

Fig. 4-3-1 Conceptual Plan of the Layout of Facilities

4-3-2 Architectural Design

(1) Floor Plan

1) Floor Plan for Each Block

The three functions of the proposed facilities, viz., (i) Enrichment of audio-visual education, (ii) coping with new techniques for programme production and (iii) conducting of basic practical training, can be translated, in terms of architectural planning, into (a) Audio-visual education block, (b) Studio block and (c) Practical-training block, respectively.

Because of the small scale of the proposed facilities, the providing of all the three blocks in a single building will be reasonable both in economical and maintenance/operation aspects. However, within the building, each block should be separated from the other blocks, since the required space, quality, interior environment, etc., differ by block and also because some of the rooms inevitably generate noise and vibration that affect other

vibrations that affect other blocks.

The corridor currently running from east to west through the central part of the existing studio building will be extended westward and each block will be positioned on either side of the corridor. Consequently, the layout of the new facilities will be an easy-to-understand design, with a corridor passing through.

a) Audio-visual Education Block

Three rooms, viz., the Joint Lecture Room, the Programme-Production Training Room and the Language Laboratory, will be provided in which to conduct lectures using audio-visual teaching materials. An entrance will be provided near the existing classroom building for convenience of the movement of people. Considering the environmental conditions, etc., at the time the three rooms are used in a darkened state, air conditioning will be provided.

b) Studio Block

In this block, a radio studio, a TV studio and a subcontrol room for each will be set up, and for acquiring new techniques for programme production, a video editing room and an ENG equipment maintenance room will also be provided. These rooms will be positioned right next to the existing studio building, taking into account the movement of people and materials between this block and the existing studio building, the cable connections for the broadcast signals and the frequency of carrying in and out ENG equipment and stage-settings.

In addition to the low permissible level of noise, all of the above-mentioned rooms are subject to a considerable amount of heat emitted from the equipment. Consequently, duct system air conditioning will be provided. This studio block will be of a dead-end corridor type layout, providing a sound-proof door at the entrance. It will also be a controlled area to prevent thefts of expensive units of equipment.

c) Practical-training Block

Three rooms will be provided for use in conducting basic practical training in electronics, communication and electric power. This block will be positioned at an end of the building in order that noise, vibrations, electromagnetic

building, in order that noise, vibrations, electromagnetic wave, etc., emitted by the training equipment, may not affect other blocks. The layout of this block will be of a type in which rooms are positioned on either side of a corridor and will be so planned as to enable all the rooms to get natural light.

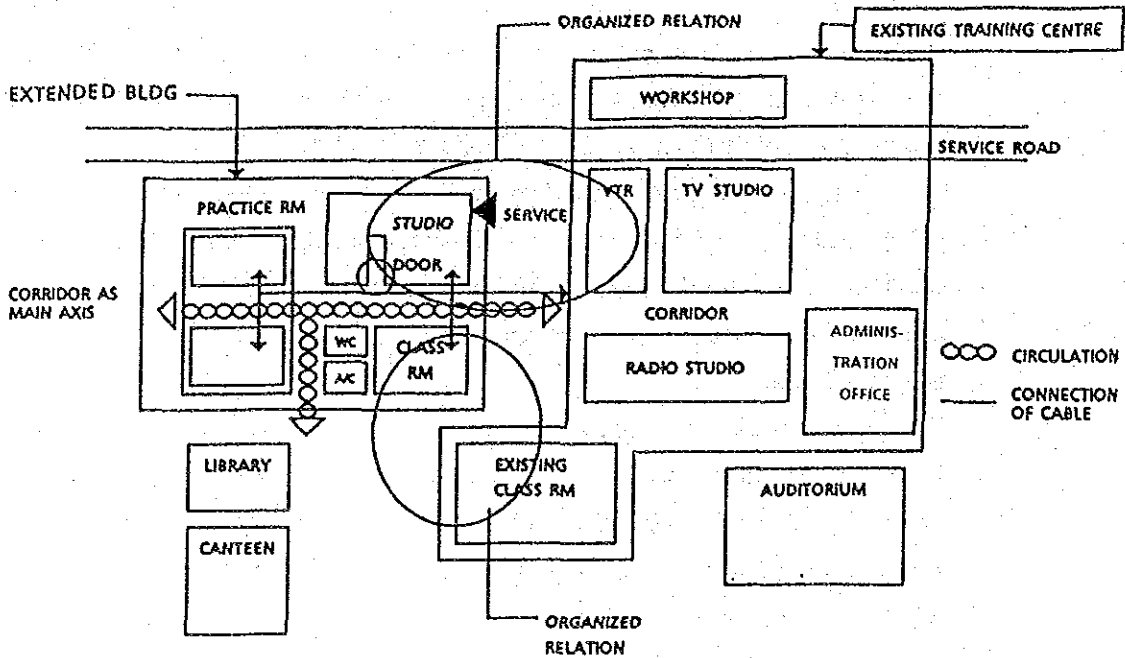


Fig. 4-3-2 Conceptual Drawing of Layout of Different Departments

The toilet will be provided at a location near to the existing classroom building, a convenient location for use by trainees.

The air-conditioning machine room will be positioned at the opposite side of the corridor, so that the machine's noise and vibration may not affect the studios.

2) Criteria for Calculation of Floor Area of Each Room

Since each of the rooms in the Studio Block has a particular function of providing practical training in programme production, the floor area of each room will be calculated on the basis of such factors as the layout of equipment and the method the training is actually conducted in the room concerned.

Table 4-3-1 Criteria for Calculation of Floor Areas

Rooms	Calculation Criteria	Remarks
Joint Lecture Room	1.1m ² /person	Average value in Japan: 1 - 1.3m ² /person
Language Laboratory	2m ² /person	Average value in Japan: 2m ² /person
Practical Training Room	3m ² /person	Standard value by the Ministry of Education and Culture of Indonesia: 4m ² /person

3) Functions and Scales of Main Rooms

a) Audio-visual Education Block

[1] Joint Lecture Room

This room is used for lectures given jointly to such different classes as language classes and religion classes. The capacity of this room will be 120 persons so that all the trainees of the DI courses may be able to attend at the same time. This will be a large classroom equipped with a large video projector connected by a line to the main control console for the existing studio. Various types of audio-visual teaching materials may be used in this room. They will also be used for evaluation of programmes produced in programme-production training.

[2] Programme-production Training Room

The practical training in programme production is conducted by first dividing the trainees into 4-6 small groups of about 15 members each and then having each group produce a programme on a particular designated subject. The production work itself will be conducted in the studio or outdoors but preliminary consultations and preparations, scriptwriting and discussions and evaluation of the programmes produced will normally be done in the training rooms. For such purposes, three meeting rooms will be provided. The three rooms are separated from one another by movable partitioning walls,

so that by removing the walls, the three rooms may also be used as one large room. These three rooms are also usable for other purposes, such as rehearsals.

[3] Language Laboratory

This is a room in which practical training in languages is given using an LL system. Its seating capacity is 24 students which corresponds to one class of the DI courses.

b) Studio Block

[1] TV Studio

This will be used mainly for practical training in programme production in the DII and DIII courses. In response to the trend in recent years to attach importance to news programmes, this studio will be used for practical training in the production of such programmes as news shows or talk shows. It is designed as a small studio with a total floor area of 123m² (10.8m in width × 11.4m in depth) provided with a two-cornered cyclorama and a chroma-key background.

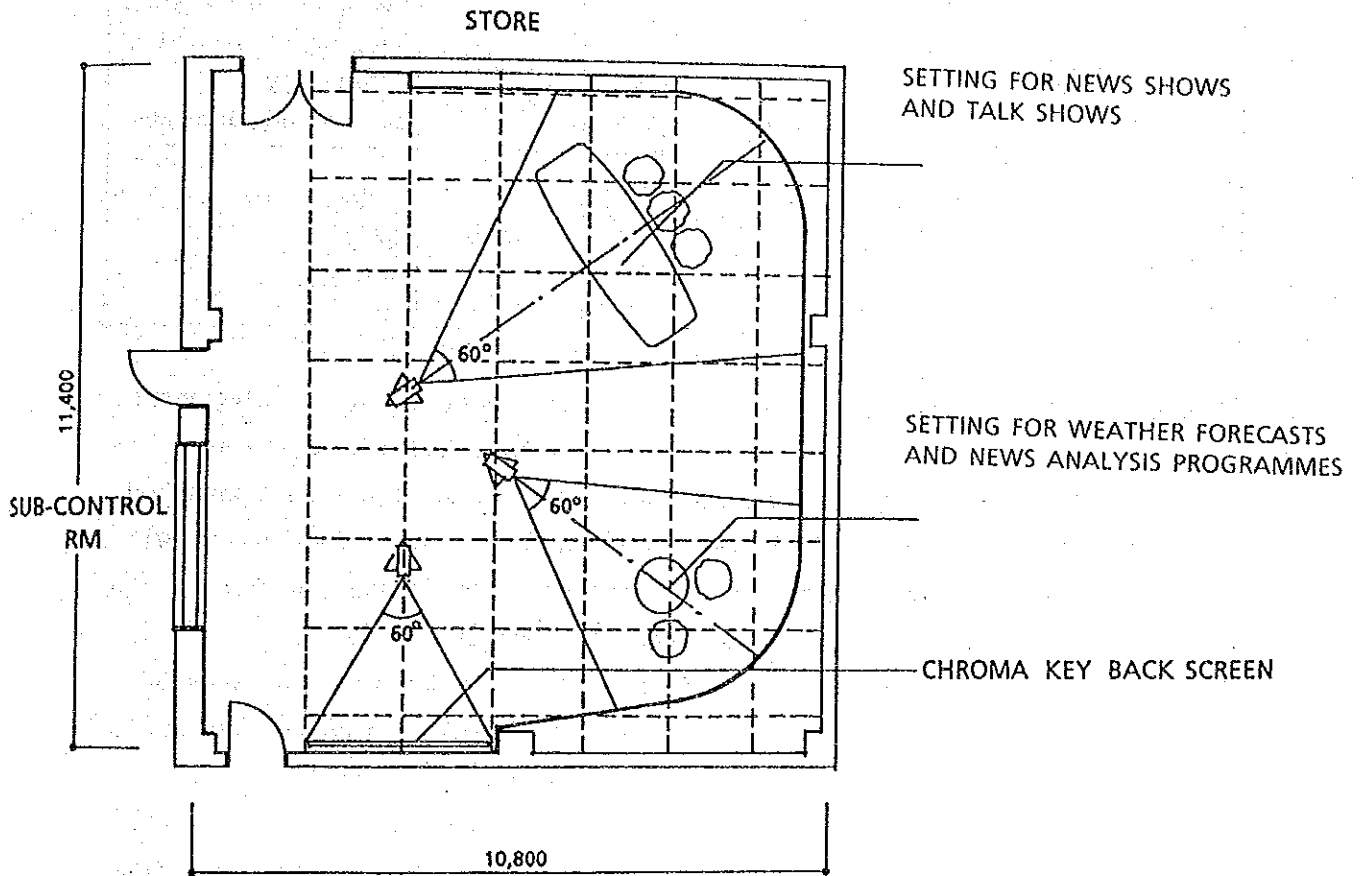


Fig. 4-3-3 Layout of the TV Studio

A comparison of the proposed TV studio with the existing TV studio is shown in Table 4-3-2.

Table 4-3-2 A Comparison between the New and the Existing TV Studios

Name	Dimensions/ Floor Area	Ceiling Height	Permissible Noise Value	Remarks
New TV Studio	Width Depth 10.8m x 11.4m Floor area 123m ²	4.8m To grid pipe 4.5m	NC-30 (designed value)	Cyclorama (fixed type), 3.6m high, 2-cornered. Chroma-key background, Grid pipe
Existing TV Studio	Width Depth 18.0m x 14.4m Floor area 260m ²	11.0m To grid pipe 8.5m	NC-30	Cyclorama (curtain type) Grid pipe

In the subcontrol room of the TV studio, a sub-control console will be installed so that practical training in recording, switching and studio control may be conducted. At the back of the sub-control console, some space will be necessary for the trainees to watch or learn the operation of the sub-control console.

Adjacent to the TV studio, a storeroom will be provided. It will also be used as an entrance through which to carry stage-settings, etc., into the studio.

[2] Radio Studio

This radio studio will be used mainly for practical training in programme production in the DII and DIII courses. It will be a small studio for use in producing talk programmes. A comparison of this new radio studio with the existing radio studio is shown in Table 4-3-3.

Table 4-3-3 A Comparison between the New and the Existing Radio Studios

Name	Dimensions/ Floor Area	Ceiling Height	Permissible Noise Value	Remarks
New Radio Studio	Width Depth 6.5m x 6.5m Floor area 42m ²	3.0m	NC-30 (designed value)	
Existing Radio Studio	Width Depth 9.0m x 12.0m Floor area 108m ²	3.5m	NC-30	

In the sub-control room of the radio studio, there will be installed a sub-control console, an echo-machine, a sound-generating device, etc., to be used for practical training in radio programme production. In addition, an audio-dubbing system will be installed for practice in the dubbing and the editing of sound in TV programmes.

[3] Post-production Room

In this room, practical training will be conducted in such post-production work as editing, processing and superimposing of recorded videotapes. A switcher, 1/2-inch VTR and a character generator will be installed. The partitioning wall between the post-production room and the TV sub-control room will be a folding wall, so that the two rooms may be used as one room if necessary. Both the post-production room and the TV subcontrol room will be of a double-floor (free-access floor) system, so that exchanging of equipment and changing of the layout may be done easily.

[4] Video Editing Room

This room will be used mainly for practical training in off-line editing of programmes, particularly news-gathering programmes. The main purpose is not to have the trainees learn how to operate an editing machine but rather to give them the chance to experience the work of editing videotape, which they had actually recorded when

gathering news, into a TV programme. For that purpose, there is the need to allocate one editing machine to each training group. Furthermore, in a corner of the room, a space will be reserved for meeting in the course of editing work.

[5] ENG Equipment Maintenance Room

This is a room for the storage and maintenance of portable video cameras (ENG cameras) and their auxiliary equipment.

[6] Videotape Storeroom

c) Practical-training Block

The basic training of engineering personnel will be conducted in groups as follows: 4 persons \times 6 groups (total 24 persons) for D-I courses and 2 persons \times 6 groups (total 12 persons) for D-II courses. Consequently, the type of practical-training tables and equipment for each training room will be selected on the basis of the above-mentioned training units.

[1] Electronics Training Room

In this room, practical training will be conducted in the subjects of electronics, logical circuits, circuit-network theory, audio and video techniques, using training kits. The training will be conducted on the practical-training tables. So, twelve sets of large training tables will be provided in this training room.

[2] Radio Frequency Training Room

In this room, practical training will be conducted in the theories of signals on AM waves, VHF and microwaves, reception of transmissions from the PALAPA satellite, transmission technology for VHF and other subjects relating to radio frequency, using various types of transmitters, receivers and measuring instruments.

Besides the training tables, a space will be reserved for installation of a TV transmitter.

[3] Electric Power Training Room

Practical training will be conducted in this room in power-source installations required in the operation of a broadcasting station, such as engine generator, power

distribution board and transformer. Besides the training table, a space will be reserved for installation of an engine generator.

Table 4-3-4 Floor Area of Each Room

Room	Basis of calculation	Floor area (m ²)
1. Audio-visual education block		
Joint lecture room	120 persons x 1.1m ² /person	136
Programme-production training room	Equipment layout	78
Language laboratory	24 persons x 2m ² /person	52
2. Studio block		
TV studio (including store)	Equipment layout	155
TV sub-control room	Equipment layout	60
Radio studio	Equipment layout	50
Radio sub-control room	Equipment layout	52
Post-production room	Equipment layout	60
Video editing room	Equipment layout	58
ENG equipment maintenance room	Equipment layout	52
Videotape store	Equipment layout	20
3. Practical-training block		
Electronics training room	24 persons x 3m ² /person	78
Radio frequency training room	24 persons x 3m ² /person	78
Electric power training room	24 persons x 3m ² /person	78
NET area		1,007
Total area		1,338
Connecting corridor		52
Project area	Area including pent roof	1,485

(2) Section

The proposed facilities should be a single-storied building, considering two points. First, it is inappropriate to build a multi-storied structure because each room requires a different ceiling height; second, evacuation is easier at times of disaster, such as during a fire.

In order to dispose of large amounts of rainfall and also to meet the requirements of the townscape regulations of the city of Yogyakarta, the roof of the proposed facilities will be a pitched roof. However, if the

pitch were too steep, the wasted space of the attic would increase. For this reason, it was concluded that the optimum pitch should be about 11.3 degrees, after having examined such factors as the local volume of precipitation, the flashing performance of the roof material, and the harmony with the roof pitch of the existing facilities. By installing an air space between the roof slabs and the roof material, high heat insulation performance will be secured.

The TV studio and the joint lecture room, both of which have high ceilings, will together be covered by a big roof, and the attic will be used as a space for laying horizontal air-conditioning ducts. The roofs to cover other rooms will be built smaller according to the ceiling height and attic space required and the height of the roofs will be lowered so as to ensure the minimum of waste in the section plan.

The eaves will be so designed as to protrude considerably in order to prevent strong direct sunbeams from entering the rooms and also to prevent the blowing-in of raindrops.

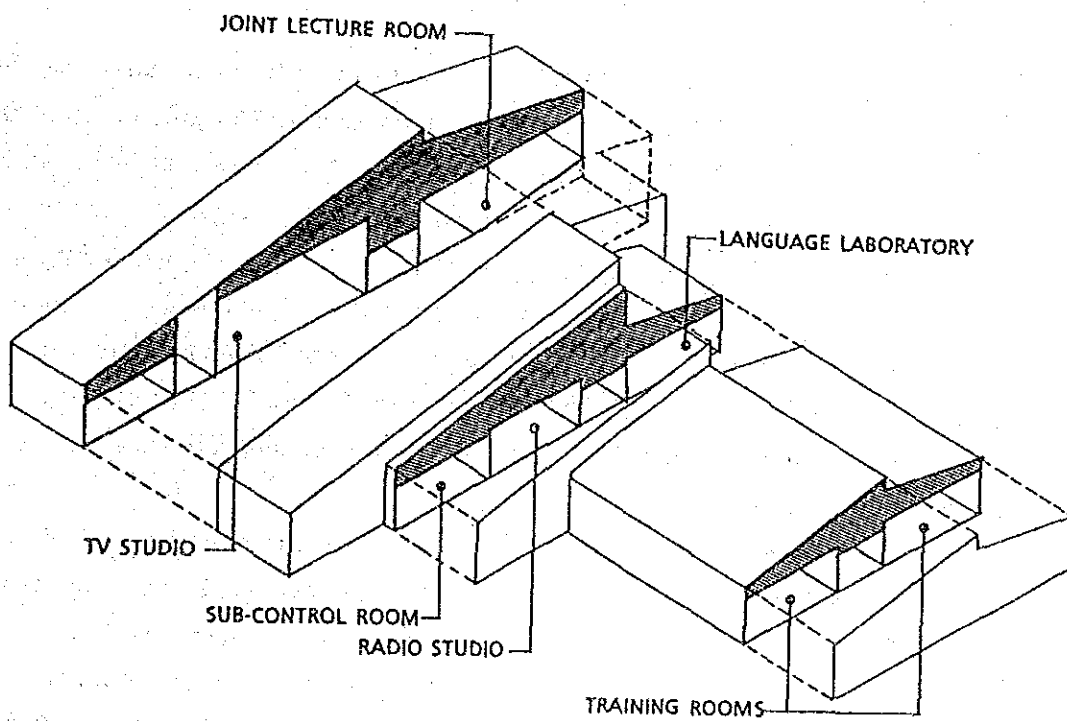


Fig. 4-3-4 Conceptual Drawing of the Section Plan

(3) Structural Plan

1) Outline of the Structure

This Project is a plan to extend the Radio and Television Training Centre which was completed in 1984. It involves construction of a single-storied building with a total area of about 1,350m² including a radio studio and a TV studio. With a connecting corridor linking the two buildings, the existing and the proposed building, the proposed building has been planned structurally as a completely separate building. The shear walls will be used to minimize the load on the frame.

