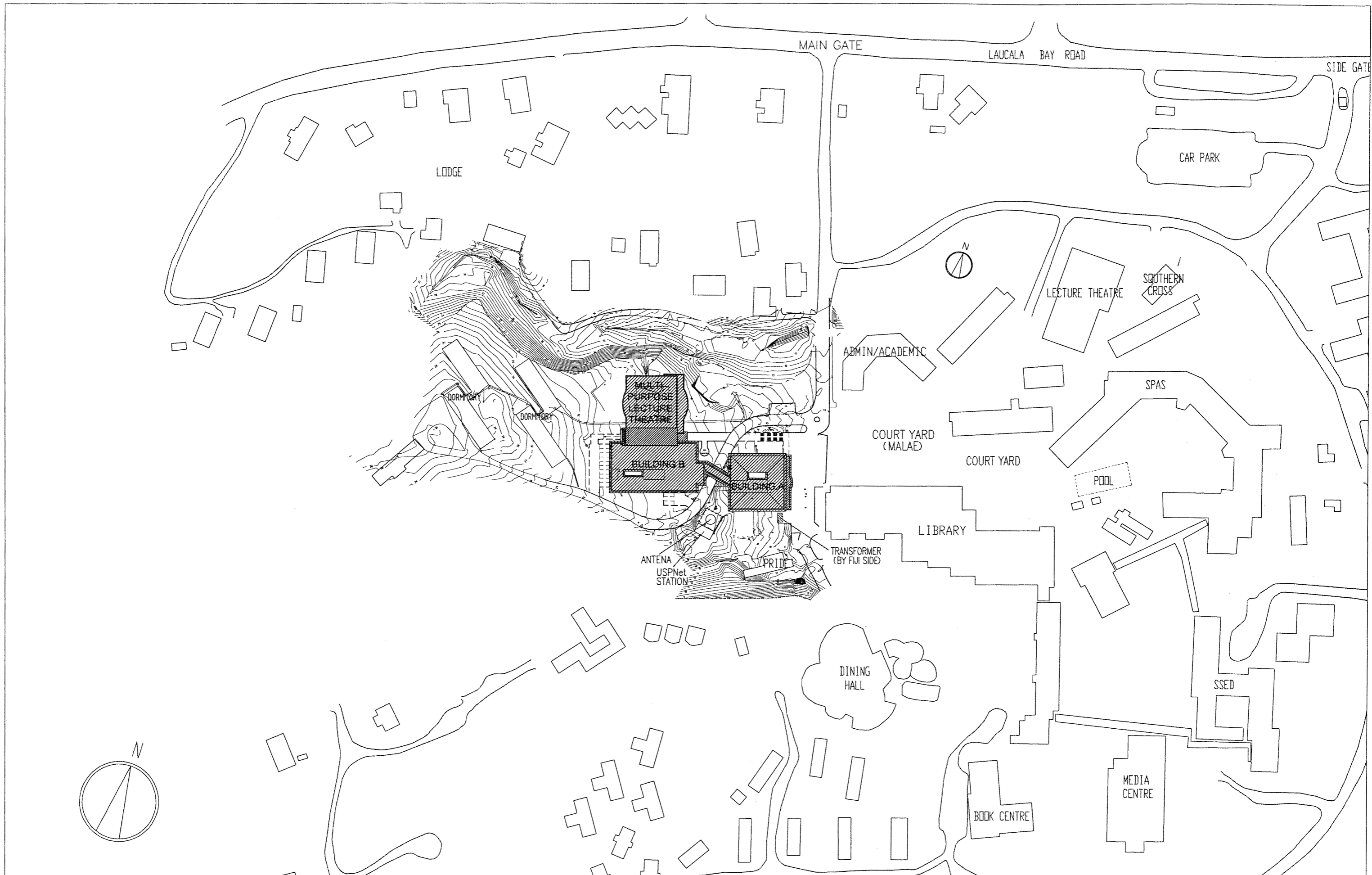


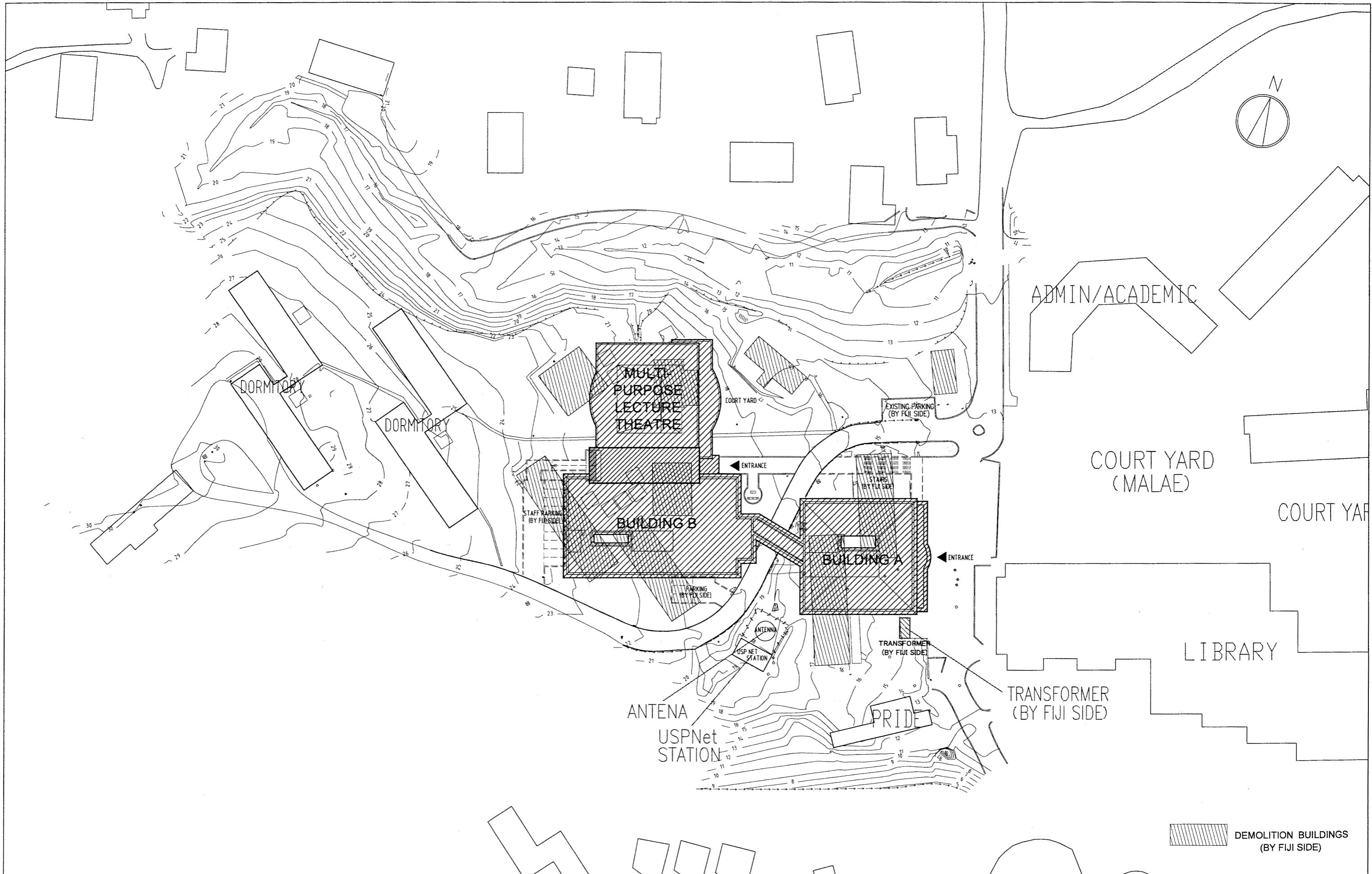
2-2-3 Basic Design Drawing

Table 2-24 Basic Design Drawing List

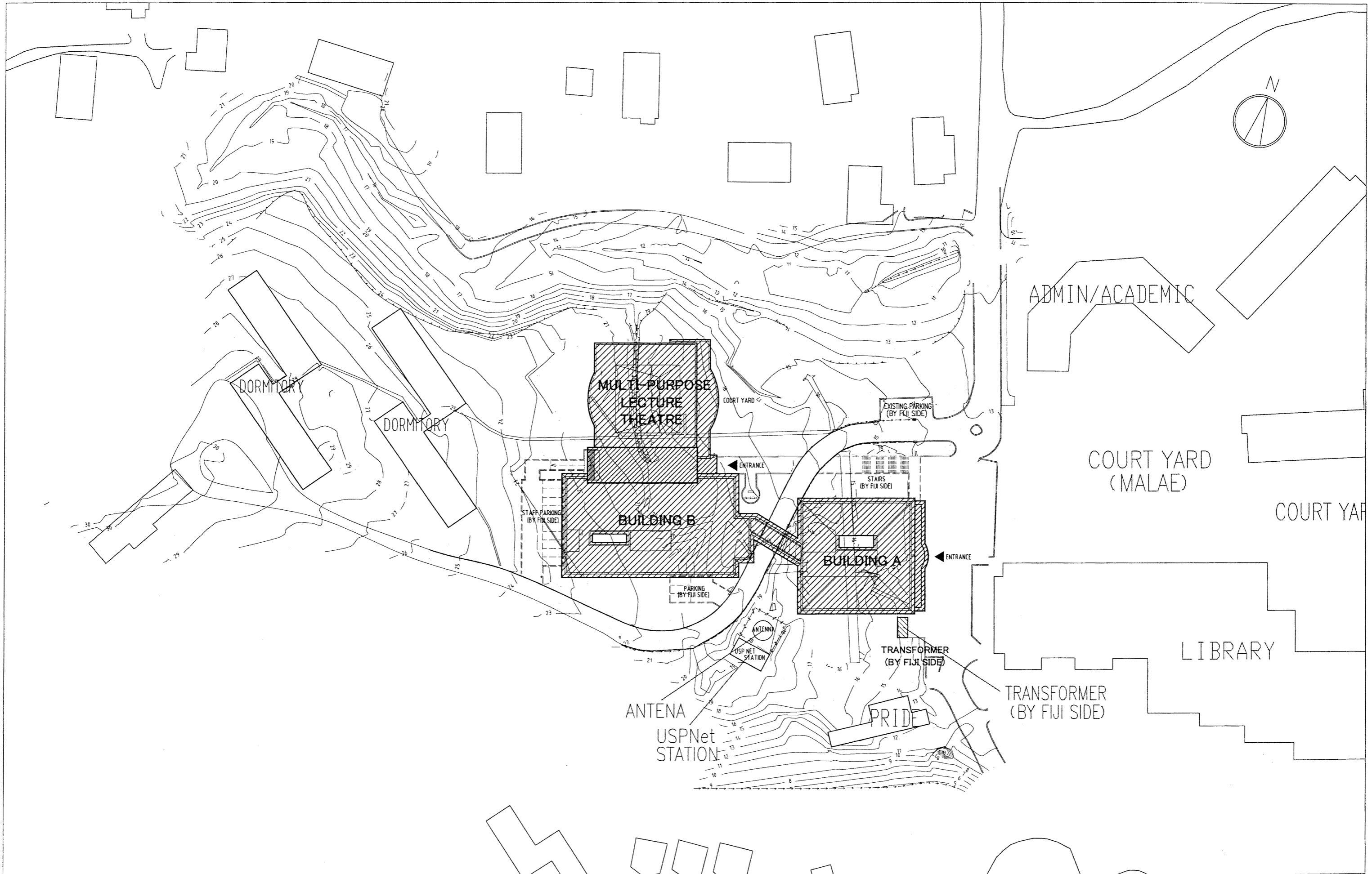
01	General Site Plan	1/2,000
02	Demolition Buildings Plan (by Fiji Side)	1/1,000
03	Site Plan	1/1,000
04	First Floor Plan	1/500
05	Second Floor plan	1/500
06	Second Floor Plan (with Contour)	1/500
07	Third Floor Plan	1/500
08	Fourth Floor Plan	1/500
09	Roof plan	1/500
10	Elevation 1	1/500
11	Elevation 2	1/500
12	Sections	1/500

