLN, located in the eastern part of the campus, to the looped distribution system using 20KV/50Hz underground cable. There are a total of 12 secondary substations on the campus from which low voltage power (380/220V/50Hz) is supplied to each building. Power supply to the Center is made by a 380/220V/50Hz transformer to be newly provided at the No. 8 Substation via underground cable. The power service entrance capacity is planned to be approximately 345 KVA. Installation of the new transformer and the work to supply power from this transformer to the Center are included in the Project.

- Telephone Facilities

Based on the assumption that the Center requires some 30 telephone units, the installation of 3 lines is planned.

- Emergency Power Supply

The power supply in Depok is fairly seldom with few power failures. Consequently, one the head office building has an emergency power source. As the planned functions of the

Center (facilities and equipment) do not appear to warrant the provision of an emergency power source, no emergency generation is provided.

② Ordinary Power Facilities

- Lighting

The decision on the required luminous intensity is based on the IES (Illuminating Engineering Society Lighting Handbook) standards. A low daytime lighting cost should be achieved by incorporating natural light in the lighting plan. Fluorescent lamps are the mainstay of lighting appliances although incandescent lamps and mercury vapour lamps are also planned where necessary. Appliances to be selected are those which can be locally repaired. The proposed average luminous intensity is as follows.

Offices and researchers' rooms	: 250 - 300 lux
Classrooms and seminar rooms	: 250 - 300 lux
Lecture hall	: 200 - 250 lux
Meeting rooms	: 200 lux
Library	: 300 lux
Corridors, staircases and rest rooms, etc.	: 50 lux
Bedrooms	: 200 lux

- Trunk Power Facilities

Low voltage trunk lines are arranged so as to independently serve different applications. A power control board to operate systems (such as an air-conditioner) incorporating a motor is installed where necessary. The power characteristics of the trunk line and load facilities are as follows.

Trunk line for lighting and others	: 3 phase, 4 wire, 380/220V
Lighting and outlets	: single phase, 2 wire, 220V
Power for ventilation fans and pumps, etc.	: 3 phase, 3 wire, 380V

- Lightning Rod

A lightning rod and conductor are mounted on the roof with an earth plate buried in the ground.

- Outdoor Lighting

Fluorescent mercury garden lamps are provided in view of security at night.

③ Low Voltage Power Facilities

- Speaker System

A simple speaker system, mainly for use on the stage, is provided in the lecture hall together with a wireless microphone system for questions and answers between the lecturer and audience.

- TV Outlets

TV outlets are provided in the AV library and lecture hall with an aerial mounted on the roof. A separate TV aerial and outlets are provided for the accommodation block.

- Automatic Fire Alarm

A fire alarm system consisting of fire detectors and emergency push-button bells is provided for the early detection of fires in view of safety. An alarm indicator panel is provided in the administration office while another panel is provided in the warden's office of the accommodation block.

(6) Construction Materials Planning

Selection of the construction materials for the Center gives top priority to those materials and construction methods which are best suited to the local climate and which are firmly established. The following materials are used based on economy, durability and maintainability. It is needless to say that their suitability vis-a-vis ensuring the required functions and/or performance of the buildings is also taken into consideration.

1) Exterior Finishing Materials

An exterior finish involving fair-faced brickwork, brick tiles and a sprayed paint finish is employed because of its weatherability and suitability vis-a-vis the local climate. The creation of an appropriate appearance as peaceful research facilities is another rationale for the selection of these materials together with compatibility with the existing buildings on the Depok campus. Roof tiles are used for the slanting roofs while windows have an aluminium frame as in the case of existing buildings in view of easy maintenance and excellent airtightness. Wire screens are not provided except in bedrooms as most of the Centre's rooms will not be often used at night.

2) Interior Finishing Materials

The following interior finishing materials for the main rooms are selected based on their suitability vis-a-vis the required functions of the rooms, durability, economy and wide availability in Indonesia.

- Floors : ceramic tiles
- Walls : brick with paint finish; partition walls using dressed plywood and aluminium supporting columns for researchers' rooms; rest rooms have ceramic tile walls
- Ceilings : (Ground Floor) concrete slabs with mortar paint finish
(First Floor) wood
(Seminar Hall) rockwool acoustic boards
(Canteen) wood
(First Floor Rest Rooms) calcium silicate boards with paint finish

4.3.3 Equipment Plan

(1) Planning Principles

- 1) The central research themes at the Center almost exclusively related to social and cultural issues and the planned equipment is mainly used to assist education and research at the Center. As the equipment is predominantly used by researchers, special care should be given to the easy operation of the equipment.
- 2) The selection of equipment for which maintenance services and parts supply are readily available in Indonesia is essential.
- 3) In the case of such special equipment as Japanese wordprocessors and micro computers, a sufficient quantity of spare parts is provided because of the probable difficulty of locally securing maintenance services and spare parts.

The range of equipment planned under the basic design is listed below:

1) Data Processing Equipment

- Personal computers for research work 8
- Personal computers for S2 students 3
- Personal computers for S3 students 2

2) Audio Visual Equipment

① Lecture Hall

- 100" video projector 1
- Slide projector 1

② Common Use AV Equipment

- 16mm projector 1
- Slide projectors 2
- OHP 1
- VTRs/monitor TV sets 2 sets
- 8mm VTR cameras 2
- Editing system for above 1 set

③ Printing Equipment

- Wordprocessors/printers 2 sets
- Copier 1
- Heat-sensitive stencil printer 1
- Small cutter 1
- Binding equipment 1 set

