- 7. "The Bureau of Plant Industry", white colored envelope, including organization chart; staff, functions & objectives; thrusts & strategies; plans & programs; special project and brief description about its services
- 8. Work Plan and Budgetary Requirements for Studies
 - a. BEF 100: Work Plan
 - b. Budgetary requirements for studies in 1994
 - c. Total cost of R & D activities 1994
 - d. Prioritized list of R & D projects (with their budgetary requirements) in 1994
- 9. News Paper Articles on Banning of Pesticides
 - a. "Fertilizer body suspends license of big pesticide manufacturer", the Philippine Star, January 14, 1994
 - b. "Government gets tough against Hoechst, judge", The Daily Inquirer, January 25, 1994

PAL-Cebu

1. Study on Pesticide Residue Degradation (on eggplant)

Regional Office in Region 7

1. The Medium-Term Agricultural Development Plan 1993-1998

Agricultural Training Institute

- a. Structure of the Extension System
- b. Organization Chart of the DA
- c. ATI Organization Structure
- d. Map of the National and Regional Training Centers

Fertilizer and Pesticide Authority

- 1. FPA Organization
 - a. FPA Organization Chart
 - b. Office of the Executive Director
 - c. Office of the Deputy Executive Director (Administration)
 - d. Administrative Division
 - e. Finance Division
 - f. Field Services Division
 - g. Information Services Division
 - h. Office of the Deputy Executive Director (Operations)
 - i. Industry Development Division
 - j. Technical Services Division
 - k. Industry Evaluation Division
 - 1. Staffing Modification
- 2. FPA Annual Report 1993

- 3. FPA Trainings 1993
 - a. Summary of Agro-chemical Dealers Trainings as of December 31, 1993
 - b. Summary of Agro-medical Trainings 1993
 - c. Trainings, Mango Contractors, 1993
- 4. Laws on Pesticide Management
 - a. Presidential Decree No. 1144
 - b. FPA Rules and Regulations, No. 1, Series 1977
- 5. Registered Pesticides
 - a. Agricultural use
 - b. Household use
 - c. Restrictions on availability and usage
- 6. FPA Pesticide Regulatory Policies and the Implementing Guidelines and Procedures
- 7. Article on a magazine, "Monitoring Fertilizer and Pesticide Use", Greenfields, May 1993

Asian Development Bank

- 1. Pesticide Management and Integrated Pest Management in Southeast Asia, edited by P.S. Teng and K.L. Heong, 1988
- 2. PHI: Crop Protection in the Highland Agricultural Development Project (HADP) area of Northern Luzon Consultant's Report, Dr. Graham Martin
- 3. Diamondback Moth and Other Crucifier Pests, Proceedings of the Second International Workshop, Taiwan, 10-14 December 1990, N.S. Talekar (eds.), Asian Vegetable Research and Development Center
- 4. Pesticide Hazards in the Third World; New evidence from the Philippines, Jennifer A. McCracken and Gordon R. Conway, International Institute for Environment and Development
- 5. Technical Assistance (JSF-Finances) to the Republic of the Philippines for Integrated Pest Management for Highland Vegetables, ADB, December 1993
- 6. Project Completion Report of the Highland Agriculture Development Project in the Philippines, July 1994

Food Development Center

- 1. 1993 Year End Highlights of Accomplishments
- 2. Questions and Answers about the Food Development Center
- 3. Schedule of Training Courses/Seminars for 1994

11. SUBSURFACE INVESTIGATION REPORT OF THE PROJECT SITES (EXCERPT)

(1) PAL-Central

OFFICE: 921-52-41 Loc. 225

921-04-81

921-13-4 LAB 99-36-02

GEOTECHNICS PHILIPPINES, INC.

800 E. DE LOS SANTOS AVENUE, QUEZON CITY, PHILIPPINES * CABLE ADDRESS: GEOTECH TELEX NO. 722-27877 FFC PH * FAX NO. 921-0481

FINAL REPORT
SUBSURFACE INVESTIGATION
FOR THE PROPOSED PESTICIPE LABORATORY BUILDING
DILIMAN. QUEZON CITY

INTRODUCTION

This report constitutes the results and final interpretation and evaluation of the subsurface investigation conducted by GEOTECHNICS PHILIPPINES, INC. at the site of the proposed two (2)-storey Pesticide Laboratory Building in Visayas Avenue, Diliman, Quezon City.