2) Foundation Form

The soil condition of the construction site is uniform and stable. From the ground surface down to a depth of about 2.0m, there is a sandy clay layer including the surface soil which continues further downward to a sandy gravel layer. Since the proposed building is single-storied, a direct foundation with this sandy gravel layer as the supporting ground will be adopted as the foundation form. The same as the foundations of the existing buildings, the effective bearing capacity of soil is estimated to be 13.0t/m² at 2.0m below the ground surface.

3) Superstructure

In the proposed building, the shear walls can be positioned comparatively well, therefore the building will be planned a reinforced concrete rigid frame structure with shear walls.

In the TV studios and the joint lecture room portion, a comparatively large space is formed with a span of 10.8m. But in spite of this large span, the reinforced concrete structure will be adopted, taking into account such factors as the quality of local construction work and the economy.

4) Structural Materials

Concrete : $F_c=210\text{kg/cm}^2$ (4-week compressive strength, cylinder strength)

Reinforcing bars: Less than 16mm SD30 $F_t = 3,000\text{kg/cm}^2$

Over 19mm SD35 $F_t = 3,500\text{kg/cm}^2$

5) Design Load and External Force

a) Dead Load

The dead load value shall be calculated in accordance with the actual weight of the structural and finishing materials.

b) Live Load

The live load shall be calculated based on the Japanese Building Standards. The main live loads will conform with the following values:

	kg/m ²		
	For slabs and beams	For girders and columns	Seismic
Studios and Sub-control Rooms	400	320	180
Classrooms	230	210	110
Videotape Store	800	700	600

c) Seismic Force

The computation of the seismic force will be based on the Structural Designing Criteria of Indonesia.

$$V = C \cdot I \cdot Wt$$

Wt: The weight of the building for seismic force

I : Coefficient of usage (1.5; radio/TV educational facilities)

C : Coefficient determined by synchronization of the ground and the building in each district (0.07; zone 3)

$$V = 0.07 \times 1.5 \times Wt$$

$$= 0.105 Wt$$

(4) Utility Plan

1) Electrical Facility Plan

a) Power Supply System

The power-receiving capacity of the existing facilities is 1,250kVA and so, at present, there is a margin of approx. 400kVA. Since the electric power required by the proposed facilities is estimated at a maximum of about 300kVA, it is possible to fill this requirement with the existing power-receiving equipment. However, there is the need to

additionally install a branch panel by remodelling the existing receiving panel in order to install a main distribution board.

Power-receiving system 3-phase, 4-wire 380V/220V, 50Hz
Low-voltage power will be supplied to the local distribution board and the motor control board to be installed in the proposed facilities from the main distribution board using the cable which will be partly buried underground.

In each of the Electronics Training Room, Radio Frequency Training Room, Electric Power Training Room, TV Sub-Control Room, Radio Sub-Control Room, Video Editing Room and ENG Equipment Maintenance Room, a distribution board will be installed for exclusive use as a power source for various units of equipment. Meanwhile, for pieces of the equipment which require a constant voltage supply, measures will be taken to supply power through an automatic voltage regulator (AVR). A system diagram showing power supply installations is given in Fig. 4-3-5.

Remodelling the existing receiving panel (including the additional installation of a branch panel for the proposed facilities) and the cable-connecting work from the branch panel to the main distribution board shall be undertaken by the Indonesian side.

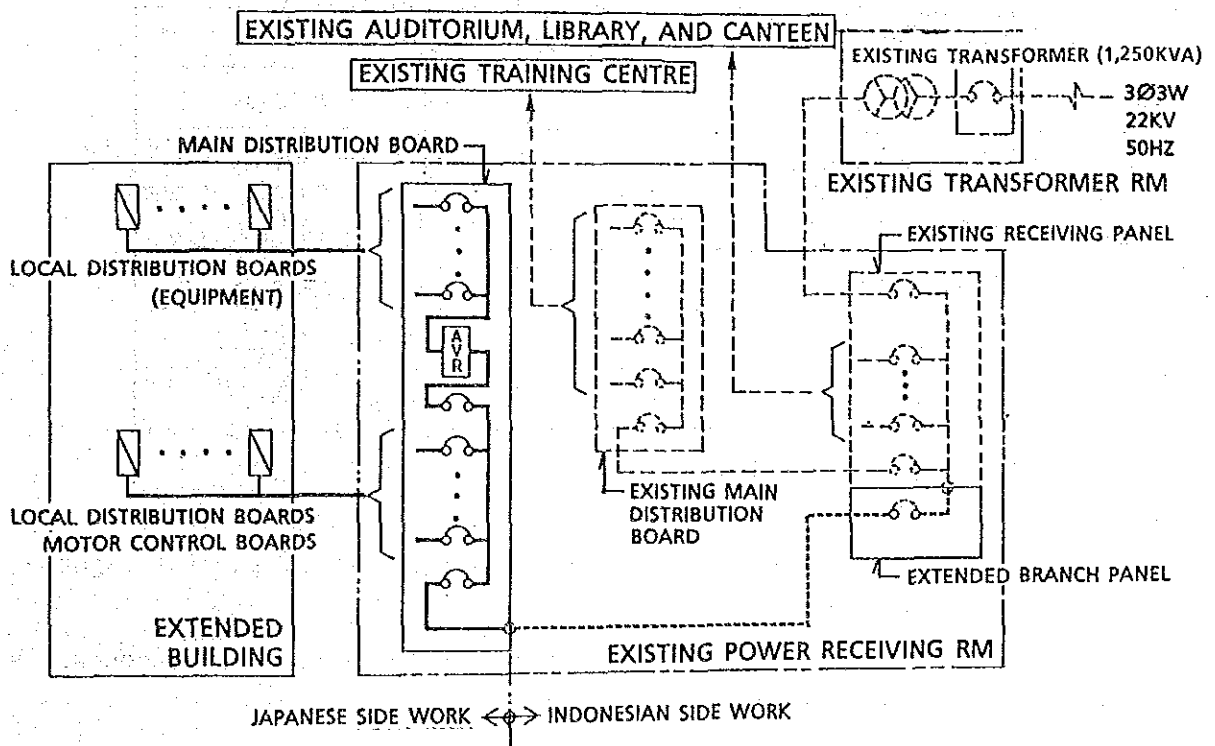


Fig. 4-3-5

b) Lighting System and Socket Outlets

As the light source for lighting, fluorescent lamps will mainly be used. Recessed-mounting type fixtures will be installed in the joint lecture room, programme-production training room, sub-control rooms and radio studio; surface-mounted or suspended type fixtures will be installed in other rooms. In the radio studio, the ballast will be installed outside the studio as a preventive measure against the noise from the fluorescent lamp ballast.

The target illumination level in each room is shown in Table 4-3-5.

Table 4-3-5 Target Illumination Level

Names of Rooms	Target Illumination Level
Video Editing Room	200 lux - 300 lux
ENG Equipment Maintenance Room	200 lux - 300 lux
Post-Production Room	200 lux - 300 lux
Sub-Control Rooms (Radio/TV)	200 lux - 300 lux
Radio Studio	200 lux - 300 lux
TV Studio	100 lux - 150 lux
Training Rooms and Classrooms	150 lux - 200 lux
Store	50 lux - 100 lux

Above the radio and TV sub-control consoles, partial lighting fixtures will be installed.

As for the plug sockets, the 2P+2E type, which is Indonesia's standard type, will be installed.

c) Telephone Piping

Piping for telephones will be installed in the proposed building, so that the extension telephones connected to the existing PABX may be installed in necessary rooms.

Increasing the capacity of the existing PABX and install the extension telephones shall be undertaken by the Indonesian side.

d) Fire Alarm System

Although Indonesia has no regulations concerning the installation of automatic fire alarms, the existing training facilities have an automatic fire alarm system. For the proposed facilities, too, an automatic fire alarm system will be installed for the purpose of ensuring early fire detection.

The fire alarm control panel will be installed in the existing PABX room where the existing fire alarm main control panel is installed.

e) Piping for Broadcasting Signal Cables

Piping to put through the cables for signals for broadcasting equipment and also the cables for studio lighting, ducts and racks will be provided.

f) Lightning Protection System

Lightning protection systems will be provided to protect the building and equipment from lightning damage.

2) Air-conditioning Facility Plan

An individual air-conditioning system using air-cooled air conditioners will be adopted, taking into consideration such advantages as ease of maintenance and operation and adaptability to equipment troubles.

a) Designed Air Conditions

[1] Design Outdoor Air Temperature

Temperature by dry-bulb thermometer 35°C (DB)

Temperature by wet-bulb thermometer 24.9°C (WB)

(Source: records of the Yogyakarta Meteorological Observatory/1989)

[2] Design Indoor Air Temperature (Target Values)

While the control target will be set for the design indoor air temperature, this will not be done for the humidity from the point of view of reducing the cost of operation of the air conditioners.

Temperature by dry-bulb thermometer 25°C (DB)

Temperature by wet-bulb thermometer (As it goes)

b) Air-conditioning System

Since noises may disturb activities of the TV studio, radio studio (both including the auxiliary rooms) and the joint

lecture room, the single-duct system using package-type air conditioners will be adopted. For other rooms, such as the training room, the individual system using air conditioners of an air-cooled split-type will be adopted.

Table 4-3-6 Air-conditioning Systems and Air-conditioned Rooms

Air-conditioning Systems	Air-conditioned Rooms
Single-duct system using an air-cooled package-type air conditioner	<ul style="list-style-type: none"> • TV studio, sub-control room, post-production room • Radio studio, sub-control room • Joint lecture room
Individual system using air-cooled split-type air-conditioners	<ul style="list-style-type: none"> • Radio frequency training room • Electric power training room • Language laboratory • Videotape Store • Electronics training room • Programme-production training room • Video editing room • ENG equipment maintenance room

c) Ventilating System

Mechanical ventilation equipment will be installed for the purpose of exhausting odors and heat and of ventilation for necessary rooms.

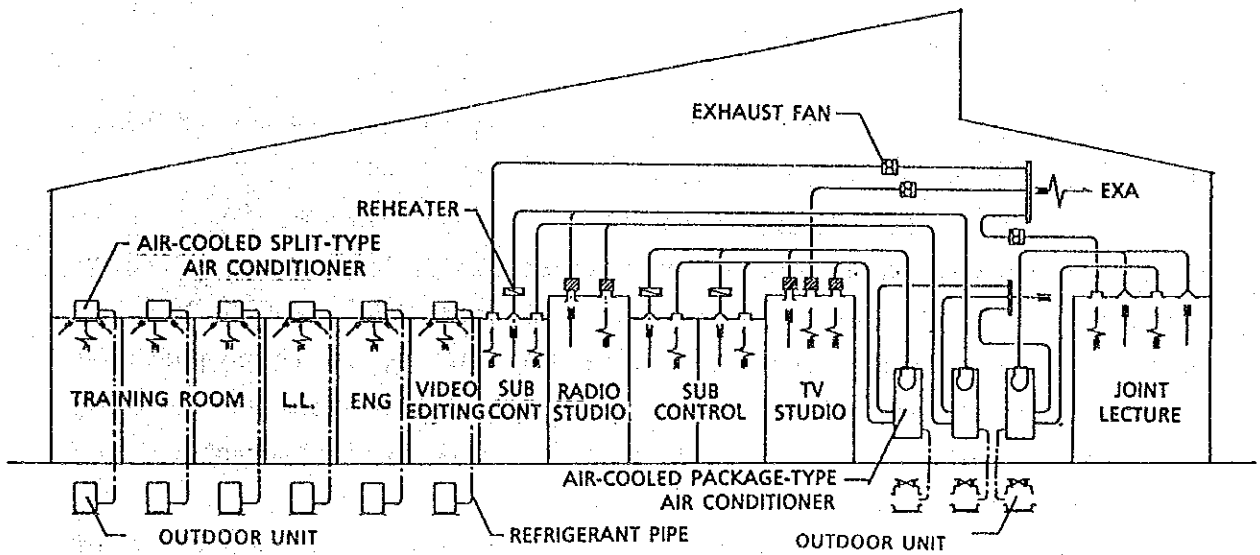


Fig. 4-3-6

3) Sanitary and Plumbing Facility Plan

a) Water Supply System

Within the construction site, there are a deep well, a water-reservoir and an elevated water tank, all of which are being used for supplying water to the existing facilities. Since the water quantity still has some surplus, it is proposed to newly install branch pipes from the existing main water-supply pipe for distributing water to rooms as required.

b) Drainage and Vent Piping System

Since there is no public sewerage in the areas surrounding the project site, the wastewater and drainage from the buildings, the same as in the case of the existing facilities, will be processed in the septic tank and the water thus treated will be allowed to permeate into the ground.

c) Sanitary Fixtures

Sanitary appliances which are suited to the customs of local life will be installed.

d) Fire Extinguishing System

Based on the Fire Services Act of Japan, the necessary indoor hydrant equipment will be installed. Since a fire pump is already installed in the existing Centre, it is proposed to newly install branch pipes to draw water from the existing piping and also to additionally install indoor hydrants.

(5) Material Plan

Building materials will be selected after detailed examinations of such factors as the required functions, the local construction situation, the planned period of construction, construction expenses and maintenance, and management costs. Since the use of locally procured materials is considered to facilitate maintenance and management of the facilities after completion, locally procured materials shall be selected as far as possible with regard to those materials for which there is no particular problem concerning price, quantity and method of supply, and performance.

1) Structural Materials

The main structural materials will be reinforced concrete which is commonly used in Indonesia and which also is the most reasonable structural material for the proposed facilities. As to cement, aggregate and reinforcing bars, local products will be

used.

The construction method generally adopted in Indonesia is that columns, beams and slabs are of reinforced concrete structure, while exterior walls are constructed either with concrete blocks or bricks. In the case of the exterior walls of the proposed facilities, reinforced concrete will be used in order to ensure optimum sound insulation, heat-insulation and waterproofing performances of the exterior walls.

2) Exterior Finish Materials

a) Roof

The roof consists of 5 layers, viz., the inclined concrete slab, the asphalt waterproofing felt, the polystyrene insulation, an airspace which would enable warm air to move without mechanical assistance and large slate roofing tiles. In order to minimize the wasted space in the attic, the pitch of the roof should be gentle. A gentle pitch requires a longer vertical overlap and high flashing performance; therefore, imported large slate roofing tiles will be used.

b) Exterior Walls

For the finish of exterior walls, Synthetic resin emulsion double-layer pattern sprayed tiles will be used, considering their waterproof quality. Compared with a paint finish or scraped finish, the urethane resin sprayed tile finish excels in durability and is weatherproof. So, there is little trouble in repairing or repainting and, therefore, this method of finish is advantageous from the point of view of maintenance and operation, too.

c) Doors and Windows

For exterior windows, aluminum sash will be used, as it excels in sound-insulation and air-tightness. For similar reasons, steel doors will be used for the exterior doors. Locally manufactured fittings will be used, except for the soundproof doors for the studios.

3) Interior Finish Materials

a) Floor

For the floors of the training rooms, vinyl tiles will be used because of their flexibility and also for ease in maintenance and operation. As for the TV and radio studios, vinyl sheet, which is generally used as flooring finish material for studios, will be used. As to the sub-control rooms and post-production room, the flooring will be an access floor which can accommodate cables under the floor and will be planned in such a way that the floor may be able to cope easily with changes in equipment layout in the future.

b) Walls

Considering architectural sound control, the walls for the studios, sub-control rooms and the joint lecture room should be sound-absorbing walls made of glass wool covered with perforated veneer. The walls of other rooms will be finished with paint on troweled mortar.

c) Ceiling

For sound control in the training rooms and classrooms, it is reasonable to finish the ceiling by providing a sound-absorbing surface. For this reason, the ceilings of the rooms should be finished with mineral acoustic tile and the ceiling height will be 2,800mm.

Table 4-3-7 Interior Finish Schedule

Room Names	Floors	Walls	Ceilings	Ceiling Height (mm)
Joint Lecture Room	Vinyl tile	Glasswool, perforated veneer	Mineral acoustic tile	4,000
Programme-Production Training Room	Vinyl tile	Mortar, paint	Mineral acoustic tile	2,800
Language Laboratory	Vinyl tile	Mortar, paint	Mineral acoustic tile	2,800
TV Studio	Vinyl sheet	Glasswool covered with glass cloth	Mineral acoustic tile	4,800
TV Sub-Control Room	Access floor	Glasswool, perforated veneer	Mineral acoustic tile	2,800
Storage	Concrete	Exposed concrete	Exposed concrete	-
Radio Studio	Vinyl sheet	Glasswool, perforated veneer	Glasswool, perforated veneer	3,000
Radio Sub-Control Room	Access floor	Glasswool, perforated veneer	Mineral acoustic tile	2,800
Post-production Room	Access floor	Glasswool, perforated veneer	Mineral acoustic tile	2,800
Video Editing Room	Vinyl tile	Mortar, paint	Mineral acoustic tile	2,800
ENG Equipment Maintenance Room	Vinyl tile	Mortar, paint	Mineral acoustic tile	2,800
Videotape Storeroom	Vinyl tile	Mortar, paint	Decorative gypsum board	2,800
Electronics Training Room	Vinyl tile	Mortar, paint	Mineral acoustic tile	2,800
Radio Frequency Training Room	Vinyl tile	Mortar, paint	Mineral acoustic tile	2,800
Electric Power Training Room	Epoxy resin	Mortar, paint	Mineral acoustic tile	2,800
Toilets	Ceramic tile	Ceramic tile	Decorative gypsum board	2,500
Corridor	Vinyl tile	Mortar, paint	Wooden ceiling panel	2,500

4-3-3 Equipment Plan

The objective of the Equipment Plan is to reinforce and augment the training equipment, which become necessary as the training plans mentioned in CHAPTER 3 are being implemented, based on the premises that the equipment to be newly provided under the Project will be used integrally with the existing equipment.

In designing this Equipment Plan, effort was made in particular to ensure quantitative augmentation of the basic training equipment. And with regard to the training equipment for use in the practical training in programme production, emphasis has been placed on the completeness and universality of the entire set-up as a system, in compensation for the arrangement to confine the specifications of the equipment provided to a basic level. The following are the lists of equipment to be provided to each room and the reasons for the selections made.

(1) Joint Lecture Room

The Joint Lecture Room with a capacity of 120 persons will be provided with various units of equipment needed to conduct audio-visual education and the auditioning, evaluation and analysis of the programmes produced by the trainees. As the room is connected by lines with the master control room, extensive uses can be made of the major existing resources.

DI, DII, DIII:

This facility will be used for Religion, State Ideology, Citizenship, Indonesian Language, public relations and demonstrations to the public.