④ Office Equipment

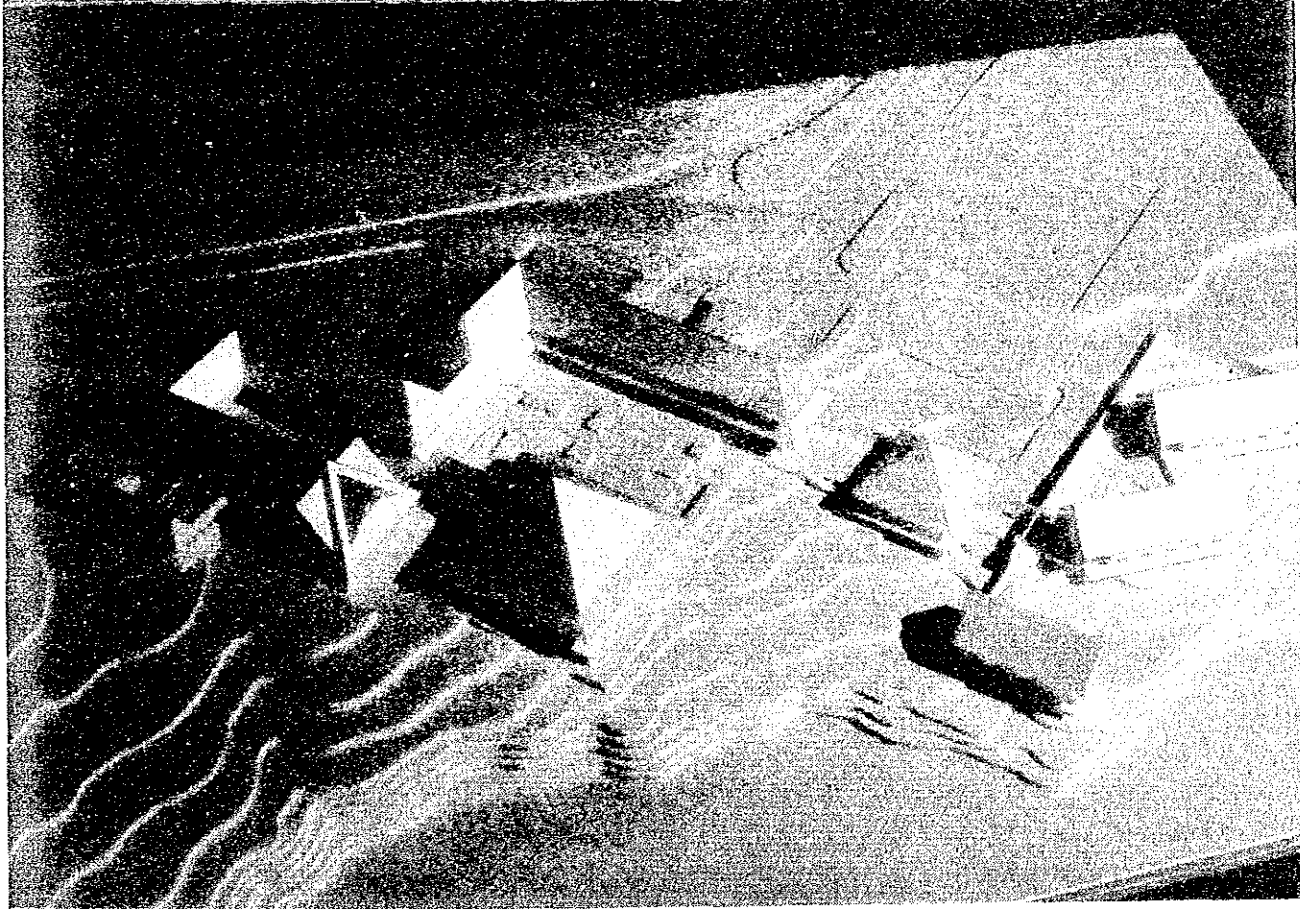
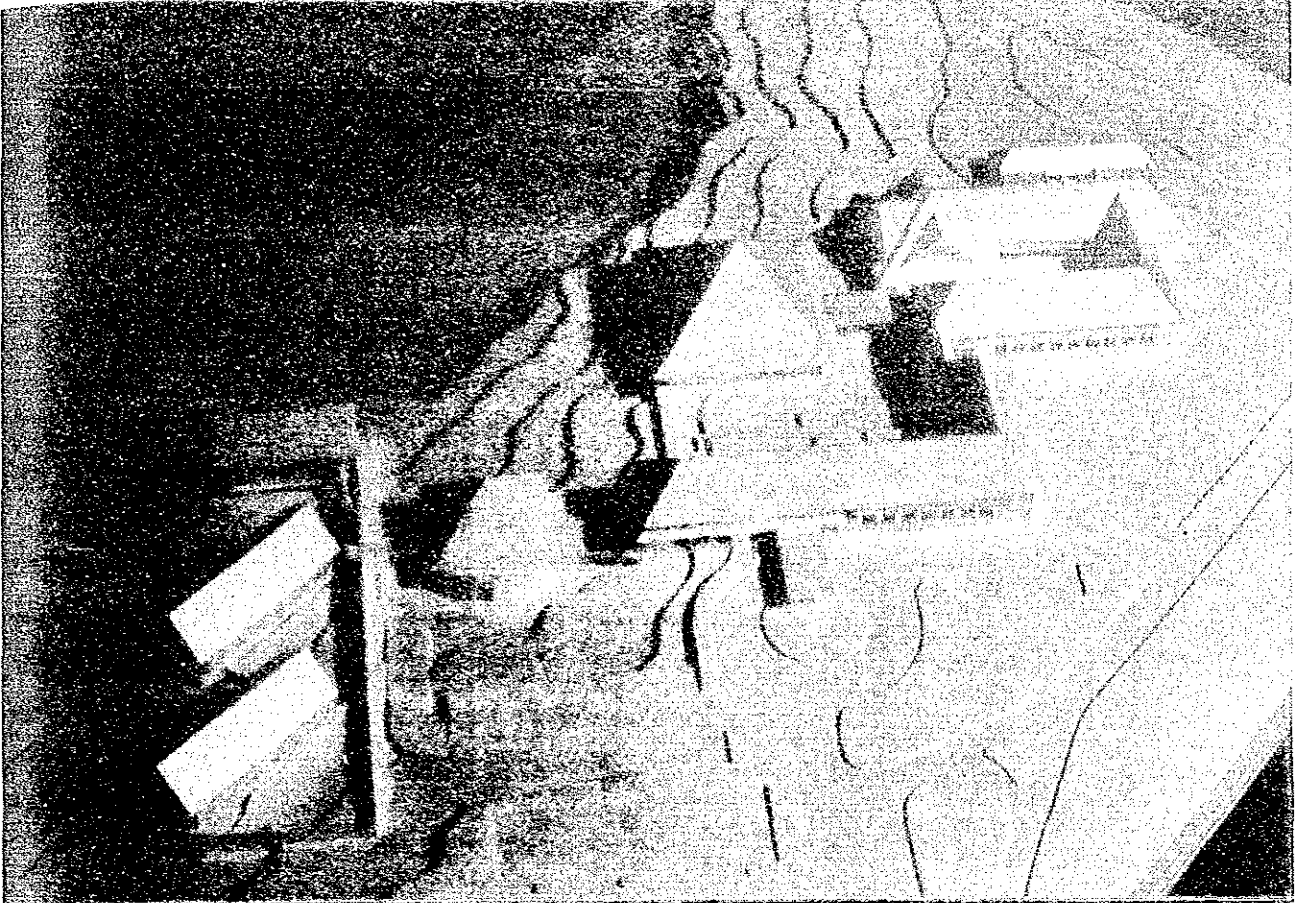
- Personal computers for administration 2
- Copier 1
- Furniture and blackboards, etc. for classrooms and researchers' rooms 1 lot