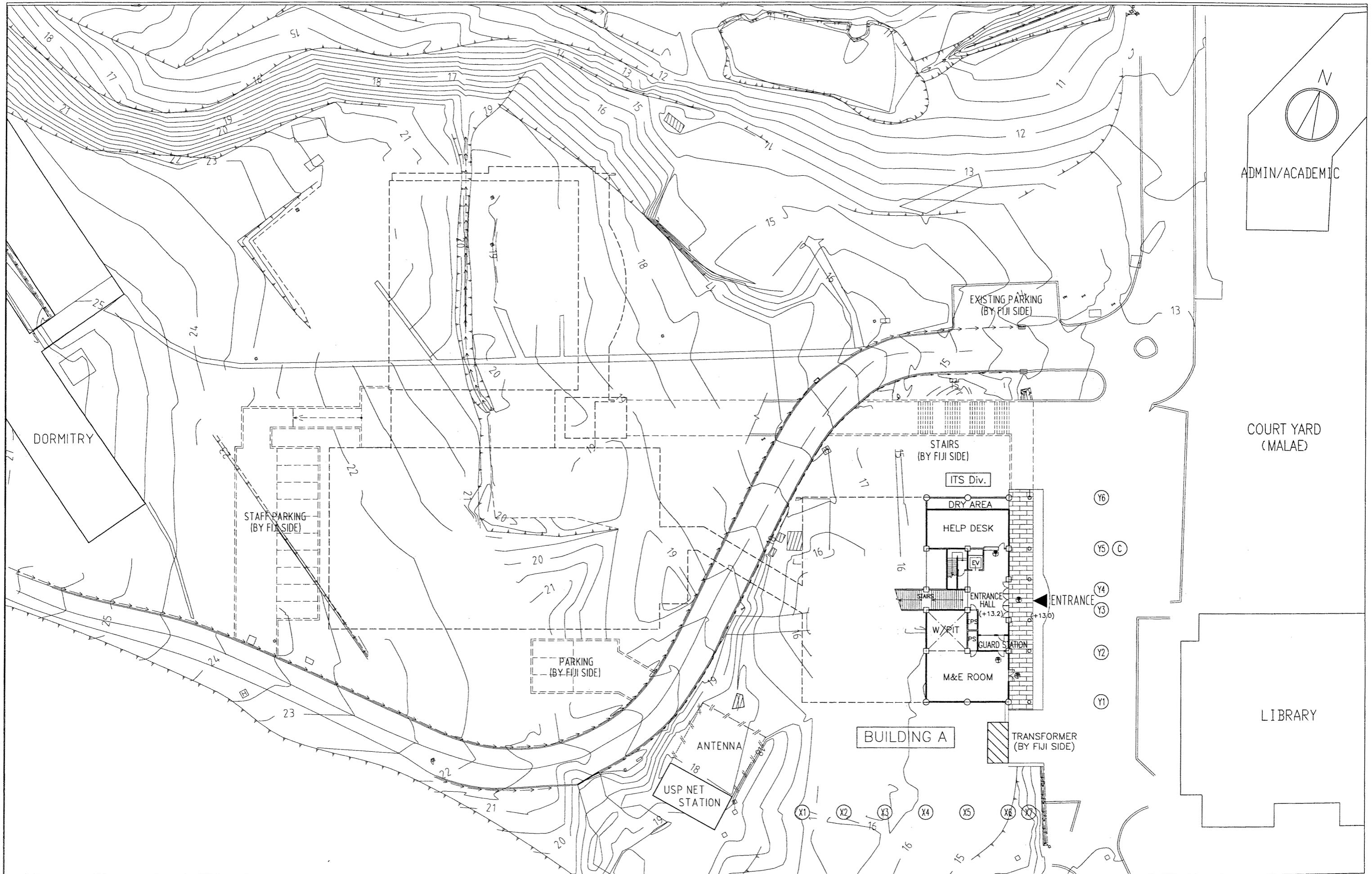


THE UNIVERSITY OF THE SOUTH PACIFIC ICT CENTRE
 GENERAL SITE PLAN S=1/2,000 01



THE UNIVERSITY OF THE SOUTH PACIFIC ICT CENTRE
 DEMOLITION BUILDINGS PLAN 1/1,000 02





THE UNIVERSITY OF THE SOUTH PACIFIC ICT CENTRE
 FIRST FLOOR PLAN S=1/500 04

MULTI-PURPOSE LECTURE THEATRE

(TX-1) (TX-2) (TX-3) (TX-4) (TX-5) (TX-6)

(TY-6)
(TY-5)
(TY-4)
(TY-3)
(TY-2)
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F
E
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A

1 2 3 4 5 6 7 8 9 10

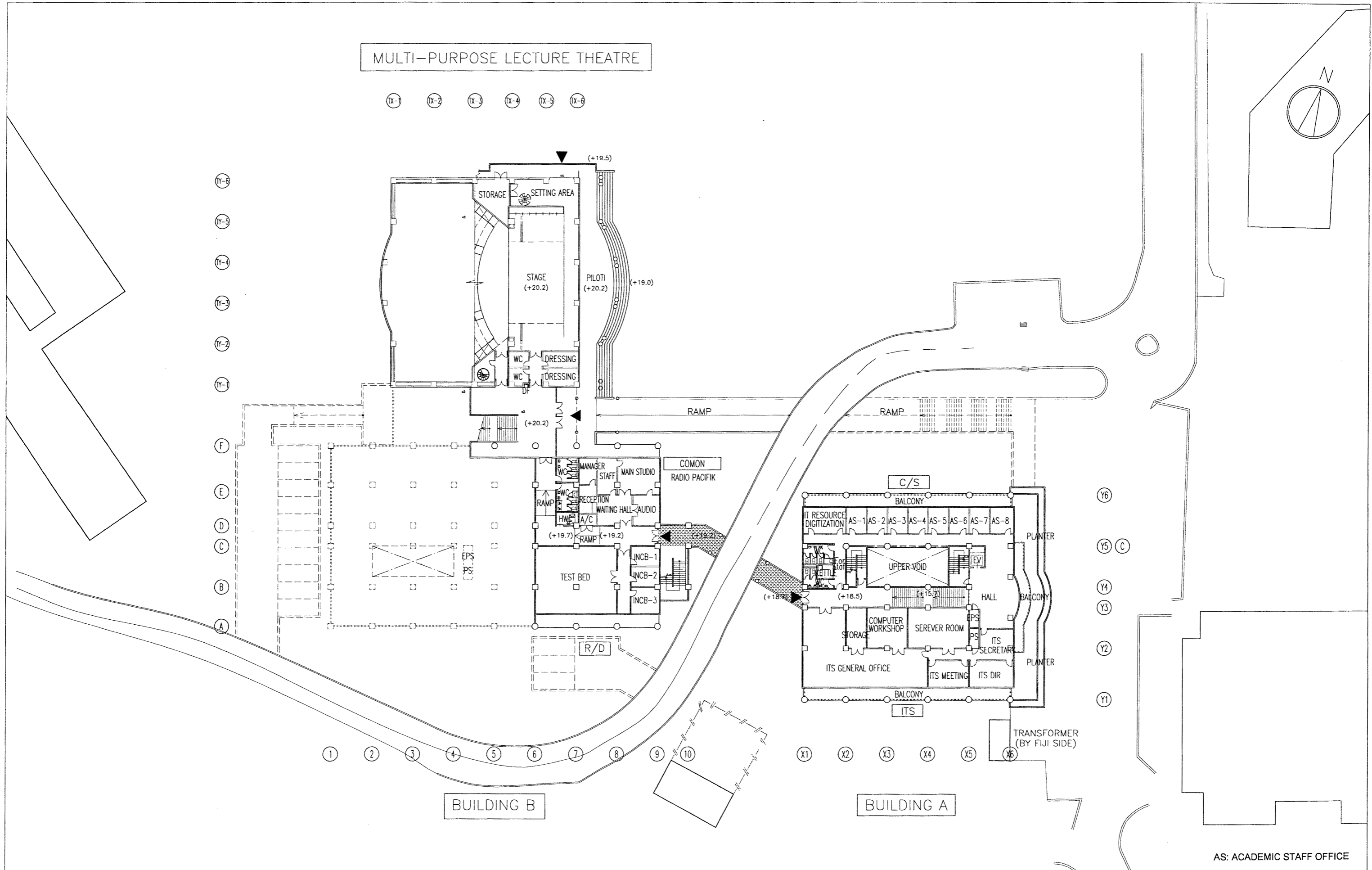
BUILDING B

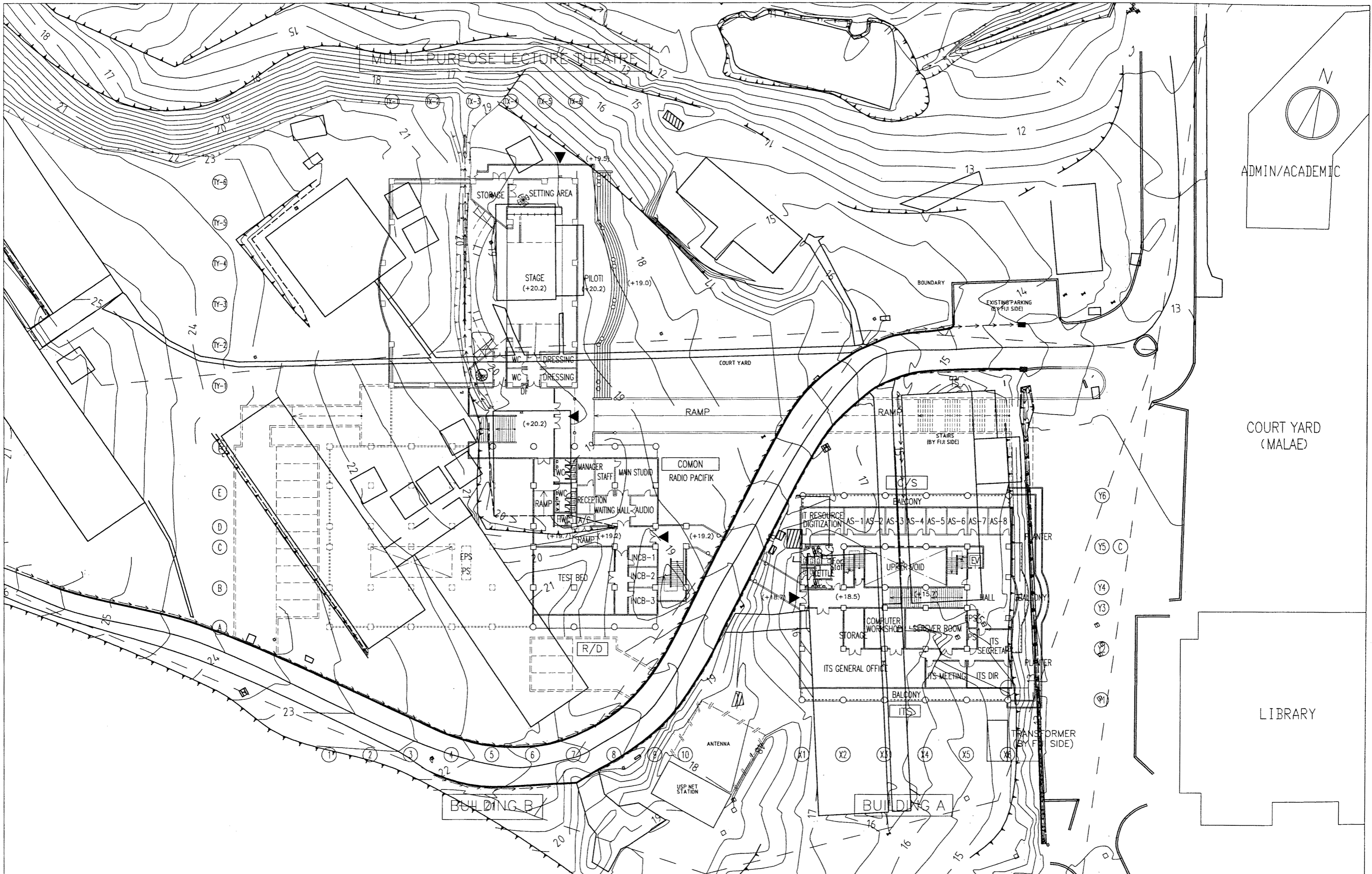
(X1) (X2) (X3) (X4) (X5) (X6)

BUILDING A

(Y6)
(Y5) C
(Y4)
(Y3)
(Y2)
(Y1)

AS: ACADEMIC STAFF OFFICE

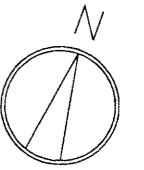




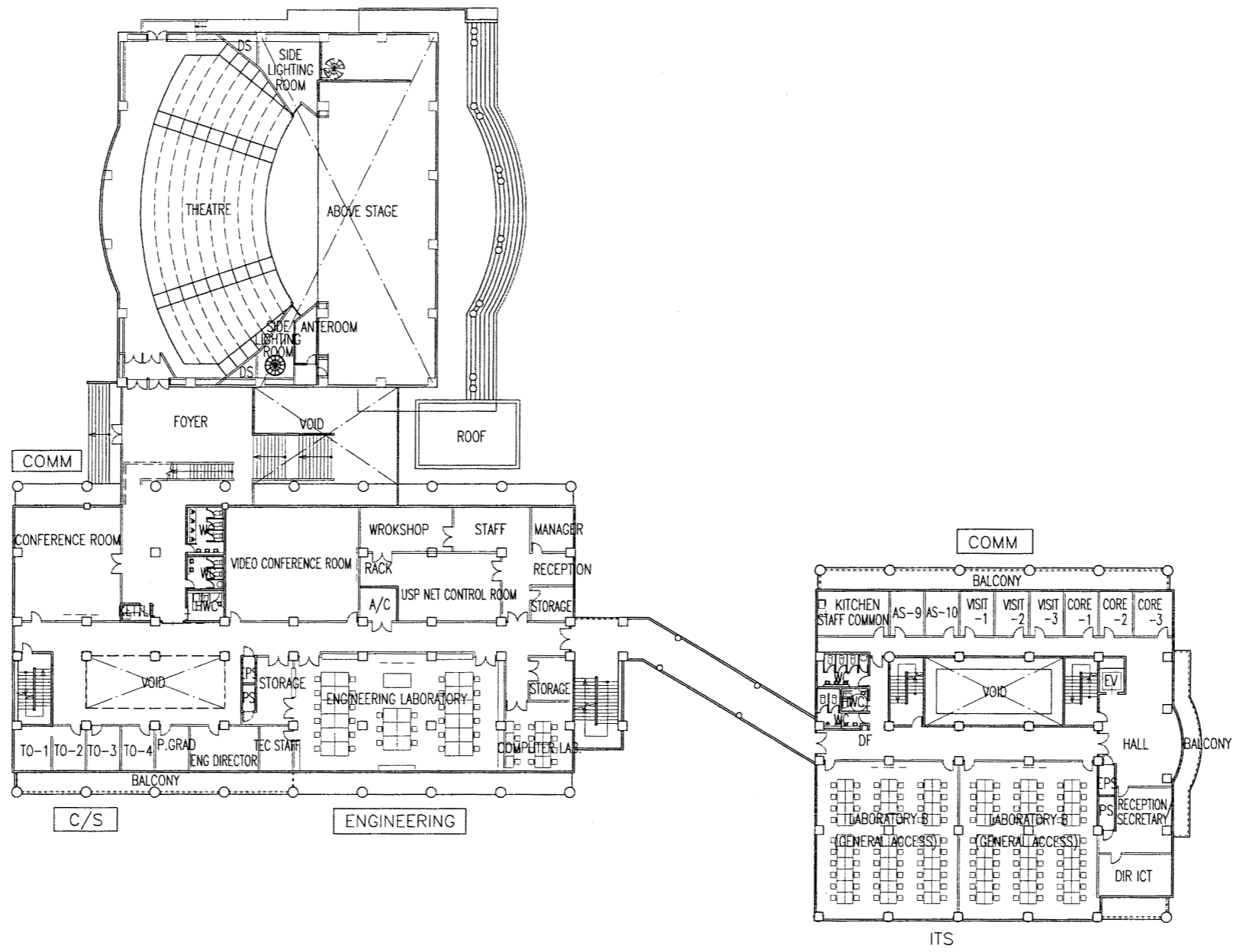
THE UNIVERSITY OF THE SOUTH PACIFIC ICT CENTRE
 2nd FLOOR PLAN (WITH CONTOURS) S=1/500 06