Equipment item	Specification	Qty.
1) Visual Aid System Video Projection Stand PAL VTR	public standard	1 set
2) Projection System Video Projector Cassette VTR 200-inch Projection Screen	higher public standard	1 set
3) PA System Audio Mixer Power Amplifier/Speaker System Cassette Tape Recorder Microphone	“	1 set

(2) Programme-Production Training Room

A VTR will be installed for retrieval and auditioning of library tapes, programme-material tapes and work copies.

DI: This facility will be used for Programme Compilation Planning, Programme Lines Production, News and Current Affairs Reporting and Studio and Master Control Technical Operation.

DII: This facility will be used for Broadcasting Programme Planning, Programme Package Production, Broadcast Journalism and Script/Story Writing.

DIII: This facility will be used for Programme Production, Scenario and Storyboard Writing.

Equipment item	Specification	Qty.
1) 20-inch Colour Monitors VHS Cassette Tape Recorder (adaptable to 4 systems)	public standard	3 sets

(3) Language Laboratory

The LL installation will be provided for exclusive use by this room which accommodates a class consisting of a maximum of 24 persons (D-I course).

DI, DII, DIII:

This facility will be exclusively used for each course's English lesson.

Equipment item	Specification	Qty.
1) LL System	public standard	1 set

(4) TV Studio

This small studio fit for production of such types of programmes as news shows or dialogue programmes will be provided with various units of equipment that can be used flexibly and universally.

DI: This facility will be used for Programme Lines Production, News and Current Affairs Reporting, Studio and Master Control Technical Operation and Programme Compilation Planning.

DII: This facility will be used for Broadcast Journalism, Studio Production Technics, Broadcasting Programme Planning and Script/Story Writing.

DIII: This facility will be used for Programme Production, Apparatus Engineering and Scenario and Storyboard Writing.

Equipment item	Specification	Qty.
1) Studio Cameras (CCD type) (Camera, CCU, zoom lens, tripod-dolly, view-finder, camera cables, VTR for ENG)	broadcasting standard	3 sets
2) Character Generator	"/	1
3) Video Switcher (1MK, over 8 inputs, chroma-key, wipe, with downstream circuit)	"/	1 set
4) Video Monitor	"/	1 set
5) VE Monitor (WFM, VSC, high-resolution colour monitor)	"/	1 set
6) 1/2-inch Component VTR (with a monitor)	"/	2
7) Audio Mixer (over 12 inputs)	"/	1
8) Sync Signal Generator	"/	1 set
9) Tape-recording Player	"/	1
10) Cassette Tape Recorder	"/	1
11) Compact Disc Player	higher public standard	1
12) Microphones (condenser, dynamic)	broadcasting standard	7
13) Microphone Stands (High × 2, Medium × 3)	"/	5
14) Boom Stand	"/	1

Equipment item	Specification	Qty.
15) Audio Monitor (for studio, sub-control room; for stereo)	broadcasting standard	1 set
16) Intercommunication System	“	1 set
17) Headset	“	1 set
18) Studio Lighting Equipment <ul style="list-style-type: none"> • 2kW, 16-Ch., dimmer 1 set • 2kW, 1kW, spotlights 7 each • 1.6kW floodlights 10 • 0.5kW cyclorama lights 20 • Telescopic hangers 15 	“	1 set
19) Video/Audio Distributor	“	1 set
20) Rack, Console, Monitor Shelf	public standard	1 set
21) Installation Materials	“	1 set

(5) Radio Studio

A set of audio-dubbing equipment will be installed in the studio sub-control room for use in practical training on the dubbing and editing of the voices of the programmes and video-editing in the Post-production Room.

DI: This facility will be used for News and Current Affairs Reporting and Studio and Master Control Technical Operation.

DII: This facility will be used for Programme Package Production.

DIII: This facility will be used for Programme Production, Apparatus Engineering and Scenario and Storyboard Writing.

Equipment item	Specification	Qty.
1) Audio Mixer (over 16 inputs)	broadcasting standard	1
2) 1/2-inch Component VTR (with a monitor) (for dubbing)	"	1
3) Tape Synchronizer	"	1
4) Tape Player (2-Ch., with remote control)	"	1
5) 8-Ch. Tape Player (with remote control)	"	1
6) Cassette Tape Player	"	1
7) Compact Disc Player	higher public standard	1
8) Audio Effector	broadcasting standard	1 set
9) Microphones (condenser, unidirectional type)	"	3
10) Microphone Stand (Medium-height)	"	3
11) 27-inch Colour Monitor	"	1
12) Audio Monitor (for stereo)	"	1 set
13) Headphone	"	1 set
14) Rack and Console	public standard	1 set
15) Installation Materials	"	1 set
16) Recorded Tape Materials	"	1 set

(6) Post-production Room

This room will be so equipped as to enable the enhancing of the completeness of the programmes by inserting letters or adding special video effects. Through such processing work which is conducted while the programme materials recorded either in the studio or outdoors are edited, complete programmes in VTR will be produced by the trainees in this room.

DII: This facility will be used for Programme Package Production, Studio Production Technics and Broadcast Journalism.

DIII: This facility will be used for Apparatus Engineering and Programme Production.

Equipment item	Specification	Qty.
1) Video Switcher (1MK, over 8 inputs, chroma-key, wipe, with downstream circuit, and with VTR editor control)	broadcasting standard	1 set
2) 1/2-inch Component VTR (with DT)	"/	3
3) Editors (with controller and monitor)	"/	1
4) Audio Mixer (12 inputs)	"/	1
5) Video Monitor (WFM, USC, CM x 8)	"/	1
6) Character Generator	"/	1 set
7) Digital Video Effector	"/	1 set
8) Video/Audio Distributor	"/	1 set
9) Tape Player	"/	1
10) Cassette Tape Player	public standard	1
11) Compact Disc Player	"/	1
12) Audio Monitor (for stereo)	broadcasting standard	1 set
13) Rack, Console, Monitor Shelf	public standard	1 set
14) VTR and Tape Materials	"/	1 set

(7) Video Editing Room

DI: This facility will be used for Programme Production, News and Current Affairs Reporting, Programme Compilation Planning and Studio and Master Control Technical Operation.

DII: This facility will be used for Programme Package Production, Broadcast Journalism and Broadcast Programme Planning.

DIII: This facility will be used for Programme Production and Apparatus Engineering.

Equipment item	Specification	Qty.
1) 1/2-inch Component VTR Editing Systems	broadcasting standard	5 sets
• VTR Player		5
• Videotape Recorder		5
• 9-inch Monitors		10
• Simple Editors (with console)		5

(8) ENG Equipment Maintenance Room

This room is for use in conducting practical training in maintenance and repair of ENG equipment and also as a storeroom for ENG equipment.

DI: This facility will be used for Programme Lines Production, News and Current Affairs Reporting, Programme Compilation Planning and Studio and Master Control Technical Operation.

DII: This facility will be used for Studio Production Technics, Programme Package Production and Broadcast Journalism.

DIII: This facility will be used for Apparatus Engineering and Programme Production.

Equipment item	Specification	Qty.
1) 1/2-inch Cameras (with built-in VTR)	broadcasting standard	2 sets
• Tripods		2
• Portable Audio Recording Sets		2 sets
• Portable Lighting Sets		2 sets
• Portable battery-run Lighting Sets		2 sets
2) Battery Chargers	higher public standard	2 sets

(9) Electronics Training Room

This room will be provided with practical-training equipment and measuring instruments, so that the trainees may systematically study electronics and digital technology from the basics to application.

DI: This facility will be used for Transmission Operation and Studio and Master Control Technical Operation.

DII: This facility will be used for Programme Package Production, Transmission Technics and Studio Production Technics.

DIII: This facility will be used for Apparatus Engineering.

Equipment item	Specification	Qty.
1) Equipment for practical-training use in electronic circuitry and digital circuitry: a) Basic electric and electronic circuits b) Circuits for measurement of static characteristics of semiconductors c) Amplifier circuits for low and high frequencies d) Amplifier circuits e) Wide-band amplifier circuits f) Oscillation circuits g) Pulse circuits h) AM transmission/reception circuits i) FM modulation/demodulation circuits j) FM modulation/demodulation circuits k) Power source using semiconductor l) Logical basic circuits m) Logical circuits	public standard	12 sets 4 sets 4 sets 2 sets 3 sets 3 sets 3 sets 4 sets 2 sets 2 sets 6 sets 2 sets 2 sets
2) Measuring Instruments for Practical-training Use a) Oscilloscopes b) Low-frequency oscillators c) Testers d) Sweep-marker oscillators e) Distortion meters f) Signal oscillators g) Millivoltmeters h) Meters (mA) i) Meters (μ A) j) Frequency counters	public standard	12 12 12 6 4 4 12 12 12 6
3) Audio-Visual Training Equipment a) Open reel ATR b) Television monitor	public standard	2 6

(10) Radio Frequency Training Room

DI: This facility will be used for Transmission Operation and Studio and Master Control Technical Operation.

DII: This facility will be used for Programme Package Production, Transmission Technics, Broadcasting Programme Planning and Studio Production Technics.

DIII: This facility will be used for Apparatus Engineering.

Equipment item	Specification	Qty.
1) 1kW VHF TV Transmitter (input device, dummy load, monitor)	broadcasting standard	1 set
2) VITS Generator/Inserter	"	1 set
3) Envelope Delay Measuring Instrument	"	1 set
4) Colour Gain and Delay Test Set	"	1 set
5) Field Strength Meter (150-10MHz)	"	1 set
6) Field Strength Meter (500k-300MHz)	"	1 set
7) TV Monitors	public standard	2 sets
8) Microwave Experiment Equipment	"	2 sets
9) Audio Spectrum Analyzer	broadcasting standard	1

(11) Electric Power Training Room

DI: This facility will be used for Transmission Operation and Studio and Master Control Technical Operation.

DII: This facility will be used for Transmission Technics, Programme Package Production and Studio Production Technics.

DIII: This facility will be used for Apparatus Engineering.

Equipment item	Specification	Qty.
1) Power Board (Input: 3-phase, 380V, 50Hz) (Output: 6 circuits, 10kVA)	public standard	2 sets
2) Diesel Generators (Output: 4.5kVA, AC 3-phase, 380V, 50Hz) (with a charger and battery)	"	2 sets
3) Motor Generators a) AC-DC generator • Motor (AC 3-phase, 4 wire, 380V, 50Hz, 3.7kW induction motor) • Generator (DC 100V, 2kW) b) DC-AC generator • Motor (DC 100V, 2.2kW) • Generator (AC 3-phase, 380V, 50Hz, 2kVA)	"	2 sets
4) Transformers a) Single-phase isolation type (1kVA 220/100V, 50Hz) b) Single-phase auto type (1kVA 220/100V, 50Hz) c) 3-phase isolation type (3kVA, 50Hz Primary: 380V 4-wire type) (3kVA, 50Hz Secondary: 220/380V)	"	2 sets
5) Motors a) AC Single-phase induction motor (AC 220V 50Hz, 3 types 200-400W) • Condenser-start type • Repulsion-start type • Phase-splitting type	"	2 sets

Equipment item	Specification	Qty.
6) Dummy Load (100V/220V, DC & AC Max. 2kW, bulb or resistance type)	public standard	2 sets
7) Meters (AC, DC, various types of voltammeters)	"	2 sets

(12) Others

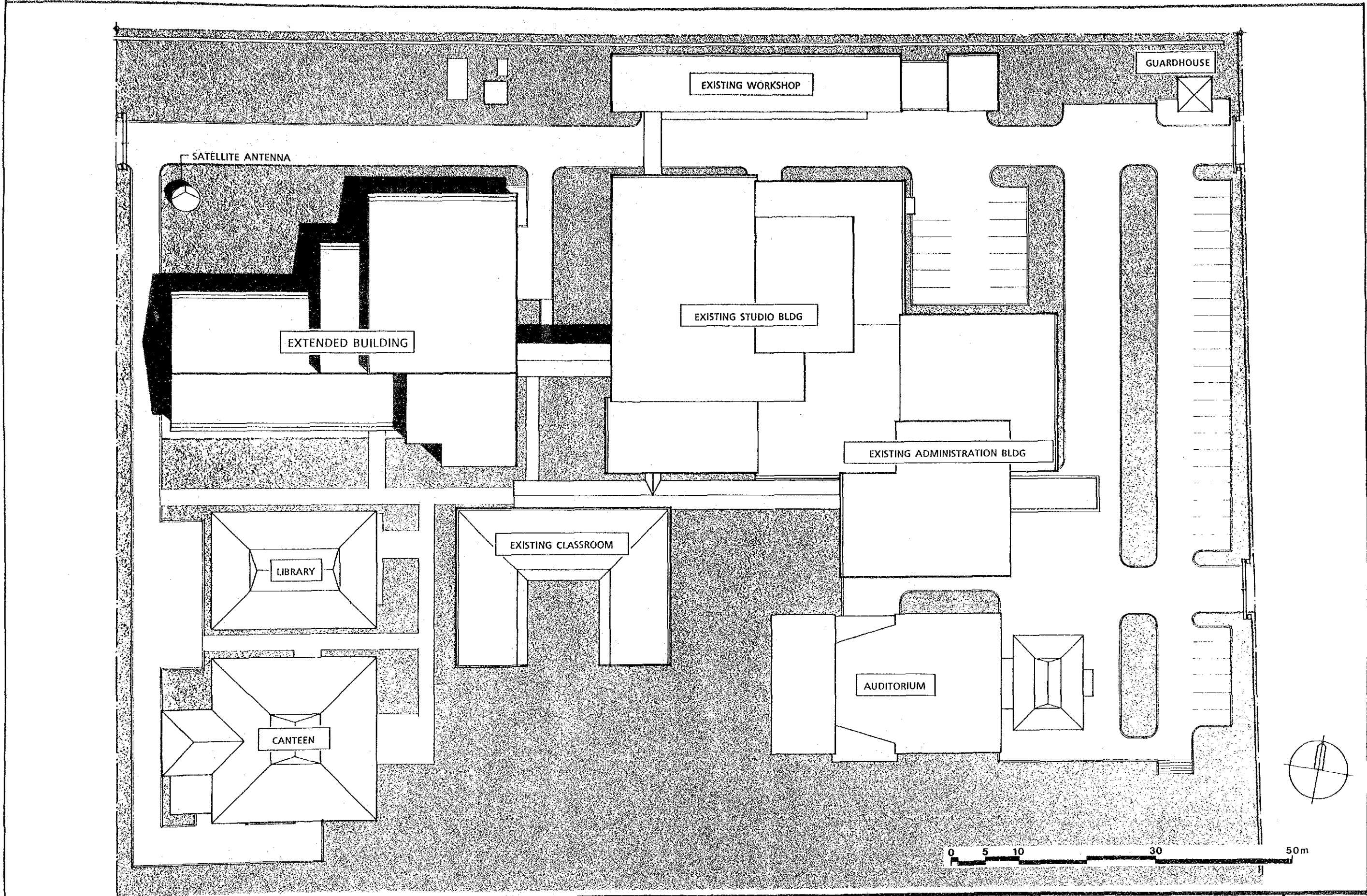
The training equipment and installations to be locally procured, manufactured or constructed are as follows:

Equipment item	Specification	Qty.
1) Satellite-broadcast Reception Equipment <ul style="list-style-type: none"> • 12-foot parabolic antenna • Receiver, remote control device • Foundation work, antenna tower, installation work 	public standard	1 set
2) Furniture and Fittings for the Training Rooms <ul style="list-style-type: none"> • Training tables (3 types) • Chairs (3 types) • Cupboards 	"	1 set

4-3-4 Basic Design Drawings

(1) Basic Design Drawings

- Fig. 4-3- 8 Site Plan
- Fig. 4-3- 9 Ground Floor Plan
- Fig. 4-3-10 Ground Floor Plan for the Entire Facility
- Fig. 4-3-11 Elevation
- Fig. 4-3-12 Section
- Fig. 4-3-13 Block Diagram of TV Studio
- Fig. 4-3-14 Block Diagram of Radio Studio
- Fig. 4-3-15 Block Diagram of Post-Production Room
- Fig. 4-3-16 Layout of Lighting Equipment
- Fig. 4-3-17 Layout of TV Studio Sub-Control Room and Post-Production Room
- Fig. 4-3-18 Layout of Radio Studio Sub-Control Room
- Fig. 4-3-19 Layout of Video Editing Room
- Fig. 4-3-20 Layout of Electronics Training Room
- Fig. 4-3-21 Layout of Radio Frequency Training Room
- Fig. 4-3-22 Layout of Electric Power Training Room
- Fig. 4-3-23 Layout of ENG Equipment Maintenance Room