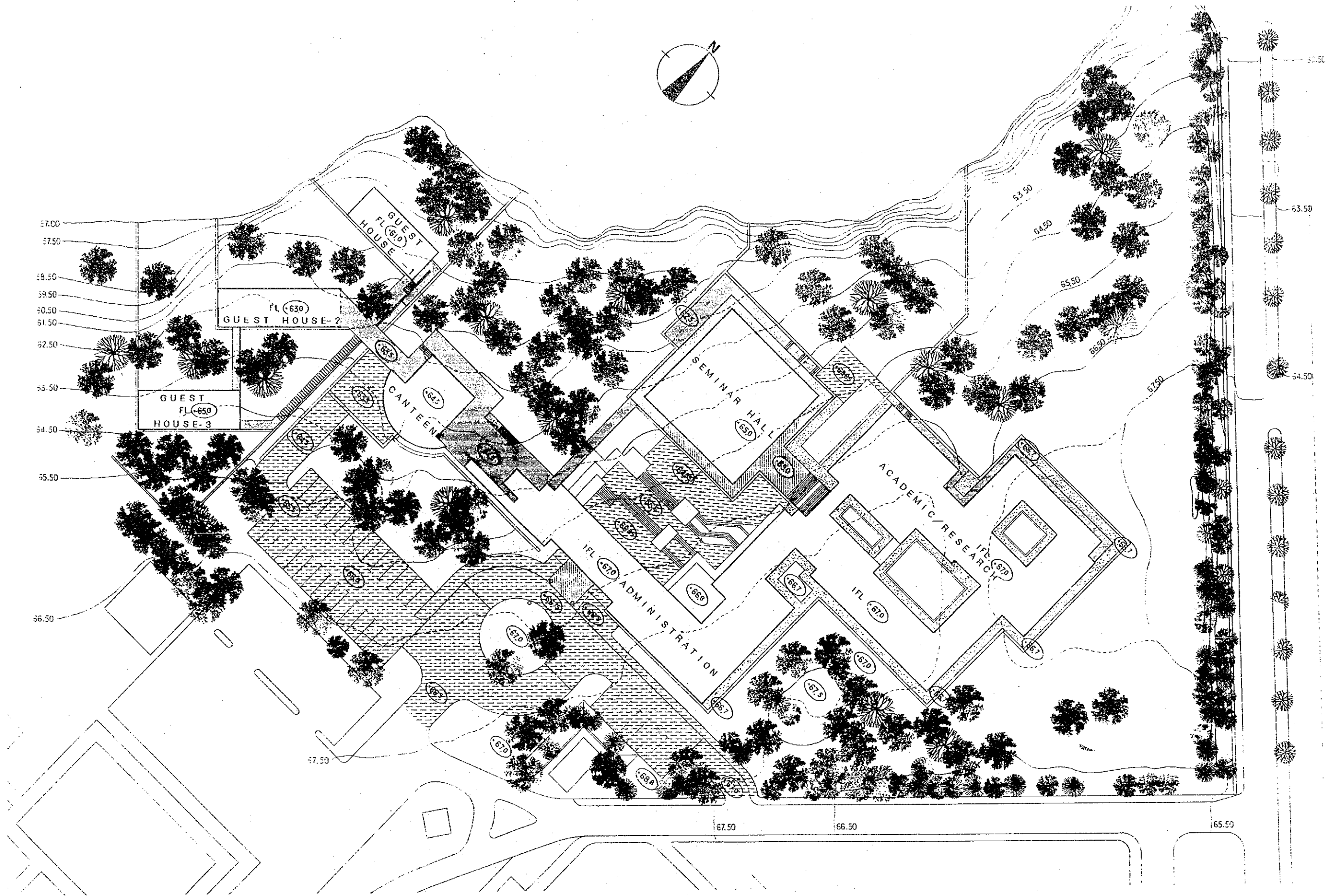
⑤ Library Equipment

- Personal computer for library management 1
- Book stacks (for 20,000 books) 1 lot
- Chairs and tables for reading room (24 persons) 1 lot
- Card files and library furniture 1 lot
- Copier 1
- Individual video booths 3
- CAI booths for kanji learning 3
- Reference books 1 lot

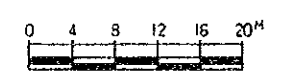
4.3.4 Basic Design Drawings

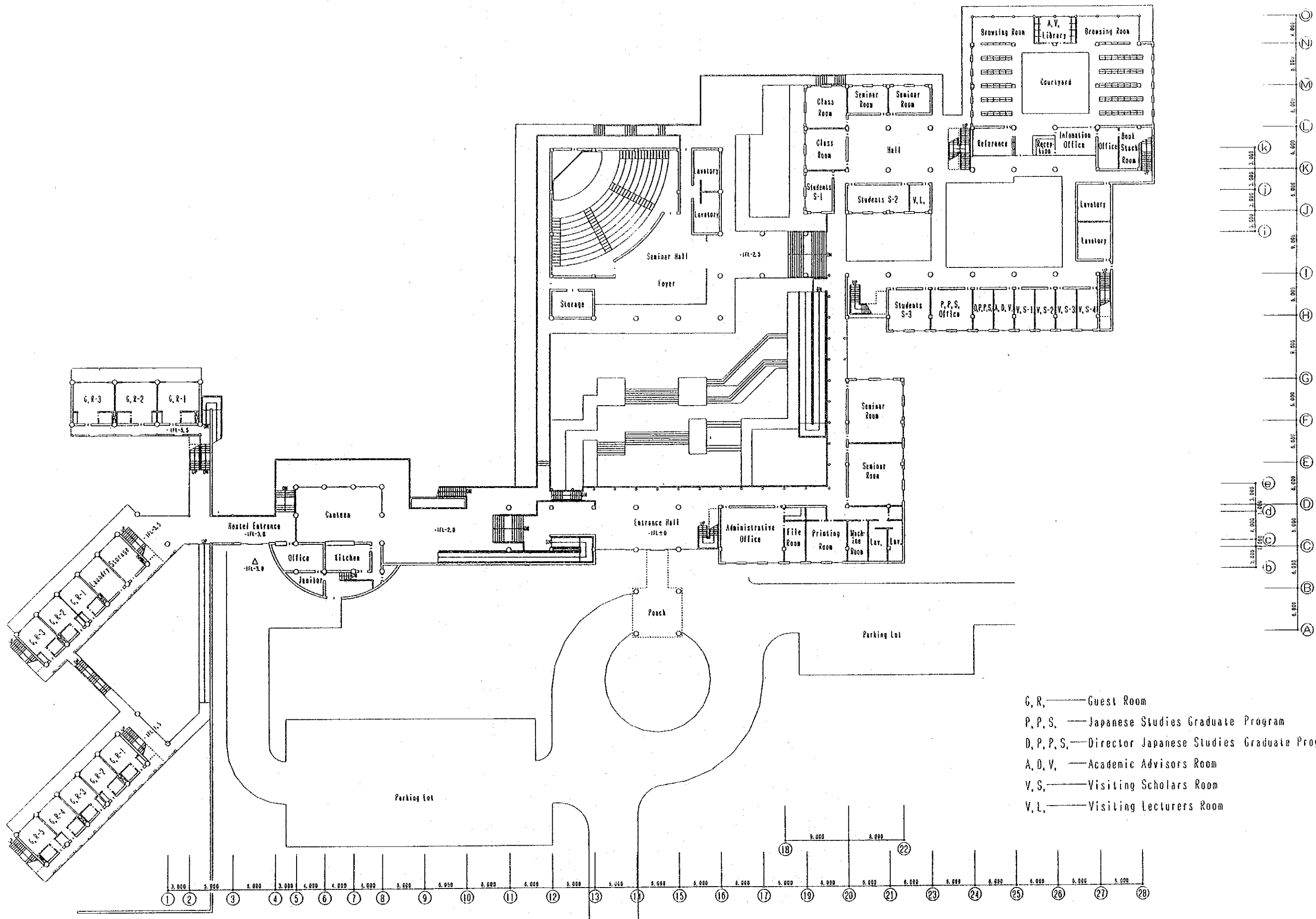
- Scale Model
- Site Plan
- 1st Floor Plan
- 2nd Floor Plan
- Roof Plan
- Elevation - 1
- Elevation - 2
- Elevation - 3
- Power & Telephone Systems
- Water Supply System
- Drainage System
- Storm Drainage System





