

2. アンケート調査分析結果



TABLE 2-1 : AMOUNT OF PAID CAPITAL (M\$)

	OWNERSHIP-CATEGORY						Total	
	FOREIGN		JOINT VENTURE		LOCAL		Nos.	%
	Nos.	%	Nos.	%	Nos.	%		
PAID CAPITAL								
> 1,000,000	77	80.2%	53	77.9%	36	64.3%	166	75.5%
100,000-999,999	3	3.1%	7	10.3%	6	10.7%	16	7.3%
50,000-99,999					1	1.8%	1	0.5%
10,000-49,999					1	1.8%	1	0.5%
NO ANSWER	16	16.7%	8	11.8%	12	21.4%	36	16.4%
Total	96	100.0%	68	100.0%	56	100.0%	220	100.0%

TABLE 2-2 : TOTAL NUMBER OF EMPLOYEES

	OWNERSHIP-CATEGORY						Total	
	FOREIGN		JOINT VENTURE		LOCAL		Nos.	%
	Nos.	%	Nos.	%	Nos.	%		
TOTAL EMPLOYEES								
5,000-9,000	2	2.1%					2	0.9%
1,000-4,999	19	19.8%	7	10.3%	1	1.8%	27	12.3%
500-999	14	14.6%	6	8.8%	3	5.4%	23	10.5%
100-499	43	44.8%	36	52.9%	24	42.9%	103	46.8%
50-99	9	9.4%	4	5.9%	9	16.1%	22	10.0%
10-49	7	7.3%	11	16.2%	15	26.8%	33	15.0%
< 10							3	1.4%
NO ANSWER	2	2.1%	4	5.9%	1	1.8%	7	3.2%
Total	96	100.0%	68	100.0%	56	100.0%	220	100.0%

TABLE 2-3 : NUMBER OF RESEARCH WORKERS

	OWNERSHIP-CATEGORY						Total	
	FOREIGN		JOINT VENTURE		LOCAL		Nos.	%
	Nos.	%	Nos.	%	Nos.	%		
RESEARCH WORKERS								
> 100			2	2.9%			2	0.9%
50-99			2	2.9%			2	0.9%
20-49	4	4.2%	1	1.5%	2	3.6%	7	3.2%
10-19	6	6.3%	4	5.9%	1	1.8%	11	5.0%
5-9	3	3.1%	5	7.4%	4	7.1%	12	5.5%
1-4	14	14.6%	8	11.8%	14	25.0%	36	16.4%
NO ANSWER	69	71.9%	46	67.6%	35	62.5%	150	68.2%
Total	96	100.0%	68	100.0%	56	100.0%	220	100.0%

TABLE 2-4 : NUMBER OF ENGINEERS

	OWNERSHIP-CATEGORY						Total	
	FOREIGN		JOINT VENTURE		LOCAL		Nos.	%
	Nos.	%	Nos.	%	Nos.	%	Nos.	%
NO OF ENGINEERS								
> 100	4	4.2%	2	2.9%			6	2.7%
50-99	2	2.1%	5	7.4%			7	3.2%
20-49	12	12.5%	2	2.9%	2	3.6%	16	7.3%
10-19	8	8.3%	5	7.4%	2	3.6%	15	6.8%
5-9	16	16.7%	11	16.2%	4	7.1%	31	14.1%
1-4	30	31.3%	18	26.5%	24	42.9%	72	32.7%
NO ANSWER	24	25.0%	25	36.8%	24	42.9%	73	33.2%
Total	96	100.0%	68	100.0%	56	100.0%	220	100.0%

TABLE 2-5 : ANNUAL SALES (M\$)

	OWNERSHIP-CATEGORY						Total	
	FOREIGN		JOINT VENTURE		LOCAL			
	Nos.	%	Nos.	%	Nos.	%		
ANNUAL SALES								
> 1,000,000	68	70.8%	55	80.9%	43	76.8%	166	75.5%
100,000-999,999	1	1.0%	1	1.5%	3	5.4%	5	2.3%
50,000-99,999	1	1.0%					1	0.5%
NO ANSWER	26	27.1%	12	17.6%	10	17.9%	48	21.8%
Total	96	100.0%	68	100.0%	56	100.0%	220	100.0%

TABLE 3-1 : FOUNDATION OF ENTERPRISES

ENTERPRISE FOUNDED YEAR	OWNERSHIP-CATEGORY						Total	
	FOREIGN		JOINT VENTURE		LOCAL		Nos.	%
	Nos.	%	Nos.	%	Nos.	%	Nos.	%
1991-1995	13	13.5%	9	13.2%	7	12.5%	29	13.2%
1986-1990	46	47.9%	16	23.5%	14	25.0%	76	34.5%
1981-1985	4	4.2%	7	10.3%	14	25.0%	25	11.4%
1976-1980	4	4.2%	10	14.7%	11	19.6%	25	11.4%
1971-1975	10	10.4%	12	17.6%	5	8.9%	27	12.3%
< 1970	12	12.5%	9	13.2%			21	9.5%
NO ANSWER	7	7.3%	5	7.4%	5	8.9%	17	7.7%
Total	96	100.0%	68	100.0%	56	100.0%	220	100.0%

TABLE 3-2 : COMMENCEMENT OF FACTORIES

	OWNERSHIP-CATEGORY						Total	
	FOREIGN		JOINT VENTURE		LOCAL		Nos.	%
	Nos.	%	Nos.	%	Nos.	%	Nos.	%
OPERATING SINCE								
1991-1995	21	21.9%	15	22.1%	11	19.6%	47	21.4%
1986-1990	50	52.1%	18	26.5%	17	30.4%	85	38.6%
1981-1985	6	6.3%	8	11.8%	13	23.2%	27	12.3%
1976-1980	4	4.2%	12	17.6%	8	14.3%	24	10.9%
1971-1975	12	12.5%	9	13.2%	7	12.5%	28	12.7%
< 1970	1	1.0%	5	7.4%			6	2.7%
NO ANSWER	2	2.1%	1	1.5%			3	1.4%
Total	96	100.0%	68	100.0%	56	100.0%	220	100.0%

TABLE 3-3 : ANNUAL AVERAGE INCREASE RATE OF SALES AMOUNT

AVERAGE INCREASE RATE	OWNERSHIP-CATEGORY						Total	
	FOREIGN		JOINT VENTURE		LOCAL		Nos.	%
	Nos.	%	Nos.	%	Nos.	%	Nos.	%
> 30%	28	29.2%	16	23.5%	9	16.1%	53	24.1%
20%-29%	13	13.5%	4	5.9%	10	17.9%	27	12.3%
10%-19%	12	12.5%	16	23.5%	9	16.1%	37	16.8%
0%- 9%	7	7.3%	7	10.3%	2	3.6%	16	7.3%
Reduction	3	3.1%	6	8.8%	4	7.1%	13	5.9%
No Answer	33	34.4%	19	27.9%	22	39.3%	74	33.6%
Total	96	100.0%	68	100.0%	56	100.0%	220	100.0%

TABLE 3-4: EQUITY SHARE

	Nos.	%
FOREIGN		
Japanese	48	21.8
Others	48	21.8
JOINT VENTURE		
Japanese	29	13.2
Others	39	17.7
LOCAL	56	25.5
TOTAL	220	100.0

TABLE 3-5(a) : EXPORT COUNTRIES OF PRODUCTS

EXPORTING COUNTRY	OWNERSHIP-CATEGORY						Total	
	FOREIGN		JOINT VENTURE		LOCAL		Nos.	%
	Nos.	%	Nos.	%	Nos.	%	Nos.	%
NORTH AMERICA	22	22.9%	9	13.2%	6	10.7%	37	16.8%
EUROPE	5	5.2%	7	10.3%			12	5.5%
ASIA	22	22.9%	12	17.6%	17	30.4%	51	23.2%
EAST ASIA	23	24.0%	17	25.0%	6	10.7%	46	20.9%
MIDDLE EAST					1	1.8%	1	0.5%
NO ANSWER	24	25.0%	23	33.8%	26	46.4%	73	33.2%
Total	96	100.0%	68	100.0%	56	100.0%	220	100.0%

INDUSTRIAL CODE	EXPORTING COUNTRY										Total			
	NORTH AMERICA		EUROPE		ASIA		EAST ASIA		MIDDLE EAST NO ANSWER		Nos.	%		
	Nos.	%	Nos.	%	Nos.	%	Nos.	%	Nos.	%	Nos.	%		
FOOD MANUFACTURING								3	6.5%		1	1.4%	4	1.8%
BEVERAGE INDUSTRIES			1	2.0%							1	1.4%	2	0.9%
TEXTILES			1	2.0%			5	10.9%					6	2.7%
WEARING APPERAL							1	2.2%					1	0.5%
WOOD & CORK							1	2.2%					1	0.5%
FURNITURE	1	2.7%											1	0.5%
PRINTING			1	2.0%									1	0.5%
CHEMICAL			3	5.9%									6	2.7%
OTHER CHEMICAL			10	19.6%	1	8.3%	3	6.5%			3	4.1%	20	9.1%
RUBBER PRODUCT	3	8.1%	2	16.7%			2	4.3%			5	6.8%	13	5.9%
PLASTIC PRODUCT			1	8.3%			1	2.2%			11	15.1%	15	6.8%
POTTERY-CHINA WARE	3	8.1%									1	1.4%	4	1.8%
GLASS			1	2.0%							1	1.4%	2	0.9%
OTHER NON METAL								1	2.2%		1	1.4%	2	0.9%
IRON & STEEL	1	2.7%						1	2.2%		3	4.1%	5	2.3%
NON FERROUS METAL											3	4.1%	6	2.7%
FABRICATED METAL	3	8.1%	1	8.3%			5	10.9%			6	8.2%	17	7.7%
MACHINERY	1	2.7%			6	11.8%	2	4.3%			5	6.8%	14	6.4%
ELECTRICAL MACHINERY	19	51.4%	7	58.3%	14	27.5%	12	26.1%			20	27.4%	72	32.7%
TRANSPORT EQUIPMENT			1	2.0%							2	2.7%	3	1.4%
PROFESSIONAL EQUIPMENT	3	8.1%			2	3.9%	6	13.0%			3	4.1%	14	6.4%
OTHER MANUFACTURING	3	8.1%			3	5.9%	3	6.5%			1	1.4%	11	5.0%
Total	37	100.0%	12	100.0%	51	100.0%	46	100.0%	1	100.0%	73	100.0%	220	100.0%