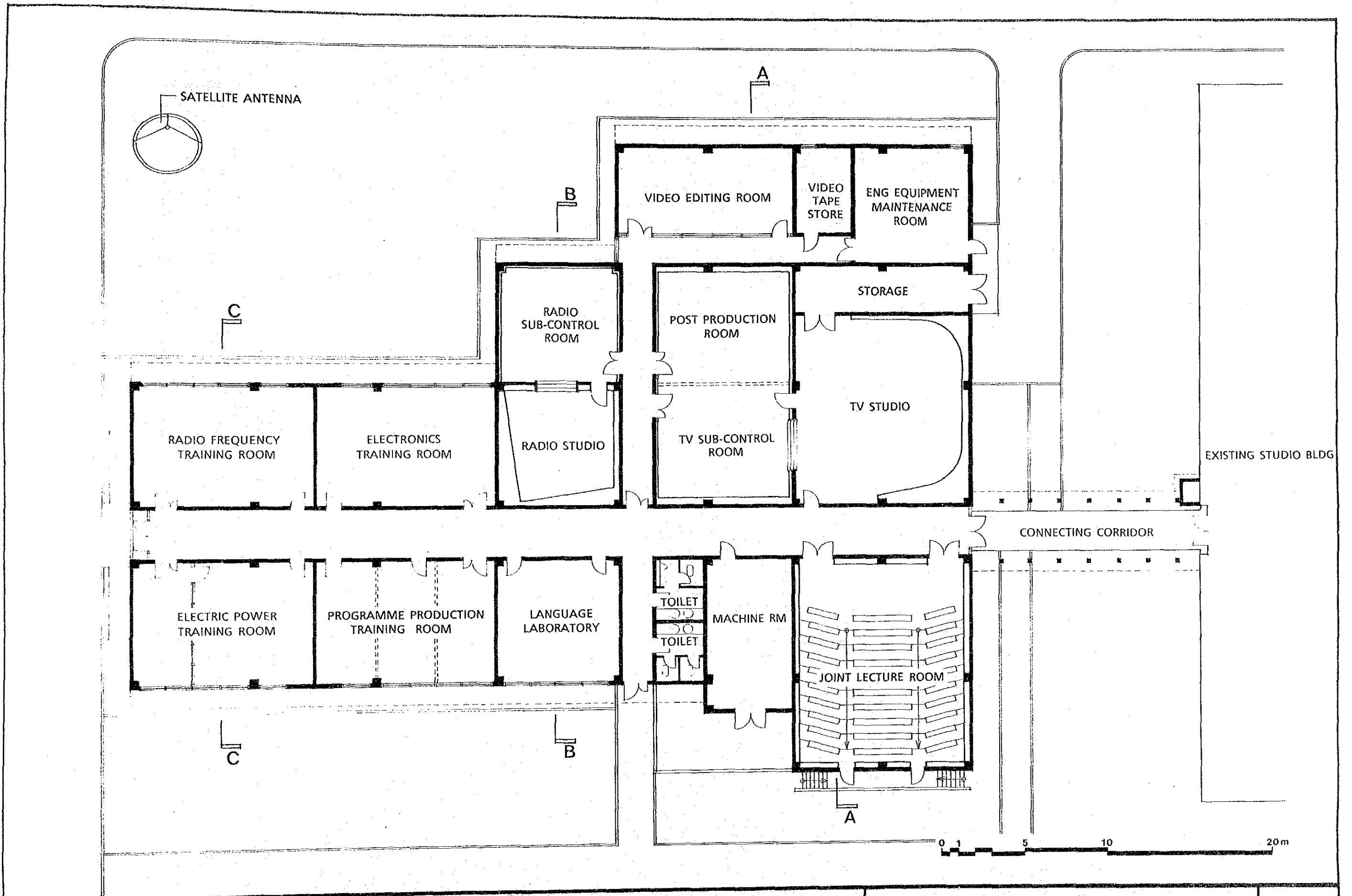


THE BASIC DESIGN STUDY ON THE SUPPLEMENT PROJECT FOR THE RADIO AND TELEVISION TRAINING CENTRE IN YOGYAKARTA

Fig. 4-3-8

SITE PLAN

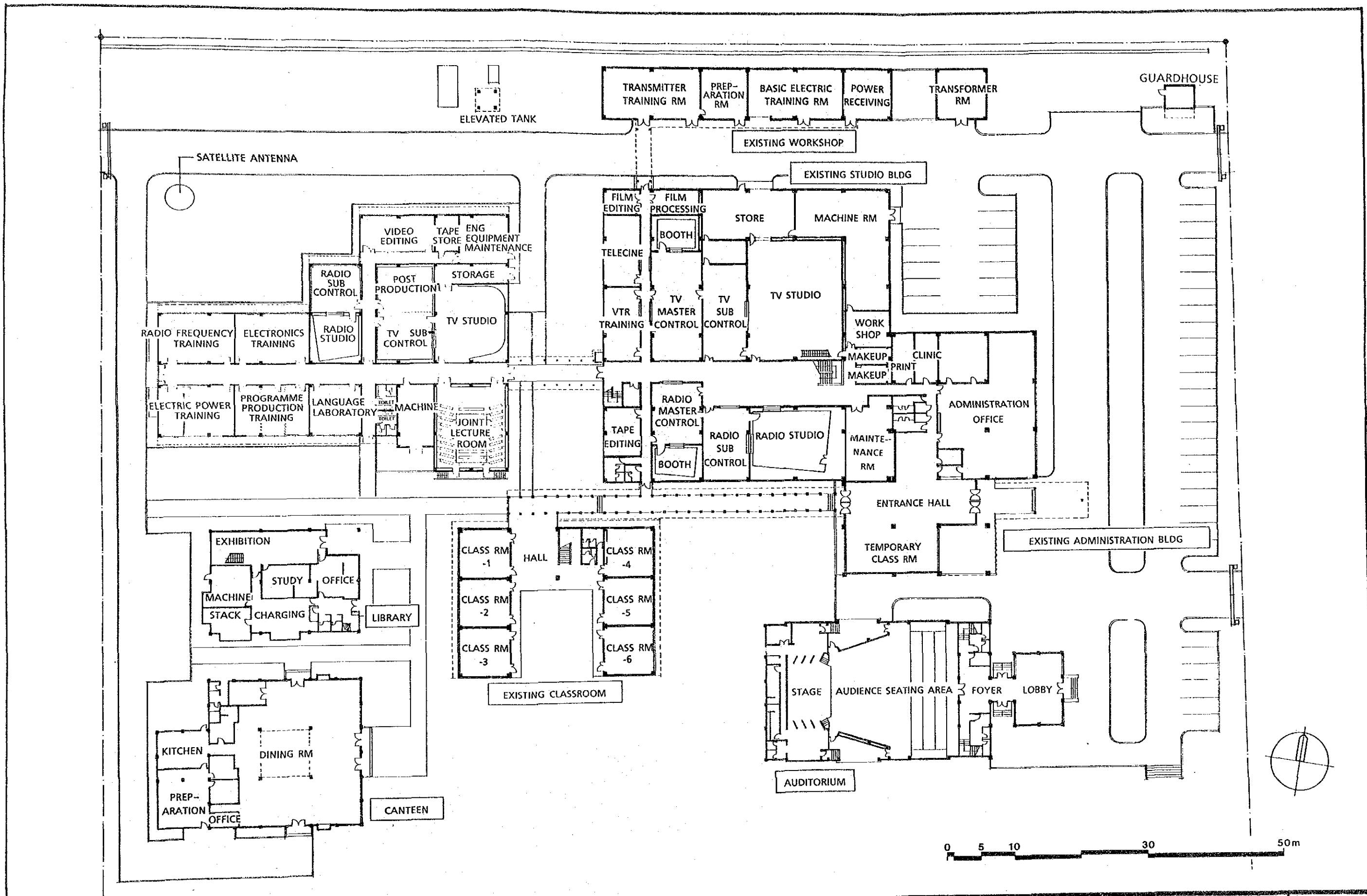
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THE BASIC DESIGN STUDY ON THE SUPPLEMENT PROJECT FOR THE RADIO AND TELEVISION TRAINING CENTRE IN YOGYAKARTA

Fig. 4-3-9

GROUND FLOOR PLAN 1:200

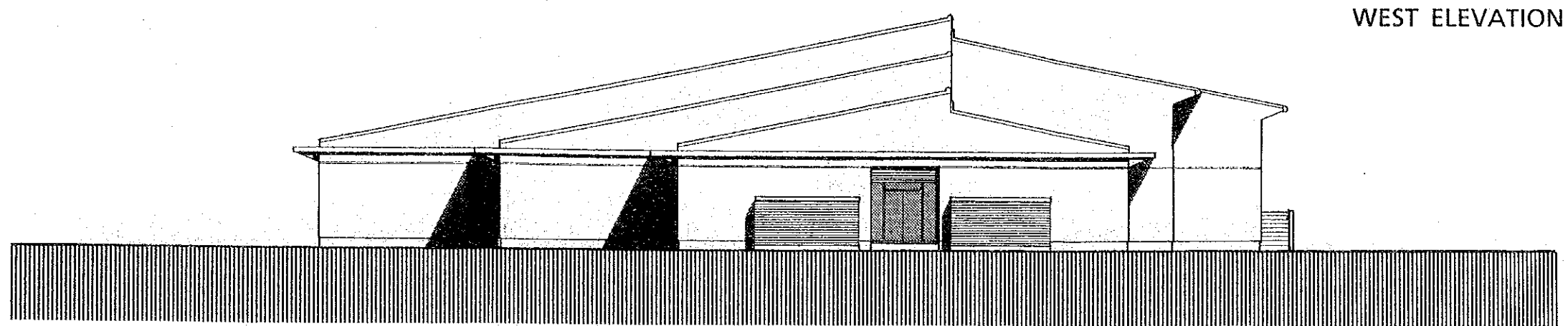


THE BASIC DESIGN STUDY ON THE SUPPLEMENT PROJECT FOR THE RADIO AND TELEVISION TRAINING CENTRE IN YOGYAKARTA

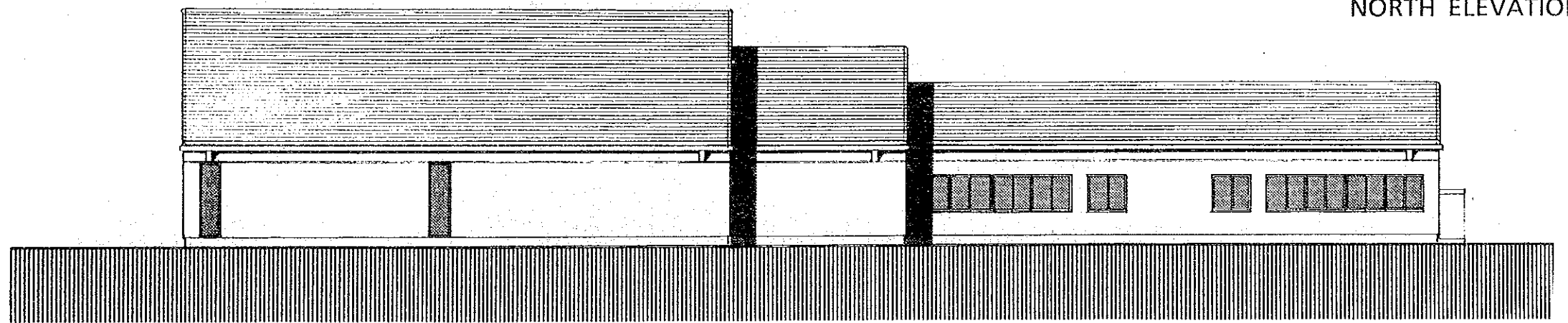
Fig. 4-3-10

GROUND FLOOR PLAN

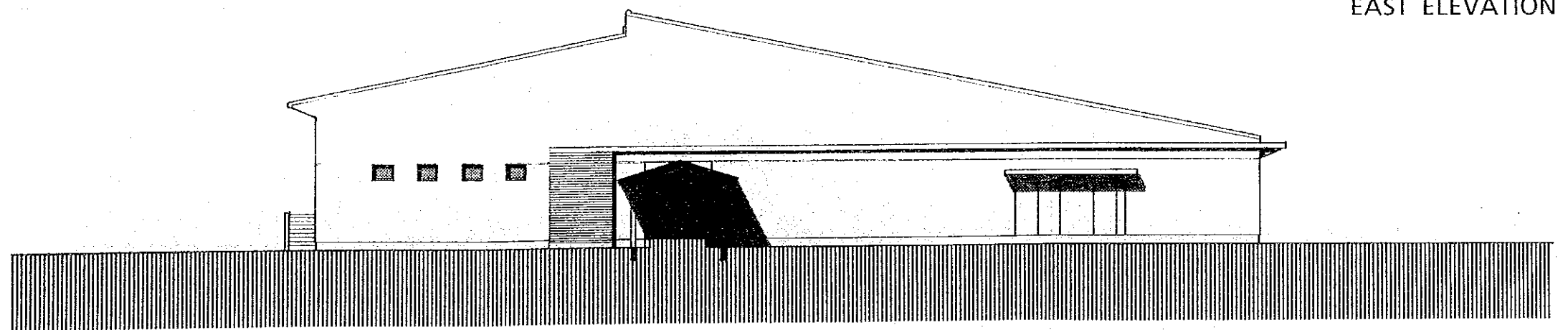
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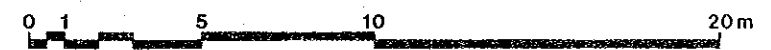
WEST ELEVATION



NORTH ELEVATION



EAST ELEVATION

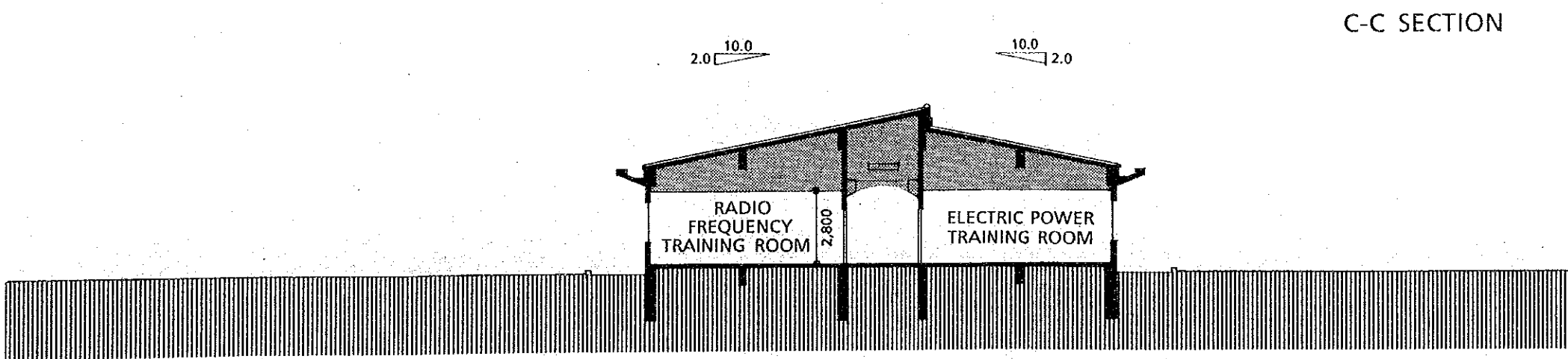
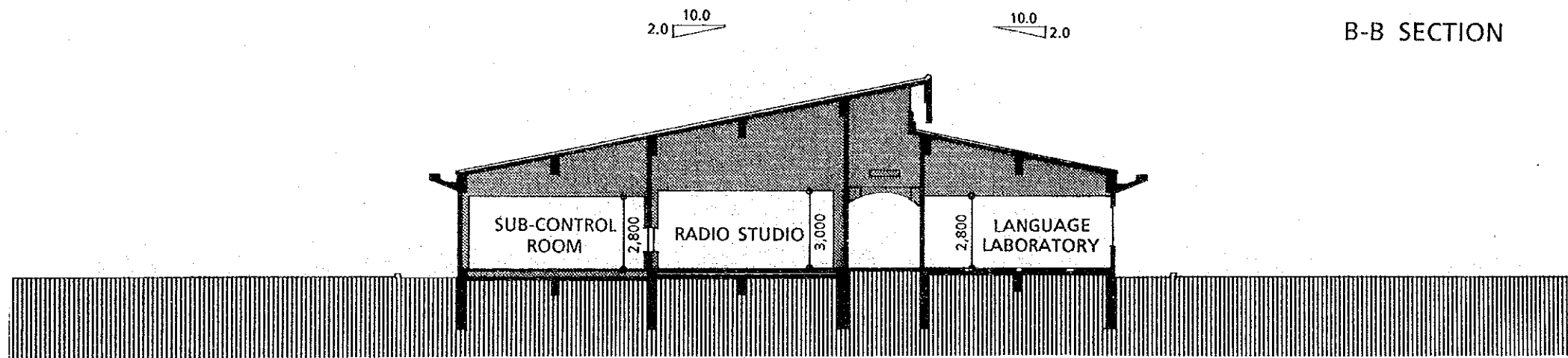
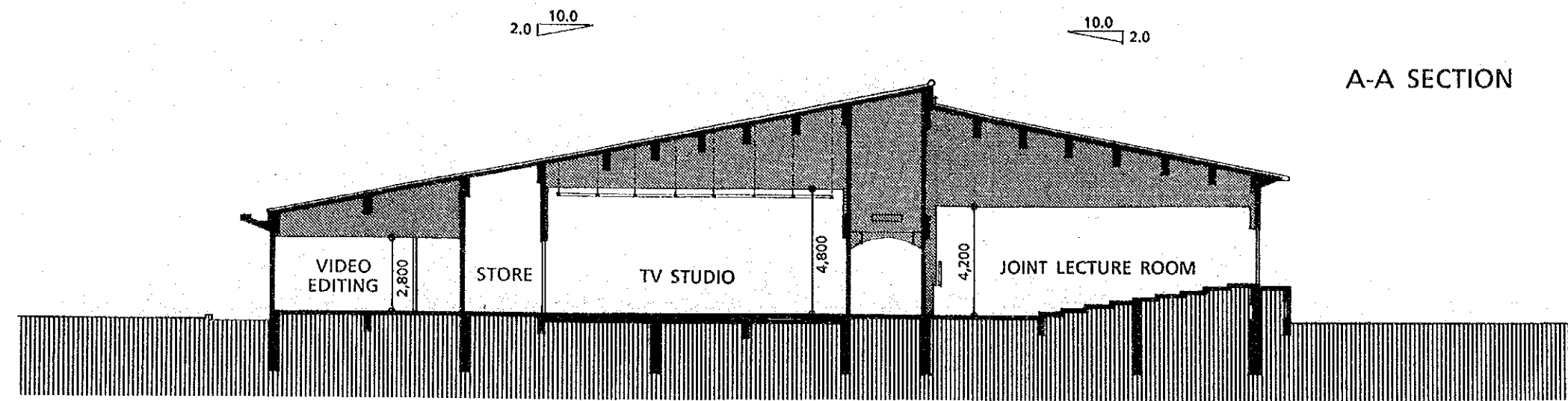


THE BASIC DESIGN STUDY ON THE SUPPLEMENT PROJECT FOR
THE RADIO AND TELEVISION TRAINING CENTRE IN YOGYAKARTA

Fig. 4-3-11

ELEVATION

1:200

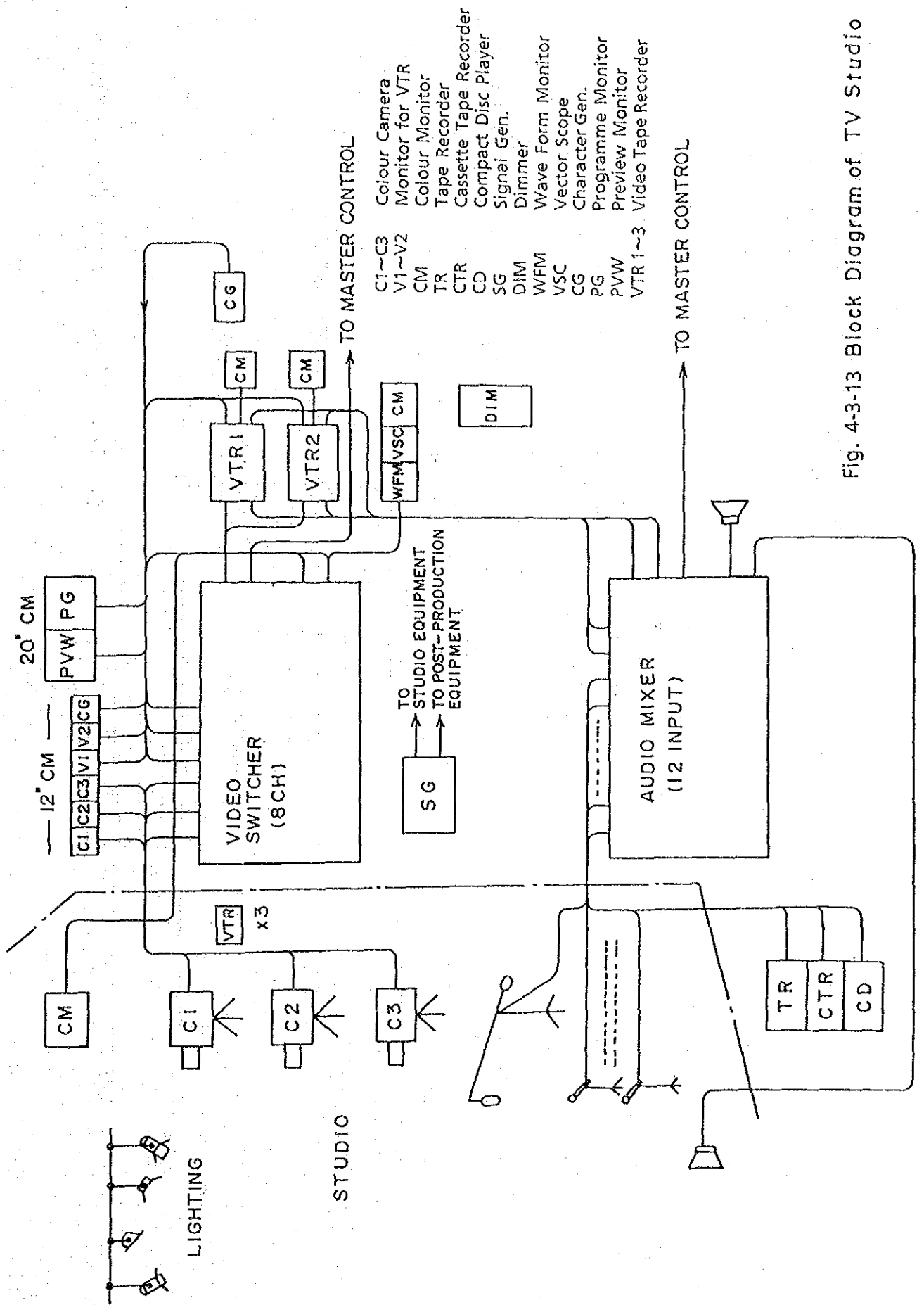


THE BASIC DESIGN STUDY ON THE SUPPLEMENT PROJECT FOR
THE RADIO AND TELEVISION TRAINING CENTRE IN YOGYAKARTA

Fig. 4-3-12

SECTION

1:200



- C1-C3 Colour Camera
- V1-V2 Monitor for VTR
- CM Colour Monitor
- TR Tape Recorder
- CTR Cassette Tape Recorder
- CD Compact Disc Player
- SG Signal Gen.
- DIM Dimmer
- WFM Wave Form Monitor
- VSC Vector Scope
- CG Character Gen.
- PG Programme Monitor
- PVW Preview Monitor
- VTR 1~3 Video Tape Recorder