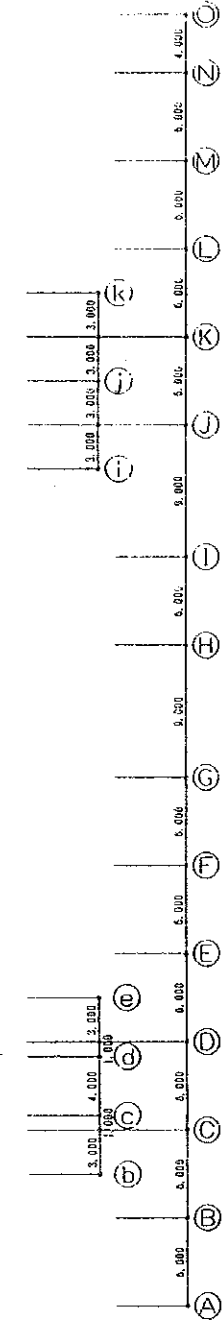
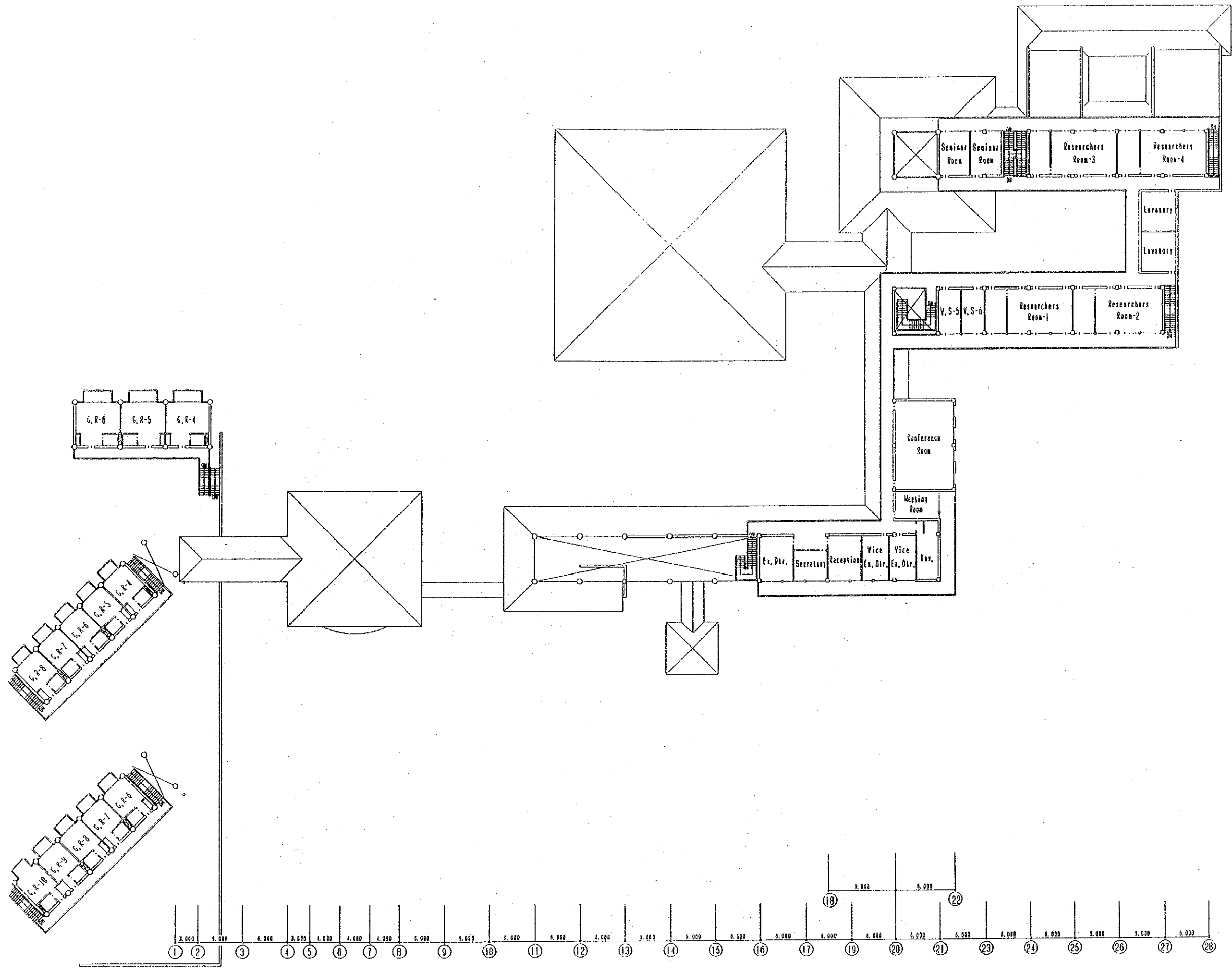
SITE PLAN



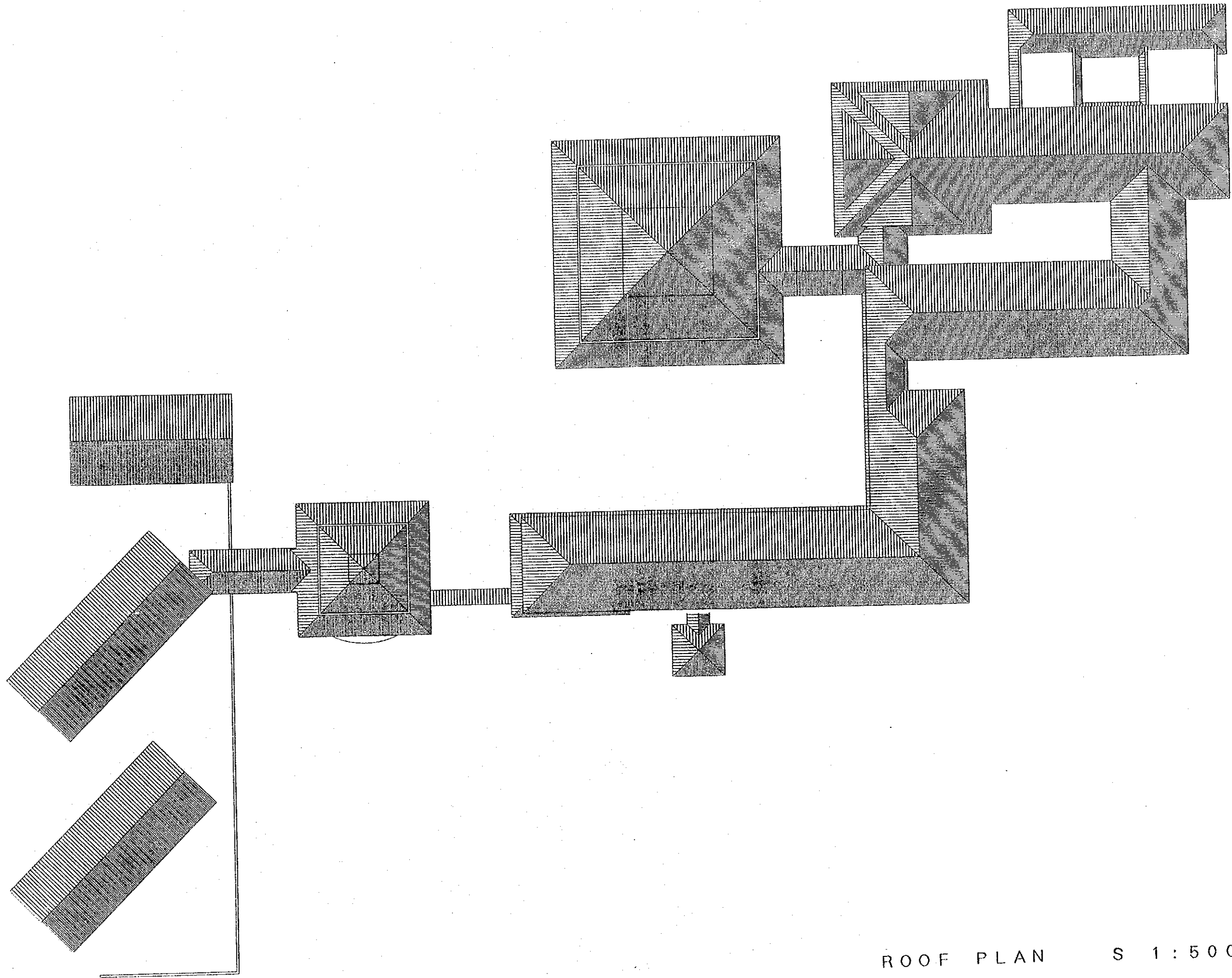


- G, R. — Guest Room
- P, P, S. — Japanese Studies Graduate Program
- D, P, P, S. — Director Japanese Studies Graduate Program
- A, D, V. — Academic Advisors Room
- V, S. — Visiting Scholars Room
- V, L. — Visiting Lecturers Room