As required for the design of the building foundation system, a subsoil investigation program was carried out to establish the geotechnical design parameters. Two (2) borings were drilled at the site as shown in the Borehole Location Plan. A resume of the borings is as follows:

Borehole	Depth (m)	Drilling Period
BH-1	10.00	May 24-26, 1994
BH-2	10.00	May 27, 1994

The boreholes were drilled by a combination of the wash boring technique through unlithified materials and core drilling through rock formations. In the wash boring method of advancing

SUBSURFACE EXPLORATION * LABORATORY TESTING * FIELD LOAD TESTING * EVALUATION & ENGINEERING REPORTS * FOUNDATION RECOMMENDATIONS * WELL DRILLING * SPECIAL PROBLEMS

the borehole, a chopping bit attached to the bottom end of a string of drilling rods was alternately raised and dropped and, at the same time, the cultings resulting from the process were continuously pumped out of the hole by pressure controlled water. At regular intervals through soils, representative samples were obtained using a standard 2-inch diameter split-spoon sampler coupled to the bottom end of the string of rods. penetration tests (SPI) were conducted contemporaneous to splitspoon sampling in order to measure the consistencies of the strata encountered. This test was carried out by dropping a standard 63.6 kg (140)b) hammer through a free fall of 76.2 cm (30 inches) onto a drive head coupled to the top end of the string of rods. The number of blows (drops) for three (3) successive six (6)-inch increments of penetration were recorded and the total number of blows for the last two (2) increments of penetration was taken as the standard penetration value or SPT-N value of the stratum.

At regular intervals through rock formations, core samples were taken using coring bit which was attached to a standard core barrel. In the drilling operation, the bit and core barrel rotate while pressure is applied, thus, grinding a groove around the core. Water under pressure is forced down the barrel and into the bit to carry the rock dust out of the hole as the water is circulated. The core recoveries after each

drilling interval were taken to determine the degree of disturbance of the rock core samples.

Finally, the representative soil samples obtained were subjected to laboratory routine classification and index property tests (grain size analysis, Atterberg limits and natural moisture content tests) while the typical intact rock cores were subjected to unconfined compression test.

The results of all field and laboratory tests undertaken are appended to this report (boring logs, grain size distribution curves and stress-strain curves).

DISCUSSION OF RESULTS

The results of the borings reveal the presence of lithified or rock formations near the beginning of the boreholes. Generally, sedimentary rock formations predominate the foundation of the project site.

A thin soil surficial layer with a thickness of about 1.0-1.5 m and consisting of silty clay overlies the lithified formations. The clay layer has a hard consistency (SPT-N greater than 45) with moisture content of 57-71% and plasticity index of 30-35.

Generally, poor to good core recoveries were

experienced in the underlying lithified or rock formations consisting of layers of sandstone, siltstone, tuff and claystone. Rock quality based on the rock quality designation (RQD) ranges from very poor to fair. Very poor rock quality, as experienced mostly in both boreholes, signifies intense fracturing and high degree of weathering.

The laboratory unconfined compression tests on upper core samples show that the sedimentary rocks are of medium hard variety. The unconfined compressive strengths of the samples range from 9.10 kg/sq. cm (18,200 psf) to 61.30 kg/sq. cm (122,600 psf). The lowest value was exhibited by the sample taken from a depth of about 3 meters in BH-2 while the sample from a depth of about 2 meters also in BH-2 gave the highest value. The claystone sample taken from a depth of about 7 meters exhibited a very low unconfined compressive strength of 0.30 kg/sq. cm (600 psf).

The depth of the ground water surface measured in both boreholes was about 3.0 meters below the ground surface.

CONCLUSIONS AND RECOMMENDATIONS

The design of the foundation structures of the proposed 2-storey building can be made as shallow foundations resting on the surficial clay layer or on the rock formation. The choice of

the type and design of shallow foundation structure depends on economic considerations and loading conditions.

For the proportioning of footings based on the surficial materials (i.e., based not more than 1.5 meters below present grade), the allowable bearing pressure under full vertical loading should be assumed at 3.0 kg/sq. cm (6.000 psf) net. Under load combinations with wind or earthquake, the allowable overpressure is one third (1/3).