Fig. 4-3-13 Block Diagram of TV Studio

- CM Colour Monitor
- TR Tape Recorder
- CTR Cassette Tape Recorder
- CD Compact Disc Player
- TS Tape Synchronizer
- MTR Multi-Tape Recorder

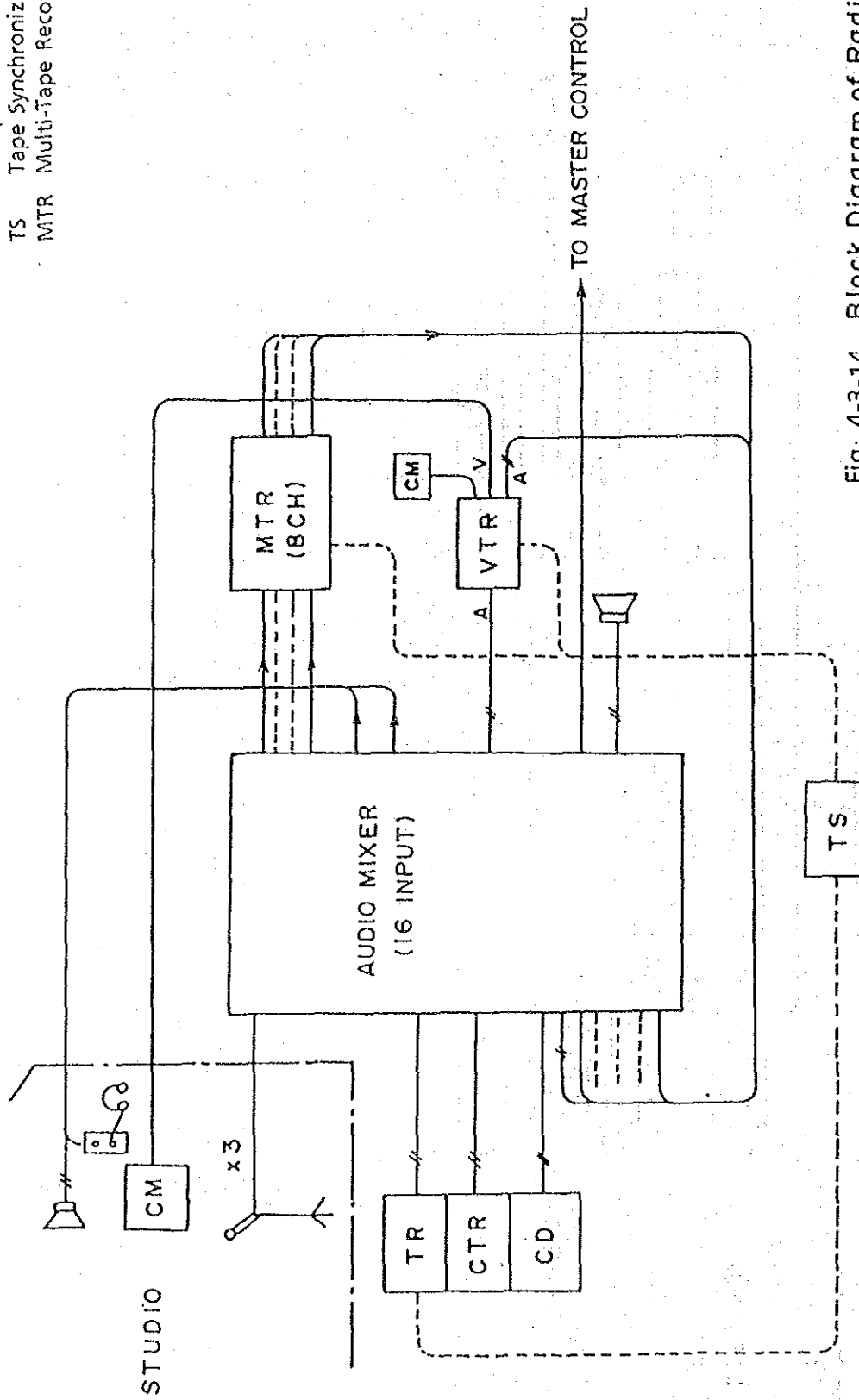
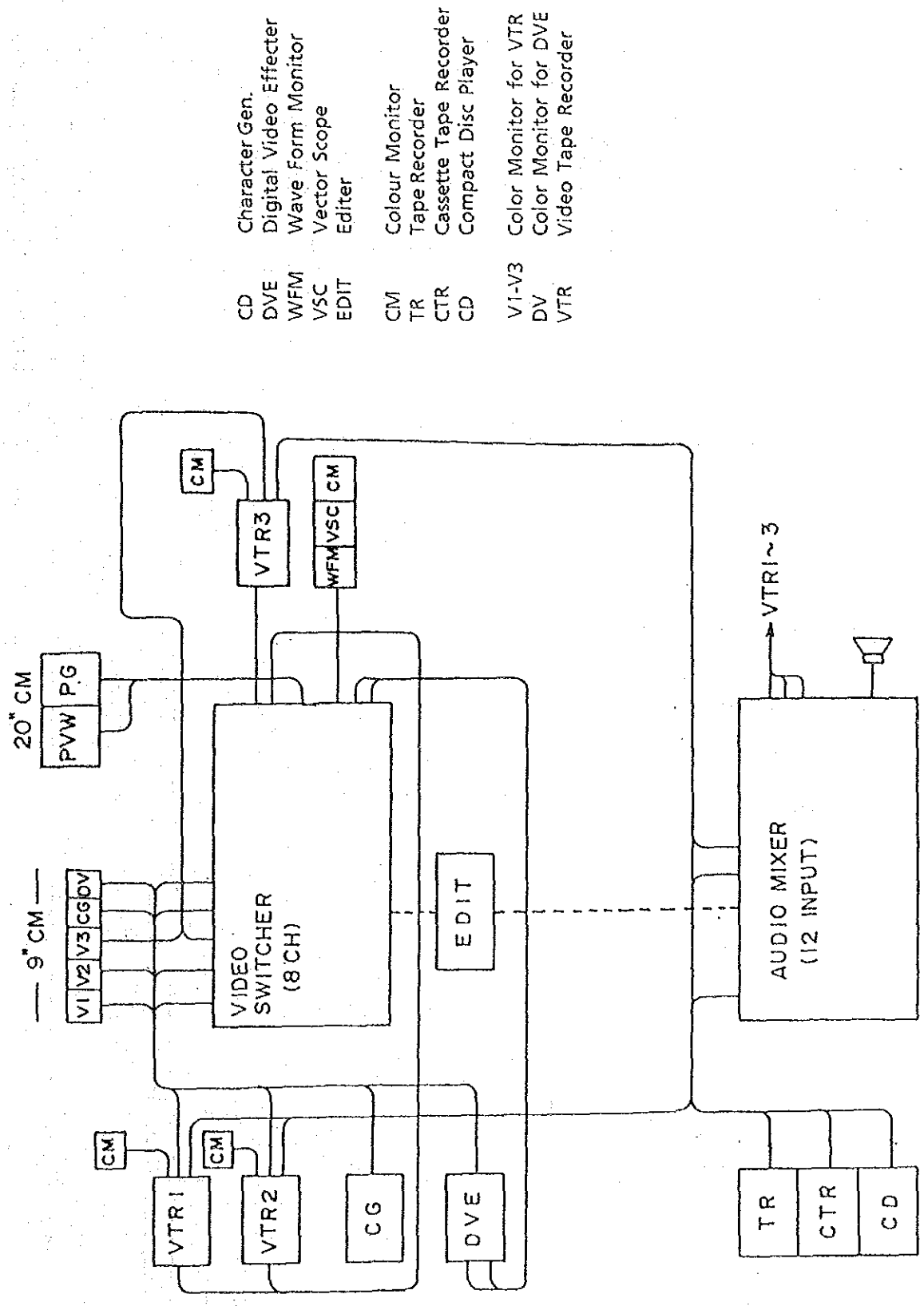


Fig: 4-3-14 Block Diagram of Radio Studio



- CD Character Gen.
- DVE Digital Video Effector
- WFM Wave Form Monitor
- VSC Vector Scope
- EDIT Editer
- CM Colour Monitor
- TR Tape Recorder
- CTR Cassette Tape Recorder
- CD Compact Disc Player
- V1-V3 Color Monitor for VTR
- DV Color Monitor for DVE
- VTR Video Tape Recorder

Fig. 4-3-15 Block Diagram of Post-Production Room

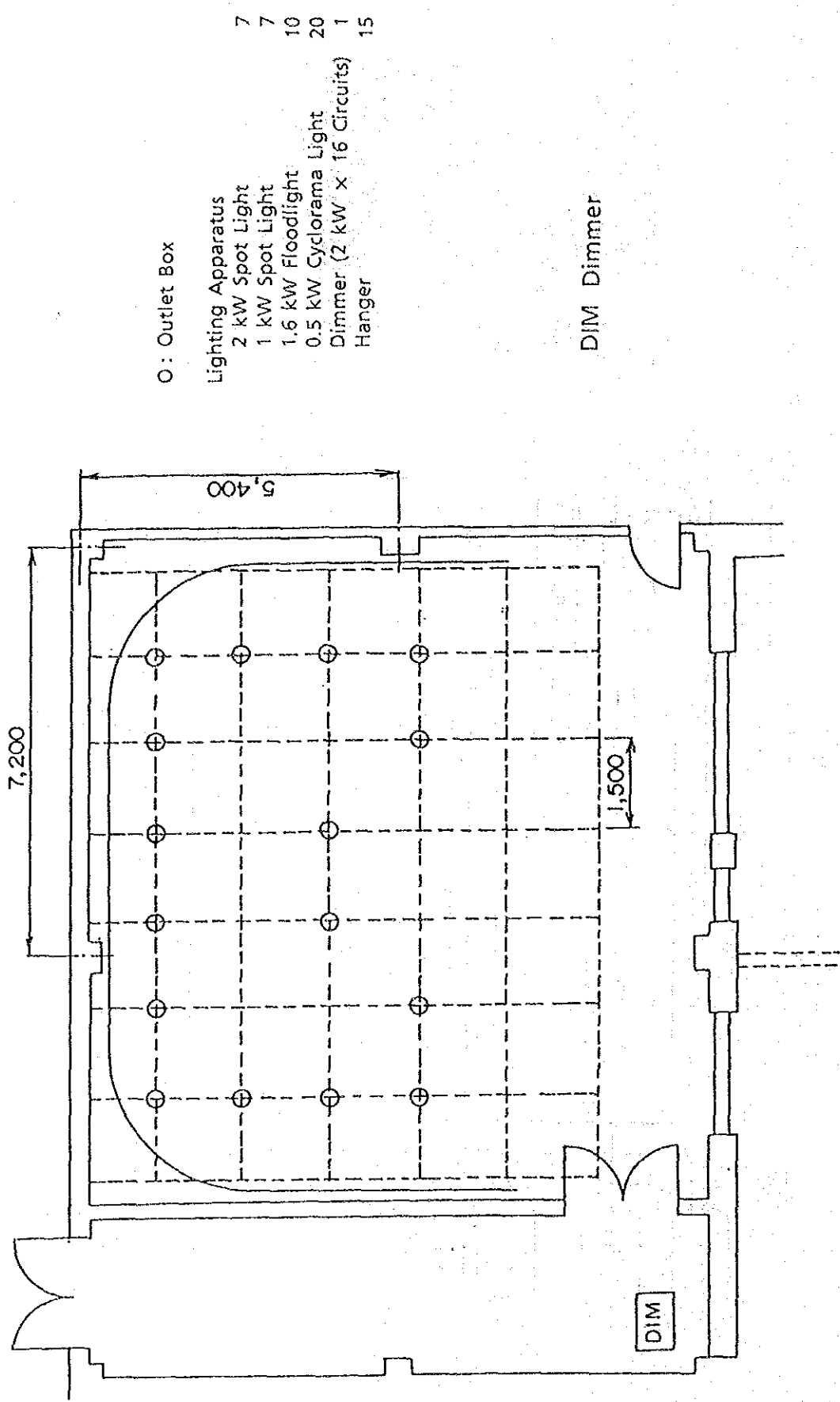


Fig. 4-3-16 Layout of Lighting Equipment

- DIM Dimmer
- CTR Cassette Tape Recorder
- TR Tape Recorder
- VTR Video Tape Recorder