MULTI-PURPOSE LECTURE THEATRE

(TX-1) (TX-2) (TX-3) (TX-4) (TX-5) (TX-6)



(TY-6)
(TY-5)
(TY-4)
(TY-3)
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(TY-1)
F
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① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩

BUILDING B

(X1) (X2) (X3) (X4) (X5) (X6)

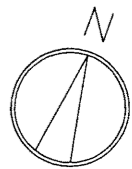
BUILDING A

(Y6)
(Y5) C
(Y4)
(Y3)
(Y2)
(Y1)

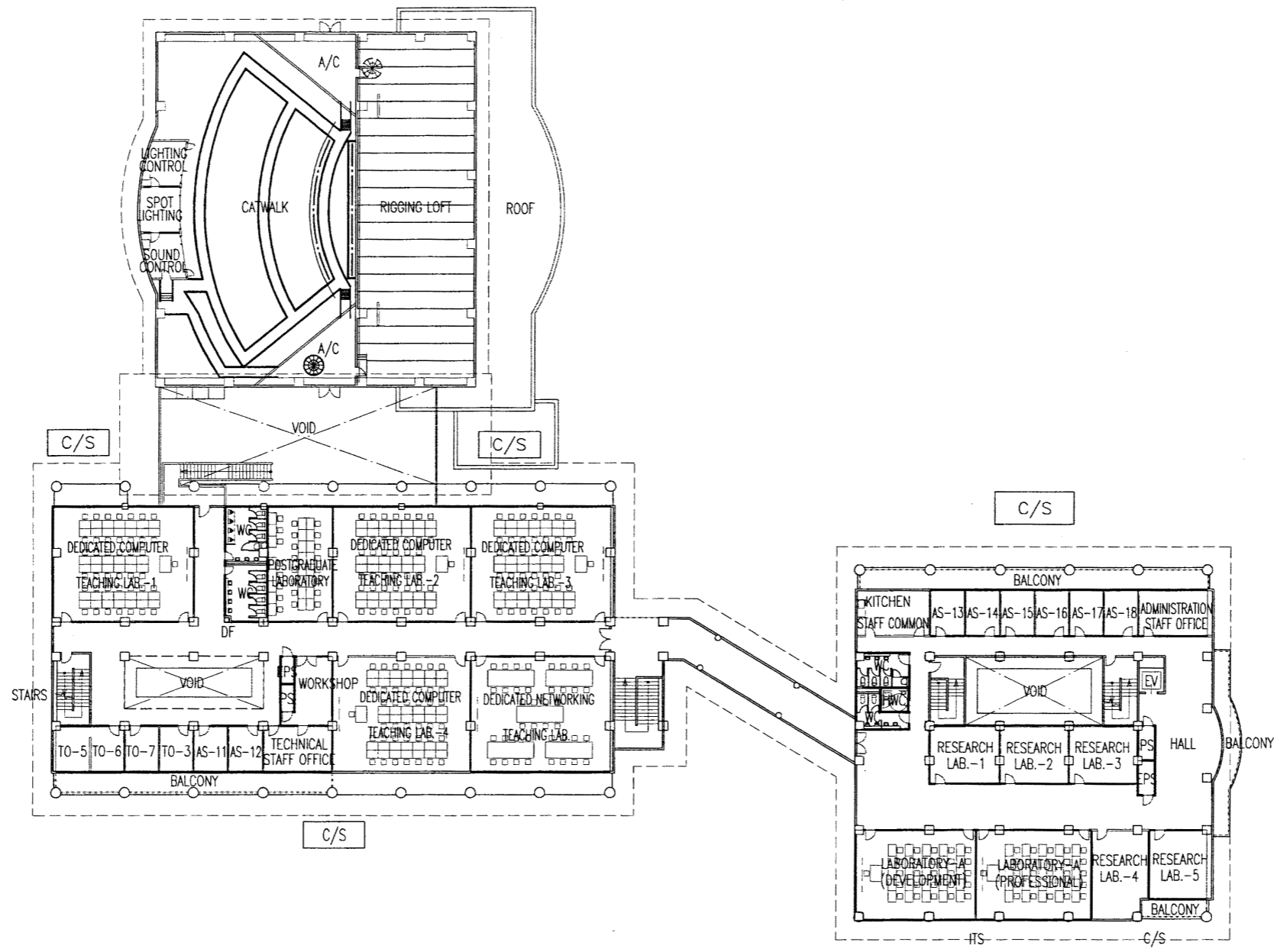
AS: ACADEMIC STARR OFFICE
VISIT: VISITING STAFF OFFICE
CORE: CORE STAFF OFFICE
TO: TUTOR OFFICE
P.GRAD: POSTGRADUATE LABRATORY

MULTI-PURPOSE LECTURE THEATRE

TX-1 TX-2 TX-3 TX-4 TX-5 TX-6



TY-6
TY-5
TY-4
TY-3
TY-2
TY-1
F
E
D
C
B
A



Y6
Y5 C
Y4
Y3
Y2
Y1

1 2 3 4 5 6 7 8 9 10

X1 X2 X3 X4 X5 X6

BUILDING B

BUILDING A

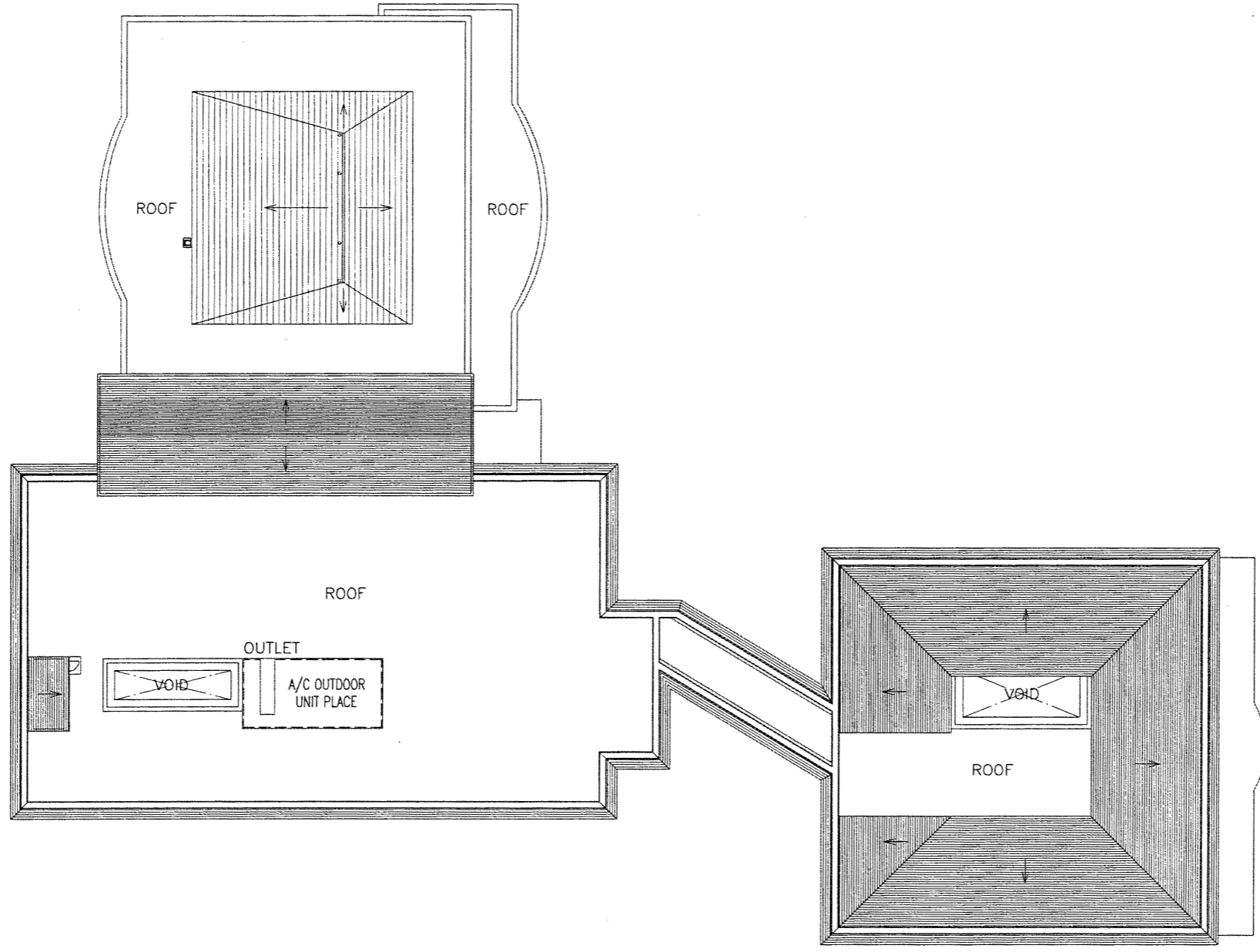
C/S: COMPUTING SCIENCE
AS: ACADEMIC STAFF OFFICE
TO: TUTOR OFFICE



(TX-1) (TX-2) (TX-3) (TX-4) (TX-5) (TX-6)

MULTI-PURPOSE LECTURE THEATRE

- (TY-6)
- (TY-5)
- (TY-4)
- (TY-3)
- (TY-2)
- (TY-1)
- (F)
- (E)
- (D)
- (C)
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- (A)



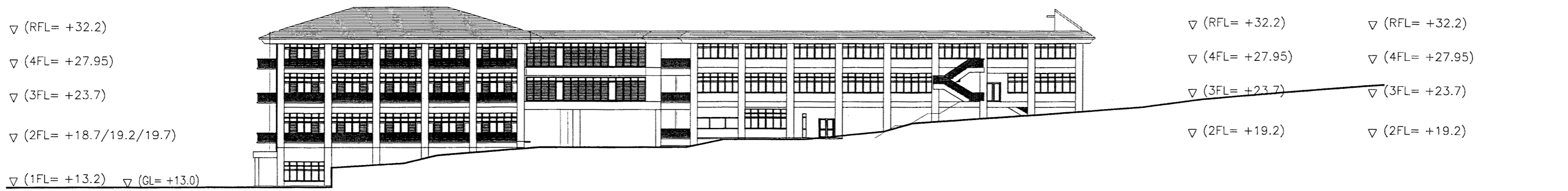
- (Y6)
- (Y5) (C)
- (Y4)
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- (Y1)

- (1)
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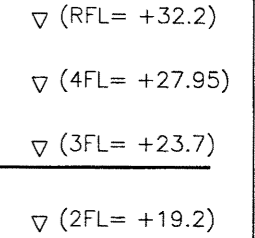
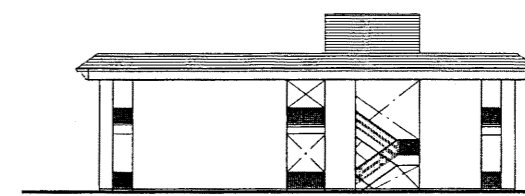
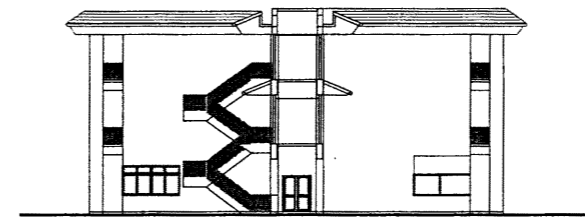
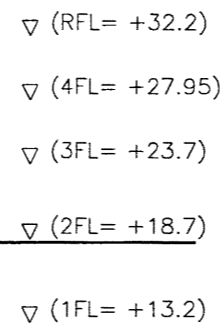
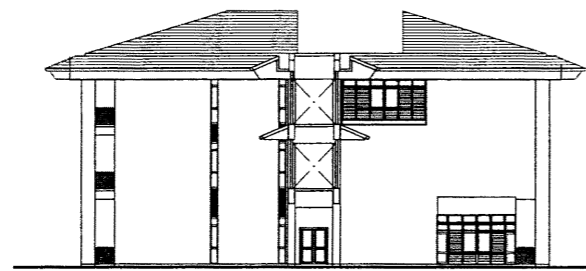
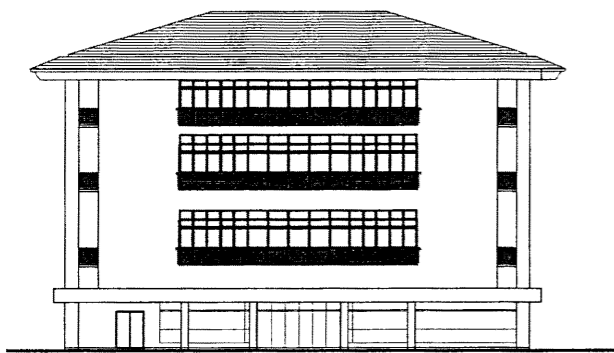
BUILDING B