Total settlement should be minimal (less than one inch) using the above allowable soil bearing pressure. It can be expected that foundation settlement will mostly take place during or immediately after the construction of the proposed structure. In the analysis of immediate settlement, the elastic properties modulus of elasticity and Poisson's ratio, may be assumed 2,000 psf and 0.25, respectively. The elastic properties may also be assumed based on the recommended values in most foundation engineering textbooks.

In view of the existing condition of the rock strata wherein the formations are generally of very poor to fair quality based on the values of RQD, the use of not more than fifteen (15) percent of the laboratory unconfined compressive strengths of the core samples tested is recommended to represent the field strength of the rocks. For the proportioning of footings based on

GEOTECHNICS PHILIPPINES, INC.

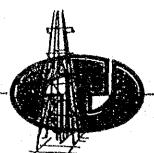
the upper rock formation, the allowable bearing pressure under full vertical loading should be assumed at 4.0 kg/sq. cm (8,000 lb/sq. ft), taking into account the decreasing strengths of the formations at lower depths and the fractured condition of the rocks. Settlement is expected to be minimal using this recommended allowable bearing pressure. Under load combinations with wind or earthquake, the allowed overpressure is also one third (1/3).

ØILBERTO/S. REYES Civil Engineer Reg. No. 20269

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4.00	C-3	CRG	80	53	0	20		SANDSTONE, fine to coarse cemented; highly fractured VERY DENSE	grained; dark gray; weak	39.19 y
6.00	C-4	CRG	60	40	0	23				
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(2) PAL-Davao

OFFICE

921-1349 921-0481

LABORATORY:

921-5241 loc, 2' 99-36-02

GEOTECHNICS PHILIPPINES, INC.

800 E. DE LOS SANTOS AVENUE, QUEZON CITY, PHILIPPINES * CABLE ADDRESS: GEOTECH TELEX NO. 722-27877 FFC PH FAX NO. 921-12-23

FINAL REPORT ON THE SUB-SURFACE
INVESTIGATION CONDUCTED AT THE SITE OF
THE PROPOSED PESTICIDE LABORATORY BUILDING
LOCATED IN BAGO OSHIRO, DAVAO CITY

I. INTRODUCTION

This report presents the geotechnical study conducted on the site of the Proposed One-Storey Pesticide Laboratory Building located in Bago Oshiro, Davao City

GEOTECHNICS PHILIPPINES, INC. was commissioned by YOKOGAWA ENGINEERS & ARCHITECTS of Japan to conduct the soil investigation and topographic survey of the proposed project.

The site is located in Davao National Crop Research and Development Center, about 17 Km. from the city proper and the area are planted by fruit bearing trees of different variety.

We acknowledged the presence of Yokogawa architect and staff of Bureau of Plant and Industry in facilitating our undertakings.

II. SUB-SURFACE INVESTIGATION

2.1 General

The program of investigation work was designated by the Client consisting of two (2) holes with a total meterage of 20.00 meters and an area of 40m. x 50m. for topographic survey. A slight variations were made to suit actual field conditions.

2.2 Method of Sampling and Drilling

A motorized cathead was employed initially, then a hydraulic feed rotary drilling machine was reinforced to advance the drill holes on boulder formations. Washboring technique was used to penetrate ordinary soil while rotary drilling was used to advanced through rock formation.

Standard penetration testing (SPT) was carried-out in soil at depth intervals of not more than 1.0m. This test was performed using procedures and equipment conforming to ASTM D1586.

1

Core drilling was achieved by means of NQ size double tube core barrels fitted with diamond bits. After each drilling run of 1.5m, the core barrel is withdrawn from the drill hole and the core sample recovered is examined.