1ST FLOOR PLAN S 1:500

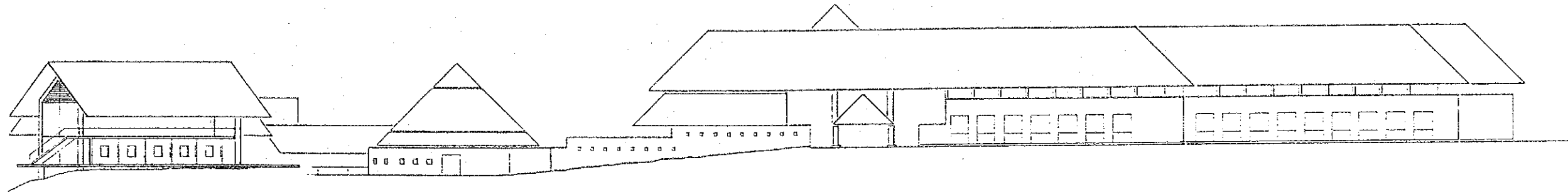


2ND FLOOR PLAN S 1:500

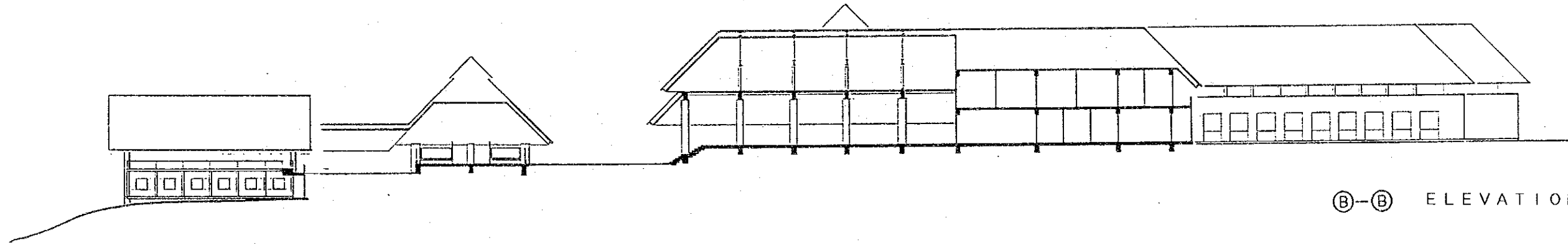


ROOF PLAN

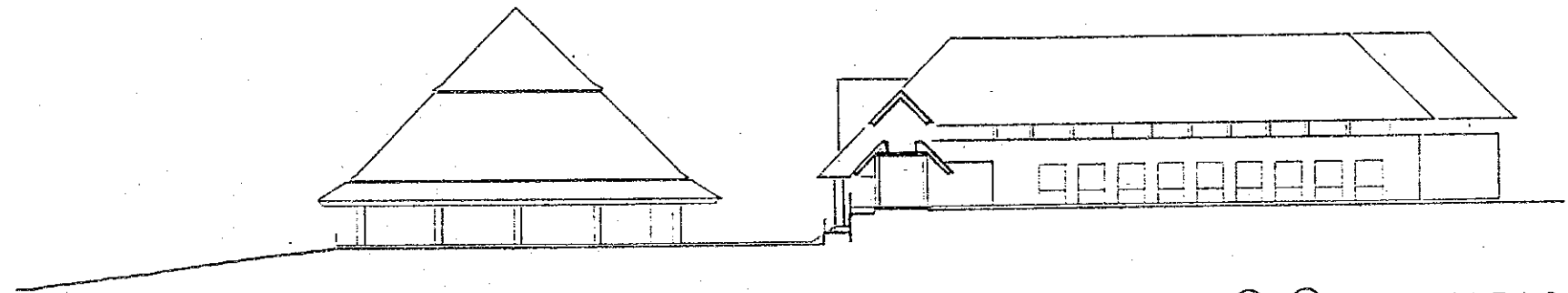
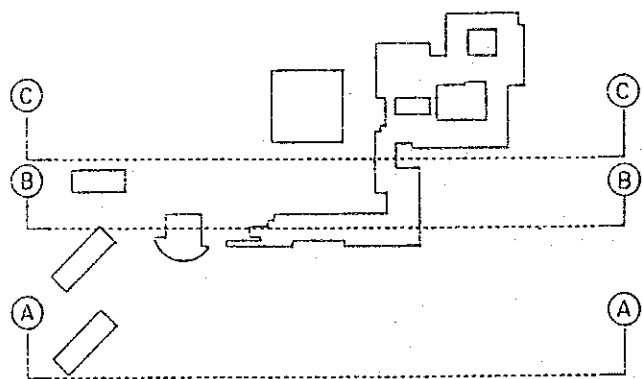
S 1 : 5 0 0