BUILDING A



BLD-A NORTH

BLD-B NORTH

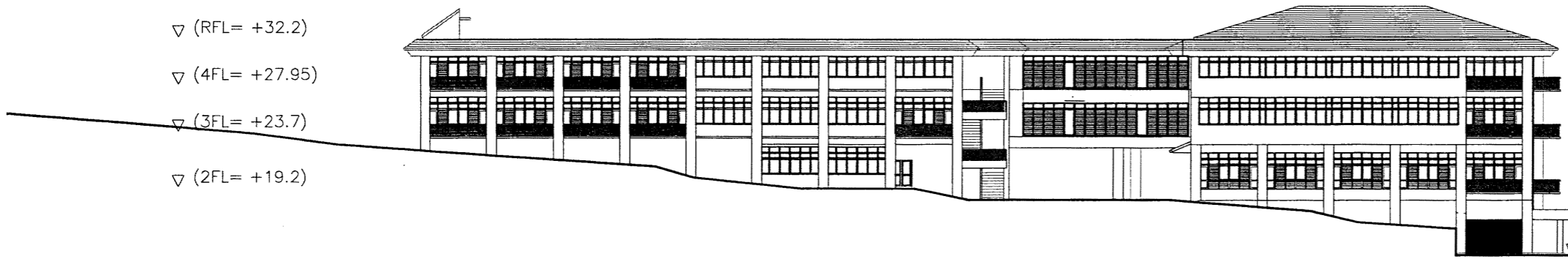


BLD-A EAST

BLD-A WEST

BLD-B EAST

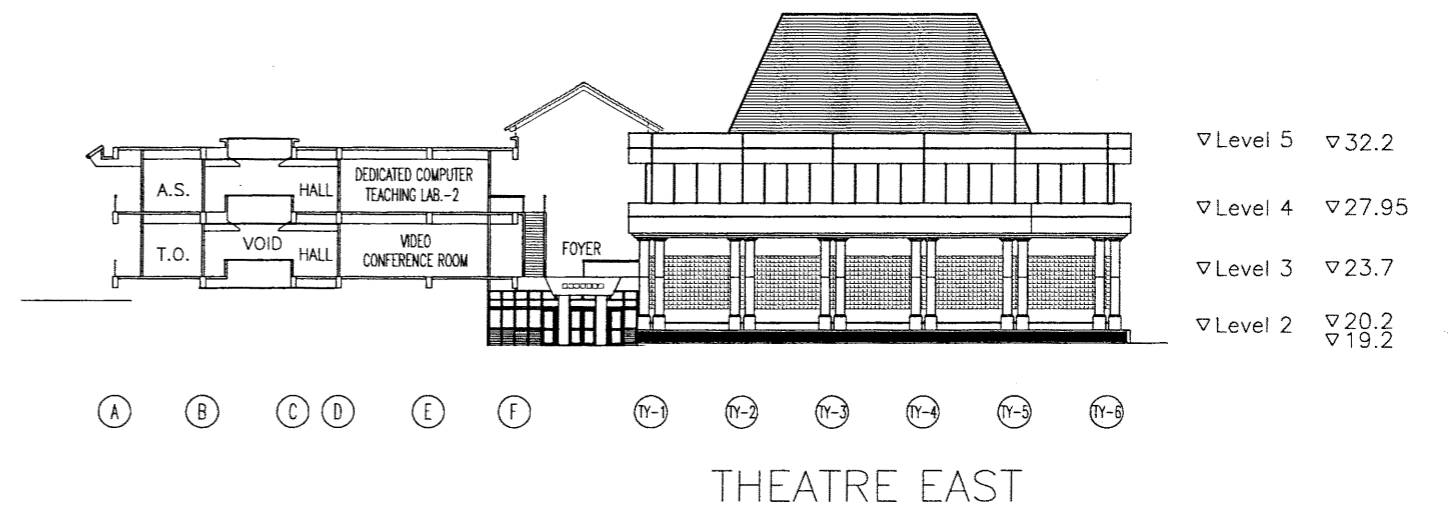
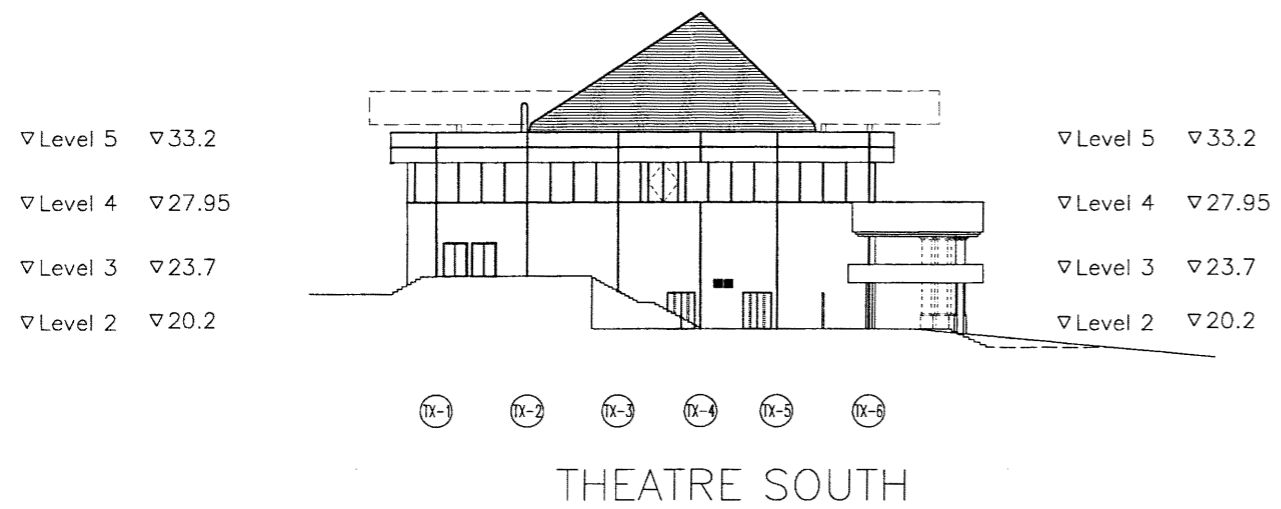
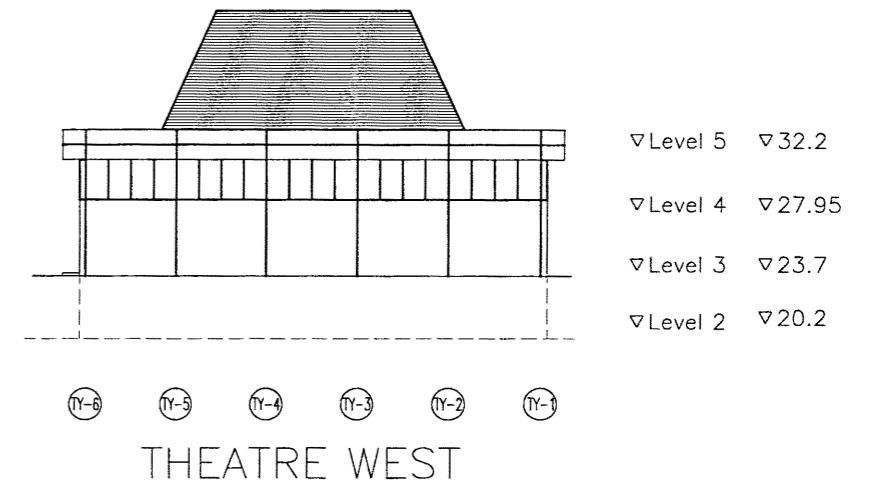
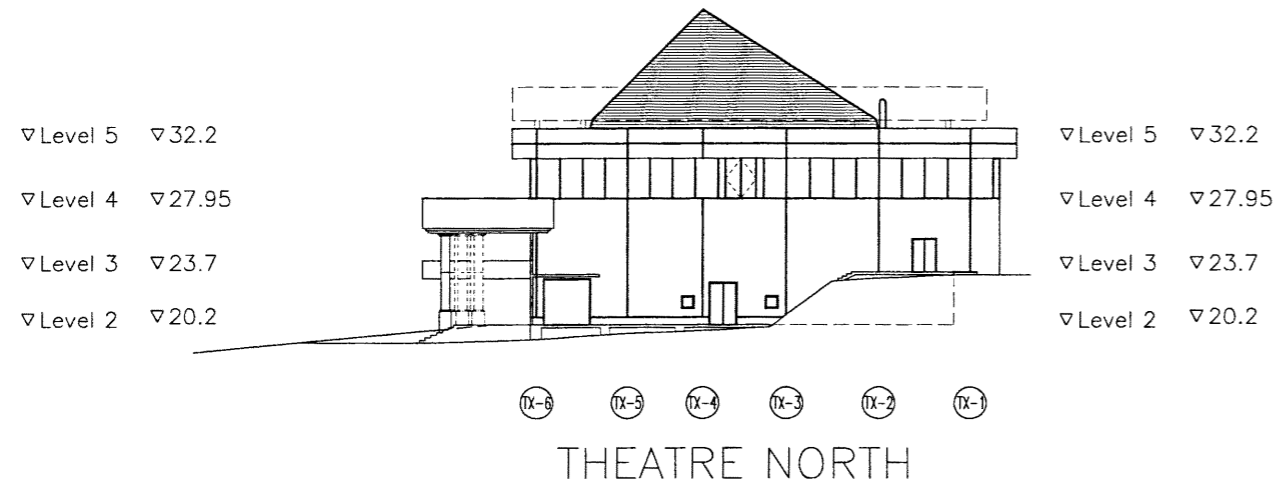
BLD-B WEST



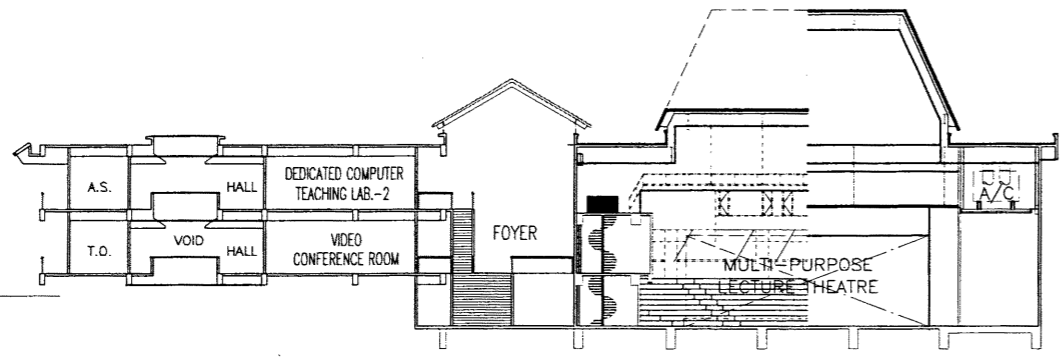
BLD-B SOUTH

BLD-A SOUTH

ELEVATION

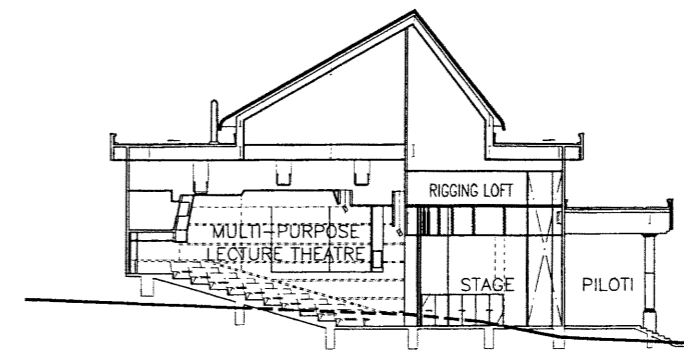


▽ (RFL= +32.2)
 ▽ (4FL= +27.95)
 ▽ (3FL= +23.7)
 ▽ (2FL+0.5= +19.2)



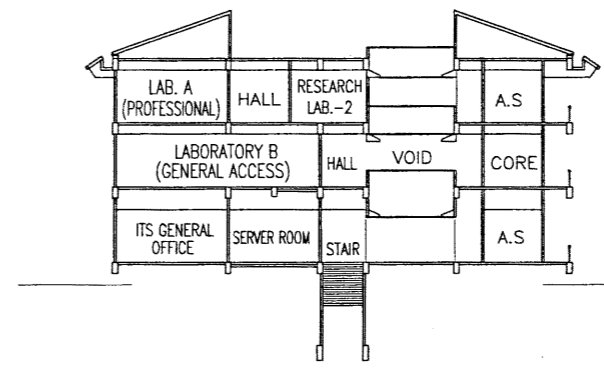
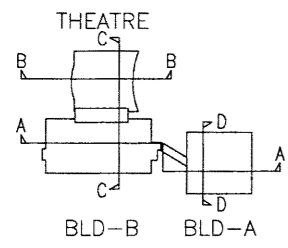
(A) (B) (C) (D) (E) (F) (TY-1) (TY-2) (TY-3) (TY-4) (TY-5) (TY-6)
 SECTION C-C

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 ▽ (4FL= +27.95)
 ▽ (3FL= +23.7)
 ▽ (2FL1.5= +20.2)



(TX-1) (TX-2) (TX-3) (TX-4) (TX-5) (TX-6)
 SECTION B-B

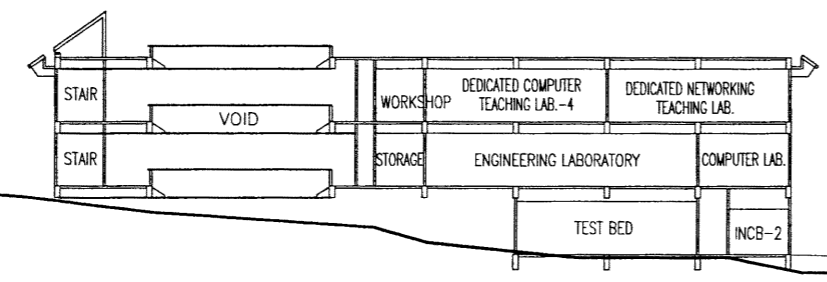
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 ▽ (2FL1.5= +20.2)