2.3 Drilling Investigation

As schedule our team mobilize ahead on site to comply the May 30, 1994, date of actual boring test. No prior inspection were made on the site and only light equipment was mobilized to carry-out the investigation. The following resume of boring test are as follows:

BH-1	- May 30 - 31, 1994	- 2.0 meters deep Hit boulders at 2.30 m. confirm by offset holes BH-1A and BH-1B
вн-2	- June 1, 1994 -	0.65 meters deep Confirm by test pit and two offset hole BH-2A and BH-2B
BH-3	- June 2, 1994 -	3.0 meters deep Hit boulder at 3.30 meters offset holes BH-3A and BH-3B shallower boulder
BH-4	- June 3, 1994 -	1.0 meter deep Hit boulder at 1.30 meters
BH-1	- June 24-26, 1994 -	10.00 meters deep

The area is said to be underlain by an alluvial deposit of big boulders from the slope of Mount Apo and the topmost soil are residual soil of high plasticity. Refusal or boulder formation was hit at various depth ranging from 0.65 meters to 3.30 meters from the ground level. Water table was observed at level -5.15 from ground on BH-1.

III. FINDINGS AND RECOMMENDATION

Based on the results of investigation on the proposed building, the area has two interface, the clay formation on the top layer (0.65 to 3.30) and the boulders and cobbles formation down to 10.00 meters deep. These boulders formation are believed to have CLAY-SILT matrix. For the purpose of construction design the footings may be founded at surficial layer (0.70-1.00m.) using the allowable bearing pressure of 1500 psf. A footing tie beam is recommended to counteract the effect of differential settlement as some footings may rest on boulders while some may embed on soil. The settlements are expected to be minimal (less than 25mm.) using the above bearing capacity. Under load combinations with wind or earthquake, the allowed over pressure is 33%.

During construction, the foundation bed should be compacted and or a well compacted gravel bedding should be placed to develop a better contact between the concrete and the soil.

The above recommendation were based on the borings done on site and should any major changes in soil strata be discovered during construction the undersigned should be informed so that necessary recommendations be made.

CMM/c

DIOSDADO A. URENA Civil Engineer PTR No. 1404257 Issued on July 29, 1993 Quezon City, Metro Manila

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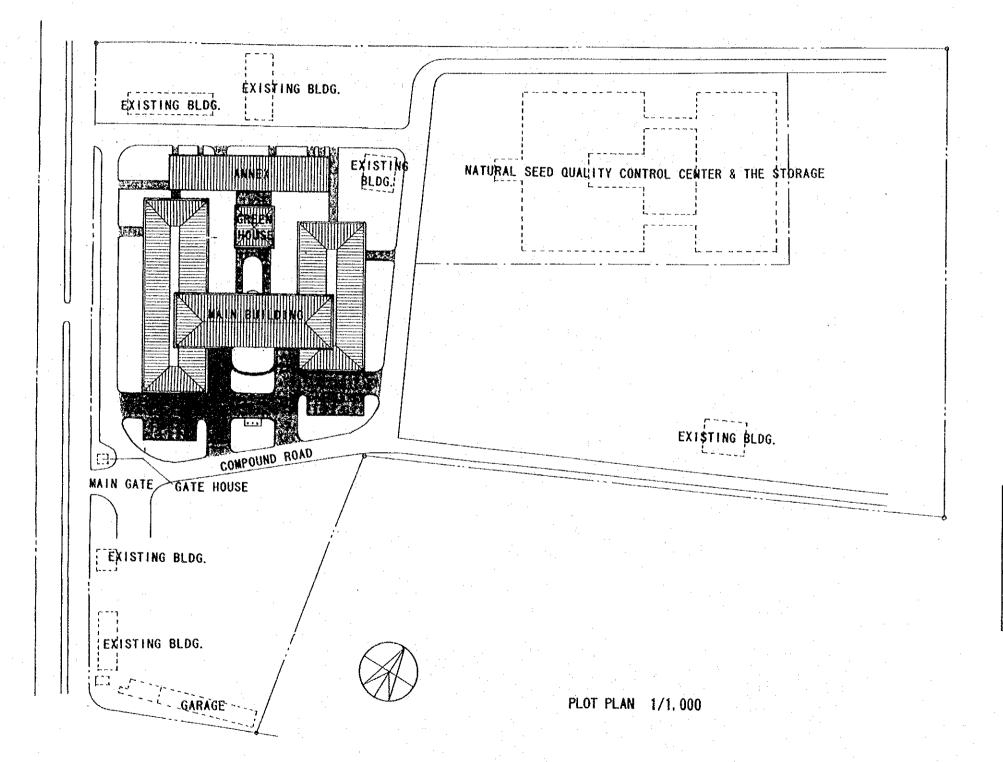
	G	EOTF	CHNI	CS P	НІІ	INC						Borehole BH-2	······································
Project	***********	************	ESTI					/ B	LDG.	Start	June 1, 1994	Sheet 1 of 1.	·
Location	*****		Oshiro	~~~~~					-	Finish	June 1, 1994	0.00 to 0.65 metres	
Equipme		ATHE				<u>-</u> _			·		The state of the s	Groundlevel 111.21	l n
Method	W	/ashb	oring								***************************************	Hammer Wt. 63.6 Kg	
Watertal				n					·	·		Hammer Fell 76.2 cm	
Depth	Samp	Туро	NMC	LL	PI %	ΝV	NV		Rec				Level
Metres	по	tost		%	%		o	100	1	Legend	Description		m
- · ·											(CH) Silty CLAY with little some fibrous matter; dark STIFF NV: (2)(4)(7)	send, few gravel and brown; very moist	111.2
_ `-													
· ·	S-1	SPT	52	78	46	11	છ	-	10		End of hole at 0.65 metre	5.	110.5
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				l			L	l					<u> </u>
Remarks	: Hit E	BOULDI	ER at (0,65m	s. Con	firm	by to:	st pit	holo	and	Dr	iled by W. Mosqu	ıeda
			holo B									gged by A.P.Arcilla	
											· · · · · · · · · · · · · · · · · · ·	ecked E.G.Merca	
NV = 1			· · · · · · · · · · · · · · · · · · ·									PROVED A.P. Arcilla	
Descr.	of strate	accor	ding to	AST	M Clas	sifical	tions					Scals: 1:25	