(A)-(A) ELEVATION

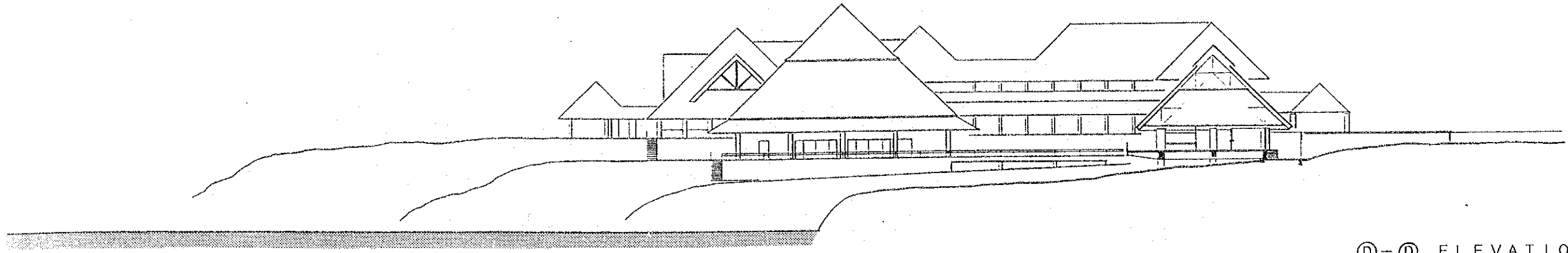


(B)-(B) ELEVATION

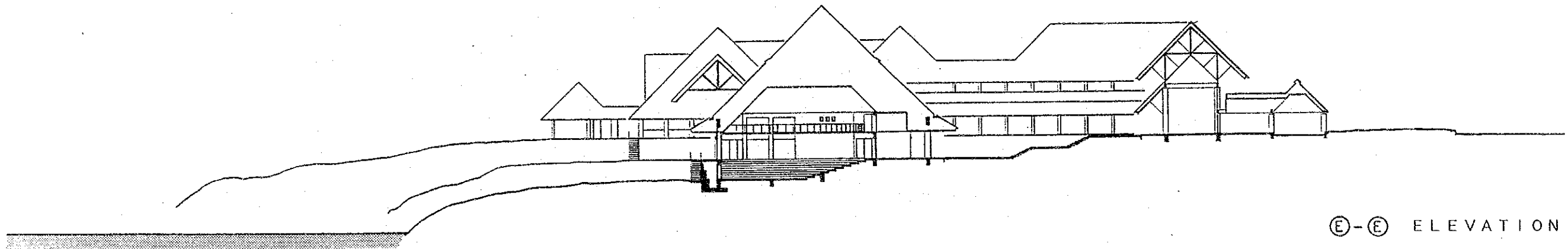


(C)-(C) ELEVATION

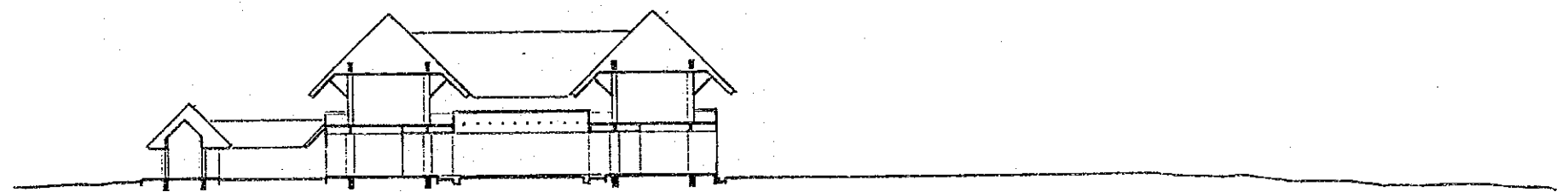
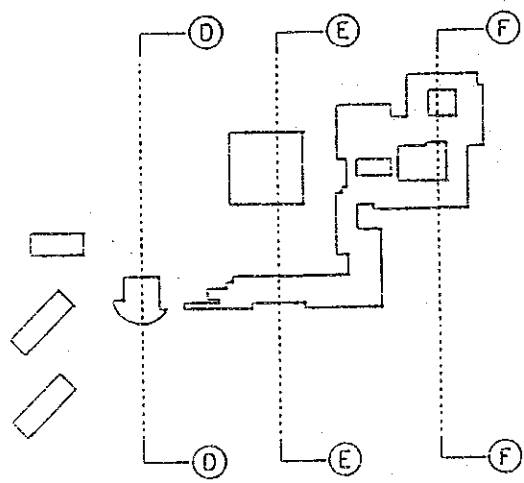
ELEVATION-1 S 1:500



ⓓ-ⓓ ELEVATION

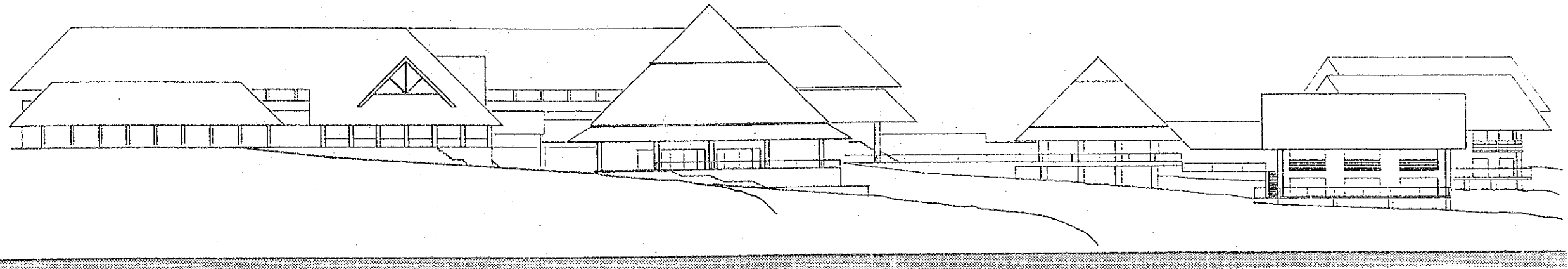


ⓔ-ⓔ ELEVATION

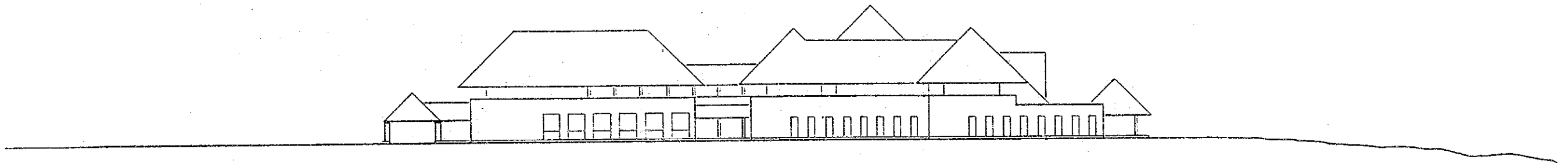


ⓕ-ⓕ ELEVATION

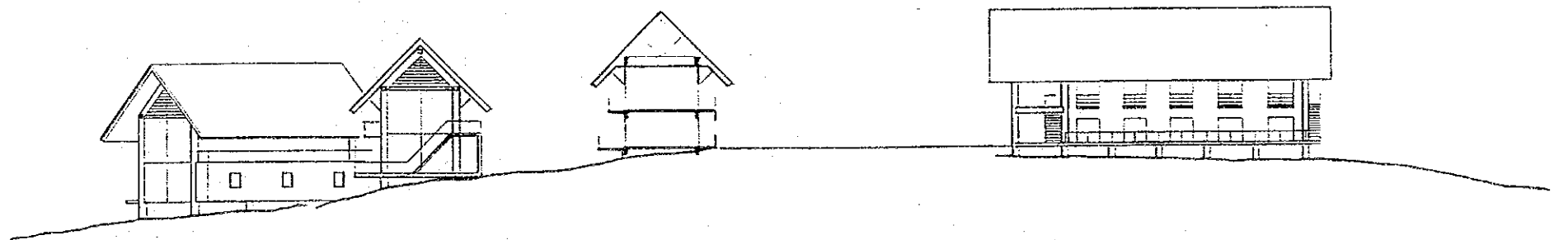
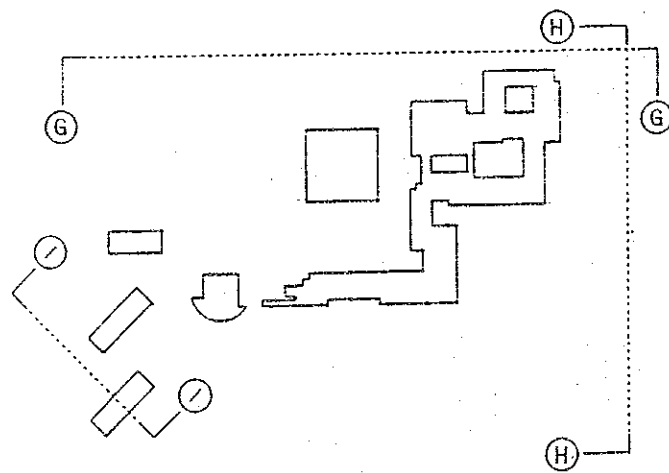
ELEVATION-2 S 1:500