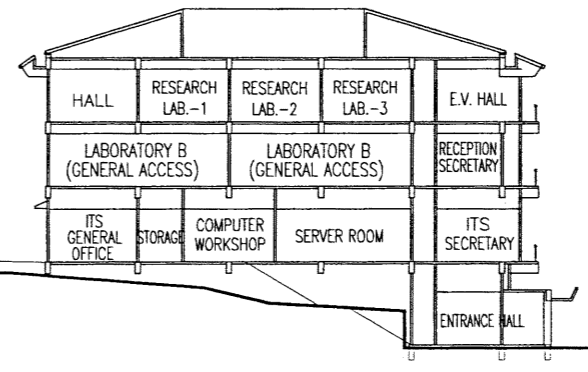
(Y1) (Y2) (Y3) (Y4) (Y5) (Y6)
 SECTION D-D

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 ▽ (3FL= +23.7)
 ▽ (2FL= +18.7)
 ▽ (1FL= +13.2)

▽ (RFL= +32.2)
 ▽ (4FL= +27.95)
 ▽ (3FL= +23.7)
 ▽ (2FL= +19.2)



(1) (2) (3) (4) (5) (6) (7) (8) (9) (10)
 SECTION A-A



(X1) (X2) (X3) (X4) (X5) (X6) (X7)

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 ▽ (4FL= +27.95)
 ▽ (3FL= +23.7)
 ▽ (2FL= +18.7)
 ▽ (1FL= +13.2)
 ▽ (GL= +13.0)

2-2-4 Implementation Plan

2-2-4-1 Implementation Policy

The elements of this project include facility construction work and the procurement and installation of equipment. The scope of cooperation regarding the project undertaken by the Japanese side will be implemented according to the framework of Japanese grant aid. Implementation of this plan shall be initiated officially only after it is approved by the Governments of both countries and the exchange of notes (E/N) is signed. Immediately after the signing of the E/N, the Japanese consultant, the responsible organization on the Fiji side, and USP, the implementing organization, shall enter a contract and initiate the detailed design work for the project. When the design is completed, the Japanese construction companies and equipment supply and installation companies will participate in the tender for their works. The successful tenderers for construction of facilities and supply and installation of the equipment will proceed to their work. The basic principles and items to be proposed for implementation of this project are described below.

1) Responsible organization and implementation organization

The responsible entity is the Ministry of Education of Fiji and the implementing organization in the project is USP. USP will be responsible for operation and maintenance of the facilities and the equipment provided by Japan.

2) Consultant

After the signing of the E/N, the Japanese consultant firm and the Government of Fiji will enter a consultant contract according to the formal procedure for the Grant Aid System of the Government of Japan. This consultant firm will execute the following activities under this Contract.

- ① Detailed design of the project: To prepare the design documents (specifications and technical reference materials on the facilities and equipment included in the project).
- ② Tender: To cooperate in the selection of the construction firm(s) and equipment supply and installation firm(s) through the tender, and to cooperate in transactions for procedures required under the contract.
- ③ Construction supervision: To supervise operations in order to ensure that proper instructions are conveyed for the construction of the facilities, delivery and installation of the equipment, and operation and maintenance.

In the detail design stage, the consultant determines the construction plan and the equipment supply plan in detail based on the basic design study of the project, reviews the equipment, and prepares tender documents consisting of specifications of the project plan, tender terms and conditions, and drafts of the contracts required for the construction work and procurement of

equipment.

Cooperation in the tender procedure involves three activities: observing the selection of the construction firm(s) and the equipment supply and installation firm(s) through the tender, helping the parties execute the formal procedures required for execution of their contracts, and preparing the reports to be submitted to the Government of Japan.

Construction supervision involves two activities: checking whether the tasks performed by the construction firms and equipment supply and installation firms are performed as specified in each contract, and confirming that the contents of their contracts are executed appropriately. To promote the smooth implementation of the project, the consultant shall also provide the related parties with advice and guidance and serve as a coordinator among them from a neutral position..

Major items in the scope of the construction supervision work are listed below.

- ① Procedures required for verification and approval of the work implementation plan, working drawings, equipment specifications, and other documents submitted by the construction firm(s) and equipment supply and installation firm(s).
- ② Inspection and approval prior to shipment of the construction materials, supply, installation and handling of the equipment.
- ③ Confirmation of instructions for the construction machines and materials, supply, installation and handling of the equipment.
- ④ Checking and reporting the progress of the construction.
- ⑤ Observation of the handover of the completed facilities and equipment.

The consultant shall execute the above items and report to the related authorities of the Government of Japan on the progress of this project, the payment procedure, and the handover of the completed facilities.

3) Construction firm(s) and equipment supply and installation firm(s)

The construction firm(s) and equipment procurement firm(s) shall be selected through an open tender for Japanese corporations which meet the specific requirements. In principal, in cases where the amount of the bid tendered is within the estimated price for the contract, the tenderer who bids the lowest price will be determined to be the successful tenderer and will negotiate the construction and the procurement contract with the Ministry of Education.

The construction firm(s) and the equipment supply and installation firm(s) shall construct the facilities; procure, deliver and install necessary construction materials and equipment according to the terms and conditions of contracts; and provide technical guidance for the operation, maintenance and management of the procured equipment to the Fiji side. In addition to providing guidance for securing a system of supply by the suppliers, manufacturers and agencies of spare parts and

consumables needed for the different equipment for continuous use of it after it is procured, these firm(s) shall provide support to make it possible to receive services such as gratis repair during the period of guarantee, paid repair after the period of guarantee, technical guidance, etc.

4) Japan International Cooperation Agency

The Grant Aid Management Department of Japan International Cooperation Agency (JICA) shall give due advice to the consultant, construction firm(s), and equipment supply and installation firm(s) to ensure that the project is implemented in conformity with the Grant Aid System. This department shall also hold consultations with the executing organizations of this project insofar as necessary for the smooth, trouble-free implementation of the project.

5) Preparation for implementation plan

The representatives of the executing organization on the USP side and the consultant shall review the implementation plan during the implementation design period. They shall clarify the scopes of the construction work for which the Japan and USP sides are responsible, confirm through consultations the starting time and the method of each work, and discuss relevant details to ensure that of the works are carried out smoothly according to the implementation schedule in this report. In particular, the USP side must be sure to carry out, at its own expense before commencement of the facility construction work, the demolition of buildings, the procurement and preparation of the land, the shifting of the existing electrical room and water tank, and other necessary preparations.

2-2-4-2 Implementation Conditions

The items to be noted for implementation of the project are described below. They should be fully taken into consideration when formulating the implementation plan.

1) Schedule Management

The foundation work will be started before the rainy season, if at all possible. The work scheduling should also be based on the recognition that the work will be of improved quality if the finishing is not performed during the rainy season.

2) Dispatch of Technicians for Equipment Installation

It is extremely important to impart knowledge and skills regarding appropriate operation and maintenance of the equipment so as to sufficiently contribute to the IT-related education services. That being the case, technicians who are thoroughly familiar with the operation of the different equipment will be selected as the equipment installation technicians, and sufficient time will be allotted for them to explain the operation thereof (operation techniques, simple repair techniques, inspection methods, etc.) and to make sure that those concerned on the receiving side acquire sufficient understanding concerning its operation and maintenance.

3) Safety Control

Temporary fences will be established around the construction site. Persons will be stationed on the site perimeter to direct traffic and give directions on site entry. Other measures will be provided to ensure sufficient safety control, as the USP will remain in operation to some extent during the construction under this project.

2-2-4-3 Scope of Works/ Procurement, Installation Categories

The success of this project hinges on the mutual cooperation between the Japan and Fiji sides. When this project is implemented under Japan's Grand Aid, it will be advisable that the Governments of Japan and Fiji undertake the scopes of work as described below, respectively.

1) Undertakings borne by the Government of Japan

The Government of Japan undertakes consultation of this project and the works related to construction of the facilities, procurement, and installation of equipment as described below.

① Consultation

- i. To prepare implementation design documents for the facilities and equipment subject for this project and their tender terms documents.
- ii. To cooperate in selecting the construction firm(s) and equipment supply and installation firm(s) and executing contracts for the project.
- iii. To supervise the construction of the facilities and the instructions for the delivery, installation, operation and maintenance of the equipment.

② Construction of facilities, supply and installation of equipment

- i. To construct facilities subject to this project.
- ii. To procure construction materials and equipment subject to this plan, and transport and deliver them to the site.
- iii. To instruct installation of the equipment subject to this project, conduct a trial run, and make adjustments.
- iv. To explain and instruct operation and maintenance methods for the equipment subject to this project.

2) Undertakings borne by the Government of FIJI and USP

The Government of FIJI and USP are to bear the cost of, and implement, the following work concerning, among other things, preparation of the facility construction site.

① Preparation of the construction site

- i. To secure and prepare the land for the construction and the temporary work.
- ii. To clear the existing facilities (5 dormitory buildings, structures such as containers, etc.) and trees and plants in the project site.
- iii. To replace the electrical room

- iv. To replace the water tank.
 - v. To reclaim the project site.
 - vi. To connect electricity line in the project site, install connecting poles, and take necessary related procedures.
 - vii. To secure water supply and take necessary related procedures.
 - viii. To install the computer and audiovisual wiring system.
- ② Outdoor work
 - i. Landscape planting, etc.
 - ii. Parking lot
 - ③ To purchase IT equipment and the furniture and equipment to be procured by the USP side, and to transfer the existing machines, furniture, and equipment.
 - ④ To make measures so that the Japanese firms will be exempted from tax, local tax, and various financial burdens imposed by the Government of Fiji on the purchase of goods and the provision of services executed according to the formally approved contracts.
 - ⑤ To provide measures to facilitate speedy customs clearance and surface transportation procedures for the equipment and materials to be exported from Japan and other foreign countries according to the approved contracts.
 - ⑥ To provide measures to facilitate procedures for those Japanese who enter Fiji and stay there to carry out their roles in the project.
 - ⑦ To issue approvals and permissions required for implementation of this project.
 - ⑧ To pay all the necessary expenses other than those borne by the Government of Japan.

2-2-4-4 Consultant Supervision

1) Implementation supervision policy

Under the policy of the Grant Aid System of the Government of Japan, the consultant shall form, based on the concept of the basic design, a team responsible for executing the project, including the preparation of the implementation design, to achieve smooth and successful implementation. The implementation supervision policy for this project is outlined below.

- ① To keep close contact with those in charge of the project representing related organizations of both countries so that the construction of the facilities and installation of equipment will be completed without delay.
- ② To provide quick and appropriate advice and suggestions from a neutral standpoint to the construction firm(s), equipment supply and installation firm(s), and others concerned.
- ③ To provide appropriate guidance and suggestions regarding suitable equipment layout and adjustment of tie-in with facilities, as well as operation and management after the handover. And to confirm that implementation has been completed and the terms of each contract are fulfilled, to observe the handover of the facilities and equipment and obtain an approval of receipt from the Fiji and USP sides.

2) Construction supervision plan

As the types of construction works involved in this project are versatile, a resident supervisor (in charge of construction) is appointed and the following engineers are dispatched from time to time in step with the progress of the construction works.

- Manager of general affairs (Overall coordination, process control)
- Engineer in charge of construction (Confirmation of construction methods, design concept, construction drawings, specifications of materials, etc.)
- Engineer in charge of structure (Confirmation of the ground conditions, foundation work, framework)
- Engineer in charge of electrical installation (Power supply & distribution system, electric service and substation, etc.)
- Engineer in charge of mechanical installation (Utility supply and processing system, air conditioning, water supply, drainage and plumbing system, etc.)
- Engineer in charge of equipment (Instruction for equipment installation, adjustment with the facility, confirmation of operation instructions, etc.)