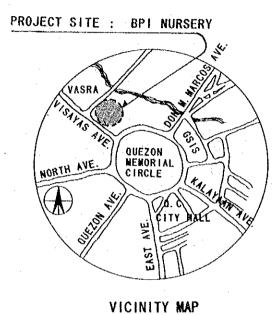
GEOTECHNICS PHIL., INC.	Borehole BH-3
	ine 2, 1994 Sheet 1 of 1.
	ine 2, 1994 0.00 to 3.00 metres
Equipment CATHEAD	Groundlevel 111.80
Method Washboring	Hammer Wt. 63.6 Kg
Watertable Nil m	Hemmer Fell 76.2 cm
Depth Samp Type NMC LL PI NV NV Rec Legend Demonstres no test	escription n
- (C	CH) Silty CLAY with little send end some fibrous atter; dark brown; very moist RM V; (3)(4)(5)
S-1 SPT 47 81 49 9 0 40	
	with few send TIFF V: (5)(4)(6)
S-2 SPT 53 95 62 10 0 40	. with little sand
N	V: (6)(5)(7)
S-3 SPT 56 80 48 12 0 40	
5.00 En	ad of hole at 3.00 metres.
	594
Permarkat. His POLIDES as 2-20 Ciff and 2-10 Ciff	1-1111111111111111111111111111111111111
Remarks: Hit BOULDER et 3.30mts, Offset holes BH-3A & BH-3B show	Drilled by W. Mosque
Remarks: Hit BOULDER at 3.30mts. Offset holes BH-3A & BH-3B show a shallower hard stratum.	Logged by A.P.Arcilla

	G	EOTE	CHNI	CS P	HIL.,	INC					The state of the s	Borehole	BH-4	:====== !
Project	***********				LABO			Y B	LDG.	Start	June 3, 1994	Shoot 1	***************************************	·
Location			******		vao (Finish.	June 3, 1994		1.00 metres	:
Equipme		ATHE										Groundle) lu
Method	W	ashbo	oring			-						Hemmor	Wt. 63.6 Kg	
Waterteb				π,									Fell 76.2 cm	
Depth Metres	Samp no	Type test	NMC	LL %	PI %	ΝV	NV 0	100	Rec 1	Legend	Description			Level m
											(CH) Silty CLAY with littl matter; dark brown; very FIRM NV: (2)(2)(4)	e sand and rnoist	some fibrous	110.9
	S-1	SPT	52	93	60	6	Ъ		40					
- 1.00-			ļ		}		1			YZZZ	End of hole at 1.00 metr	os.		109.9
														•
2.00														
										,				
3.00											OF 04	PHILLIPPY HALL LARGE	Tana.	
Remerks	; Hit l	BOULD	ER at	1,30m	(9,							Orilled by Logged by	W. Mosqu A.P.Arcilla	
					,	 -		·——		~		Checked	E.G.Merca	
NV = I	No, of t	Blows			· · · ·							APPROVED	A.P.Arcilla	
	of strate		rdina +	n AST	M Clas	sifica	ilione	*******					Scele: 1:25	
													1 2000 1.20	