TABLE 4 : PROBLEM ON MANAGEMENT AND OPERATION

	OWNERSHIP-CATEGORY						Total	
	FOREIGN		JOINT VENTURE		LOCAL		Nos.	%
	Nos.	%	Nos.	%	Nos.	%	Nos.	%
MANAGEMENT PROBLEMS								
UNCERTAINTY OF MARKET INFORMATION	10	10.4%	19	27.9%	12	21.4%	41	18.6%
NO ROOM FOR MARKET EXPANTION	5	5.2%	3	4.4%	5	8.9%	13	5.9%
INSUFFICIENT CAPACITY TO MEET DEMAND	25	26.0%	17	25.0%	17	30.4%	59	26.8%
INSUFFICIENT R&D	14	14.6%	15	22.1%	13	23.2%	42	19.1%
LACK OF FINANCE	3	3.1%	8	11.8%	13	23.2%	24	10.9%
LACK OF ACCESS TO TI	9	9.4%	12	17.6%	16	28.6%	37	16.8%
LACK OF ENGINEERS	37	38.5%	24	35.3%	25	44.6%	86	39.1%
LACK OF SKILLED WORKERS	69	71.9%	41	60.3%	38	67.9%	148	67.3%
LACK OF UNSKILLED WORKERS	61	63.5%	32	47.1%	25	44.6%	118	53.6%
LIMITED FLOOR AREA	16	16.7%	6	8.8%	14	25.0%	36	16.4%
OTHERS	2	2.1%	1	1.5%	1	1.8%	4	1.8%
NO ANSWER	5	5.2%	2	2.9%	2	3.6%	9	4.1%
Total	256		180		181		617	
Nos. of replied firms	96	100.0%	68	100.0%	56	100.0%	220	100.0%

N.B. Plural answers

TABLE 5-1 : INTENTION OF BUSINESS EXPANSION

	OWNERSHIP-CATEGORY						Total	
	FOREIGN		JOINT VENTURE		LOCAL		Nos.	%
	Nos.	%	Nos.	%	Nos.	%		
INTENTION OF EXPANDING								
YES	86	89.6%	63	92.6%	54	96.4%	203	92.3%
NO	10	10.4%	5	7.4%	1	1.8%	16	7.3%
NO ANSWER					1	1.8%	1	0.5%
Total	96	100.0%	68	100.0%	56	100.0%	220	100.0%

TABLE 5-2: FUTURE EXPANSION PLAN

	OWNERSHIP-CATEGORY						Total	
	FOREIGN		JOINT VENTURE		LOCAL		Nos.	%
	Nos.	%	Nos.	%	Nos.	%	Nos.	%
EXPANSION PLAN								
MODERNIZATION OF								
PRODUCTION FACILITIES	43	44.8%	23	33.8%	31	55.4%	97	44.1%
DIVERSIFICATION TO NEW								
PRODUCT	40	41.7%	30	44.1%	33	58.9%	103	46.8%
ESTABLISHMENT OF R&D								
FACILITIES	13	13.5%	19	27.9%	16	28.6%	48	21.8%
CONSOLIDATION OF								
PRODUCTION ACTIVITIES	13	13.5%	12	17.6%	4	7.1%	29	13.2%
INCREASING PRODUCTION								
CAPACITY	68	70.8%	49	72.1%	36	64.3%	153	69.5%
OTHERS	2	2.1%	1	1.5%	2	3.6%	5	2.3%
NO ANSWER	14	14.6%	6	8.8%	3	5.4%	23	10.5%
Total	193		140		125		458	
Nos. of replied firms	96	100.0%	68	100.0%	56	100.0%	220	100.0%

N.B. Plural answers

TABLE 6-1 : CURRENT ACTIVITIES ON R & D

	OWNERSHIP-CATEGORY						Total	
	FOREIGN		JOINT VENTURE		LOCAL		Nos.	%
	Nos.	%	Nos.	%	Nos.	%		
R&D ACTIVITIES								
NO ACTIVITIES	43	44.8%	17	25.0%	17	30.4%	77	35.0%
PRODUCT DEVELOPMENT	31	32.3%	42	61.8%	26	46.4%	99	45.0%
PROCESS DEVELOPMENT	30	31.3%	22	32.4%	14	25.0%	66	30.0%
OTHERS	1	1.0%			2	3.6%	3	1.4%
NO ANSWER	4	4.2%	5	7.4%	7	12.5%	16	7.3%
Total	109		86		66		261	
Nos. of replied firms	96	100.0%	68	100.0%	56	100.0%	220	100.0%

N.B. Plural answers

TABLE 6-2(a) : DIFFICULTY IN CARRYING OUT R&D

	OWNERSHIP-CATEGORY						Total	
	FOREIGN		JOINT VENTURE		LOCAL		Nos.	%
	Nos.	%	Nos.	%	Nos.	%	Nos.	%
DIFFICULTY ON R&D								
LIBRARY INFORMATION	5	5.2%	7	10.3%	8	14.3%	20	9.1%
ACCESS TO EXPERTISE	23	24.0%	19	27.9%	20	35.7%	62	28.2%
OPPORTUNITY FOR R&D	5	5.2%	7	10.3%	8	14.3%	20	9.1%
ACCESS TO DATABASE	3	3.1%	8	11.8%	4	7.1%	15	6.8%
COMPUTER AND NETWORK	4	4.2%	5	7.4%	6	10.7%	15	6.8%
RESEARCH FACILITIES	17	17.7%	19	27.9%	14	25.0%	50	22.7%
LACKS OF FUNDS	4	4.2%	3	4.4%	6	10.7%	13	5.9%
OTHERS			3	4.4%			3	1.4%
NO ANSWER	59	61.5%	29	42.6%	26	46.4%	114	51.8%
Total	120		100		92		312	
Nos. of replied firms	96	100.0%	68	100.0%	56	100.0%	220	100.0%

N.B. Plural answers

TABLE 6-2(b): PROBLEM ON R&D BY ACTIVITIES

	ACTIVITIES												TOTAL			
	NO ACTIVITIES			PRODUCT DEVELOPMENT			PROCESS DEVELOPMENT			OTHERS				NO ANSWER		
	Nos.	%		Nos.	%		Nos.	%		Nos.	%			Nos.	%	
R&D DIFFICULTY	1	1.2%	16	9.3%	11	9.3%									20	9.1%
LIBRARY INFORMATION	2	2.4%	46	26.7%	32	27.1%				2	11.1%				62	28.2%
ACCESS TO EXPERTISE	3	3.5%	11	6.4%	13	11.0%				1	5.6%				20	9.1%
OPPORTUNITY FOR R&D	2	2.4%	13	7.6%	9	7.6%									15	6.8%
ACCESS TO DATABASE	1	1.2%	14	8.1%	6	5.1%									15	6.8%
COMPUTER AND NETWORK	3	3.5%	39	22.7%	27	22.9%				1	5.6%				50	22.7%
RESEARCH FACILITIES			11	6.4%	6	5.1%				1	5.6%				13	5.9%
LACKS OF FUNDS	1	1.2%	2	1.2%	1	0.8%									3	1.4%
OTHERS	72	84.7%	20	11.6%	13	11.0%	3	100.0%							114	51.8%
NO ANSWER																
Total	85		172		118		3		3		18				312	
Nos. of replied firms	77	100.0%	99	100.0%	66	100.0%	3	100.0%	3	100.0%	16	100.0%			220	100.0%

N.B. Plural answers

TABLE 6-2(b) : PROBLEM ON R&D BY ACTIVITIES

	HUMAN RESOURCE DEVELOPMENT												TOTAL				
	NO ACTIVITIES		ON		JOB TRAINING		SPECIAL		TRAINING		OTHERS			NO ANSWER			
	Nos.	%	Nos.	%	Nos.	%	Nos.	%	Nos.	%	Nos.	%		Nos.	%		
TRAINING ON HUMAN RESOURCE																	
TECHNICAL TRAINING	5	20.0%	143	83.6%	77	87.5%	1	33.3%	2	18.2%	160	72.7%					
COMPUTER TRAINING	2	8.0%	78	45.6%	56	63.6%	1	33.3%	5	45.5%	90	40.9%					
LABOUR TRAINING	2	8.0%	50	29.2%	43	48.9%			2	18.2%	59	26.8%					
SALES TRAINING	7	28.0%	167	97.7%	78	88.6%	1	33.3%	2	18.2%	190	86.4%					
MANAGER TRAINING	1	4.0%	45	26.3%	42	47.7%	1	33.0%	1	9.1%	53	24.1%					
PRODUCTION TRAINING	1	4.0%	24	14.0%	23	26.1%			1	9.1%	28	12.7%					
QUALITY CONTROL	1	4.0%	41	24.0%	36	40.9%	1	33.3%	2	18.2%	46	20.9%					
OTHERS			13	7.6%	7	8.0%	1	33.3%			14	6.4%					
NO ANSWER	17	68.0%	5	2.9%	2	2.3%	2	66.7%	7	63.6%	27	12.3%					
Total	36		566		364		8		22		667						
Nos. of replied firms	25	100.0%	171	100.0%	88	100.0%	3	100.0%	11	100.0%	220	100.0%					

N.B. Plural answers

TABLE 6-3: FIELDS OF R&D AT PRESENT

	OWNERSHIP-CATEGORY						Total	
	FOREIGN		JOINT VENTURE		LOCAL		Nos.	%
	Nos.	%	Nos.	%	Nos.	%	Nos.	%
FIELD OF R&D								
ELECTRONICS	30	31.3%	12	17.6%	6	10.7%	48	21.8%
OPT-ELECTRONICS	1	1.0%					1	0.5%
MECHATRONICS	5	5.2%	3	4.4%	4	7.1%	12	5.5%
FINE CERAMICS	2	2.1%	1	1.5%			3	1.4%
FINE CHEMICAL	4	4.2%	2	2.9%	2	3.6%	8	3.6%
OTHER NEW MATERIAL	5	5.2%	7	10.3%	4	7.1%	16	7.3%
BIO-TECHNOLOGY					1	1.8%	1	0.5%
MEDICAL EQUIPMENT	1	1.0%	1	1.5%			2	0.9%
SOFTWARE-INFORMATION								
SYSTEM	1	1.0%	3	4.4%	2	3.6%	6	2.7%
OTHERS	4	4.2%	6	8.8%	7	12.5%	17	7.7%
NO ANSWER	50	52.1%	36	52.9%	35	62.5%	121	55.0%
Total	103		71		61		220	100.0%
Nos. of replied firms	96	100.0%	68	100.0%	56	100.0%	220	100.0%