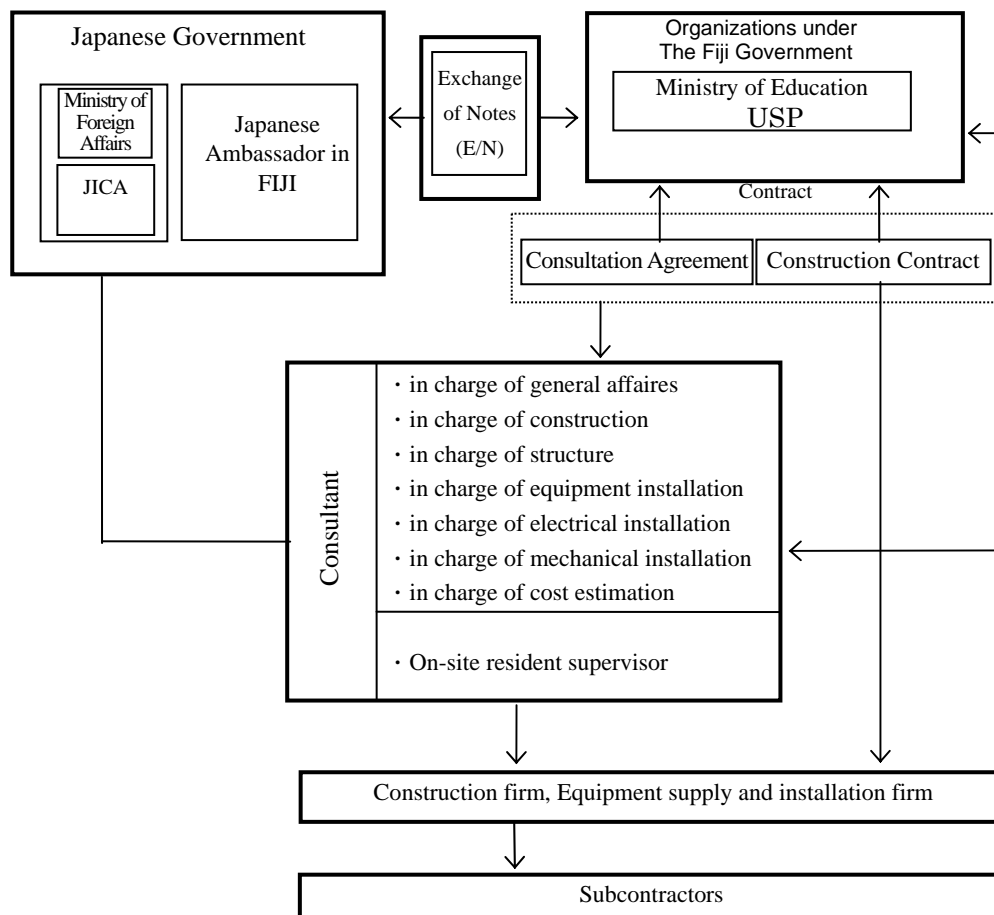


Figure 2-19 Supervision System

2-2-4-5 Procurement Plan

1) Construction materials

Construction materials that can be procured within Fiji are limited to sand/gravel, lumber, concrete blocks, and the like. Although there is one plant for cement in Fiji, cement will be procured from Japan or from a third country (such as Australia or New Zealand) for reasons of quantity and quality. The same will apply to steel bars, finishing material, and facility equipment as well.

In terms of labor, a construction rush started from late 2003, powered by the booming economy in Australia and New Zealand. A resulting shortage in the general labor force compounded the problems already posed by a pre-existing shortage of skilled workers, leading to strikes by construction workers. Under these circumstances, it will be necessary to select materials and adopt construction methods with an eye on shortening the construction period, and to dispatch Japanese engineers or supervisors from a third country to the construction site.

Table 2-25 Procurement Categories of Construction and Equipment Materials

Material	Procured from			Remarks
	Fiji	Japan	Third countries	
(Construction material)				
1. Solidification material for concrete (gravel, sand)	○			
2. Cement	○			
3. Reinforcing rods		○		
4. Steel-frame structure		○	○	Structure steel frame will be procured from Japan. Purling materials will be procured from AU or NZ.
5. Concrete blocks	○			
6. Metallic heat insulation material		○		
7. Wood, plywood	○			
8. Tiles for floors and walls			○	
9. Light-gauge steel furring strip			○	
10. Interior boards			○	
11. Wooden fittings	○			
12. Metal fittings		○	○	Japan, Malaysia
13. Fixtures for fittings		○		
14. Paint (general material)	○			
15. Paint for protection against rust		○		
16. Glass	○			
17. Concrete products	○			
(Materials for equipment work)	○			
1. PVC cable tubes	○			
2. Wires, cables	○	○	○	
3. Control panels	○			
4. Transformer			○	
5. Special control panels		○		
6. Lightning equipment		○		
7. Generator equipment		○		
8. Telephone system equipment	○			
9. Special light electrical equipment		○		
10. Sanitary earthenware	○	○		
11. Pumps		○		
12. Air-conditioning system	○			
13. Fans		○		
14. Refrigerator		○		
15. FRP water storage tank		○		
16. Electric water heater	○			
17. Piping	○	○		
18. Filters		○		
19. Hose reel (for fire hose)	○			

2) Equipment

Of the planned equipment, estimated procurement categories are as shown below.

Table 2-26 Procurement category of Equipment

Equipment	Procured from			Remarks
	Fiji	Japan	Third countries	
DLP Projector (L)		○		
LCD Projector (S) /w Screen		○		
PC (Desktop type)			○	China • Malaysia • Australia
Desk & Chair for PC			○	Malaysia
PC (Rack mount type)			○	China • Malaysia • Australia
Presenter		○		
DVD Player		○	○	China • Malaysia • Philippines
HDD/DVD recorder		○	○	China • Malaysia • Philippines
White Board		○		
LCD TV		○	○	China • Malaysia • Philippines
Remote Camera (w/Control System)		○		
Audio Speaker		○		
Audio Control System for Multipurpose Theater		○		
Video Control System for Multipurpose Theater		○		
A/V Control System for Video Conference Room		○		
A/V Control System for Conference Room		○		
Midrange Server w/Rack			○	China • Malaysia • Australia
Switching Hub			○	China • Malaysia • Australia
Patch Panel		○	○	China • Malaysia • Australia
Ethernet Card		○	○	China • Malaysia • Australia
PC (Desktop type)			○	China • Malaysia • Australia
Desk & Chair for PC		○	○	Malaysia
Embedded System Board		○		
Oscilloscope		○	○	China
Printer			○	China • Malaysia • Australia
High end Server			○	China • Malaysia • Australia
Midrange Server			○	China • Malaysia • Australia
Tape Backup Archive			○	China • Malaysia • Australia
Switching Hub			○	China • Malaysia • Australia
UPS			○	China • Malaysia • Australia
PC (Desktop type)			○	China • Malaysia • Australia
Desk & Chair for PC		○	○	Malaysia
Printer			○	China • Malaysia • Australia
LCD Projector (S) /w Screen		○		
Equipment Rack			○	China • Malaysia • Australia
PC (Desktop type for Scheduler)			○	China • Malaysia • Australia
Desk & Chair for PC		○	○	Malaysia
Workbench w/Chair		○	○	Malaysia
HDD/DVD recorder		○		
A/V System for USPNet Control Room		○		

Analog Communications		○	○	U.S.A. • Canada • Italy • England
Analog Communications Training System			○	Canada
Fiber Optic Communications			○	Canada • Italy • England
Antenna Training and Measuring System			○	Canada
Microwave Technology Training System		○		Canada • Italy
Digital Communications 1			○	Canada • Italy • England
Digital Communications 2			○	Canada • Italy • England
Digital Communications Training System			○	Canada
Oscilloscope		○	○	China
Power Supply		○		
Signal Generator		○		
Multimeter		○	○	China
Soldering Station		○		
Tool kits		○	○	China
Bread Board Set			○	Canada • Italy
PC (Desktop type)			○	China • Malaysia • Australia
Desk & Chair for PC		○	○	Malaysia
Midrange Server w/Rack			○	China • Malaysia • Australia
Workbench w/Chair		○	○	Malaysia
LCD Projector (S) /w Screen		○		
Microfilm Scanner			○	China • Malaysia • Australia
Flat-bed Scanner			○	China • Malaysia • Australia
Percentage (%)	0%	30%	70%	

2-2-4-6 Quality Control Plan

1) Quality Control of the Facility

The Construction firm(s) will submit the documents of construction plans in advance to the consultant according to the construction contract (drawings, specifications, etc.). The consultant will verify the adequacy prior to the commencement of construction, listing the specific inspection items and indicating the frequency of inspection necessary to secure a high level of quality control.

Major controlling items are listed below.

① Material

On-site resident supervisor will inspect the construction materials received.

- i. Mill sheets of steel bars, results of tension strength tests, and manufacturer names
- ii. Analysis tables of cement material identification, tables of test results and manufacturer names
- iii. Analysis of salt components in aggregate, size distributions, densities, and percentages of absorption
- iv. Reinforced concrete

iv-1 Mixing Plans

Confirmation and determination of the aggregate quantity, slump, cement-water ratio, air

quantity, and salt components through test mixings

iv-2 Compression Tests

Determination of the standard control values from analysis of result tables

iv-3 Control of material quantity measures and complete control of material storage

iv-4 Prior submittals of concrete casting plans

② Standards of Control

The consultant will supervise the construction in accordance with certain standards of control based on the approved construction schedule plans. The standards of control will basically be governed by the standards of Japan.

③ Soil-Bearing Capacity

The soil-bearing capacity will be confirmed at the site in the presence of an on-site resident supervisor by implementing plate loading tests.

2) Quality Control of Equipment

Ready-made equipment to be procured for this project will be selected from among equipment in full compliance with JIS, UL, IEC, ISO, and other international standards. The consistencies between the equipment to be procured and the contents of the contract will be confirmed at the inspections carried out before shipment, in parallel with the inspections carried out by third-party agencies for the containers and other components for shipment.

3) Transportation method and place of delivery

Regarding transportation of the equipment and materials, basically the construction materials are to be shipped by maritime transportation in containers. A liner service runs a route from Japan to Fiji's main cargo receiving port, Suva (a voyage of 2-3 weeks). Overland transportation is necessary from the port of Suva to the site, but this will pose no problems as the road conditions are favorable. The procurement plans also allow an extra week for unloading, customs clearance, and other formalities. This will ensure plenty of leeway in the schedule.

2-2-4-7 Operation Guidance Plan

The equipment to be procured in this Project is broadly divided into audio-visual equipment, information processing equipment, and the equipment for experiments at the Department of Engineering. The USP side has dedicated operation and maintenance personnel stationed at the Department of Computer Science, IT Service Division, the Department of Engineering, and the Media Center, where the equipment will be installed.

Most of the audio-visual equipment consists of systematized products and will be procured from Japan. For this reason, 2 Japanese engineers will be dispatched to provide training to the operation and maintenance personnel in charge of the relevant equipment. The period of training will be 6 days.

Information processing equipment (mainly personal computers, servers, and network products) will be procured locally. Under the supervision of the procurement manager from Japan, 2 engineers will be dispatched from the manufacturer's agency in Fiji to provide training to the operation and management personnel in charge of the relevant equipment. The period of training will be 4 days.

The equipment for the Department of Engineering (mainly measurement instruments and the equipment for experiments and laboratory classes) will be procured from Japan or third countries. Two Japanese engineers will be dispatched to provide training to the operation and maintenance personnel in charge of the relevant equipment. The period of training will be 6 days.

2-2-4-8 Implementation Schedule

1) Project Implementation Schedule

Implementation is carried out in two stages. One is the detail design stage in which the tender document is prepared and the main stage in which the tender and construction are executed. After signing of the Exchange of Notes (E/N) for the detail design stage, the tender document is prepared and after signing the E/N for the main stage, construction and equipment procurement works are carried out.

The table below shows the specific time schedule for each period.

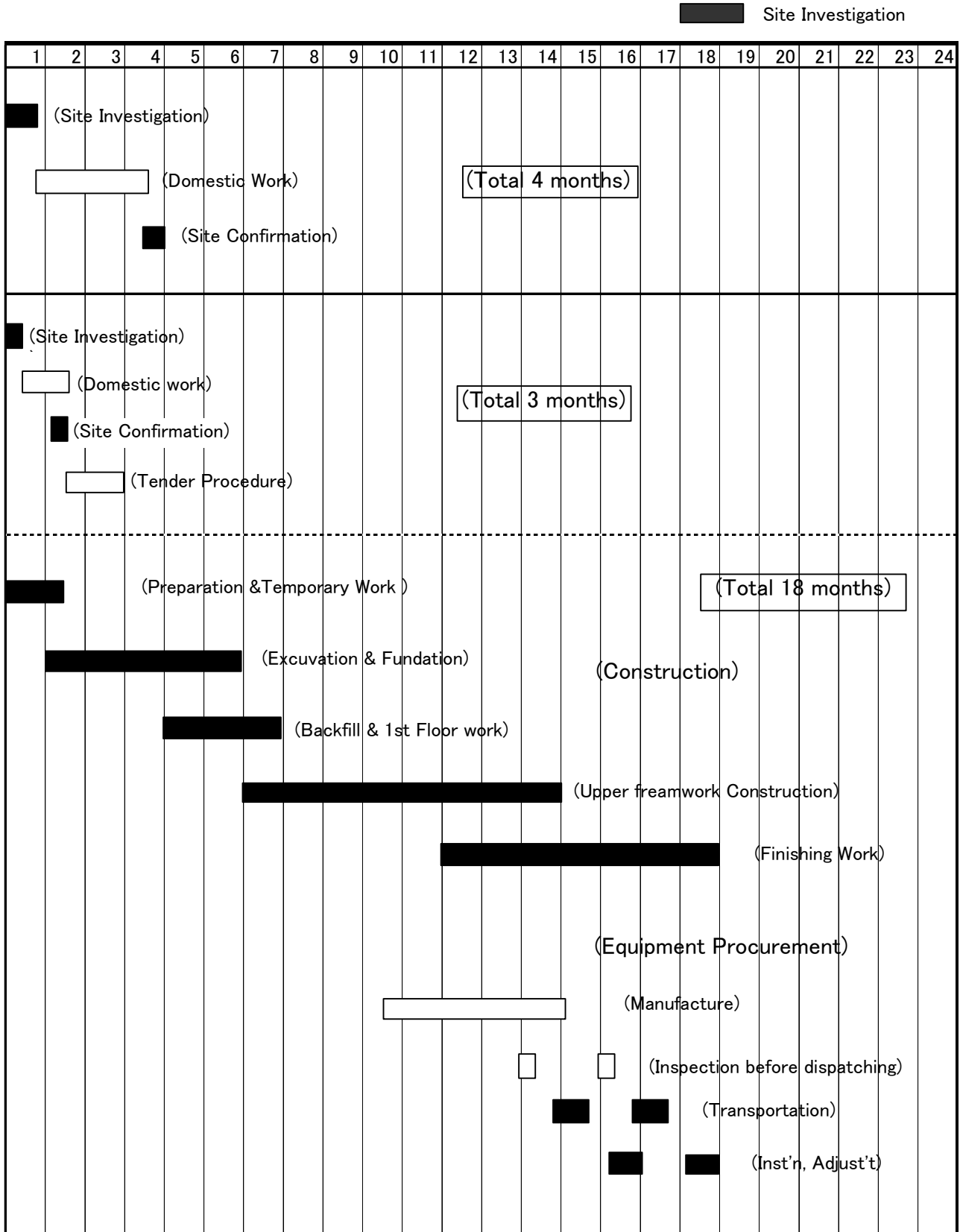
Table 2-27 Project Implementation Schedule

	Detail Design Stage	Main Stage
Detailed Design Stage (Including the field survey)	4.0 months	
Tender Stage		3.0 months
Construction / Procurement & Installation Stage		18 months
Total	4.0months	21.0 months

2) Implementation Schedule

The following table shows the implementation schedule of this Project.