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								•						BH-2	\mathbb{Z}	3						-	:		*************	1	:	:		. \\	U	0		
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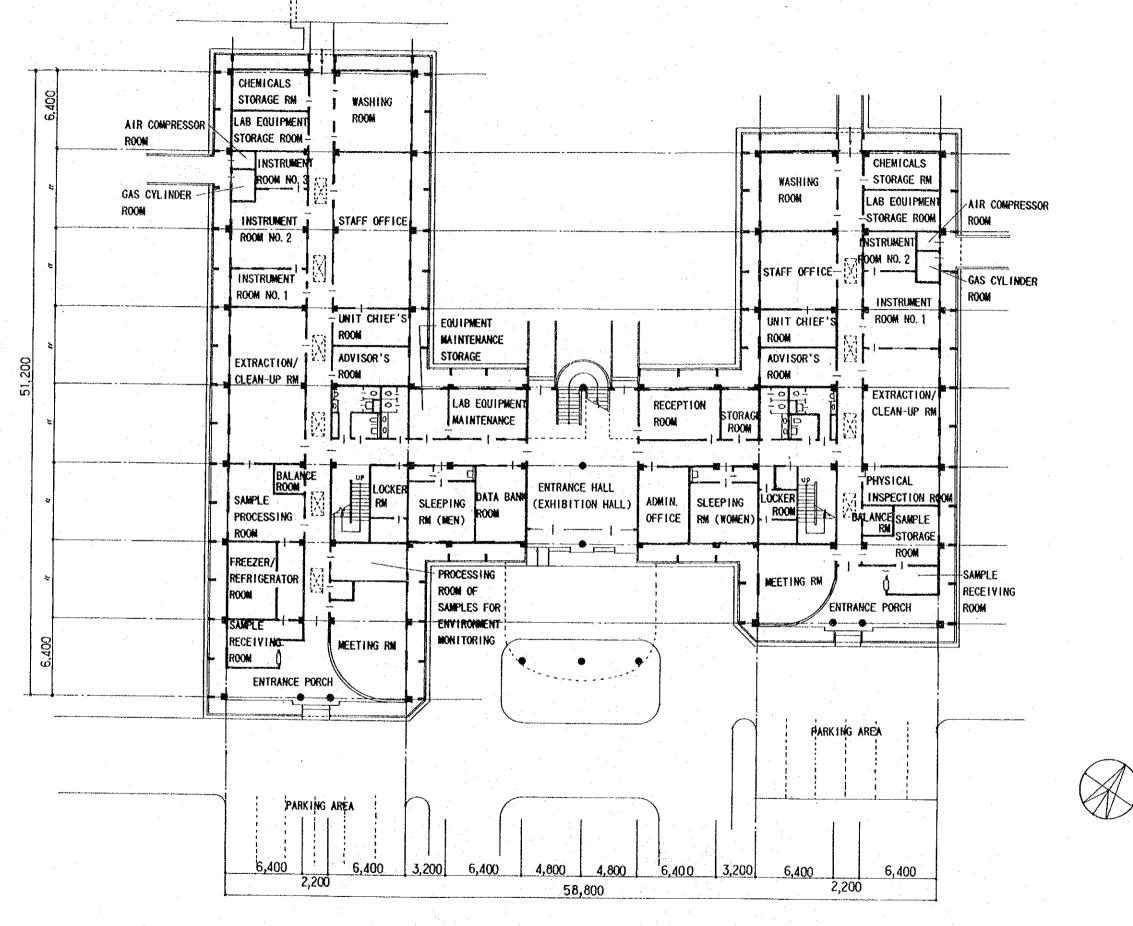
BASIC DESIGN DRAWINGS