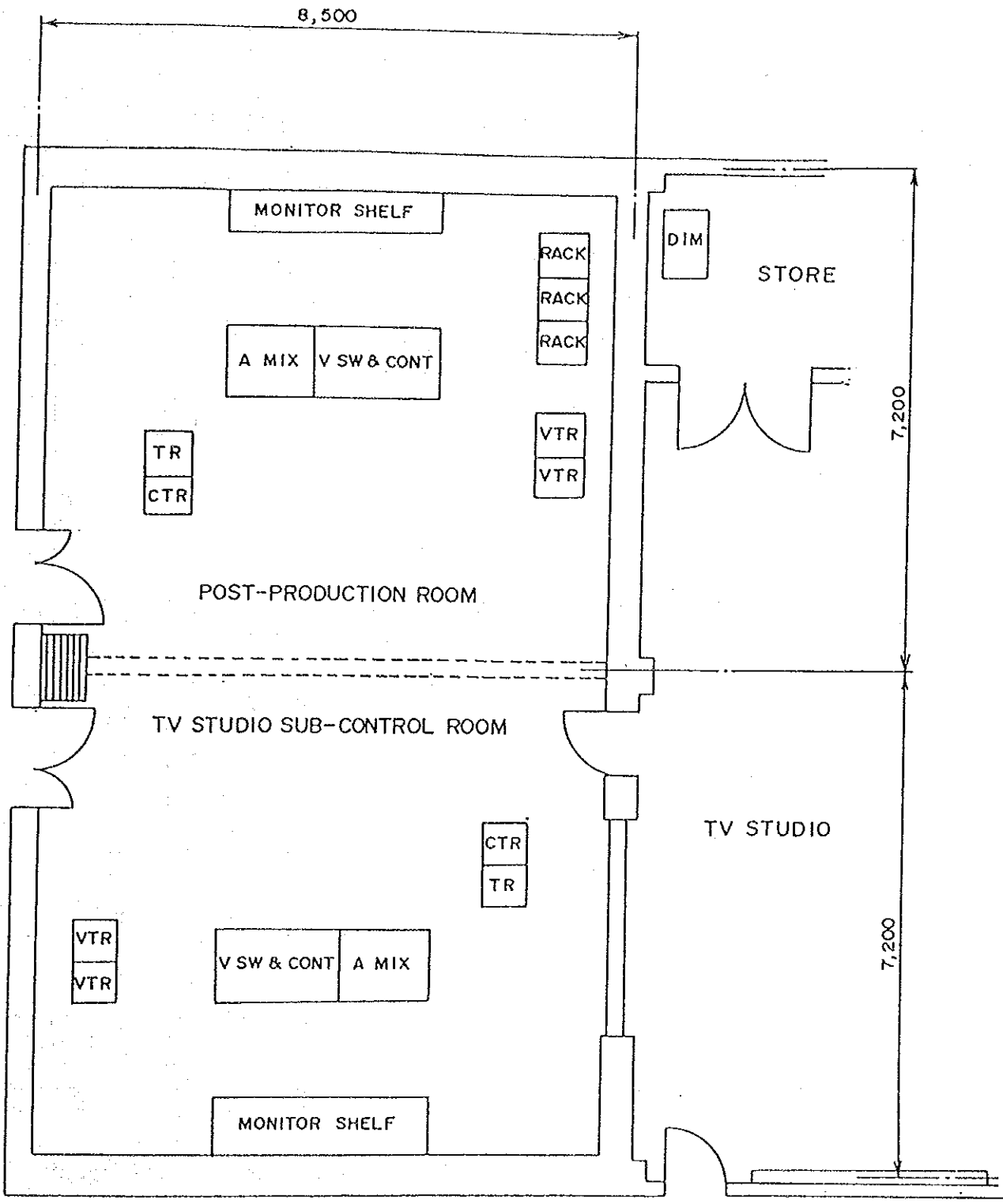


Fig. 4-3-17 Layout of TV Studio Sub - Control Room and Post - Production Room

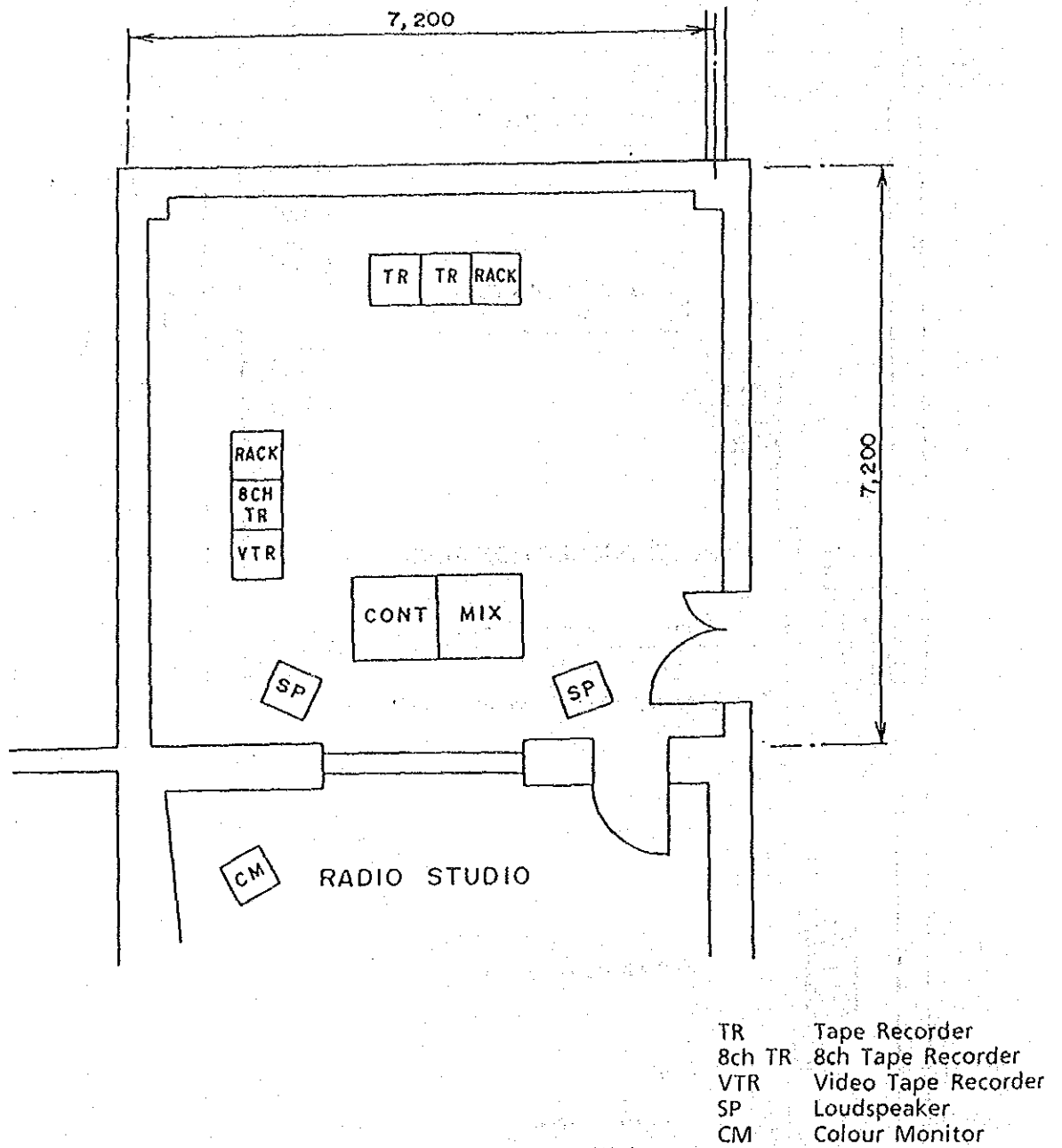


Fig. 4-3-18' Layout of Radio Studio Sub-Control Room

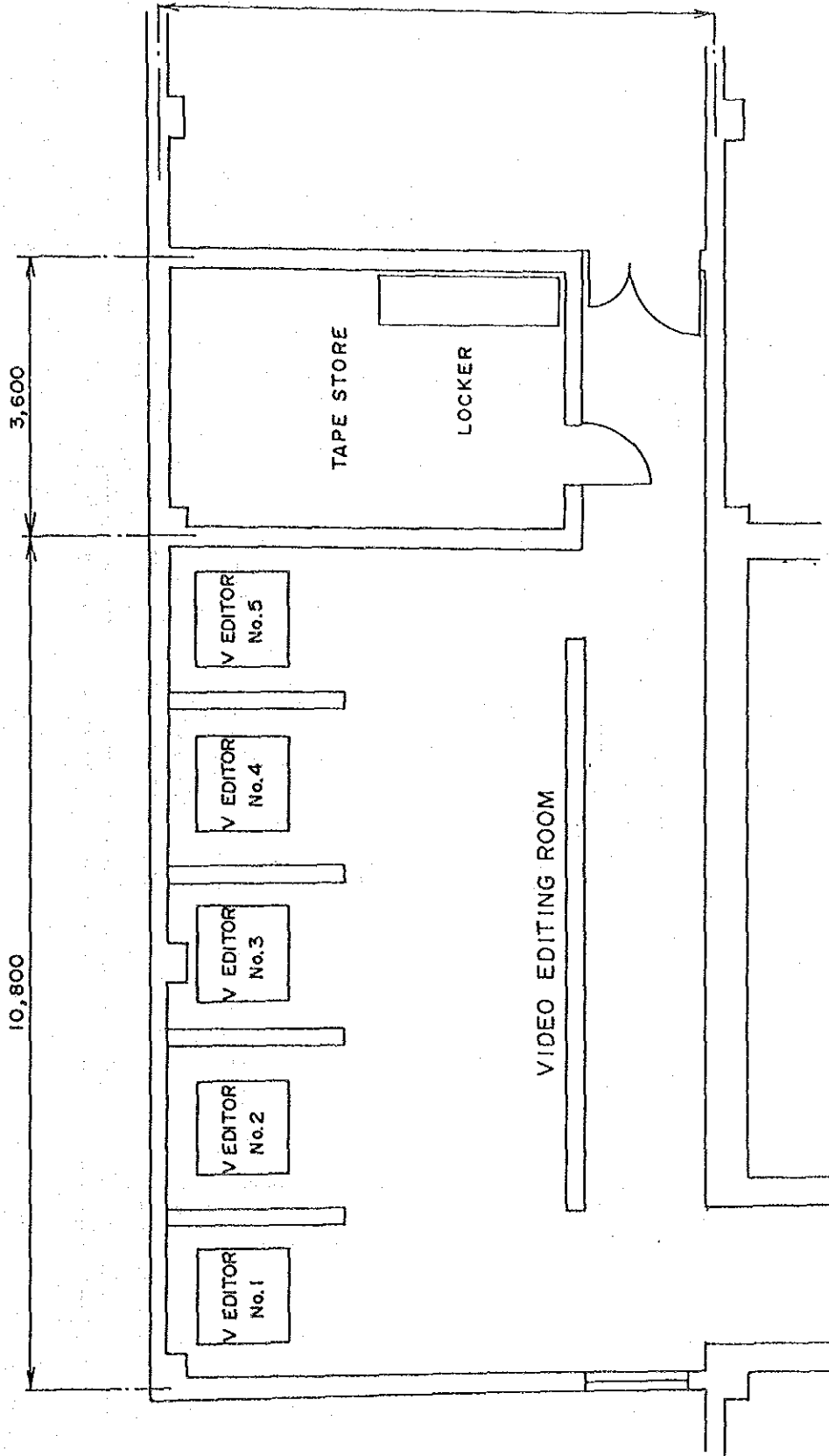


Fig. 4-3-19 Layout of Video Editing Room

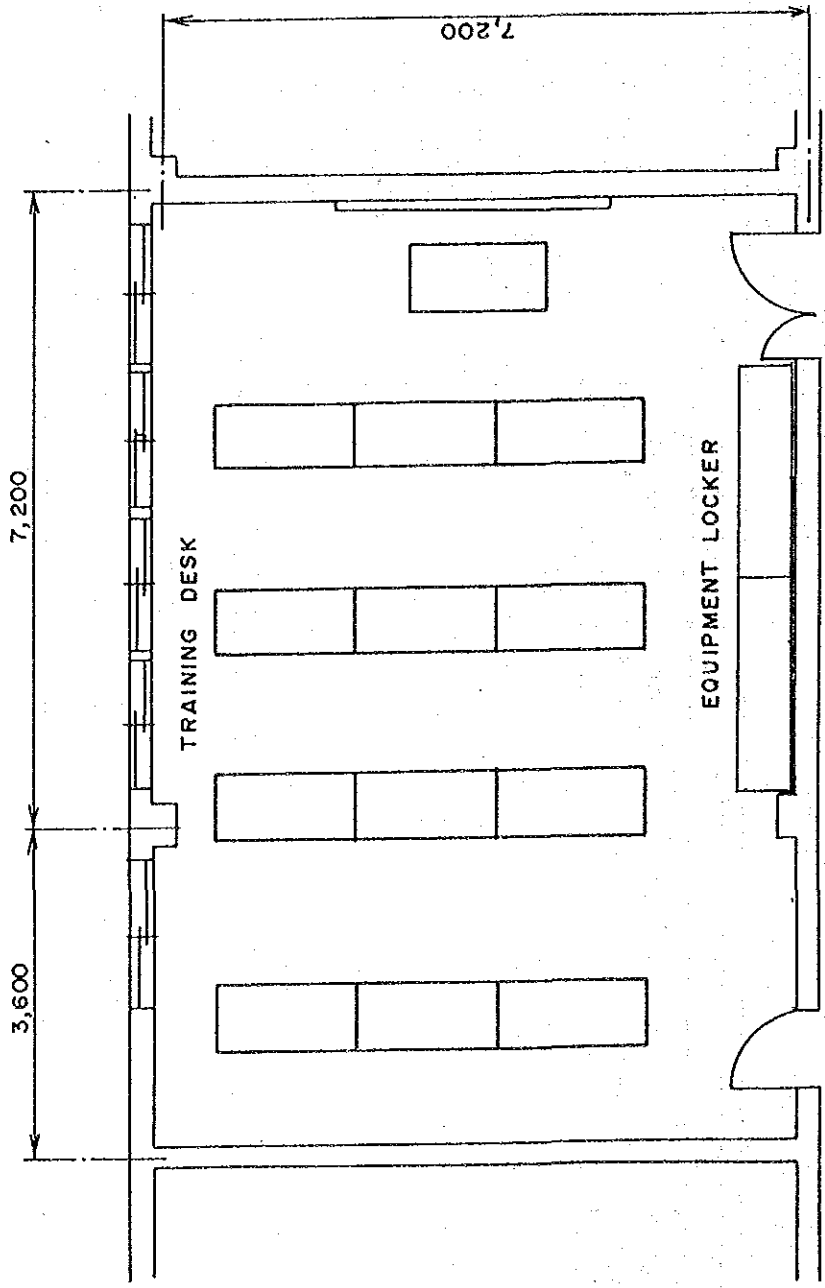


Fig. 4-3-20 Layout of Electronics Training Room

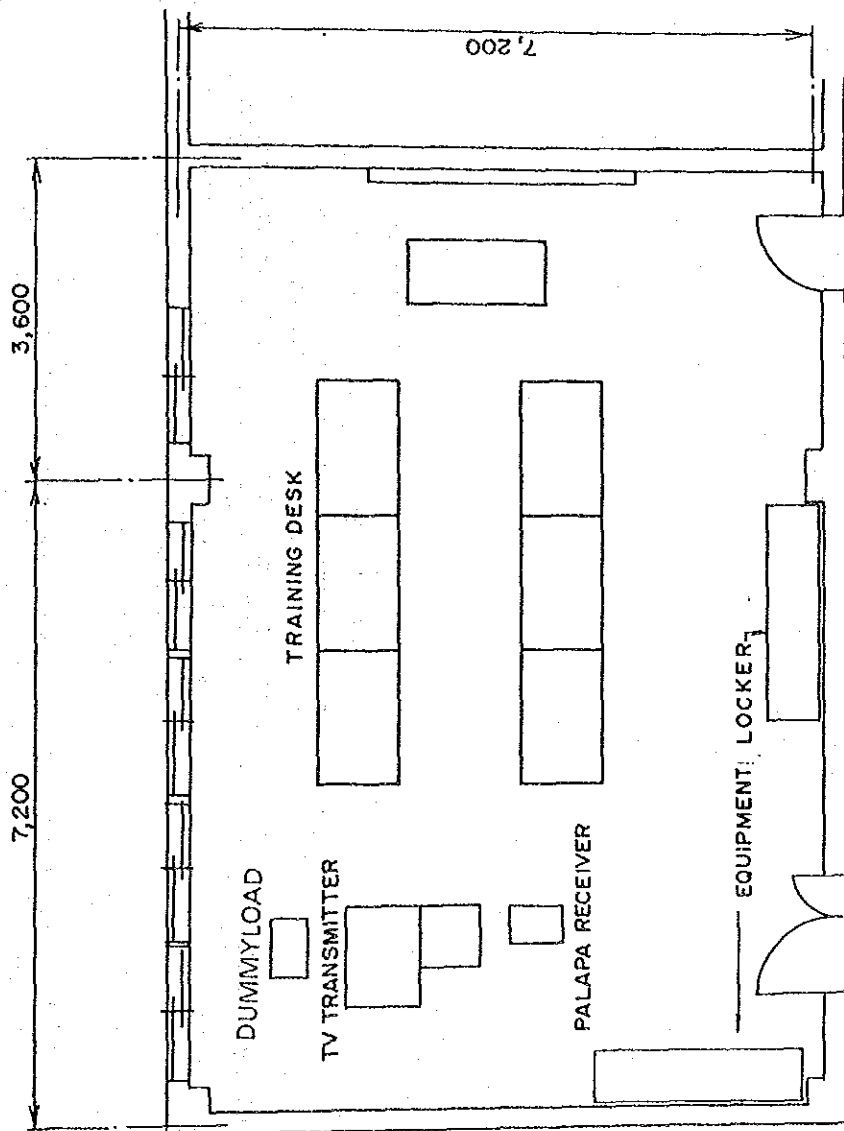


Fig. 4-3-21 Layout of Radio Frequency Training Room

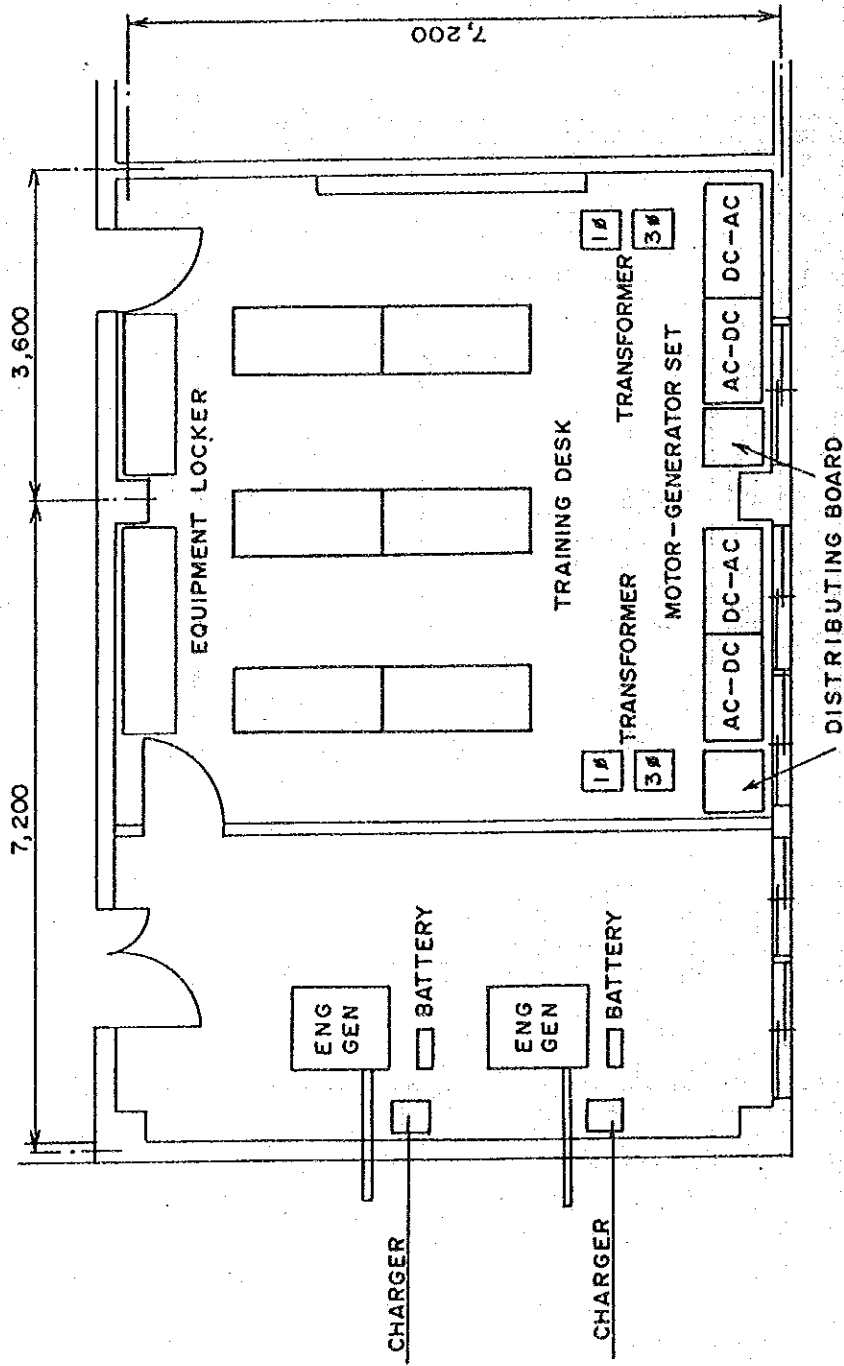


Fig. 4-3-22 Layout of Electric Power Training Room

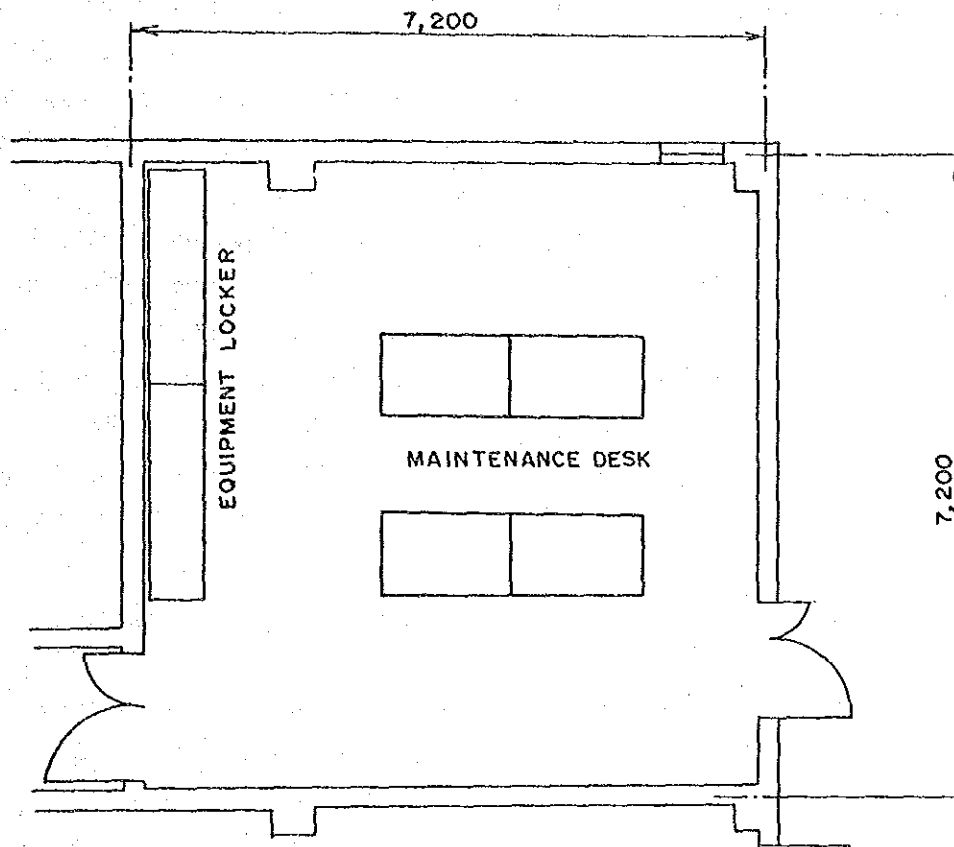


Fig. 4-3-23 Layout of ENG Equipment Maintenance Room

4-4 Implementation Plan

4-4-1 Implementation Policy

This Project will be implemented in one phase. In order to complete the construction work and equipment work on schedule, it is necessary to pay attention to the following points:

- 1) To ensure that the tax-exemption and customs clearance procedures for the construction materials, construction equipment and other equipment are completed quickly.
- 2) To make the construction schedule taking into account the fact that the work efficiency inevitably drops during the rainy season from November to April and the month of Ramadan.
- 3) During the period of construction, the normal training of personnel is going on at the existing training facilities. So, it is necessary to coordinate the construction schedule and the work not to disturb the training carried out at the existing facilities.