N.B. Plural answers

TABLE 6-4 : EXPANSION PLAN ON R&D

	OWNERSHIP-CATEGORY						Total	
	FOREIGN		JOINT VENTURE		LOCAL		Nos.	%
	Nos.	%	Nos.	%	Nos.	%		
PLAN TO EXPAND IN R&D								
YES	51	53.1%	40	58.8%	36	64.3%	127	57.7%
NO	34	35.4%	20	29.4%	15	26.8%	69	31.4%
NO ANSWER	11	11.5%	8	11.8%	5	8.9%	24	10.9%
Total	96	100.0%	68	100.0%	56	100.0%	220	100.0%

TABLE 6-5 : STYLE OF PLAN ON R&D IN THE FUTURE

STYLE OF IN HOUSE ACTIVITIES	OWNERSHIP-CATEGORY						Total	
	FOREIGN		JOINT VENTURE		LOCAL		Nos.	%
	Nos.	%	Nos.	%	Nos.	%	Nos.	%
R&D								
CONSIGNMENT OF R&D	54	56.3%	38	55.9%	25	44.6%	117	53.2%
JOINT VENTURE	7	7.3%	6	8.8%	6	10.7%	19	8.6%
OTHERS	3	3.1%	9	13.2%	15	26.8%	27	12.3%
NO ANSWER	2	2.1%	1	1.5%			3	1.4%
	37	38.5%	23	33.8%	17	30.4%	77	35.0%
Total	103		77		63		243	
Nos. of replied firms	96	100.0%	68	100.0%	56	100.0%	220	100.0%

N.B. Plural answers

TABLE 6-6 : FIELD OF R&D IN THE FUTURE

	OWNERSHIP-CATEGORY						Total	
	FOREIGN		JOINT VENTURE		LOCAL		Nos.	%
	Nos.	%	Nos.	%	Nos.	%		
FIELD OF R&D								
ELECTRONICS	30	31.3%	14	20.6%	12	21.4%	56	25.5%
OPT-ELCTRONICS	2	2.1%					2	0.9%
MECHATRONICS	6	6.3%	3	4.4%	5	8.9%	14	6.4%
FINE CERAMICS	3	3.1%	1	1.5%			4	1.8%
FINE CHEMICAL	4	4.2%	3	4.4%			7	3.2%
OTHER NEW MATERIAL	11	11.5%	9	13.2%	7	12.5%	27	12.3%
ENERGY	2	2.1%	2	2.9%	1	1.8%	5	2.3%
AVIATION-SPACE SCIENCE	1	1.0%			2	3.6%	3	1.4%
MEDICAL EQUIPMENT	1	1.0%	1	1.5%			2	0.9%
SOFTWARE-INFORMATION								
SYSTEM	3	3.1%	5	7.4%	1	1.8%	9	4.1%
OTHERS	7	7.3%	8	11.8%	8	14.3%	23	10.5%
NO ANSWER	43	44.8%	32	47.1%	25	44.6%	100	45.5%
Total	113		78		61		252	
Nos. of replied firms	96	100.0%	68	100.0%	56	100.0%	220	100.0%

N.B. Plural answers

TABLE 7-1 : CURRENT ACTIVITIES ON HUMAN RESOURCE DEVELOPMENT

	OWNERSHIP-CATEGORY						Total	
	FOREIGN		JOINT VENTURE		LOCAL		Nos.	%
	Nos.	%	Nos.	%	Nos.	%		
HUMAN RESOURCE DEV								
NO ACTIVITIES	14	14.6%	4	5.9%	7	12.5%	25	11.4%
ON JOB TRAINING	72	75.0%	54	79.4%	45	80.4%	171	77.7%
SPECIAL TRAINING	50	52.1%	27	39.7%	11	19.6%	88	40.0%
OTHERS	2	2.1%	1	1.5%			3	1.4%
NO ANSWER	3	3.1%	5	7.4%	3	5.4%	11	5.0%
Total	141		91		66		298	
Nos. of replied firms	96	100.0%	68	100.0%	56	100.0%	220	100.0%

N.B. Plural answers

TABLE 7-2(a) : TRAINING WORK ON HUMAN RESOURCE DEVELOPMENT

	OWNERSHIP-CATEGORY								Total	
	FOREIGN		JOINT VENTURE		LOCAL				Nos.	%
	Nos.	%	Nos.	%	Nos.	%	Nos.	%	Nos.	%
HUMAN RES TRAINING	70	72.9%	50	73.5%	40	71.4%	160	72.7%		
TECHNICAL TRAINING	43	44.8%	33	48.5%	14	25.0%	90	40.9%		
COMPUTER TRAINING	34	35.4%	17	25.0%	8	14.3%	59	26.8%		
LABOUR MANAGEMENT	81	84.4%	54	79.4%	55	98.2%	190	86.4%		
SALES PROMOTION	32	33.3%	16	23.5%	5	8.9%	53	24.1%		
MANAGER TRAINING	14	14.6%	10	14.7%	4	7.1%	28	12.7%		
PRODUCTION CONTROL	23	24.0%	17	25.0%	6	10.7%	46	20.9%		
QUALITY CONTROL	6	6.3%	7	10.3%	1	1.8%	14	6.4%		
OTHERS	13	13.5%	5	7.4%	9	16.1%	27	12.3%		
NO ANSWER										
Total	316		209		142		667			
Nos. of replied firms	96	100.0%	68	100.0%	56	100.0%	220	100.0%		

N.B. Plural answers

TABLE 7-3(a) : PROBLEM IN CONDUCTING TRAINING PROGRAM

	OWNERSHIP-CATEGORY						Total	
	FOREIGN		JOINT VENTURE		LOCAL		Nos.	%
	Nos.	%	Nos.	%	Nos.	%		
HUMAN RES PROTRAINING								
LACK OF LECTURERS	17	17.7%	10	14.7%	14	25.0%	41	18.6%
TEACHING MATERIALS	22	22.9%	14	20.6%	9	16.1%	45	20.5%
TIME FOR TRAINING	54	56.3%	39	57.4%	33	58.9%	126	57.3%
LOST OF INVESTMENT	52	54.2%	31	45.6%	21	37.5%	104	47.3%
INSUFFICIENT SPACE	21	21.9%	16	23.5%	8	14.3%	45	20.5%
OTHERS	7	7.3%	1	1.5%			8	3.6%
NO ANSWER	13	13.5%	10	14.7%	12	21.4%	35	15.9%
Total	186		121		97		404	
Nos. of replied firms	96	100.0%	68	100.0%	56	100.0%	220	100.0%

N.B. Plural answers

TABLE 7-3(b) : PROBLEM ON CONDUCTING TRAINING BY WORK

	PROBLEM ON TRAINING														TOTAL		
	LACK OF LECTURERS		TEACHING MATERIALS		TIME FOR TRAINING		LOST OF INVESTMENT		INSUFFICIENT SPACE		OTHERS		NO ANSWER		Nos.	%	
	Nos.	%	Nos.	%	Nos.	%	Nos.	%	Nos.	%	Nos.	%	Nos.	%			
TRAINING ON HUMAN RESOURCE																	
TECHNICAL TRAINING	5	20.0%	143	83.6%	77	87.5%			1	33.3%	1	33.3%	2	18.2%	160	72.7%	
COMPUTER TRAINING	2	8.0%	78	45.6%	56	63.6%			1	33.3%	1	33.3%	5	45.5%	90	40.9%	
LABOUR TRAINING	2	8.0%	50	29.2%	43	48.9%							2	18.2%	59	26.8%	
SALES TRAINING	7	28.0%	167	97.7%	78	88.6%			1	33.3%	1	33.3%	2	18.2%	190	86.4%	
MANAGER TRAINING	1	4.0%	45	26.3%	42	47.7%			1	33.0%	1	33.0%	1	9.1%	53	24.1%	
PRODUCTION TRAINING	1	4.0%	24	14.0%	23	26.1%			1	33.3%	1	33.3%	2	18.2%	46	20.9%	
QUALITY CONTROL	1	4.0%	41	24.0%	36	40.9%			1	33.3%	1	33.3%			14	6.4%	
OTHERS			13	7.6%	7	8.0%			2	66.7%	2	66.7%	7	63.6%	27	12.3%	
NO ANSWER	17	68.0%	5	2.9%	2	2.3%											
Total	36		566		364				8		8		22		667		
Nos. of replied firms	25	100.0%	171	100.0%	88	100.0%			3	100.0%	3	100.0%	11	100.0%	220	100.0%	

N.B. Plural answers

TABLE 7-4: EXPANSION PLAN OF THE TRAINING PROGRAM IN FUTURE

	OWNERSHIP-CATEGORY						Total	
	FOREIGN		JOINT VENTURE		LOCAL		Nos.	%
	Nos.	%	Nos.	%	Nos.	%		
PLAN TO EXPAND TRAINING PROGRAM								
YES	87	90.6%	56	82.4%	48	85.7%	191	86.8%
NO	6	6.3%	6	8.8%	2	3.6%	14	6.4%
NO ANSWER	3	3.1%	6	8.8%	6	10.7%	15	6.8%
Total	96	100.0%	68	100.0%	56	100.0%	220	100.0%

TABLE 8-1(a) : INTREST IN LOCATING NEW FACALITIES IN KHTP

	OWNERSHIP-CATEGORY						Total	
	FOREIGN		JOINT VENTURE		LOCAL		Nos.	%
	Nos.	%	Nos.	%	Nos.	%		
KHTP								
YES	2	2.1%	7	10.3%	3	5.4%	12	5.5%
POSSIBLE	33	34.4%	24	35.3%	25	44.6%	82	37.3%
NO	61	63.5%	37	54.4%	28	50.0%	126	57.3%
Total	96	100.0%	68	100.0%	56	100.0%	220	100.0%