⑥-⑥ ELEVATION

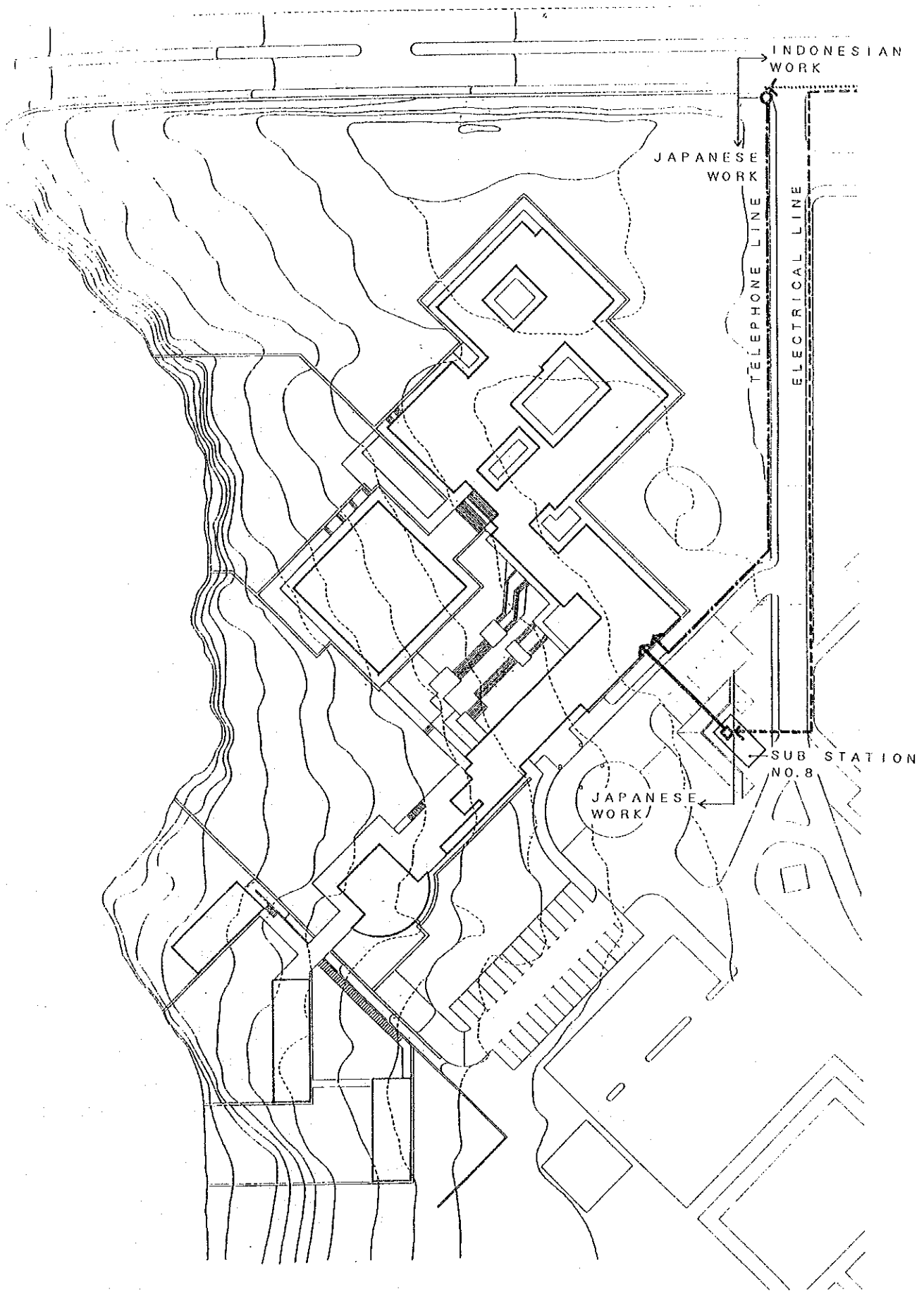


⑧-⑧ ELEVATION

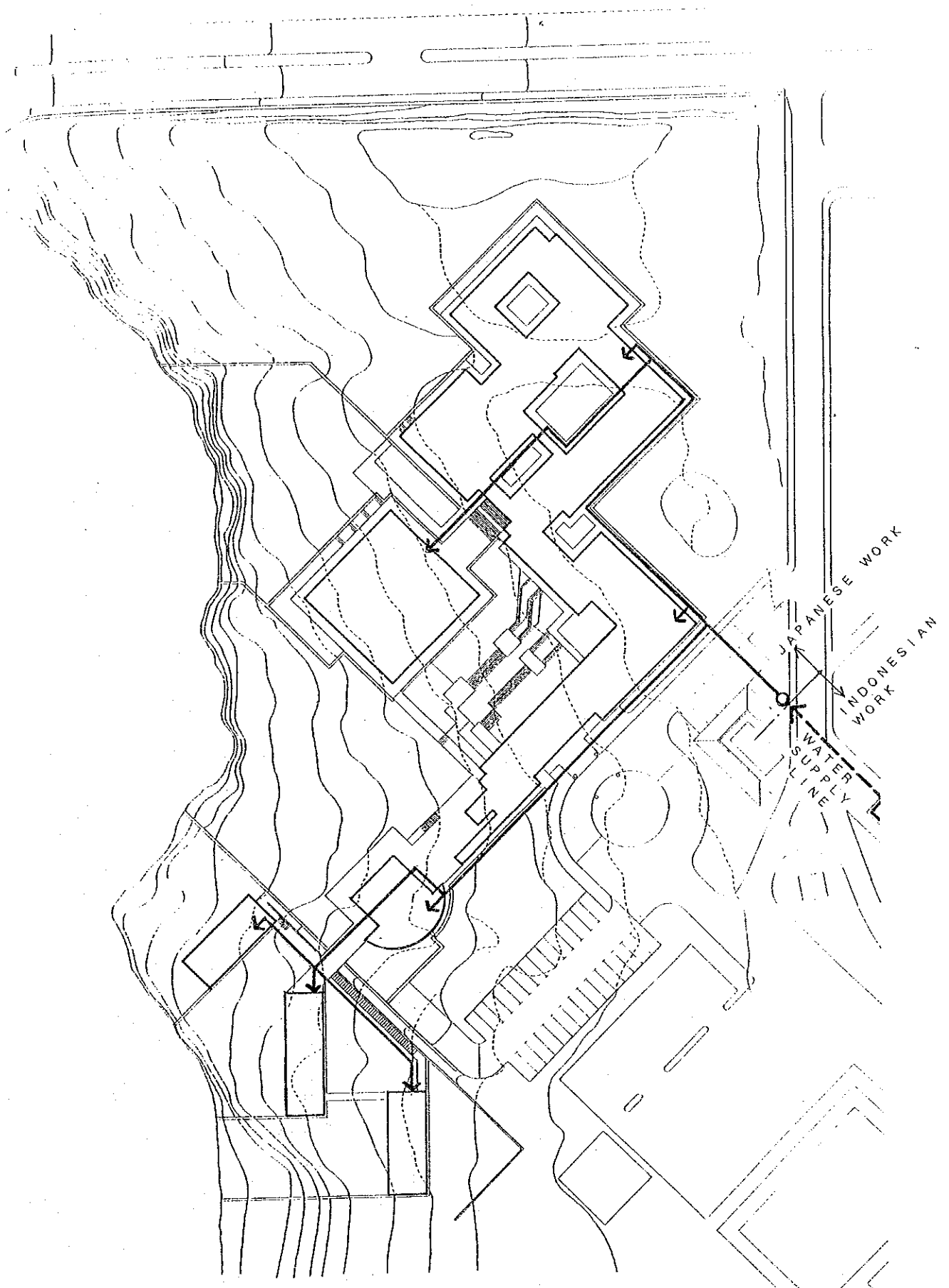


①-① ELEVATION

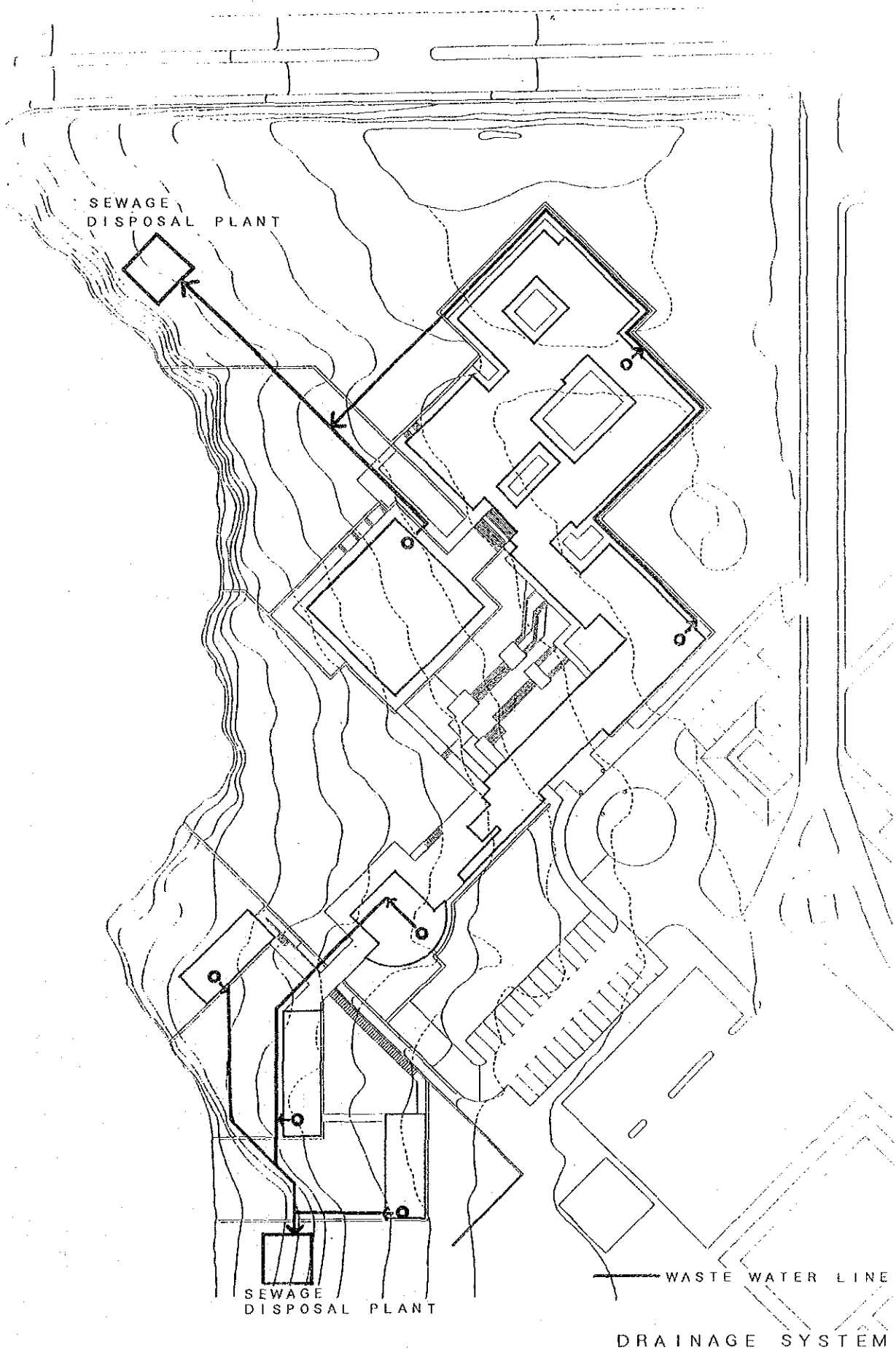