Table 2-28 Implementation Schedule



2-3 Obligation of the Recipient Country

The scope of works regarding this project is described in “Article 2-2-4 (3) Scope of Works / Procurement/Installation Categories.” The scope of works on the Fiji side is outlined below.

(1) Procedures

1) Acquisition of the site

The building site, located within the USP campus, is leased from the Fiji Government on a contract for 99 years from 1977.

2) Exemption from tax

When Japanese companies and building constructors working on this project procure construction materials and equipment within the country for this project during the period of execution of construction, or import the same into Fiji from abroad, exemptions from customs duties, consumption tax, other inclusive tax, surcharges, etc. shall be required. In addition, measures will have to be taken for the prompt landing procedures required for custom clearances.

3) Accommodations allowed for imported materials and equipment from Japan or third countries

The Ministry of Education will provide required accommodations for prompt custom clearances and inland transportation procedures concerning the imported materials and equipment from Japan or third countries.

4) Acquisition of Building Permission

The application and acquisition of building permissions regarding this project must be completed without delay prior to the commencement of the construction. The same condition shall also apply to other applications and acquisitions required for the commencement of construction.

5) Issuance of Banking Arrangement and Authorization to Pay

The Ministry of Education will be the contact person on this project, and will promptly issue the Banking Arrangement and Authorization to Pay based on the agreement of the consultant and the contract of the executing agency.

(2) Tasks undertaken by the Fiji Government and the USP

The Fiji Government and the USP will share responsibility for executing the following tasks, all of which are indispensable for the smooth implementation this project:

1) Removal of obstacles and site-preparation work at the construction site

Five dormitory buildings, a number of power-receiving facilities and in-house power-generation facilities, a water receiving tank, trees, and other structures and objects will have to be either removed from the construction site or relocated within the site. The construction site is sloped downward from the west side to the east side and leads to the Laucala Bay. The USP needs to remove the above buildings, structures, trees, and complete rough land reclamation in accordance with the design ground of the construction site before the construction starts.

The above works are all inexpensive and do not require any special techniques. The contents of

the works are capable of being shared sufficiently by the Fiji Government and the USP.

2) Infrastructure development

① Relocation of power-receiving facilities

The existing power-receiving facilities provided by FEA need to be relocated to ensure that they do not interfere with this project.

② Relocation of in-house generator

The existing in-house power generator needs to be relocated to ensure that it does not interfere with this project. The in-house power generator required for this project will be procured in this project separately.

③ Relocation of water-receiver tank

The existing water-receiver tank needs to be relocated to ensure that it does not interfere with this project.

④ Wiring for computers, videos, and the network system within the building

The pathways in the building required for those equipment will be laid out by the Japanese side with the wiring works implemented by the USP.

3) Outdoor work

① Parking lot

A parking lot to accommodate visitors on occasions such as lectures and conferences in the Multi-purpose Lecture Theater will be provided by the USP in the back of the ICT Centre.

② Landscape planting

The Landscape planting works will be executed by the USP in accordance with the outdoor work of this project.

4) Relocation of existing equipment and furniture

The relocation of existing equipment, furniture, etc. in the existing facilities and purchase of required equipment will be included in the scope of the project undertaken by the USP. The relocation of the existing ICT equipment can be executed by the IT Service, while the furniture, etc., can be relocated individually by the staff without asking for assistance of vendors (thus ensuring that no cost sharing will be incurred).

The relocation will be executed from places partially completed, one after another.

2-4 Project Operation Plan

2-4-1 Administration Plan

(1) Operation System and Organization

The USP will be in charge of the operation and maintenance of the facilities after completion as the implementation agency under the supervision of the Ministry of Education of Fiji. This project aims to mitigate the digital divide in Fiji and the South Pacific countries and to promote the development of the social economy by completely developing the possibility of ICT utilization and by establishing a central educational/research institution for information and communication technology which enables the South Pacific region to participate in the global information society on a full scale.

Since commencing its audio remote education using satellites in 1973, the USP has fostered engineers and expanded its IT service department on its own in order to fulfill its leading role in the ICT field in Fiji. This project does not intend to establish a new department, but to expand and strengthen the existing department. With the human resources and equipment having been beefed up in recent years in response to the high demand for the Computer Science Course, upgrades in the existing administrative organization will allow the organization to remain operating on a continuous basis.

(2) Manpower planning

Faculty teaching staff accounted for 620 of the 1,818 USP total staff as of 2006. Faculty of Science and Technology teaching staff accounted for 126 and School of Computing, Information & Math Sciences teaching staff accounted for 38, and their numbers are still increasing. Given that the purpose of this project is to upgrade the existing ICT-related courses, and given that faculty recruitment implemented each year by the USP on a continuous basis in accordance with the curricula, the USP is considered to be capable enough to operate the ICT Centre after completion.

As a “Technical Cooperation Project” in fiscal 2006, the USP is considering dispatching the three professionals in charge of the operation and maintenance of the centre, Internet protocol technology, and information security technology, respectively, to a professional institute in Japan with the objective of acquiring technologies and knowledge required for the startup, operation, and maintenance of the Information Communication Technology Centre to be newly constructed in association with this project.

2-4-2 Maintenance System

(1) Maintenance System of the USP

With regard to the maintenance of the USP, in light of the fact that ICT-related maintenance has been executed by the ICT Service Department and maintenance of facilities has been executed by the Building and Repair Department, the USP will have sufficient operating and maintenance capabilities when the ICT Centre is opened.

The 54 persons working in the ICT Service Department are engaged in the maintenance of the satellite communication across the whole campus, as well as the registration, operation monitoring, and

security control of the ICT equipment. There are expected to be 60 such personnel by the time the ICT Centre opens.

The Facilities and Properties Department consists of approximately 70 personnel, including interior cleaning staff, outdoor maintenance staff, storemen, assistants, repair staff (carpenters), plumbers, painters, electricians, and mechanics.

2-4-3 Financial plan

(1) Budget and financial status of USP

As shown in the Table below, the growth of expenditure has been in excess of that of annual income since 2005, and a single-year deficit was recorded in 2006. The cause of this deficit was the increase in the data traffic generated by students, resulting from the acceleration of USPNet and the improvement of the Internet environment. The costs for the acceleration of USPNet have been expended from the maintenance support budget for 2 years (2005 and 2006).

Table 2-29 Financial Status of USP from 2002 to 2006 (Profit-And-Loss Statement) (UNIT: FJ\$)

Revenues	2002	2003	2004	2005	2006
Government subsidy	38,376,000	41,925,000	43,257,150	44,431,675	50,328,190
Tuition from students. etc.	9,799,786	12,378,687	15,360,045	16,813,166	18,482,081
Foreign aid	4,777,082	4,490,660	5,621,446	5,746,593	5,828,371
Revenues from other businesses	2,818,930	4,503,721	3,803,941	6,527,885	6,491,419
Total revenues	55,771,798	63,300,071	68,042,582	73,519,319	81,130,061
Expenditures					
Compensation to the faculty	23,747,355	27,185,448	28,307,775	33,229,581	38,348,124
Service fees for supporting the faculty (including internet expense)	9,581,453	10,915,972	12,055,341	13,485,227	14,729,289
Management support	9,472,197	10,036,437	10,996,098	10,568,219	15,146,763
Utilities, land related expenses and maintenance expenses	3,530,886	3,177,482	3,937,720	5,248,424	5,493,548
Communications cost	1,563,035	1,671,464	1,987,476	2,334,076	2,148,958
General education expenses	3,054,533	2,482,695	3,609,740	3,881,066	2,933,909
Other expenses	2,920,562	4,345,940	3,095,558	3,701,764	1,348,349
Building and repairing expenses	678,000	678,000	678,000	928,000	1,033,000
Reserve fund	40,000	40,000	40,000	40,000	338,988
Finance Lease Interest				33,879	40,655
Total expenditures	54,588,021	60,533,438	64,707,708	73,450,236	81,560,583
Annual surplus	1,183,777	2,766,633	3,334,874	69,083	(430,522)

Source: USP

As shown below, the expenditure for teaching staff cost, university support service, and maintenance support was increasing at a high rate of over 10%, but this growth was less than 10% in 2006.

Table 2-30 Revenues and Expenditures from 2003 to 2006 (Year-On-Year Growth Rate)

	2003	2004	2005	2006 (Unit: %)
Growth rate of the total revenue	13.5	7.5	8.0	10.6
Growth rate of the total expenditure	10.9	6.9	13.5	11.0
Growth rate of Service fees for supporting the faculty (including internet expense)	13.9	10.4	11.9	9.2

(2) Past and present budgets and expectation in 2007 of USP

Since 2007, USP has limited the student Internet usage, and plans to build and operate a system for charging excess usage fees to make a balance between income and expenditure.

The following table shows 2007 financial forecast obtained from USP Finance Division.

Table 2-31 2007 Year End Forecast of Financial Status of USP (UNIT:FJ\$)

	ANNUAL BUDGET 2007	ACTUAL June 2007	Year End Forecast
<i>Income</i>			
Government Subsidy	53,798.5	27,238.3	53,798.5
Tuition fees from students	20,208.6	9,314.1	19,094.0
Foreign aid	5,805.0	3,745.1	5,805.0
Revenue from other businesses	1,550.0	562.5	1,782.5
Total Income	81,362.1	40,859.9	80,480.0
<i>Expenditure</i>			
Academic	38,058.0	18,725.7	38,406.5
Academic Support Services	13,894.6	7,109.9	14,514.4
Administration Support	14,394.9	6,699.4	14,035.5
Utilities, Grounds & Maintenance	4,922.1	2,254.8	5,290.1
Community Services	2,415.1	1,207.0	2,449.7
General Education Expenditure	3,823.4	1,091.3	3,009.4
Miscellaneous Expenditure	2,307.8	797.8	1,714.0
Medium Works	533.0	533.0	533.0
Depreciation charged to Recurrent Fund	352.0	176.0	352.0
Finance Lease Interest	41.0		41.0
Total Expenditure	80,741.9	38,594.9	80,345.6
Surplus/(Deficit) for Year	620.2	2,265.0	134.4

(3) Analysis of past expenditures and perspective of future expenditures after completion of facilities

The operation cost of the ICT Centre consists of the compensation to faculty; communications cost; building and repairing expenses; lighting, heating and similar costs; facility maintenance expenditures; and equipment maintenance expenditures.

Compensation to faculty accounts for approximately 45% of the total expenditure of the USP, while the utilities, land-related expenses, maintenance expenses, and communications costs account for only 8% to 10%.

This section will discuss the individual items of the estimated expenditure of the ICT Centre and calculate the income and expenditure over the next five years from the estimated point of project completion (2008) based on the information obtained from the USP. For the purpose of calculation, the rate of rise in prices will be assumed to be 1.99%, the average rate for Fiji in the past three years (Source: Fiji Statistics Bureau).

1) Labor cost

The data for the period from 1999 to 2005 show that the staff cost continuously accounted for approximately 45% of the total expenditure, but increasing to 47% in 2006. With approximately 40 personnel expected to be hired, the total number of the faculty to be involved in the ICT Centre after the completion of the facilities is expected to climb to 89. The income and expenditure will be calculated on the assumption that the ICT Centre will receive budget allocation commensurate with the increase in the labor cost from the USP.

2) Service fees for supporting the faculty (including internet expense)

The amount of student network usage associated with the faster USPNet and improvement of the Internet environment has increased since 2005, recording a loss in 2006. Since 2007, USP has limited the student Internet usage, and plans to build and operate a system for charging excess usage fees to make a balance between income and expenditure.

Since this item will be covered by the entire university, it does not need to be estimated and covered under ICT Centre alone.

3) Communications cost

Telephone, fax and mail fees account for large part of the item. The cost was approximately 3.2% of the entire USP expenditures in 2005, but was reduced to 2.6% in 2006 in conjunction with the start of IP phone network running inside the campus.

Since this item will be covered by the entire university, it does not need to be estimated and covered under ICT Centre alone.

The communications cost, which chiefly consists of the telephone/fax rates and Internet connection fees, accounts for 3% or less of the total USP expenditure. That being the case, this ratio will be applied to individual income and expenditure.

4) Lighting, heating and similar costs

Electricity charges and water supply charges will be calculated based on the sizes and the contents of the facilities and equipment in this project.

5) Facility maintenance expenditures

The facility maintenance expenditures account for approximately 6% of the total expenditure. Because the air-conditioned floor area of the facilities to be constructed in this project exceeds 50% of the total floor area, the ratio of the facility maintenance is expected to increase. In light of the above factor, the ratio of the future facility maintenance expenditures against the total expenditure is estimated to be approximately 20%.

5) Equipment maintenance expenditures

The expenditure required in association with the application of the equipment procured in this project is mostly electricity charges. However, because most equipment expected to be procured in this project is intended for replacement of decrepit equipment, the additionally increase in the electricity charge is estimated to be approximately 116,641FJ\$, which will account for approximately 17% of the lighting, heating and similar costs of the USP. Thus, the increase in electricity charges is evaluated as less problematic in terms of operation.