4-4-2 Construction Supervision Plan

In accordance with the system of the Japanese government's grant aid cooperation, a Japanese consultant will conclude a contract for consulting services with the Project's executing agency of the Indonesian government and will conduct the detailed design and supervise construction work and equipment work in compliance with provisions of the contract. The objectives of the supervision are to conduct guidance, advising and coordination activities during the period of the Project so as to ensure the quality of work, always taking a fair point of view to ascertain whether the work is being carried on exactly in accordance with the drawings and specifications and to make certain that the contents of the contract are strictly observed and executed in an appropriate manner. The work to be undertaken by the consultant consists of the following:

(1) Assisting with the Tender Procedures and Contracting

To select Japanese contractors for the building work as well as equipment procurement and installation work, the consultant will prepare tender documents, announce tenders publicly, accept applications for the tender, determine prequalification, issue tender documents, accept tenders offered, evaluate the results, and give advice on contracting.

(2) Instructions, Advice and Coordination for the Contractors

The consultant will examine the construction schedule, the construction plan, the materials and equipment procurement/installation plan, and provide instructions, advice and coordination to contractors.

(3) Examination and Approval of Shop Drawings, Manufacturing Drawings and Other Documents

The consultant will examine and approve shop drawings, manufacturing drawings and other documents submitted by contractors.

(4) Confirmation and Approval of Construction Materials and Equipment

The consultant will confirm the consistency of data on construction, materials and equipment with the drawings and specifications, and approve their use in the Project.

(5) Witness for Plant Inspection

If necessary, the consultant will witness and give necessary instructions during plant inspections of the building components and equipment at the manufacturers' plants.

(6) Reporting on Progress

The consultant will report to the project executing agency on the progress of construction, procurement and installation work based on the situation at the construction site.

(7) Inspection and Testing upon Completion

The consultant will conduct a final inspection upon completion, and test facilities and equipment operation. Final inspection reports will then be submitted to the Indonesian side. In particular, major items of broadcasting training equipment will be installed and adjusted by engineers dispatched by the manufacturers. The consultant will ascertain that test results are consistent with specifications.

(8) Training in Maintenance and Operation of the Equipment

Considerable maintenance and operation skills and experience are required for some equipment installed under this project. For this reason, Indonesian engineers/technicians responsible for equipment should receive the necessary training from the manufacturers' professional specialists and engineers for operating, troubleshooting and repairing the equipment during the period of installation, adjustment and test running. The consultant will give necessary instructions in the training programme.

The consultant will dispatch engineers to the site for inspection, instruction and coordination as needed, according to the progress of the work. The consultant will also establish a system in Japan in which the

engineers in charge will keep in contact with and support the dispatched engineers. The consultant will report on the progress, disbursement, completion, transfer, etc., of the project to concerned Japanese government authorities.

4-4-3 Procurement Plan

At present, the greater part of the construction materials can be procured locally in Indonesia. However, such construction materials procured will be used after making full study of the prices, availability and quality, taking into account the special character of the Project, such as that the building to be constructed requires high performance and that, compared with ordinary construction work in Indonesia, the construction period is short.

Because of the difficulty of procurement in Indonesia, the training equipment will be imported from Japan, with the exception of the training furniture.

(1) Main Materials and Equipment Scheduled to be Procured Locally

- 1) Cement
- 2) Aggregate (sand and gravels)
- 3) Reinforcing bars and structural steel
- 4) Bricks
- 5) Concrete blocks
- 6) Lumber and plywood
- 7) Wooden or aluminum fittings
- 8) Sheet glass
- 9) Paints
- 10) Tiles
- 11) Electric wires and cables
- 12) Steel pipes and PVC pipes
- 13) Sanitary ceramic ware
- 14) Construction machines

(2) Main Materials and Equipment Scheduled to be Procured from Japan

- 1) Ceiling materials
- 2) Acoustical materials
- 3) Soundproof doors
- 4) Floor-finish materials
- 5) Large size slate roofing tiles
- 6) Sprayed tile

- 7) Access floor
- 8) Folding walls
- 9) Valves and joints
- 10) Air conditioners and duct materials

4-4-4 Implementation Schedule

The Project will be implemented in one phase. After conclusion of the Exchange of Notes (E/N) between the two governments concerning Japan's grant aid cooperation, the Government of Indonesia will designate a Japanese consultant to take charge of designing and construction supervision and then a consultant contract will be concluded between the designated consultant and the Project's executing agency of the Government of Indonesia. In order to ensure smooth implementation of the Project, it is important to sign a consultant contract as soon as possible upon the conclusion of the E/N. The subsequent implementation schedule, as outlined below, consists of three stages, viz., Detailed Design, Tender and Construction/ Installation.

(1) Detail Design

After the signing of the consultant contract, the detail design work will be commenced upon verification by the Government of Japan. In the course of the detail design, a set of tender documents, such as detail design drawings, specification and tender requirements, will be prepared on the basis of the Basic Design Study Report on the Project. Meanwhile, consultations will be conducted with the officials concerned of the Indonesian side regarding the contents of the facilities and equipment to be provided, so that final approval may be obtained from the Indonesian side concerning the above tender documents. The period estimated to be required in completing these procedures is about 2.5 months.

(2) Tender

Many items of equipment to be supplied under the Project require construction work before the installation. Preparatory construction work, including anchoring and laying of pipes, are necessary prior to the installation of the equipment.

Consequently, it is difficult to conduct the building work and equipment work separately, and it is considered appropriate to place the orders collectively with a consortium of companies, which, as a group, will be responsible for the construction and equipment work.

The contractor will be selected through a tender. The tender will be conducted through the process of public notice of tender, invitation to tender, tender, evaluation of the tender price, designation of the contractor and the signing of the contract, in this order. For these procedures, about 1.5 months are required.

(3) Construction/Installation

After the signing of the contract and following the verification by the Government of Japan, the construction work and equipment work will be started. Taking into consideration such factors as the scale of the facilities, the local weather conditions and the local construction situation, the construction period, including the installation of equipment, will be set as twelve (12) months. The entire process of construction work and equipment work under the Project is as shown in Fig. 4-4-1, Implementation Schedule, on the next page.

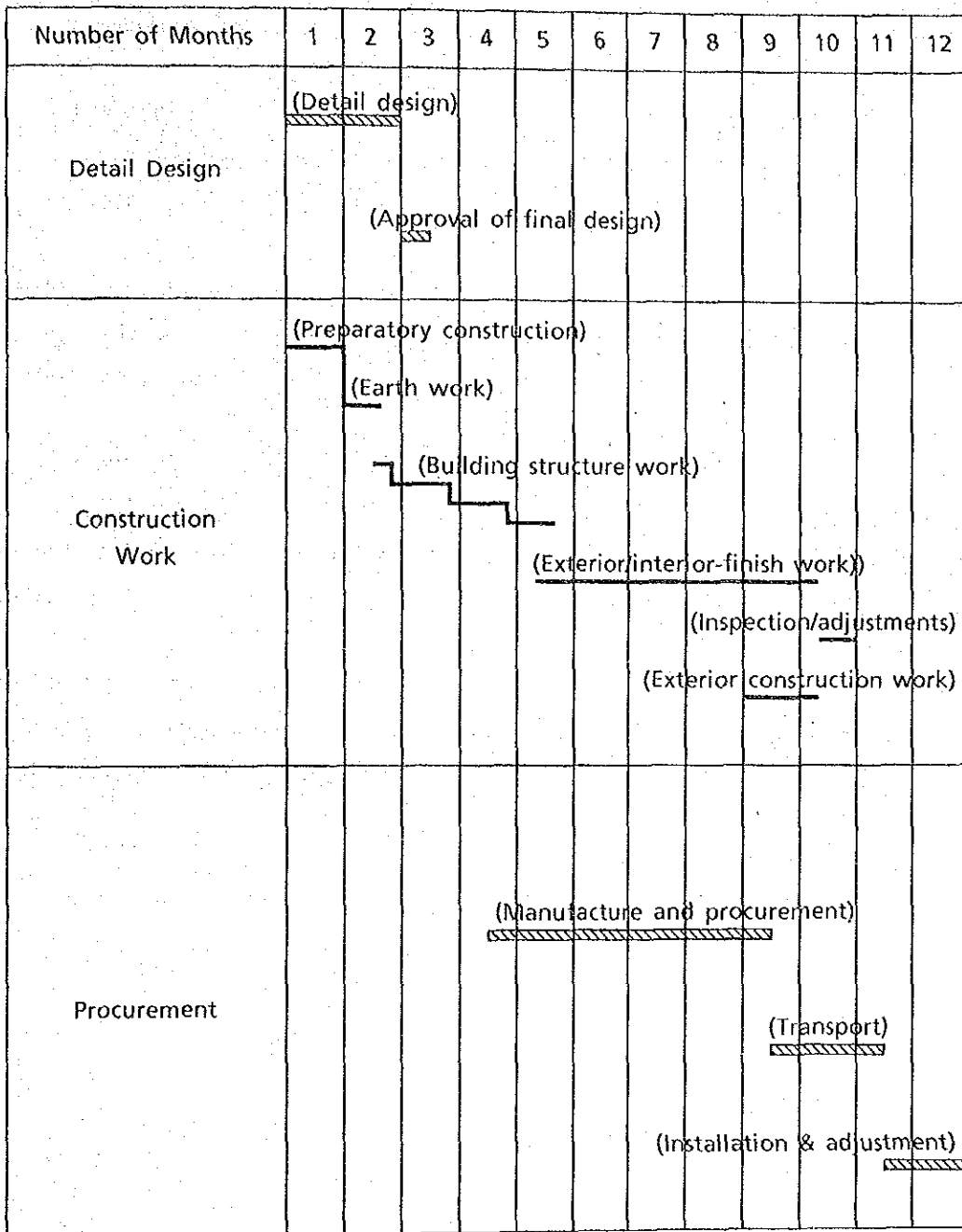


Fig. 4-4-1 Implementation Schedule

4-4-5 Estimated Project Cost to be Borne by the Government of Indonesian

The estimated project costs to be borne by the Government of Indonesia are as follows:

(1) Site preparation costs	Rp 4,400,000
1. Costs of removing of the existing water supply pipe	: Rp 4,400,000
(2) Infrastructure costs	Rp22,000,000
1. Power supply costs (remodeling of existing receiving panel)	: Rp22,000,000
Total costs	Rp26,400,000

The above-mentioned estimation of construction expenses to be borne by the Government of Indonesia do not include such expenses as taxes, fees and clerical & management charges.

In order to ensure smooth execution of this Project and effective utilization of the facilities to be constructed, it is desirable for the Indonesian side to carry out the budgeting, designing and construction items at an appropriate time.

CHAPTER 5 Project Evaluation and Conclusion

CHAPTER 5 Project Evaluation and Conclusion

As explained in the previous chapters, five DI courses and three DII courses are currently conducted at MMTC. As a result of implementation of this project, it will become possible for MMTC to conduct three more DII courses and three DIII courses in 1993/94. Consequently, improvements will be made in various aspects of MMTC's activities as shown in Table 5-1 below:

Table 5-1

	Current Status and Problems	Measures Proposed under This Project	Effects of the Project and the Degree of Improvements Made
1	At the broadcasting stations in Indonesia, there is a shortage of trained engineers. In order to solve this problem, basic training is conducted at MMTC. However, because the range of those to be trained at MMTC is restricted and also because MMTC does not yet have a setup to conduct medium level or higher training courses, expansion and reinforcement of facilities and equipment at MMTC have been strongly desired.	Consistent training will be given to the trainees from DI through DIII courses. In both programme production and broadcast engineering, training on a higher level will be conducted. For that purpose, facilities and equipment will be provided.	As a result of the training given, the most serious problem of the shortage of broadcast engineers in Indonesia today will be solved. And, moreover, the technical level of the currently-employed personnel will be further enhanced and consequently the quality of broadcast programmes will be improved and the technical quality of broadcast radio waves will be upgraded.
2	Broadcast programmes are delivered to the audience through the process of planning, programming, production and transmission, in that order. Since training in broadcast-programme planning is not conducted in Indonesia at present, the planning of broadcast programmes is done on the basis of the accumulated experiences of the broadcasting personnel.	As one of the DII courses, a course for broadcast-programme planning will be newly set up to give training in such fields as programme evaluation and production, methods of preparing production materials, personnel planning, scriptwriting and budget planning. For that purpose, facilities and equipment will be provided.	As a result of the training given, all aspects of broadcasting services, such as the coordinating of programme materials, planning of programmes and production system, will be improved, thus promoting the enhancement of programme quality.

	Current Status and Problems	Measures Proposed under This Project	Effects of the Project and the Degree of Improvements Made
3	At present in Indonesia, there is no training organization for journalists. The broadcast journalists have been coping with the work of programme production on the basis of whatever they have acquired through their past experiences.	As one of the DII courses, a broadcast journalism course will be set up to give training in such fields as broadcast journalism, presentation and reporting techniques, news programmes and news commentary, news editing and news programme production. For that purpose, facilities and equipment will be provided.	As a result of the training given, personnel will become able to handle such work as writing scripts based on news materials, writing reports, edit news, commentate on and analyze news, and consequently the news programmes will be improved substantially.
4	At present, at MMTC, a transmission technique course is offered as one of the D I Courses. However, this course is aimed at training in basic level work and there is the need for training in higher level transmission techniques in order to cope fully with the actual work.	As one of the DII courses, a transmission technique course will be set up to give training of a higher level than D I in such fields as a multiplex transmission system, radiowave propagation, measuring techniques and measurement. For that purpose, facilities and equipment will be provided.	As a result of the training given, personnel will come to possess complete knowledge about transmitters, radiowave propagation, and quality of audio and video transmissions, and this will help improve transmission systems.
5	Educational programmes and religious programmes are required to be produced with consideration given to each of the different social classes. Hence, the personnel in charge are required to possess a wide-ranging and unbiased viewpoint. At present, in Indonesia, there is no training organization for the producers of educational or religious programmes.	As one of the DIII courses, a production course for educational/religious programmes will be set up to give training in such fields as educational psychology, cultural anthropology, cross-cultural exchanges, scriptwriting and musical descriptions. For that purpose, facilities and equipment will be provided.	As a result of the training given, personnel will become able to acquire the ability to produce educational/religious programmes that conform with social order from a more comprehensive point of view.
6	Broadcast programmes are generally produced in accordance with broadcasting scripts. At present, in Indonesia, there is no training organization for scriptwriting. Hence, the scriptwriting has been conducted on the basis of accumulated experiences of the personnel concerned.	As one of the DIII courses, a scriptwriting course will be set up to give training in such fields as manuscript and scenario writing, animation, manuscript analysis, broadcast performances and film-shooting methods. For that purpose, facilities and equipment will be provided.	As a result of training given, improvements will be made in radio and TV scriptwriting, adaptation of literary works and comedies and the contents of presentations and shooting scripts, and consequently the quality of programmes will be further enhanced.

	Current Status and Problems	Measures Proposed under This Project	Effects of the Project and the Degree of Improvements Made
7	At present, in Indonesia, there is no training organization to give training in such techniques as the designing, planning and construction of broadcasting stations. Hence, designing, planning, construction, etc., of broadcasting stations have been conducted here on the basis of the accumulated experiences of the personnel concerned.	As one of the DIII courses, an apparatus-technology course will be set up to give training in such fields as broadcasting station facilities planning, acoustical engineering, programme-production equipment planning and appropriate layout of equipment. For that purpose, facilities and equipment will be provided.	As a result of the training given, personnel will gain knowledge about the designing and planning of studios and master control rooms, and consequently the technical quality of broadcasts will be enhanced substantially.

At present in Indonesia, for both radio and television, the population coverage is 68%, which means that the majority of Indonesians today are capable of receiving either radio or TV broadcasts or both. As for the radio broadcasts, in particular, they are received extensively, including by people of the poorer class, partly because of the low price of receivers as compared with those of TV. However, the contents of programmes and technical quality of the broadcasts are still inadequate and there remains a good deal of room for improvement. In that respect, the implementation of this project can be expected to help improve the programme contents and their technical quality and to enable the listeners and viewers across the country, totalling more than 100 million including those of the poorer class, to enjoy broadcasts that are richer both in quality and quantity.

The objective of this project is, so to speak, human resources development within the broadcasting organization. Even if the total number of personnel trained each year may not be many, very far-reaching effects are expected to be given by the graduates of MMTC courses who, upon their return to their respective workplaces, will be conveying all they learned at MMTC to their colleagues in many ways, such as through OJT (on-the-job-training).

The MMTC is already maintained, managed and operated with Indonesia's own funds, human resources and technologies and, therefore, it is considered that the MMTC can be maintained, managed and operated

adequately and properly even after it is further expanded in scale as a result of the implementation of this project.

And the same as in the case of the last time a project was successfully carried out with Japan's grant aid in 1983 without any particular difficulty, there apparently exists no particular factor on the Indonesian side to hinder the implementation of this project.

As mentioned above, this project is expected to produce some substantial effects and, at the same, will contribute extensively to improvements in many aspects of people's lives through, for example, spreading of useful information, enhancement of levels of medical and hygienic knowledge and modernization of rural villages. Hence, it is judged that the implementation of this project with Japanese government grant aid is most appropriate.

APPENDICES

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1. Member List of Survey Team

1) Basic Design Study

<u>Name</u>	<u>Assignment</u>	<u>Present Post</u>
Mr. Shinya NAKAI	Team Leader	Director, Second Basic Design Study Division, Grant Aid Survey Department, Japan International Cooperation Agency
Mr. Ikuya SAITO	Cooperation Plan	Assistant Director, General Coordination Division, Minister's Secretariat, Ministry of Posts and Telecommunications
Mr. Yoshiyuki MATSUDA	Training Plan	Chief Engineer, Facilities Administration Division, Engineering Administration Department, Japan Broadcasting Corporation
Mr. Eiichi YAGUCHI	Broadcasting Engineering (Survey Leader)	Chief Engineer, All Japan Radio & Television Engineering Services Co., Ltd.
Mr. Tetsuo SHIBATA	Programme Production Facilities	Ditto
Mr. Hiroo SUZUKI	Training Facilities	Deputy Director General, All Japan Radio & Television Engineering Services Co., Ltd.
Mr. Ryosaburo UEDA	Architectural Plan	Director, All Japan Radio & Television Engineering Services Co., Ltd.
Mr. Satoshi OKAMATO	Architectural Design	Architect, Yamashita Sekkei Inc.