TABLE 8-1(b) : INTERVIEW IN FACILITIES IN KHTP BY INDUSTRIAL CATEGORY

INDUSTRIAL CODE	KHTP				Total			
	YES		POSSIBLE		NO			
	Nos.	%	Nos.	%	Nos.	%		
FOOD MANUFACTURING	1		1	1.2%	3	2.4%	4	1.8%
BEVERAGE INDUSTRIES			1	1.2%	1	0.8%	2	0.9%
TEXTILES	1	8.3%	3	3.7%	2	1.6%	6	2.7%
WEARING APPERAL			1	1.2%			1	0.5%
WOOD & CORK					1	0.8%	1	0.5%
FURNITURE			1	1.2%			1	0.5%
PRINTING	1	8.3%					1	0.5%
CHEMICAL	1	8.3%	4	4.9%	1	0.8%	6	2.7%
OTHER CHEMICAL			4	4.9%	16	12.7%	20	9.1%
RUBBER PRODUCT	1	8.3%	7	8.5%	5	4.0%	13	5.9%
PLASTIC PRODUCT	3	25.0%	3	3.7%	9	7.1%	15	6.8%
POTTERY-CHINA WARE			2	2.4%	2	1.6%	4	1.8%
GLASS					2	1.6%	2	0.9%
OTHER NON METAL	1	8.3%	1	1.2%			2	0.9%
IRON & STEEL			2	2.4%	3	2.4%	5	2.3%
NON FERROUS METAL			4	4.9%	2	1.6%	6	2.7%
FABRICATED METAL			9	11.0%	8	6.3%	17	7.7%
MACHINERY			7	8.5%	7	5.6%	14	6.4%
ELCTRICAL MACHINERY	2	16.7%	25	30.5%	45	35.7%	72	32.7%
TRANSPORT EQUIPMENT	1	8.3%			2	1.6%	3	1.4%
PROFESSIONAL EQUIPMENT			3	3.7%	11	8.7%	14	6.4%
OTHER MANUFACTURING	1	8.3%	4	4.9%	6	4.8%	11	5.0%
Total	12	100.0%	82	100.0%	126	100.0%	220	100.0%

TABLE 8-2(a) : INTREST IN UTILISE NEW FACILITIES IN TECNO CENTRE

	OWNERSHIP-CATEGORY						Total	
	FOREIGN		JOINT VENTURE		LOCAL			
	Nos.	%	Nos.	%	Nos.	%		
TC								
YES	15	15.6%	11	16.2%	10	17.9%	36	16.4%
POSSIBLE	47	49.0%	34	50.0%	26	46.4%	107	48.6%
NO	34	35.4%	23	33.8%	20	35.7%	77	35.0%
Total	96	100.0%	68	100.0%	56	100.0%	220	100.0%

TABLE 8-2(b) : INTEREST IN FACILITIES IN TECNO CENTRE BY INDUSTRIAL CATEGORY

INDUSTRIAL CODE	YES				TC POSSIBLE				NO				Total	
	Nos.		%		Nos.		%		Nos.		%		Nos.	%
FOOD MANUFACTURING	1	2.8%	1	0.9%	2	2.6%	4	1.8%						
BEVERAGE INDUSTRIES	1	2.8%	1	1.3%	1	1.3%	2	0.9%						
TEXTILES	1	2.8%	4	3.7%	1	1.3%	6	2.7%						
WEARING APPERAL			1	1.3%	1	1.3%	1	0.5%						
WOOD & CORK			1	0.9%	1	1.3%	1	0.5%						
FURNITURE			1	0.9%	1	1.3%	1	0.5%						
PRINTING	1	2.8%	4	3.7%	1	1.3%	6	2.7%						
CHEMICAL	1	2.8%	12	11.2%	6	7.8%	20	9.1%						
OTHER CHEMICAL	2	5.6%	6	5.6%	5	6.5%	13	5.9%						
RUBBER PRODUCT	2	5.6%	5	4.7%	6	7.8%	15	6.8%						
PLASTIC PRODUCT	4	11.1%	2	1.9%	1	1.3%	4	1.8%						
POTTERY-CHINA WARE	1	2.8%	2	0.9%	2	2.6%	2	0.9%						
GLASS			1	0.9%	2	2.6%	2	0.9%						
OTHER NON METAL	1	2.8%	3	2.8%	2	2.6%	5	2.3%						
IRON & STEEL			2	1.9%	2	2.6%	6	2.7%						
NON FERROUS METAL	2	5.6%	9	8.4%	5	6.5%	17	7.7%						
FABRICATED METAL	3	8.3%	8	7.5%	4	5.2%	14	6.4%						
MACHINERY	2	5.6%	37	34.6%	27	35.1%	72	32.7%						
ELCTRICAL MACHINERY	8	22.2%	1	0.9%	7	9.1%	3	1.4%						
TRANSPORT EQUIPMENT	2	5.6%	5	4.7%	3	3.9%	14	6.4%						
PROFESSIONAL EQUIPMENT	2	5.6%	6	5.6%	3	3.9%	11	5.0%						
OTHER MANUFACTURING	2	5.6%	6	5.6%	3	3.9%	11	5.0%						
Total	36	100.0%	107	100.0%	77	100.0%	220	100.0%						

TABLE 8-3(a) : EXPECTING SERVICES FROM TECHNO CENTRE

	OWNERSHIP-CATEGORY						Total	
	FOREIGN		JOINT VENTURE		LOCAL		Nos.	%
	Nos.	%	Nos.	%	Nos.	%	Nos.	%
EXPECTED SERVICE								
MEASUREMENT	22	35.5%	13	28.9%	12	33.3%	47	32.9%
TESTING	28	45.2%	25	55.6%	19	52.8%	72	50.3%
CONSULTING	21	33.9%	21	46.7%	17	47.2%	59	41.3%
SECRETARY			1	2.2%	1	2.8%	2	1.4%
SEMINAR & TRAINING	45	72.6%	29	64.4%	21	58.3%	95	66.4%
EXHIBITION	18	29.0%	9	20.0%	8	22.2%	35	24.5%
INFORMATION	38	61.3%	31	68.9%	19	52.8%	88	61.5%
RECREATION	13	21.0%	6	13.3%	2	5.6%	21	14.7%
OTHER SERVICE			1	2.2%			1	0.7%
NO ANSWER					1	2.8%	1	0.7%
Total	185		136		100		421	
Nos. of replied firms	62	100.0%	45	100.0%	36	100.0%	143	100.0%

N.B. Plural answers

TABLE 8-3(b) : EXPECTING SERVICES FROM TECHNO CENTRE BY INDUSTRIAL CATEGORY

INDUSTRIAL CODE	EXPECTED SERVICE														TOTAL					
	MEASURE- MENT	TESTING		CONSULTING		SECRETARY		SEMINAR & TRAINING		EXHIBITION		INFORMATION		RECREATION		OTHER SERVICE		NO ANSWER		
		Nos.	%	Nos.	%	Nos.	%	Nos.	%	Nos.	%	Nos.	%	Nos.		%	Nos.	%	Nos.	%
FOOD MANUFACTURING	1	1.4%	1	1.7%					2	2.1%			1	1.1%					2	1.4%
BEVERAGE INDUSTRIES	1	1.4%	1	1.7%															1	0.7%
TEXTILES	1	1.4%						5	5.3%	2	5.7%	3	3.4%					5	3.5%	
FURNITURE												1	1.1%					1	0.7%	
PRINTING	1	2.1%	1	1.4%				1	1.1%									1	0.7%	
CHEMICAL	1	2.1%	3	4.2%	3	5.1%		4	4.2%	4	11.4%	3	3.4%	1	4.8%			5	3.5%	
OTHER CHEMICAL	3	6.4%	8	11.1%	7	11.9%	1	50.0%	8	8.4%	2	5.7%	10	11.4%		1	100.0%	14	9.8%	
RUBBER PRODUCT	4	8.5%	5	6.9%	5	8.5%		7	7.4%	2	5.7%	6	6.8%	4	19.0%			8	5.6%	
PLASTIC PRODUCT	3	4.2%	4	6.8%	4	6.8%		5	5.3%	3	8.6%	6	6.8%	2	9.5%			9	6.3%	
POTTERY-CHINA WARE	1	1.4%	1	1.7%				2	2.1%			1	1.1%					3	2.1%	
OTHER NON METAL	1	1.4%	1	1.7%				1	1.1%	1	2.9%	1	1.1%	1	4.8%			2	1.4%	
IRON & STEEL	2	4.3%	2	2.8%				1	1.1%	1	2.9%	2	2.3%					3	2.1%	
NON FERROUS METAL	1	2.1%	3	4.2%	3	5.1%		1	1.1%	2	5.7%	1	1.1%					4	2.8%	
FABRICATED METAL	3	6.4%	5	6.9%	4	6.8%		9	9.5%	2	5.7%	8	9.1%					12	8.4%	
MACHINERY	7	14.9%	8	11.1%	6	10.2%	1	50.0%	6	6.3%	2	5.7%	6	6.8%	3	14.3%		10	7.0%	
ELECTRICAL MACHINERY	15	31.9%	18	25.0%	17	28.8%		32	33.7%	8	22.9%	27	27.7%	8	38.1%			45	31.5%	
TRANSPORT EQUIPMENT	1	2.1%	2	3.4%	2	3.4%		1	1.1%	1	2.9%	2	2.3%					3	2.1%	
PROFESSIONAL EQUIPMENT	5	10.6%	3	4.2%	2	3.4%		4	4.2%	3	8.6%	5	5.7%	1	4.8%			7	4.9%	
OTHER MANUFACTURING	4	8.5%	6	8.3%	2	3.4%		6	6.3%	2	5.7%	5	5.7%	1	4.8%			8	5.6%	
Total	47	100.0%	72	100.0%	59	100.0%	2	100.0%	95	100.0%	35	100.0%	88	100.0%	21	100.0%	1	100.0%	1	100.0%