2-5 Project Cost Estimation

2-5-1 Initial Cost Estimation

When this cooperation project is implemented, the project cost needed on Fiji side will be FJ\$2,717,000 (205.5 million yen). The breakdown of cost is estimated as follows, according to the estimation condition described in (2) below.

(1) Cost Estimation to be borne by Fiji side

Table 2-32 Cost Estimation to be borne by Fiji side

		(FJ \$)	(million Japanese Yen)
Total		2,717,000	205.5
1)	Demolition of Existing Building	401,000	30.3
2)	Leveling of Construction Site	26,000	2.0
3)	Move of Power Receiving Station	40,000	3.0
4)	Move of Water Tank	40,000	3.0
5)	Landscaping	261,000	19.8
6)	Parking	200,000	15.1
7)	Planting	32,000	2.4
8)	Equipment	472,000	35.7
9)	Furniture	180,000	13.6
10)	Theatre Equipment	734,000	55.5
11)	Power Receiving Equipment	301,000	22.8
12)	Banking Commission Fee for B/A and A/P	30,000	2.3

* Networking, Telephone calling, Moving Expenses are not included in the cost estimation above.

(2) Condition of Cost Estimation

1) Time of Cost Estimation

From February 2004 to September 2005 (half year average rate)

2) Exchange rate

•US \$ 1= 121.33 Japanese Yen

•FJ \$ 1= 0.6236 US \$

•FJ \$ 1= 75.66 Japanese Yen

3) Construction term

The period of detailed design, construction and procurement of equipment is identified in the implementation schedule.

4) Other

This Project will be implemented though the system of the Grant Aid cooperation by the Government of Japan.

2-5-2 Operation and Maintenance Cost

The income and expenditure after the completion of the facilities are estimated as follows:

Table 2-33 Income and Expenditure after Opening of the ICT Centre (Unit: FJ\$)

		Year 1	Year 2	Year 3	Year 4	Year 5	TOTAL
Operating Expenditure							
Labour Cost		1,133,200	1,277,000	1,541,200	1,820,100	2,234,300	8,005,800
Building Maintenance		676,100	725,300	776,900	830,900	919,000	3,928,200
Equipment	Depreciation	1,134,800	1,134,800	1,134,800	1,134,800	1,134,800	5,674,000
	Maintenance	160,000	164,800	169,700	174,800	180,000	849,300
	Consumables	20,000	20,600	21,200	21,800	22,500	106,100
Total Expenditure		3,124,100	3,322,500	3,643,800	3,982,400	4,490,600	18,563,400
Source of Revenue							
USP Revenues		200,000	206,000	212,200	218,600	225,200	1,062,000
Revenue Balance	Computing Science	219,300	228,100	237,300	246,800	256,700	1,188,200
Departmental Budget Allocation	Computing Science	852,000	987,400	1,243,000	1,513,100	1,918,000	6,513,500
	ITS	218,500	225,000	231,700	238,600	245,700	1,159,500
Revenue - Extra-Curricular	Trading Income	87,600	219,000	246,400	277,200	311,900	1,142,100
	Development Project	356,000	400,500	450,600	506,900	570,300	2,284,300
	Literature & Language	25,000	28,100	31,600	35,600	40,100	160,400
	ITU/Cisco/USP Academy	996,000	1,025,900	1,056,700	1,088,400	1,121,100	5,288,100
Total Funding		2,954,400	3,320,000	3,709,500	4,125,200	4,689,000	18,798,100
Surplus / (Deficit)		(169,700)	(2,500)	65,700	142,800	198,400	234,700
Cumulative Surplus		(169,700)	(172,200)	(106,500)	36,300	234,700	234,700

(1) Running cost of facilities

Electricity charges and water supply charges are calculated as follows:

1) Electricity charges

Electric energy (ICT Centre): {700Kw (estimated contract demand) ×0.4 (daytime demand factor) C 14hr (service hours) + 700Kw ×0.2 (nighttime demand factor)×8hr (service hours)}×365 days=1,839,600Kwh /year

Electric charge (ICT Centre): 1,839,600Kwh /year × 0.35FJ\$/Kw
=643,860 FJ\$

2) Water supply charges

57.6t(demand per day) × 240days × 0.57 FJ\$=7,880 FJ\$

(2) Running cost of equipment

The maintenance expenditures for the equipment provided in this Grant Aid Project are basically limited to the electricity charges during the operation of the equipment. The following table lists equipment requiring special attention to control maintenance expenditures due to large-quantity electricity consumption and other factors.

Table 2-34 Running cost of equipment

Equipment	Qty	Required daily electric energy per unit (kW/h)	Total required daily electric energy (kW/h)	Annual required electric energy (kW/h)	Annual required expenditure
Server	22 units	22kW/h *1	484 kW/h *2	176,660kW/h	61,831 FJ\$
Personal computer	290 units	2.7kW/h *3	783kW/h *4	156,600kW/h	54,810 FJ\$

*1 : Calculated on the assumption of 24 hours of daily service.

*2 : Calculated on the assumption of 365 days of service each year.

*3 : Calculated on the assumption of 8 hours of daily service.

*4 : Calculated on the assumption of 200 days of service each year.

Calculated on the assumption that the electricity charge is 0.35 FJ\$ per 1kW/h.

2-6 Other Relevant Issues

The following points should be considered in order to sustainably manage this project and maintain stable supply of the personnel with IT skills to the Oceania region.

- Gradual increase of subsidy from 12 member countries.
- Keeping teachers with high ICT technology
- Increase in data transfer speed of the Internet and satellite communications
- Acquiring maintenance technique on facilities and equipment and securing maintenance cost every year
- Continually upgrading the skill of maintenance technique on ICT

Chapter 3 PROJECT EVALUATION AND RECOMMENDATIONS

Chapter 3 PROJECT EVALUATION AND RECOMMENDATIONS

3- 1 Project Effect

As mentioned before, the USP is providing remote Pacific Ocean island countries with distant education activities through the USPNet, and hence providing assistance in the ICT field of the USP is deemed as a great contribution to alleviation of the digital divide, one of the objectives of this Project.

The number of applicants to enter the USP is constantly on the rise, and particularly ICT and accounting related courses attract more students. However, the Department of Computer Science is located in a wooden building, which was constructed in haste, where space and computers available for students are totally in shortfall and the environment for computer installation is quiet inadequate.

The implementation of this Project will benefit not only the students at the USP but also 12 Pacific Ocean island countries through improvement of the ICT environment.

The effects expected as outcomes of the Project are summarized as follows.

Table 3-1 Project Effects and Degree of Improvement over Current State

Current state and problems	Countermeasures through the project (project component to be undertaken)	Effects from the project and degree of improvement
<p>The Pacific Ocean region is ruled by unique geographic conditions, with the islands being scattered over a broad expanse of ocean, and there is a significant information differential, or 'digital divide,' in the region. Moreover, the communication infrastructure itself is undeveloped, making human resources development difficult, and there has been no development to date of industries utilizing IT.</p> <p>At the same time, the number of applicants entering the USP is constantly on the rise, and incoming students are particularly interested in ICT and Accounting. However, the Department of Computer Science is located in pre-fabricated wooden buildings with insufficient space, and the number of computers for student use is also insufficient, while the facilities and equipment are in a state of deterioration and disrepair.</p>	<p>An 'ICT Centre' will be built on the Laucala Campus of the University of the South Pacific, consisting of a Common Area that includes a Multi-purpose Lecture Theatre large enough to accommodate 300 people, a Department of Computer Science, an IT Services Division, a Research and Development Department, and a Department of Engineering, and equipment and materials for the Centre will be procured.</p>	<ul style="list-style-type: none"> · The computer learning environment at the University of the South Pacific will be refurbished, and the number of incoming students in the ICT field will increase, as well as the number of students graduating and the number of students who find employment after graduating. · The information differential in Fiji (population approximately 848,000) and the South Pacific island nations (population approximately 1.1 million) will be mitigated. · The number of USP students who will directly benefit is a combined 21,131 students (2006) from the campuses on the 12 South Pacific island nations, including Fiji, but it is also expected that implementing the Project will promote socio-economic development as a result of the development of information communication technology in the South Pacific island nations.

It is thought that the effects of the Project should appropriately be evaluated at some point after 2012 two years past completion date (2010), when the final transfer of the facilities and equipment takes place.

Table 3-2 Indicators of Project Achievements

Success indicator	2006	Two years after the opening of the ICT centre (After 2012)
Number of the ICT relation curriculum	63 courses/year	88 courses/year
Possibility opening hours of the ICT education courses for adult	24 hours/week	48 hours/week
Graduates from the computer science of USP	179	Increase
Employment to the ICT related jobs	97 (2004)	Increase

① No. of ICT related curricula

The number of ICT-related curricula will be increased as a result of developing the ICT Centre and securing a necessary number of laboratories.

② Hours for ICT-related courses designed for adults

The number of hours of courses for adults will be increased by developing the ICT Centre and increasing the number of dedicated laboratories.

③ Number of Graduate from the computer science of USP

The study environment is improved and the number of graduate will be increased by the construction of the ICT center.

④ Number of employment to the ICT related jobs

Number of employment person from the ICT relation increases, with the increase of the graduates that had the skill of ICT by the construction of the ICT center.

In addition to the above, implementing the Project is expected to provide the following direct and indirect effects to the USP.

(1) Direct effects

- The ICT educational environment will be improved by increasing the number of computers to be used by the growing number of new students, particularly in ICT and Accounting courses, from 402 to 688 including 446 units to be installed in the ICT Centre (285 of which are to be procured by Japan) and 242 units in the existing facilities.
- The environment for the computers in the Department of Computer Science will be improved

from the quiet inadequate conditions in the wooden building which uses dangerous insulation materials for the sake of air-conditioning efficiency.

- The computer laboratories will be improved so that the number of curricula at the Department of Computer Science can be increased from 63 courses in 2006 to 88 courses per year afterwards.
- By constructing the Multi-purpose Lecture Theatre with an accommodation capacity of 300 persons, overpopulation of accommodation capacity of 242 lecture hall will be improved.
- The capacity for ICT-related training courses designed for adults will be increased from 24 hours/week to 48 hours/week.
- The reliability of the internal network environment in the University will be enhanced through improving the equipment and setting environment for the server of the IT Services Division.
- The Research and Development Department which conduct joint research/development with the outside organization is upgraded and the research and development division is strengthened.

(2) Indirect effects

- Setting up a central educational and research centre for information and communications technology within the USP will facilitate the Pacific Ocean island nations to participate in the global information society.
- Fiji and other Pacific island countries will promote training leaders in R & D and lead the research and development in the ICT field by leveraging the Centre, and hence they will be able to develop ICT potential to contribute to human resources development, education, environmental preservation, and development of society and culture in the field of media development.
- The Department of Engineering to be newly established will be able to supply engineers who are hitherto lacking in this field on the islands.
- The ICT educational environment will be strengthened thereby increasing the number of workers in the ICT-related fields.

3- 2 Recommendations

In order to utilize the facilities built and the equipment and materials procured as a result of implementing the Project to the maximum limit, and to realize and sustain the results of the Project implementation, the following issues have been identified as those that must be addressed by the Government of Fiji and by the USP.

3-2-1 Issues and proposals

- 1) Maintenance of the facilities and equipment

Financially, the university is not encumbered by deficits, and is maintaining a sound financial situation. In addition to the total amount required for heating and lighting expenses, communication expenses, maintenance control and building repair expenses being assured at approximately 10% of annual expenditures, the Department of Planning & Facilities oversees maintenance of the various facilities, with an organizational structure that involves around 70 persons in all. Thus, the management and maintenance control capability is regarded as being fully adequate.

With respect to IT equipment and materials, all IT equipment and materials are handled by the IT Services Division, and no problems are foreseen in terms of the ability to carry out management and maintenance control capability of facilities and equipment in the ICT Centre.

However, because the computer laboratory is at the core of this facility, it was found that the floor space devoted to air conditioning amounts to just under 60% of the overall facility. Taking the service life of the equipment into consideration, it is suggested that sufficient maintenance of the air-conditioning equipment will need to be carried out, and sufficient funds will need to be assured to cover the cost of electricity usage.

2) Upgrading of the USPNet

In the beginning of 1990, USP introduced the first e-mail system in the Pacific island nations and, in 2000 with support from Japan, completed USPNet, a network using satellite communication that uses 64 kbps voice and data lines and a 128 kbps video line with which a distant education system was implemented even though the quality was somewhat rough at 10 to 15 frames per second. Later between 2005 and 2006, thanks to employment of IP and improvement of communication speed, 25 time faster speed up was materialized.

As a result, it is possible to provide Distant and Flexible Learning through satellite communications with the output of 4 Mbps and input of 3 Mbps for two-way communications (like TV conference). However, the speed is not fast enough for multi-session (connection with plural sites) through the two-way communications. Thus, further effort in increasing communication speed is expected in order to fully make use of the facilities upon completion of this project.

3) Internet environment

As a result of cooperation from the Government of Australia in 2005, connections were made to the AARNET (Australian Academic Research Network) through Southern Cross Cable on March 4, 2005, and the Internet connection environment was significantly improved, from 1 Mbps to 155 Mbps.

At the same time, however, in view of future advances in Internet technology, it is hoped that the Internet connection environment will continue to be augmented and strengthened following the opening of the ICT Centre.

3-2-2 Items related to technical cooperation and other donors

Japan conducted the USP Communication System Updating Project using grant aid in 2000. Since 2002, the USP Remote Data Communication Technology Enhancement Project (technical cooperation project) was conducted. In 2003, there was such a case that Australia and New Zealand cooperated with the UPS Communication System Updating Project that was promoted by Japan (JICA).

The USP requested of JICA to support for the management of the ICT center, dispatch specialists on technical support and supervisors, and provide training for the USP staff after the project finished. The Japanese side should consider and review technical cooperation for the project.