ELEVATION-3 S 1:500

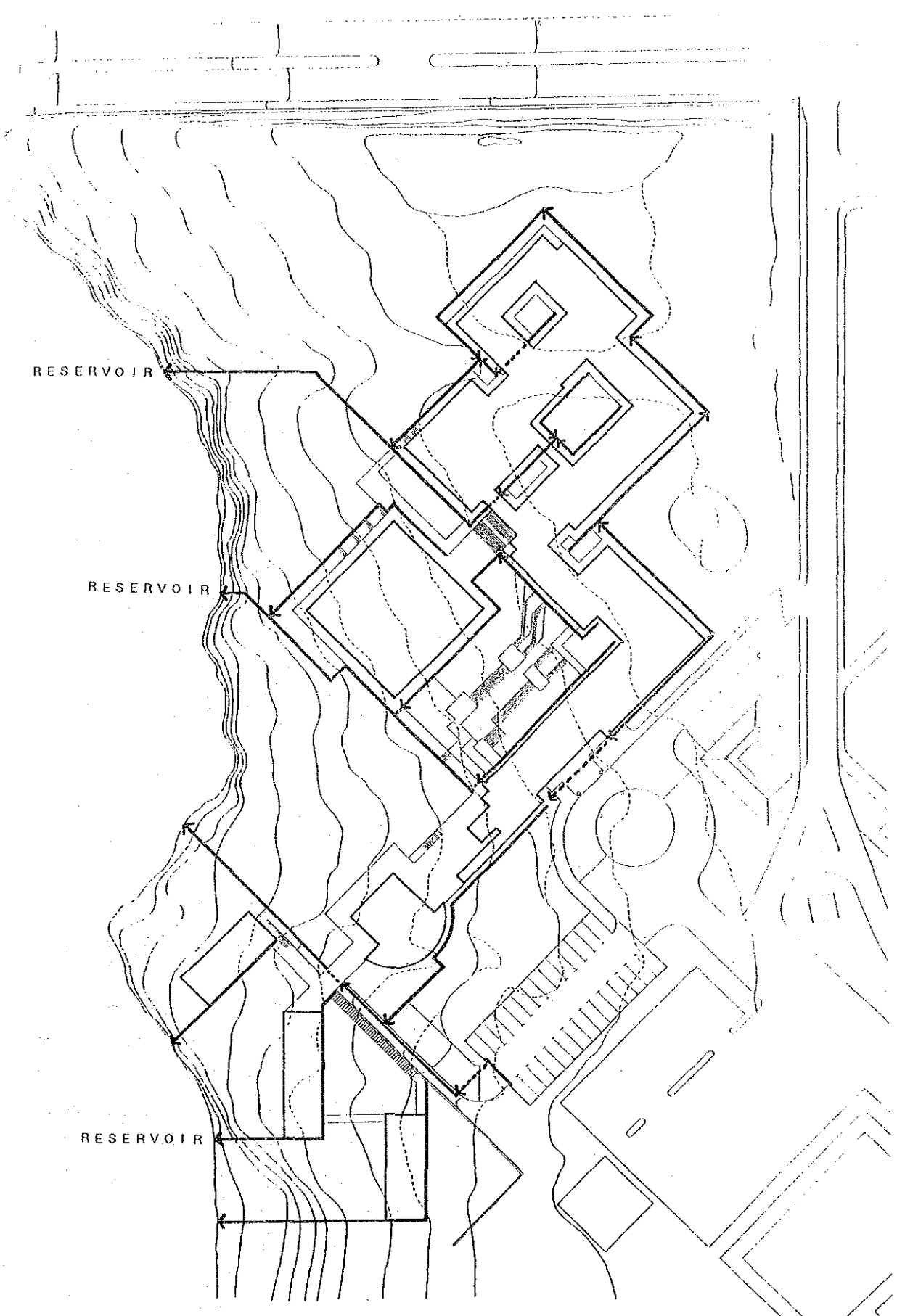


POWER & TELEPHONE SYSTEMS



WATER SUPPLY SYSTEM





STORM DRAINAGE SYSTEM