TABLE 8-4(a) : UTILIZATION OF FACILITIES IN TECHNO CENTRE

	OWNERSHIP-CATEGORY						Total	
	FOREIGN		JOINT VENTURE		LOCAL		Nos.	%
	Nos.	%	Nos.	%	Nos.	%		
FACILITIES UTILISED								
OPEN LABORATORY	23	37.1%	11	24.4%	10	27.8%	44	30.8%
RENTAL FACILITIES	13	21.0%	6	13.3%	10	27.8%	29	20.3%
RENTAL SPACE	3	4.8%	2	4.4%	2	5.6%	7	4.9%
INFORMATION CENTRE	42	67.7%	32	71.1%	24	66.7%	98	68.5%
OTHER SERVICES	1	1.6%	1	2.2%	1	2.8%	3	2.1%
NO ANSWER	8	12.9%	5	11.1%	5	13.9%	18	12.6%
Total	90		57		52		199	
Nos. of replied firms	62	100.0%	45	100.0%	36	100.0%	143	100.0%

N.B. Plural answers

TABLE 8-4(b): UTILIZATION OF FACILITIES IN TECHNO CENTRE BY INDUSTRIAL CATEGORY

INDUSTRIAL CODE	FACILITIES UTILISED										Total			
	OPEN		RENTAL		RENTAL		INFORMATION		OTHER			NO ANSWER		
	Laboratory	%	Facilities	%	Space	%	Center	%	Services	%		Nos.	%	
Nos.	%	Nos.	%	Nos.	%	Nos.	%	Nos.	%	Nos.	%	Nos.	%	
FOOD MANUFACTURING														
BEVERAGE INDUSTRIES	1	2.3%					2	2.0%				2	1.4%	
TEXTILES	1	2.3%					1	1.0%				1	0.7%	
FURNITURE							3	3.1%			2	11.1%	3.5%	
PRINTING	1	2.3%					1	1.0%				1	0.7%	
CHEMICAL	5	11.4%					1	1.0%				1	0.7%	
OTHER CHEMICAL	4	9.1%	2	6.9%			3	3.1%				5	3.5%	
RUBBER PRODUCT	4	9.1%	3	10.3%	1	14.3%	7	7.1%	2	66.7%	1	5.6%	14	9.8%
PLASTIC PRODUCT	1	2.3%	1	3.4%			7	7.1%			1	5.6%	8	5.6%
POTTERY-CHINA WARE							7	7.1%					9	6.3%
OTHER NON METAL	1	2.3%	1	3.4%			2	2.0%			1	5.6%	3	2.1%
IRON & STEEL	2	4.5%	1	3.4%			2	2.0%			1	5.6%	2	1.4%
NON FERROUS METAL	2	4.5%	2	6.9%			3	3.1%					3	2.1%
FABRICATED METAL	2	4.5%	3	10.3%	1	14.3%	8	8.2%			1	5.6%	4	2.8%
MACHINERY	4	9.1%	2	6.9%	1	14.3%	5	5.1%			3	16.7%	12	8.4%
ELECTRICAL MACHINERY	11	25.0%	9	31.0%	2	28.6%	32	32.7%	1	33.3%	7	38.9%	45	31.5%
TRANSPORT EQUIPMENT			2	6.9%	1	14.3%	3	3.1%					3	2.1%
PROFESSIONAL														
EQUIPMENT	2	4.5%	1	3.4%			5	5.1%					7	4.9%
OTHER MANUFACTURING	3	6.8%	2	6.9%			6	6.1%			1	5.6%	8	5.6%
Total	44	100.0%	29	100.0%	7	100.0%	98	100.0%	3	100.0%	18	100.0%	143	100.0%

TABLE 8-5(a) : REQUIREMENT OF FLOOR AREA FOR OPEN LABROTARY

	OWNERSHIP-CATEGORY						Total	
	FOREIGN		JOINT VENTURE		LOCAL		Nos.	%
	Nos.	%	Nos.	%	Nos.	%	Nos.	%
FLOOR SPACE REQUIRED								
> 300 m2	2	3.2%			3	8.3%	5	3.5%
200-299 m2	4	6.5%	2	4.4%	1	2.8%	7	4.9%
100-199 m2	5	8.1%	3	6.7%	5	13.9%	13	9.1%
50-99 m2	3	4.8%	3	6.7%	2	5.6%	8	5.6%
< 50 m2	7	11.3%	4	8.9%	2	5.6%	13	9.1%
NO ANSWER	41	66.1%	33	73.3%	23	63.9%	97	67.8%
Total	62	100.0%	45	100.0%	36	100.0%	143	100.0%

TABLE 8-5(b) : FLOOR AREA FOR OPEN LABROTARY BY INDUSTRIAL CATEGORY

INDUSTRIAL CODE	FLOOR SPACE REQUIRED										Total			
	> 300 M SQFT		200-299 M SQFT		100-199 M SQFT		50-99 M SQFT		< 50 M SQFT		NO ANSWER			
	Nos.	%	Nos.	%	Nos.	%	Nos.	%	Nos.	%	Nos.	%		
FOOD MANUFACTURING														
BEVERAGE INDUSTRIES			1	7.7%							2	2.1%	2	1.4%
TEXTILES									1	7.7%	4	4.1%	5	3.5%
FURNITURE											1	1.0%	1	0.7%
PRINTING			1	14.3%									1	0.7%
CHEMICAL			1	14.3%	2	15.4%	1	12.5%			1	1.0%	5	3.5%
OTHER CHEMICAL	1	20.0%			2	15.4%			1	7.7%	10	10.3%	14	9.8%
RUBBER PRODUCT	1	20.0%			2	15.4%					5	5.2%	8	5.6%
PLASTIC PRODUCT			1	14.3%					2	15.4%	6	6.2%	9	6.3%
POTTERY-CHINA WARE											3	3.1%	3	2.1%
OTHER NON METAL			1	14.3%	1	7.7%							2	1.4%
IRON & STEEL									2	15.4%	1	1.0%	3	2.1%
NON FERROUS METAL											1	12.5%	3	2.8%
FABRICATED METAL	1	20.0%							3	23.1%	6	6.2%	12	8.4%
MACHINERY					1	7.7%	1	12.5%			8	8.2%	10	7.0%
ELECTRICAL MACHINER	1	20.0%	3	42.9%	4	30.8%	1	12.5%	2	15.4%	34	35.1%	45	31.5%
TRANSPORT EQUIPMENT									1	7.7%	2	2.1%	3	2.1%
PROFESSIONAL EQUIPMENT													4	4.1%
OTHER MANUFACTURI	1	20.0%									7	7.2%	8	5.6%
Total	5	100.0%	7	100.0%	13	100.0%	8	100.0%	13	100.0%	97	100.0%	143	100.0%

3. インタビュー調査企業リスト

Company List of Interview Survey

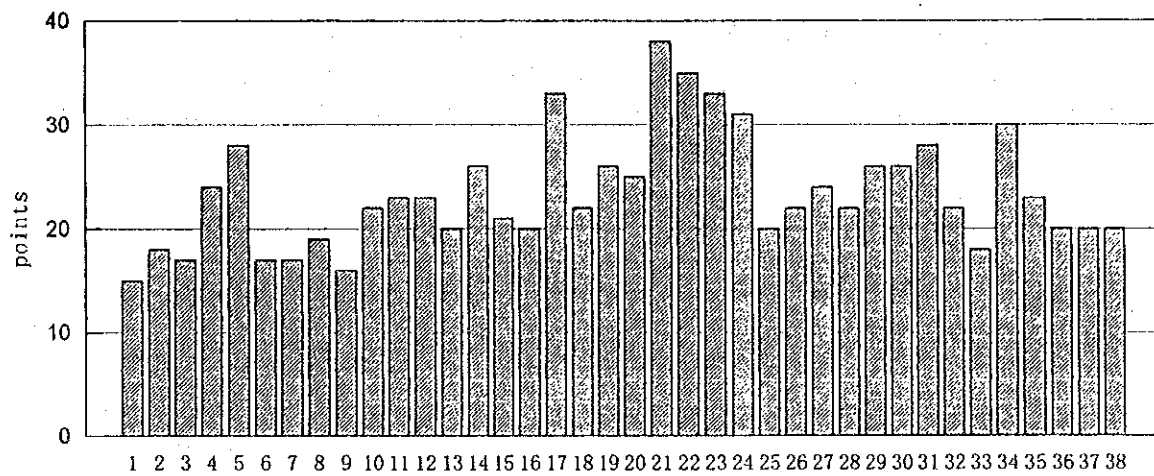
NAME	PRODUCT DESCRIPTION
1 AICELLO SANIPAL M SDN BHD	BARGAGE BAGS
2 ALCATEL NETWORK SYSTEMS (M) SDN BHD	SWITCHING EQUIP POWER CONVERTORS TELECOMM. SOFTWARE
3 ALPHA PRECISION TURNING & ENG SDN BND	METAL TURNING PARTS
4 AMC MANUFACTURING M SDN BHD	POWER TRANSFORMER
5 ANTARAWAJA SDN BHD	WHEELBARROWS & METAL STAMPING
6 ASAHIBEST BASE SDN BHD	WIRE HARNESS
7 ASEANIA FOILPACK SDN BHD	LAMINATED PRODUCT FOR INSULATION IN ROOFING & AIRCOND INDUST
8 ASIAN DRIVESHAFT SDN BHD	DRIVESHAFT
9 ATLAN INDUSTRIES SDN BHD	STAMPED METAL COMPONENTS
10 AVIMO (M)SDN BHD	PRECISION OPTICS & COMPONENT
11 BRIDGESTONE SPORTING GOODS MFG.SDN.BHD.	GOLF BOUL
12 CAM PRECISION COMPONENTS (PENANG) SDN BHD	HARD DISK DEVICES COMPONENTS
13 CENTURY CHEMICAL WORKS SDN BHD	POWDERED ACTIVATED CARBON
14 COIL TECH SDN.BHD	
15 CREST ULTRASONICS (M) SDN BHD	ULTRASONICS MACHINE
16 ELECTROUGH DEVICES SND BHD	UPS TRANSFORMERS
17 ENG KAH ENTERPRISE SDN BHD	COSMETICS PERFUMERY TOILETETRY
18 EVAPAK SDN BHD	COLLAPSIBLE ALUMINIUM TUBES
19 FRANKLIN PORCELAIN SDN BHD	HAND PAINTED, PORCELAIN DOLLS, PEWTER, PLASTIC, WOOD PRODUCTS
20 GABAN SPICE MFG M SDN BHD	CURRY POWDER
21 GREAT TECH (M) SDN BHD	COMPUTER MONITOR PHONE
22 HIGASHI FUJI (M) SDN BHD	SYNCHRONAS & STEPPING
23 HITACHI ELECTRONIC PRODUCTS (M) SDN BHD	VTR CTV
24 HITACHI SEMICONDUCTORS (KEDAH) SDN BHD	TRANSISTORS & DIODES
25 HONEST PRODUCT (SRIJUS IND) SDN BHD	JUS PRODUCTS
26 ISUTA SDN BHD	CLEANROOM CRITICAL ENVIRONMENT CAR AUDIO PACKAGING ESD PREVENTIVE
27 JOHAN FIBRE IND SDN BHD	FIBRE GLASS
28 KANEBO (M) S.M. SDN BHD	ACRYLIC WOOL BLENDED YARN