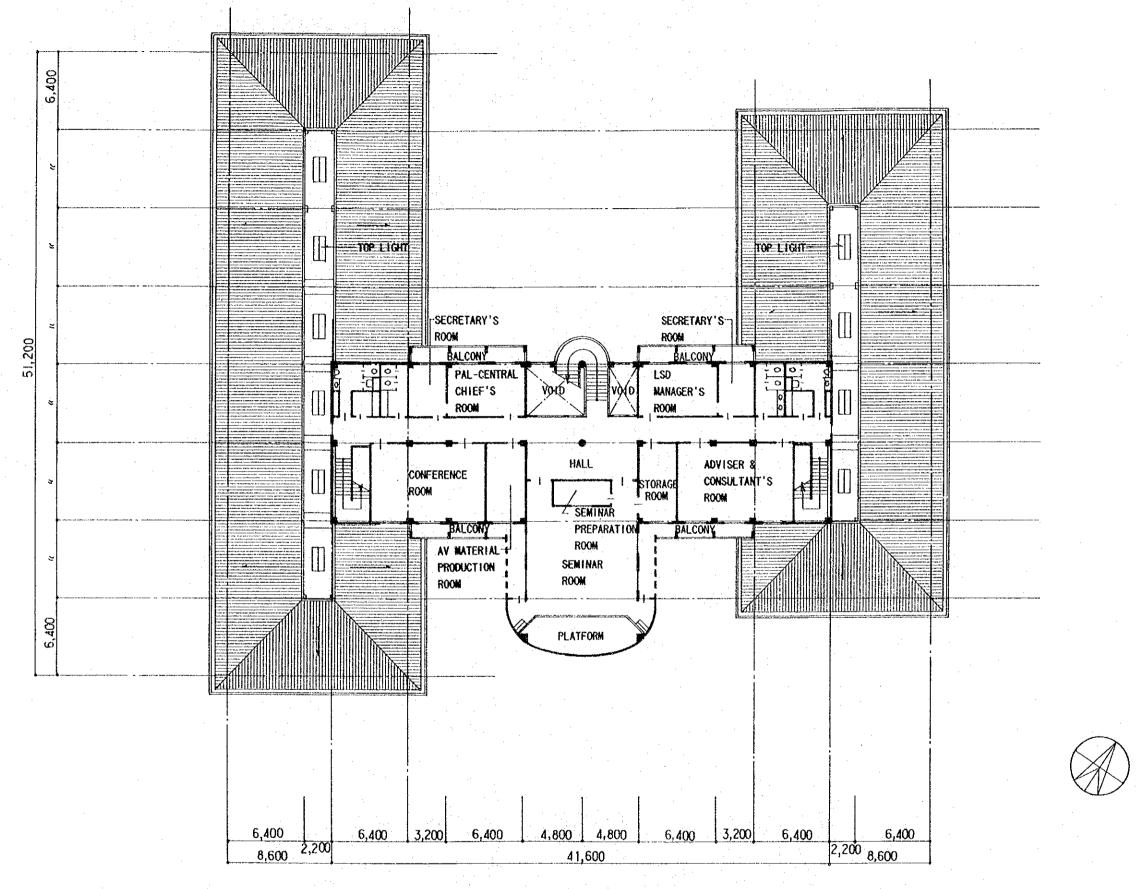


FLOOR AREAS

BUILDING	FLOOR AREA (m1)
MAIN BUILDING	2, 270. 38
ANNEX	286. 72
GREEN HOUSE	81.00
TOTAL FLOOR AREA	2, 638. 10



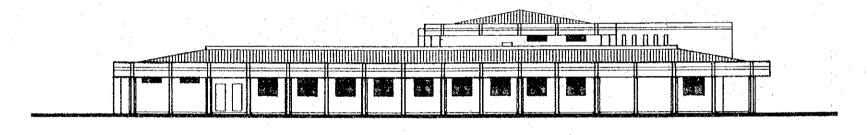
MAIN BUILDING GROUND FLOOR PLAN 1/300



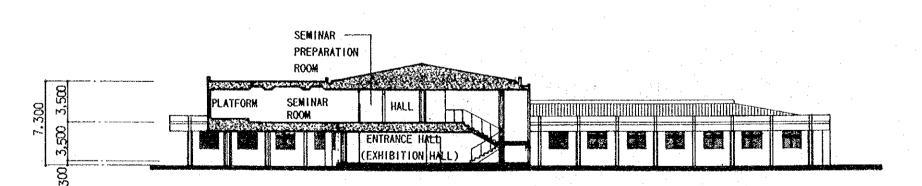
MAIN BUILDING SECOND FLOOR PLAN 1/300