2) Draft Final Report Explanation

<u>Name</u>	<u>Assignment</u>	<u>Present Post</u>
Mr. Toru NAKAYA	Team Leader	Assistant Director, Administration Division, Broadcasting Bureau, Ministry of Posts and Telecommunications.
Mr. Eiichi YAGUCHI	Broadcasting Engineering (Survey Leader)	Chief Engineer, All Japan Radio & Television Engineering Services Co., Ltd.
Mr. Tetsuo SHIBATA	Programme Production Facilities	Ditto
Mr. Ryosaburo UEDA	Architectural Plan	Director, All Japan Radio & Television Engineering Services Co., Ltd.

2. Survey Schedule

1) Basic Design Study

No. 1

No.	Date	Day	Travelling	Main Study Item
1	4/ 3	Tue.	Lv. Narita Ar. Jakarta	
2	4/ 4	Wed.		Courtesy call to Deppen. Discussion with Embassy and JICA Jakarta.
3	4/ 5	Thu.	Lv. Jakarta Ar. Yogyakarta	Discussion with MMTC (Inception Report and tentative idea of Study Team).
4	4/ 6	Fri.		Discussion with MMTC (MMTC future plan, MMTC budget). Study on MMTC facilities.
5	4/ 7	Sat.		Discussion with MMTC (priority of proposed items).
6	4/ 8	Sun.		Preparation of Minutes.
7	4/ 9	Mon.		Discussion with MMTC (Survey Plan and counterparts). Study on TVRI & RRI at Yogyakarta.
8	4/10	Tue.	N, SA, M, Y & U Lv. Yogyakarta Ar. Jakarta	Y & U information collection at AJTS office. SH, SU & O survey, & data analysis.
9	4/11	Wed.		N, SA, MA & Y discussion on Minutes with Deppen. SH & SU survey, & data analysis. O visit Public Relations Dept.
10	4/12	Thu.	N, SA & MA Lv. Jakarta	N, SA, M, Y & U signing of Minutes. Y & U discussion with Deppen. SH & SU survey & data analysis. O visit PLN & Perumtel.
11	4/13	Fri.	N, SA & MA Ar. Narita Y & U Lr. Jakarta Ar. Yogyakarta	SH, SU & O data filing.
12	4/14	Sat.		Y, U, SH & SU survey & data analysis. O study on construction companies.

Abbreviations: N ... Mr. Nakai SA ... Mr. Saito M ... Mr. Matsuda
 Y ... Mr. Yaguchi SH ... Mr. Shibata SU ... Mr. Suzuki
 U ... Mr. Ueda O ... Mr. Okamoto

No. 2

No.	Date	Day	Travelling	Main Study Item
13	4/15	Sun.	O Lv. Yogyakarta Ar. Jakarta	Y, U, SH & SU survey & data analysis.
14	4/16	Mon.		Y, U, SH & SU survey & data analysis. O study on construction companies.
15	4/17	Tue.	YU, SH & SU Lv. Yogyakarta Ar. Jakarta	Y, U, SH & SU survey on dormitory. O study on construction companies.
16	4/18	Wed.		Visit radio and TV training centre.
17	4/19	Thu.	Lv. Jakarta	
18	4/20	Fri.	Ar. Natita	

Abbreviations: N ... Mr. Nakai SA ... Mr. Saito M ... Mr. Matsuda
 Y ... Mr. Yaguchi SH ... Mr. Shibata SU ... Mr. Suzuki
 U ... Mr. Ueda O ... Mr. Okamoto

2) Explanation of Draft Final Report

No. 1

No.	Date	Day	Travelling	Main Study Item
1	6/26	Tue.	Lv. Narita Ar. Jakarta	
2	6/27	Wed.		Courtesy call to Deppen. Discussion with Embassy and JICA Jakarta.
3	6/28	Thu.	Lv. Jakarta Ar. Yogyakarta	Discussion with JICA experts at MMTC.
4	6/29	Fri.		Explanation of the draft final report to MMTC.
5	6/30	Sat.		Preparation of Minutes.
6	7/ 1	Sun.	Lv. Yogyakarta Ar. Jakarta	Moving to Jakarta.
7	7/ 2	Mon.		Signing of Minutes after discussion with Deppen.
8	7/ 3	Tue.		Public holiday. Report making.
9	7/ 4	Wed.	Lv. Jakarta	Reporting to Embassy and JICA Jakarta.
10	7/ 5	Thu.	Ar. Narita	

3. Member List of Concerned Parties in Indonesia

(Ministry of Information: DEPPEN)

Mr. EMIR. H. MANGWEANG	Secretary General of Department of Information
IR. M. ARIFIN	Head of Planning Bureau of Department of Information

(Ministry of Information: MMTTC)

Mr. HOETOJO HOERIP	Director MMTTC
DRS. M. KOSASIH	Deputy Director for Engineering
DRS SISWANTONO. BA	Deputy Director for Teaching
Mr. UTJUK RAHAROJO	Secretariat
Mr. SUNARYO. B. A	Instructor
Mr. JOKO YUNianto	"
Mr. IRIANDI	"
Mr. TUGIYO DRS.	"
DRS. UCUK RANARJO	"
DRS. BAMBANG WINARSO	Head of Teaching Administration Section
Mr. RACHMAT SUTEJO. SH.	Head of Programme Compilation and Evaluation Section
Mr. TOGAR LUMBAN RADJA	Deputy Director for Administration
Mr. TAMADJOE	Head of Finance Section
Mr. TOEGIMAN	Head of Personnel Section
Mr. MAURICE SIMATUPANG	Head of General Affairs Section
Mr. SUBAKAT	Head of Supporting Facility Section
Mr. MOORYANTORO	Head of Reproduction and Documentation Section

(Ministry of Information, Radio Training Centre)

DRS IDRUS ALKAF	Head of RRI Training Centre
DRS. AGAES SJAMSUDDIN	Head of Administration RRI TC

(Ministry of Information, TV Training Centre)

Mr. SWANTO	Technical Coordinator for Technical Staff of T.C
Mr. SWAND	Head of Education Administration
Mr. YON HARDOYONO	Head of TVRI. Training Centre

(Ministry of Public Works: DPU)

Ir. SUGENG KARTODIHARDIO

Director General of Public Works

Ir. SOERIPTO KOESOEMOWINOTO

Director General of Yogyakarta Region
Office

Ir. KARTI SUSILO HADISUBROTO

Director General of Sleman Region
Office

(National Electricity Corporation: PLN)

Ir. SOEDARNO

Engineer of High Tension Department

(Department of Statistics)

Ir. INDRARTO HADIJANTO

Director General

(Embassy of Japan)

Mr. FUMIAKI ASANO

First Secretary

Mr. IKUYA SAITO

Second Secretary

(JICA Jakarta Office)

YASUO KITANO

Resident Representative

TOORU TAGUCHI

Deputy Representative

KAZUHIRO YONEDA

(JICA Expert: --MMTC--)

NOBORU SHIMOJI

Project Leader

SHIGEKI UENO

YUJI TOKIMATSU

OSAMU KOBAYASHI

(JICA Coordinator: --MMTC--)

TADASHI IKESHIRO

(JICA Expert: --DEPPEN-TVRI--)

MASAO MIGITA

YOSHIAKI MATSUDA

MITSUUMI HORISHITA

HIDEO KAWAKAMI

MASANORI KATO

4. Minutes of Discussions

1) Basic Design Study

MINUTES OF DISCUSSIONS

ON

THE SUPPLEMENT PROJECT

FOR

THE RADIO AND TELEVISION TRAINING CENTRE

IN


THE REPUBLIC OF INDONESIA

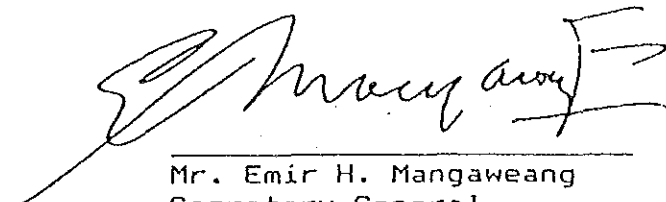
In response to the request made by the Government of the Republic of Indonesia for the Supplement Project for the Radio and Television Training Centre (hereinafter referred to as "the Project"), the Government of Japan decided to conduct a basic design study and Japan International Cooperation Agency (hereinafter referred to as "JICA") has sent to the Republic of Indonesia the Basic Design Study Team (hereinafter referred to as "the Team") headed by Mr. Shinya Nakai (Director, Second Basic Design Study Division, Grant Aid Survey Department, JICA) from 3rd April to 20th April, 1990.

The Team has carried out the field survey, held a series of discussions and exchange views with the concerned authorities of the Government of the Republic of Indonesia.

As a result of the study and discussions, both the parties have agreed to recommend to their respective governments to examine the results of the study attached herewith towards realization of the Project.

Jakarta, 12th April, 1990


Mr. Shinya Nakai
Team Leader
Basic Design Study Team
JICA, JAPAN


Mr. Emir H. Mangaweang
Secretary General
Ministry of Information
THE REPUBLIC OF INDONESIA

ATTACHMENT

1. Objective of the Project

The objective of the Project is to enhance activities of Diploma Courses of the Radio and Television Training Centre in the framework of the Multi Media Training Centre Yogyakarta by supplementing the facilities and equipment.

2. Project Site

The proposed site of the Project is prepared by the Government of Indonesia in the campus of the Multi Media Training Centre, located at Jalan Magelang Km 6, in Yogyakarta, as attached in Annex-1.

3. Organization

- (1) Responsible Organization : Ministry of Information
- (2) Executing Organization : Secretariat General

4. Request by the Government of Indonesia

The Team will convey to the Government of Japan the desire of the Government of Indonesia that the former takes necessary measures to cooperate in implementing the Project and provides necessary facilities and equipment as listed in Annex - 2 within the scope of Japanese economic cooperation in grant form.

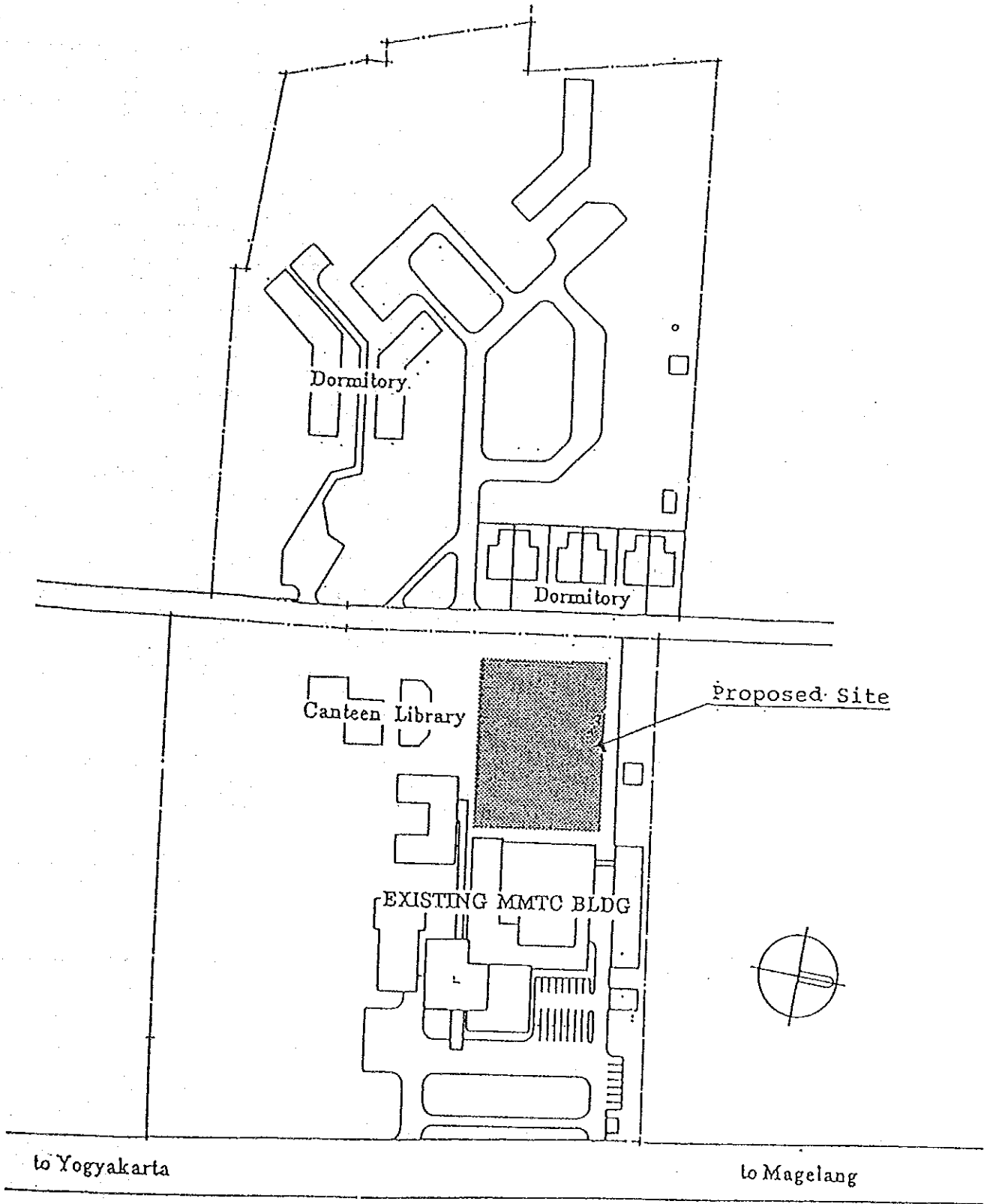
5. Grant Aid Programme

The Government of Indonesia understood Japan's Grant Aid system explained by the Team which includes a principle of use of a Japanese consultant firm and a Japanese company for implementation of the Project.

6. Necessary Measures to be taken by the Government of Indonesia

The Government of Indonesia will take necessary measures as listed in Annex - 3 on condition that the grant assistance by the Government of Japan is extended to the Project.

ANNEX-1 Project Site



8.2

ANNEX - 2

REQUESTED FACILITIES AND EQUIPMENT

Facilities	Main Equipment
1. Joint Lecture Room	Audiovisual System
2. Programme Production Training Room	Audiovisual Equipment
3. Language Laboratory	Language Laboratory System
4. TV Studio	3 Cameras (ENG type), Video/Audio and Lighting Equipment, Monitors
5. Radio Studio	Audio Mixing Console (Stereo), Tape Recorders, Disc Player, Audio Dubbing System
6. Post Production Room	VTRs, DVE, Colour Corrector, Tape-lock System
7. Video Editing Room	Video Editing Systems (2 VTRs and Editing Controller for each system)
8. ENG Equipment Maintenance Room	ENG Systems (including Audio/Lighting Equipment), Maintenance/Measuring Equipment, Battery Charger
9. Electronics and Digital Training Room	Training Equipment, Measuring Equipment
10. Radio Frequency Training Room	Training Equipment (TV transmitter, Microwave Equipment, Satellite Receiving Equipment), Measuring Equipment
11. Electric Power Training Room	Transformers, Generators, Distributing Boards, Measuring Equipment

ANNEX - 3

1. To provide data and information necessary for basic design study.
2. To ensure prompt unloading, tax exemption, customs clearance at the ports of disembarkation in Indonesia and prompt internal transportation of the products purchased under the Grant Aid.
3. To exempt the Japanese nationals concerned from customs duties, internal taxes and other fiscal levies imposed in Indonesia with respect to the supply of the products and services for the Project.
4. To provide necessary permissions, licences and other authorizations for carrying out the Project.
5. To provide facilities for distribution of electricity, telephone, water supply, drainage and other incidental facilities; and provide temporarily the above facilities before the start of the construction.
6. To bear all expenses including V.A.T. (Value Added Tax) other than those to be borne by the Grant Aid necessary for the execution of the Project.
7. To maintain and use properly and effectively the facilities and equipment purchased under the Grant Aid.

2) Explanation of Draft Final Report

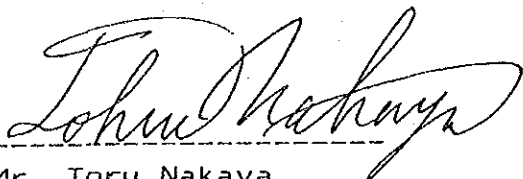
MINUTES OF DISCUSSIONS
ON
THE DRAFT FINAL REPORT OF THE BASIC DESIGN STUDY
ON THE SUPPLEMENT PROJECT
FOR
THE RADIO AND TELEVISION TRAINING CENTRE
IN
THE REPUBLIC OF INDONESIA

In response to the request of the Government of the Republic of Indonesia for the Supplement Project for the Radio and Television Training Centre (hereinafter referred to as "the Project"), the Government of Japan decided to conduct a basic design study on the Project and entrusted the study to the Japan International Cooperation Agency (JICA). JICA sent to the Republic of Indonesia the study team headed by Mr. Shinya Nakai (Director, Second Basic Design Study Division, Grant Aid Survey Department, JICA) from 3rd to 20th April, 1990.

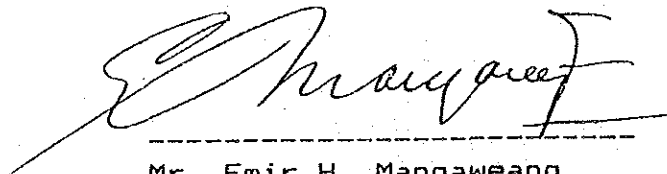
As a result of the study, JICA prepared a draft final report and dispatched a team headed by Mr. Toru Nakaya (Assistant Director, Administration Division, Broadcasting Bureau, Ministry of Posts and Telecommunications) to explain and discuss it from 26th June to 5th July, 1990.

Both parties had a series of discussions on the report and agreed to recommend to their respective governments that the major points of understanding reached between them, attached herewith, should be examined towards the realization of the Project.

Jakarta, 4th July, 1990.



Mr. Toru Nakaya
Leader,
Draft Final Report
Explanation Team,
JICA, JAPAN.



Mr. Emir H. Mangawang
Secretary General,
Ministry of Information,
The Republic of Indonesia.

ATTACHMENT

1. The Indonesia side has agreed in principle on the basic design proposed in the Draft Final Report.
2. The Indonesia side has understood Japan's Grant Aid System and confirmed that the necessary measures will be taken by the Indonesia side as shown in ANNEX 3 of the Minutes of Discussions on the Project signed on 12th April, 1990 on condition that the Grant Aid by the Government of Japan be extended to the Project.
3. The Indonesia side will ensure the provision of the necessary budget for the project cost to be borne by the Government of the Republic of Indonesia as stated in the Report.
4. The Final Report (10 copies in English) on the Project will be submitted to the Indonesia side by the end of October, 1990.

5. List of Data on Indonesia

Indonesia Handbook	1990
Statistical Data on Indonesia	1988
Economic Indices of Indonesia	Jan. 1990
Comparison of consumer and service prices between different provinces	1988
Survey on the trends of consumer price indices in 24 major cities	1988
Consumer and service prices in different provinces and cities	1987
Comparison of wholesale prices between provinces	April 1989
National Construction Regulations	
Load Regulations of Indonesia	
Designing Standards of Indonesia	
Collection of Building Standard Drawings	
Map of the city of Yogyakarta	
Dictionary of Indonesian Language	
Register of Equipment owned by the Radio and Television Training Centre of Indonesia	
Explanatory Notes on the outline of the projects of the Radio and Television Training Centre of Indonesia	
Materials for use by the preliminary survey team on the reinforcement plans for broadcast technology	
Materials for use by the itinerant guidance & survey team of the Radio and Television Training Centre of Indonesia	

JICA