29	KENMEC TECHNOLOGY SDN BHD	ORIGINAL EQUIPMENT MANUFACTURER
30	KOBE PRECISION (M) SDN BHD	COMPUTER HARD DISK DRIVE PTS
31	KOMATSU BATTERIES IND	AUOMOBILE & MOTORCYCLE BATTERIES
32	LAMBADA INDUSTRIES SDN BHD	METAL STAMPING
33	MALAYSIA ELECTRO-CHEMICAL INDUSTRY CO., SDN.BHD	
34	MARDEC PRECISION PRODUCTS SDN BHD	RUBBER PRODUCTS
35	MATSUSHITA ELECTRONICS CORP.(M) SDN BHD	CATHODE RAY COLOUR MONITOR TUBES
36	MAX FASTENERS (M) SDN BHD	STAPLES & BANDED WIRE
37	MEISEI ELECTRIC M SDN BHD	KEY TELEPHONE
38	METOXIDA MALAYSIA SDN BHD	ZINC OXIDE
39	MITSUOKA ELECTRONICS M SDN BHD	TRANSFORMER
40	MIYAO TOKI M SDN BHD	CERAMIC TABLE
41	MOZA PRECISION PLASTIC INDUSTRIES SDN BHD	PLASTIC AUDIO PARTS
42	MYOJO MSIA SDN BHD	INSTANT & BOWL NOODLES
43	NAKAZAWA DIE CASTING SDN BHD	ZINC DIE CAST
44	NILSON ELECT (ASIA) SDN BHD	LOW VOLTAGE SWITCHGEAR MANUFACTURER
45	NIPPON MENARD M SDN BHD	COSMETICS PRODUCTS
46	NIPPON PAINT M SDN BHD	PAINT & THINNERS
47	NIPPON PIGMENT (M)SDN BHD	PLASTIC COLOUR COMPOUND
48	NKR CONTINENTAL MFG	
49	NORTHERN TELECOM IND	TELECOMMUNICATION
50	OHKAWA MOULD DESIGN & ENGINEERS SDN.BHD	
51	OMRON MALAYSIA SDN BHD	ELECTRICAL COMPONENTS
52	ORGANO (ASIA) SDN BHD	WATER TESTING
53	PARKERIZING INDUSTRIES (M) SDN BHD	CHEMICAL
54	PENFIBRE SDN BHD	POLYESTER STAPLE FIBRES
55	PERUSAHAAN OTOMOBIL NASIONAL BHD	PASSENGER CARS
56	PHN INDUSTRY SDN BHD	METAL STAMPED
57	PLAS-SYS MALAYSIA SDN BHD	GLASSWOOL
58	POLY GLASS FIBRE (M) SDN BHD	PHARMACENTICAL DOSAGE
59	RANBAXY (MALAYSIA) SDN BHD	CERAMIC CAPASITOR
60	RICHWELL INDUSTRIES SDN BHD	

- | | |
|---------------------------------------|--|
| 61 SANKO SANGYO SDN BHD | TELECOMMUNICATION |
| 62 SAPURA RESEARCH SDN BHD | FIBRE CABLE |
| 63 SDKM FIBRE CABEL SDN BHD | AUDIO PRODUCT, CORDLESS PHONES, CD PICK UP |
| 64 SHAR ROXY CORP (M) SDN BHD | SILICONE RUBBER SWITCHERS |
| 65 SHIN ETSU POLYMER (M) SDN BHD | INDUSTRIAL GASES |
| 66 SITT TATT INDUSTRIAL GASES SDN BHD | RUBBER PROCESSING MACHINERY |
| 67 SPHERE COPR SDN BHD | TRANSFORMERS & ADAPTORS |
| 68 STANDFORD INDUSTRIES SDN BHD | EARTHENWARE |
| 69 TAKAGI M SDN BHD | ELECTRICAL INDUCTION MOTORS |
| 70 TECO INDUSTRY (M) SDN BHD | AUDIO PRODUCTS |
| 71 TOYO AUDIO CO (M) SDN BHD | AUTOMOTIVE PARTS |
| 72 TRACOMA SDN BHD | GRAPHICS CARDS |
| 73 UNICO TECHNOLOGY SDN BHD | WIRES & CABLES |
| 74 UNIPHONE CABLES SDN BHD | MATERIAL HANDLING SYSTEM |
| 75 UNITED IDEA ENGINEERING M SDN BHD | CAR & MOTORCYCLE BATTERIES |
| 76 YUASA BATTERY (M) SDN BHD | |

4. 設備需要及びその調査結果

Demand Survey On Equipment



- 1 Rutherford back-scattering spectroscope
- 2 Secondary ion mass spectrometer
- 3 Auger electron spectrometer
- 4 x-ray photoelectron spectrometer
- 5 x-ray microanalyser
- 6 Glow diecharge mass spectrometer
- 7 Induction linked plasma spectrometer
- 8 Photoelectric emission spectrophotometer
- 9 Glow discharge spectroscop
- 10 x-ray fluorescence spectrometer
- 11 ON particle size distribution measuring instrument
- 12 Fourier transform infrared spectrophotometer
- 13 Differential scanning calorimeter
- 14 Differential thermal analyser
- 15 CS particle size distribution measuring instrument
- 16 Scanning tunneling microscope
- 17 Scanning electron microscope
- 18 Scanning color laser microscope
- 19 Ultrasonic microscope
- 20 x-ray diffractometer
- 21 Universal material testing machine
- 22 Laser surface measuring instrument
- 23 Constant temperature/humidity chamber
- 24 Thermal impact durability testing machine
- 25 Vacuum impact durability testing machine
- 26 Magnetic environ testing apparatus
- 27 Magnetic shield room
- 28 Radiowave shield room, 10/3m test (VCCI,FCC,CISPR)
- 29 Voltage variation tolerance tester
- 30 Static electricity hazard tester
- 31 LCR meter
- 32 Logic analyser
- 33 Protocol analyser
- 34 Spectrum analyser
- 35 FFT analyser
- 36 Digital link analyser
- 37 LAN analyser
- 38 Super-pure water generator

REQUEST OF COOPERATION TO QUESTIONNAIRE ON
LABORATORY EQUIPMENT FOR R&D SUPPORT SERVICES AT
PROPOSED TECHNO CENTER IN KULIM HI-TECH INDUSTRIAL PARK

27 June 1995

Dear Sir,

Upon the request of the Government of Malaysia, we, JICA Study Team, are conducting a survey and working out a basic plan of the Techno Center to be set up at Kulim Hi-tech Industrial Park, Kedah State.

In this regard, we would very much appreciate if you could answer the attached questionnaire concerning the laboratory equipment to be installed in the Center. Please fill in by selecting the number e.g 1, 2 or 3 in order of your priority or interest, which you think is advisable or you might actually entrust the testing, should they be available.

Kindly send back the attached questionnaire by fax until 5 July 1995.

Thanking you in advance for your kind attention and cooperation.

Sincerely yours,

for 大隅進也

Takashi FUJII
Team Leader - JICA Study Team

REQUEST OF COOPERATION TO QUESTIONNAIRE ON
LABORATORY EQUIPMENT FOR R&D SUPPORT SERVICES AT
PROPOSED TECHNO CENTRE IN KULIM HI-TECH INDUSTRIAL PARK

June 28, 1995

JICA STUDY TEAM
TEAM LEADER

藤井 隆

クリムテクノセンターの機器に関するアンケート調査について（お願い）

拝啓 時下ますますご清祥のこととお慶び申し上げます。

さて、現在国際協力事業団（JICA）は、マレーシア政府の要請をうけて、「クリムテクノセンター企画、経営調査」をスタディチームを派遣して実施しております。本調査は、ケダ州のクリムハイテク工業団地において、研究開発支援、人材育成、交流等の機能をもった中核施設（テクノセンター）の企画を行うと同時に経営企画も行うものです。

この調査を進めるにあたり、本センターに設置する研究開発支援のための機器の需要に関して、ファクシミリによってアンケート調査を行うこととなりました。

つきましては、ご多忙のところ誠に恐れ入りますが、別添のアンケート表（2枚）に下記の要領でご記入の上、ご返送いただきますようよろしくお願い申し上げます。

敬 具

記

1. Priorityの欄に貴工場の活動からお考えになって、次の基準で1～3の番号をご記入下さい。

- ・非常に有益（もしあれば是非使いたい）場合には1
- ・まあまあ有益（あれば使うこともある）場合には2
- ・あまり有益ではない（使うことはない）場合には3

2. 恐れ入りますが、7月5日（水）までに、ファクシミリにてご返送願います。

TO: JICA STUDY TEAM
C/O TAMAN TEKNOLOGI MALAYSIA

FAX: 03-9319225

FROM: _____

No.	Description	Priority
1	Rutherford back-scattering spectroscopy ラザフォード後方散乱分析装置	
2	Secondary ion mass spectrometer 二次イオン質量分析計	
3	Auger electron spectrometer 走査型オーギュ電子分光装置	
4	x-ray photoelectron spectrometer X線光電子分光分析装置	
5	x-ray microanalyser X線マイクロアナライザー	
6	Glow discharge mass spectrometer グロ-放電質量分析計	
7	Induction linked plasma spectrometer 誘導結合プラズマ質量分析計	
8	Photoelectric emission spectrophotometer 発光分光分析装置	
9	Glow discharge spectroscopy グロ-放電発光分析装置	
10	x-ray fluorescence spectrometer 蛍光X線分析装置	
11	ON particle size distribution measuring instrument 酸素窒素同時分析装置	
12	Fourier transform infrared spectrophotometer フーリエ変換赤外分光光度計	
13	Differential scanning calorimeter 圧力示差走査熱量計	
14	Differential thermal analyser 示差熱分析計	
15	CS particle size distribution measuring instrument 炭素・硫黄同時分析装置	
16	Scanning tunneling microscope 走査型トンネル顕微鏡	
17	Scanning electron microscope 走査型電子顕微鏡	
18	Scanning color laser microscope 走査型カラーレーザー顕微鏡	
19	Ultrasonic microscope 超音波顕微鏡	