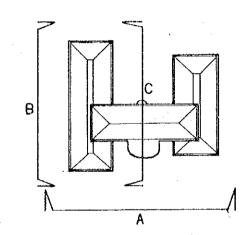
SIDE A ELEVATION 1/300

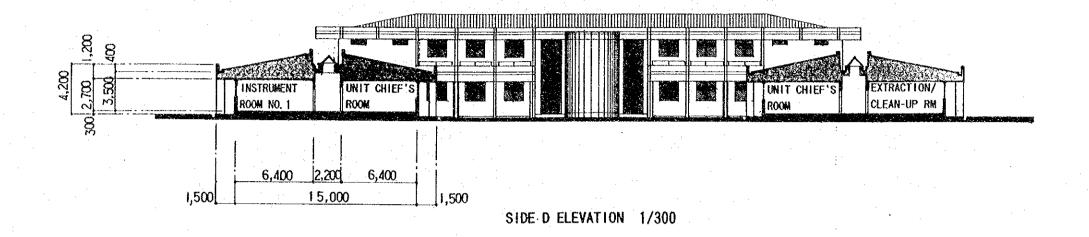


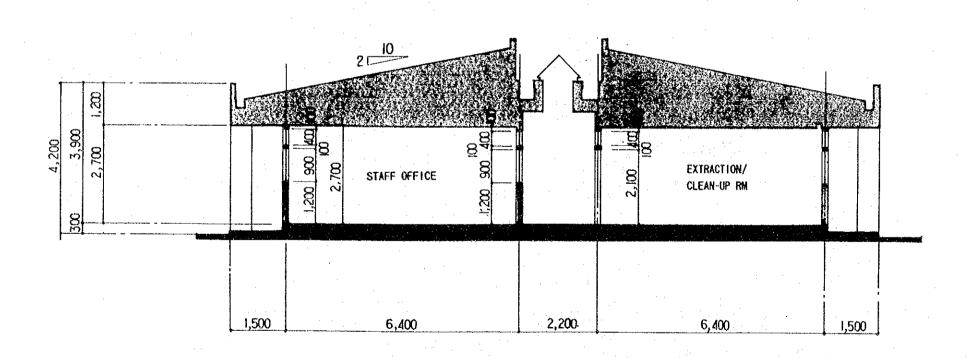
SIDE B ELEVATION 1/300

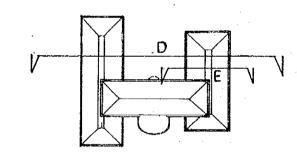


SIDE C ELEVATION 1/300

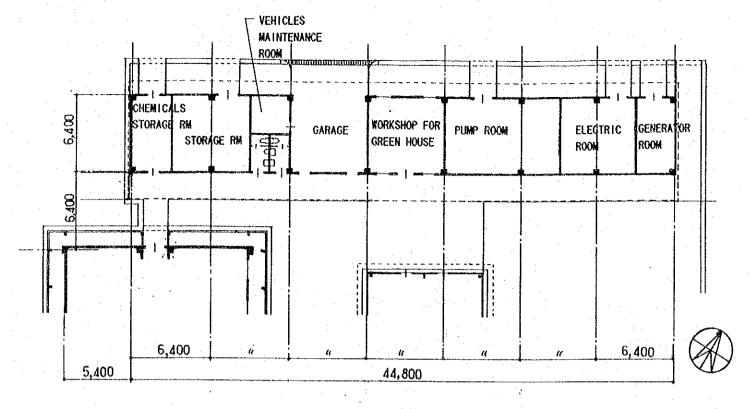








SIDE E ELEVATION 1/300



ANNEX FLOOR PLAN 1/300