No.	Description	Priority
20	x-ray diffractometer X線回折装置	
21	Universal material testing machine 万能材料試験機	
22	Laser surface measuring instrument レーザ式表面形状測定器	
23	Constant temperature/humidity chamber 恒温恒湿槽	
24	Thermal impact durability testing machine 冷熱衝撃試験機	
25	Vacuum impact durability testing machine 真空環境耐性試験機	
26	Magnetic environ testing apparatus 電磁環試験装置	
27	Magnetic shield room 電磁シールドルーム	
28	Radiowave shield room, 10/3m test (VCCI,FCC,CISPR) 電波暗室	
29	Voltage variation tolerance tester 電源電圧変動許容度試験機	
30	Static electricity hazard tester 静電気障害試験機	
31	LCR meter LCRメータ	
32	Logic analyser ロジックアナライザ	
33	Protocal analyser プロトコルアナライザ	
34	Spectrum analyser スペクトラムアナライザ	
35	FFT analyser FFTアナライザ	
36	Digital link analyser デジタルリンクアナライザ	
37	LAN analyser LANアナライザ	
38	Super-pure water generator 超純水製造装置	

Company List of Demand Survey on Equipment

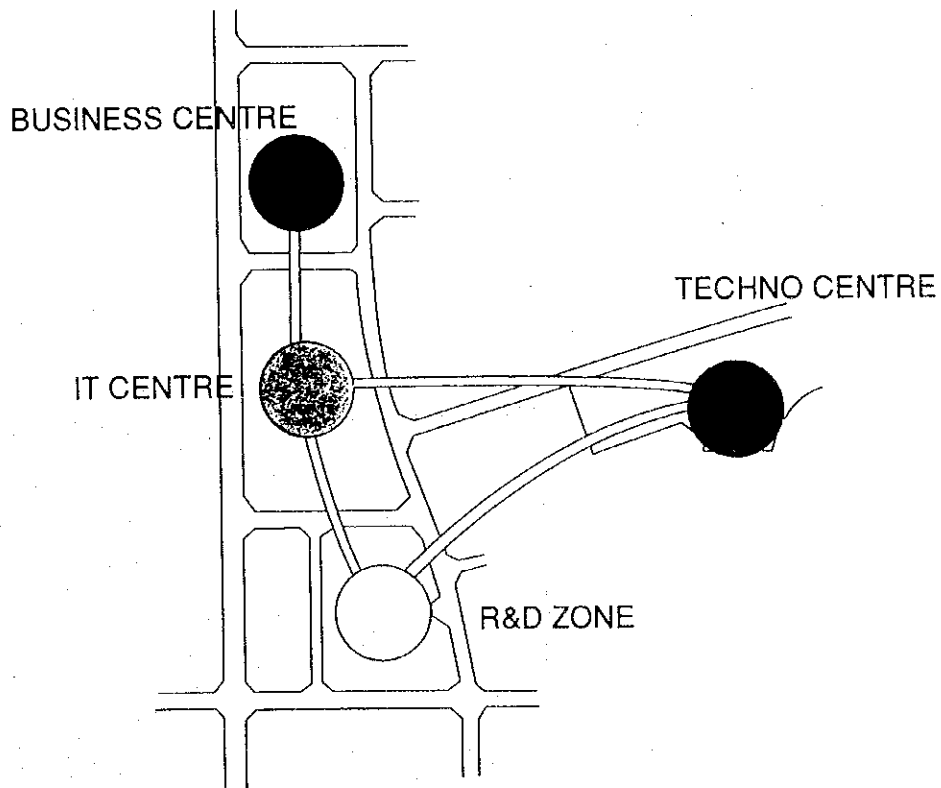
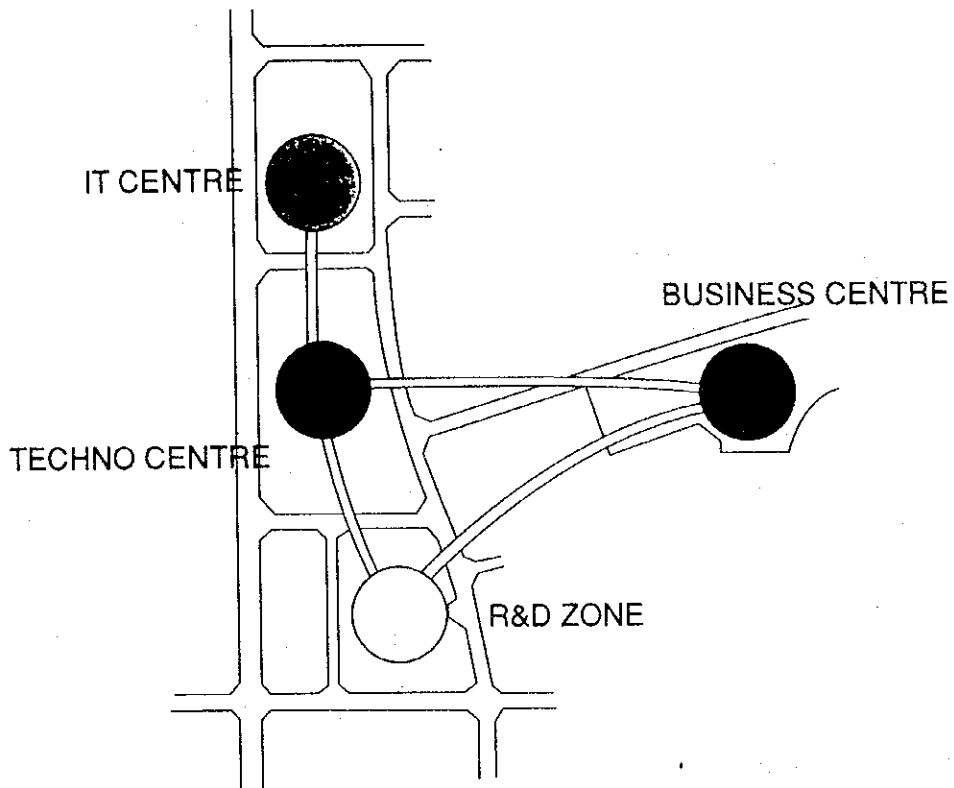
NAME	PRODUCT DESCRIPTION
1 AICELLO SANIPAL M SDN BHD	BARGAGE BAGS
2 ALCATEL NETWORK SYSTEMS (M) SDN BHD	SWITCHING EQUIP POWER CONVERTORS TELECOMM. SOFTWARE
3 ALPHA PRECISION TURNING & ENG SDN BND	METAL TURNING PARTS
4 AMC MANUFACTURING M SDN BHD	POWER TRANSFORMER
5 AN TARAWAJA SDN BHD	WHEELBARROWS & METAL STAMPING
6 ARITA VALVE MFG M SDN BHD	SOCKET
7 ARMSTRONG AUTO PARTS SDN BHD	CAR PARTS
8 ASAHIBEST BASE SDN BHD	WIRE HARNESS
9 ASEANIA FOILPACK SDN BHD	LAMINATED PRODUCT FOR INSULATION IN ROOFING & AIRCOND INDUST
10 ASIAN DRIVESHAFT SDN BHD	DRIVESHAFT
11 ATLAN INDUSTRIES SDN BHD	STAMPED METAL COMPONENTS
12 A VIMO (M)SDN BHD	PRECISION OPTICS & COMPONENT
13 BACN SDN BHD	LATEX DIPPED FOLEY CATHETERS
14 BAR CODE SATO ELECTRONICS(M)SDN.BHD.	GENERAL MACHINERY
15 BRIDGESTONE SPORTING GOODS MFG.SDN.BHD.	GOLF BOUL
16 CAM PRECISION COMPONENTS (PENANG) SDN BHD	HARD DISK DEVICES COMPONENTS
17 CENTURY CHEMICAL WORKS SDN BHD	POWDERED ACTIVATED CARBON
18 CHUYODA INTEGRE CO. (PENANG)SDN.BHD.	ELECTRIC PARTS
19 CONCORD TECHNOLOGY SDN BHD	PCB ASSEMBLY
20 CREST ULTRASONICS (M) SDN BHD	ULTRASONICS MACHINE
21 DIC COMPOUNDS(MALAYSIA)SDN.BHD.	CHEMICAL
22 ELECTROUGH DEVICES SND BHD	UPS TRANSFORMERS
23 ENG KAH ENTERPRISE SDN BHD	COSMETICS PERFUMERY TOILETETRY
24 EVAPAK SDN BHD	COLLAPSIBLE ALUMINTUM TUBES
25 FRANKLIN PORCELAIN SDN BHD	HAND PAINTED, PORCELAIN DOLLS, PEWTER, PLASTIC, WOOD PRODUCTS
26 FUJITEC MALAYSIA SDN.BHD.	GENERAL MACHINERY
27 GABAN SPICE MFG M SDN BHD	CURRY POWDER
28 GREAT TECH (M) SDN BHD	COMPUTER MONITOR PHONE

29	HICOM-HONDA MANUFACTURING MALAYSIA SDN.BHD	CAR PARTS
30	HIGASHI FUJI (M) SDN BHD	SYNCHRONAS & STEPPING
31	HITACHI ELECTRONIC PRODUCTS (M) SDN BHD	VTR CTV
32	HITACHI SEMICONDUCTORS (KEDAH) SDN BHD	TRANSISTORS & DIODES
33	HOKURIKU(MALAYSIA)SDN.BHD.	ELECTRIC EQUIPMENT
34	HOKUSHIN(MALAYSIA)SDN.BHD.	RUBBER
35	HONEST PRODUCT (SRIJUS IND) SDN BHD	JUS PRODUCTS
36	ISUTA SDN BHD	CLEANROOM CRITICAL ENVIRONMENT CAR AUDIO PACKAGING ESD PREVENTIVE
37	JOHAN FIBRE IND SDN BHD	FIBRE GLASS
38	KANEBO (M) S.M. SDN BHD	ACRYLIC WOOL BLENDED YARN
39	KENMEC TECHNOLOGY SDN BHD	ORIGINAL EQUIPMENT MANUFACTURER
40	KESP SDN BHD	BURN IN SERVICE
41	KOBE PRECISION (M) SDN BHD	COMPUTER HARD DISK DRIVE PTS
42	KOMATSU BATTERIES IND	AUOMOBILE & MOTORCYCLE BATTERIES
43	LAMBADA INDUSTRIES SDN BHD	METAL STAMPING
44	MAGATOR ELECTRONIC SDN BHD	VARISTORS
45	MARDEC PRECISION PRODUCTS SDN BHD	RUBBER PRODUCTS
46	MATSUSHITA ELECTRONICS CORP. (M) SDN BHD	CATHODE RAY COLOUR MONITOR TUBES
47	MAX FASTENERS (M) SDN BHD	STAPLES & BANDED WIRE
48	MEIKI(MALAYSIA)SDN.BHD.	MOULDING PARTS
49	MEISEI ELECTRIC M SDN BHD	KEY TELEPHONE
50	METOXIDA MALAYSIA SDN BHD	ZINC OXIDE
51	MITSUOKA ELECTRONICS M SDN BHD	TRANSFORMER
52	MIYAO TOKI M SDN BHD	CERAMIC TABLE
53	MMC ELECTRONICS(M)SDN.BHD.	ELECTRIC PARTS
54	MOZA PRECISION PLASTIC INDUSTRIES SDN BHD	PLASTIC AUDIO PARTS
55	MYOJO MSIA SDN BHD	INSTANT & BOWL NOODLES
56	NAKAJIMA DOKO MALAYSIA SDN.BHD.	METAL PRODUCTS
57	NAKAZAWA DIE CASTING SDN BHD	ZINC DIE CAST
58	NICOMSTEEL CEBTRE M SDN BHD	STEEL SHEET
59	NILSON ELECT (ASIA) SDN BHD	LOW VOLTAGE SWITCHGEAR MANUFACTURER
60	NIPPON MENARD M SDN BHD	COSMETICS PRODUCTS

61. NIPPON PAINT M SDN BHD	PAINT & THINNERS
62. NIPPON PIGMENT (M) SDN BHD	PLASTIC COLOUR COMPOUND
63. NITTO DENKO ELECTRONICS (MALAYSIA) SDN BHD	CHEMICAL
64. NITTOKU MALAYSIA SDN BHD	GENERAL MACHINE
65. NKR CONTINENTAL MFG	
66. NORTHERN TELECOM IND	TELECOMMUNICATION
67. OMRON MALAYSIA SDN BHD	ELECTRICAL COMPONENTS
68. PARKERIZING INDUSTRIES (M) SDN BHD	CHEMICAL
69. PENFIBRE SDN BHD	POLYESTER STAPLE FIBRES
70. PERUSAHAAN OTOMOBIL NASIONAL BHD	PASSENGER CARS
71. PHN INDUSTRY SDN BHD	METAL STAMPED
72. PLAS-SYS MALAYSIA SDN BHD	GLASSWOOL
73. POLY GLASS FIBRE (M) SDN BHD	PHARMACENTICAL DOSAGE
74. RANBAXY (MALAYSIA) SDN BHD	HEADSTACK ASSEMBLY
75. READ RITE (M) SDN BHD	CERAMIC CAPASITOR
76. RICHWELL INDUSTRIES SDN BHD	CASTORS WHEELS
77. RITOMBUS CONTINENTAL CASTORS SDN BHD	
78. SANKO SANGYO SDN BHD	TELECOMMUNICATION
79. SAPURA RESEARCH SDN BHD	FIBRE CABLE
80. SDKM FIBRE CABEL SDN BHD	AUDIO PRODUCT, CORDLESS PHONES, CD PICK UP
81. SHAR ROXY CORP (M) SDN BHD	SILICONE RUBBER SWITCHERS
82. SHIN ETSU POLYMER (M) SDN BHD	INDUSTRIAL GASES
83. SITT TAIT INDUSTRIAL GASES SDN BHD	RUBBER PROCESSING MACHINERY
84. SPHERE COPR SDN BHD	TRANSFORMERS & ADAPTORS
85. STANDFORD INDUSTRIES SDN BHD	RESISTOR
86. TAI OHME ELECTRONICS M SDN BHD	METAL PRODUCTS
87. TAJIMA METAL WORK (MALAYSIA) SDN BHD	EARTHENWARE
88. TAKAGI M SDN BHD	MTRS OF CHEMICAL EQUIP & OF EXOTIC METALS
89. TEAM HI TECH (M) SDN BHD	ELECTRICAL INDUCTION MOTORS
90. TECO INDUSTRY (M) SDN BHD	SMT MACHINE & TESTER
91. TESCON ELECTRONIC M SDN BHD	ELECTRIC PARTS
92. TOKYO FERRITE (MALAYSIA) SDN BHD	

- | | | |
|-----|-----------------------------------|----------------------------|
| 93 | TOWAM SDN.BHD. | MOULDING |
| 94 | TOYO AUDIO CO (M) SDN BHD | AUDIO PRODUCTS |
| 95 | TRACOMA SDN BHD | AUTOMOTIVE PARTS |
| 96 | UNICO TECHNOLOGY SDN BHD | GRAPHICS CARDS |
| 97 | UNIPHONE CABLES SDN BHD | WIRES & CABLES |
| 98 | UNIPES M SDN BHD | PLASTIC PARTS |
| 99 | UNITED IDEA ENGINEERING M SDN BHD | MATERIAL HANDLING SYSTEM |
| 100 | YUASA BATTERY (M) SDN BHD | CAR & MOTORCYCLE BATTERIES |

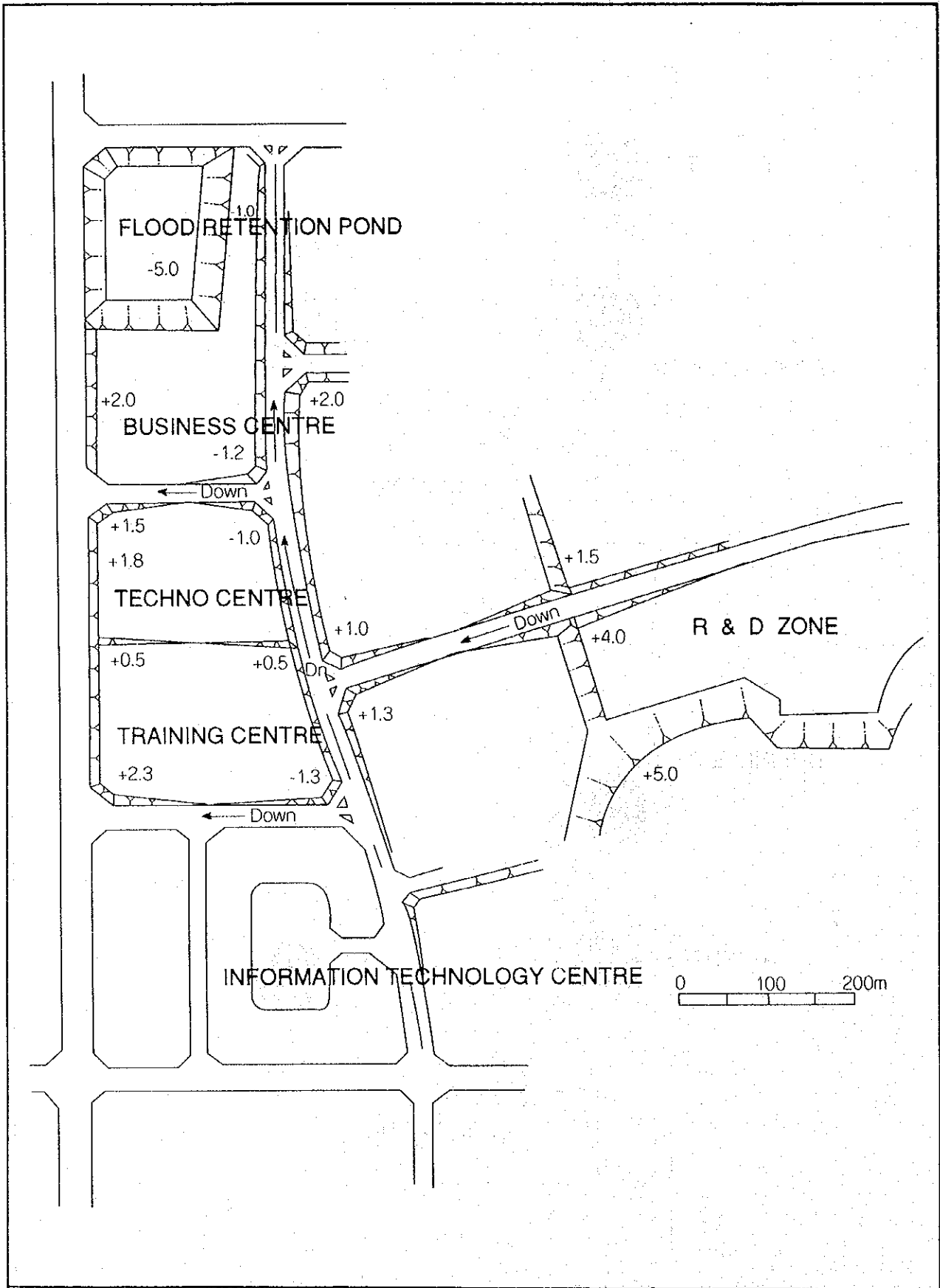
5. 建築デザイン



JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)
 ECONOMIC PLANNING UNIT, THE GOVERNMENT OF MALAYSIA
 STUDY ON MANAGEMENT AND PLANNING OF
 R&D SUPPORTING FACILITIES (TECHNO CENTRE) FOR
 KULIM HI-TECH INDUSTRIAL PARK

Figure 5.1
 Spatial Layout Alternatives

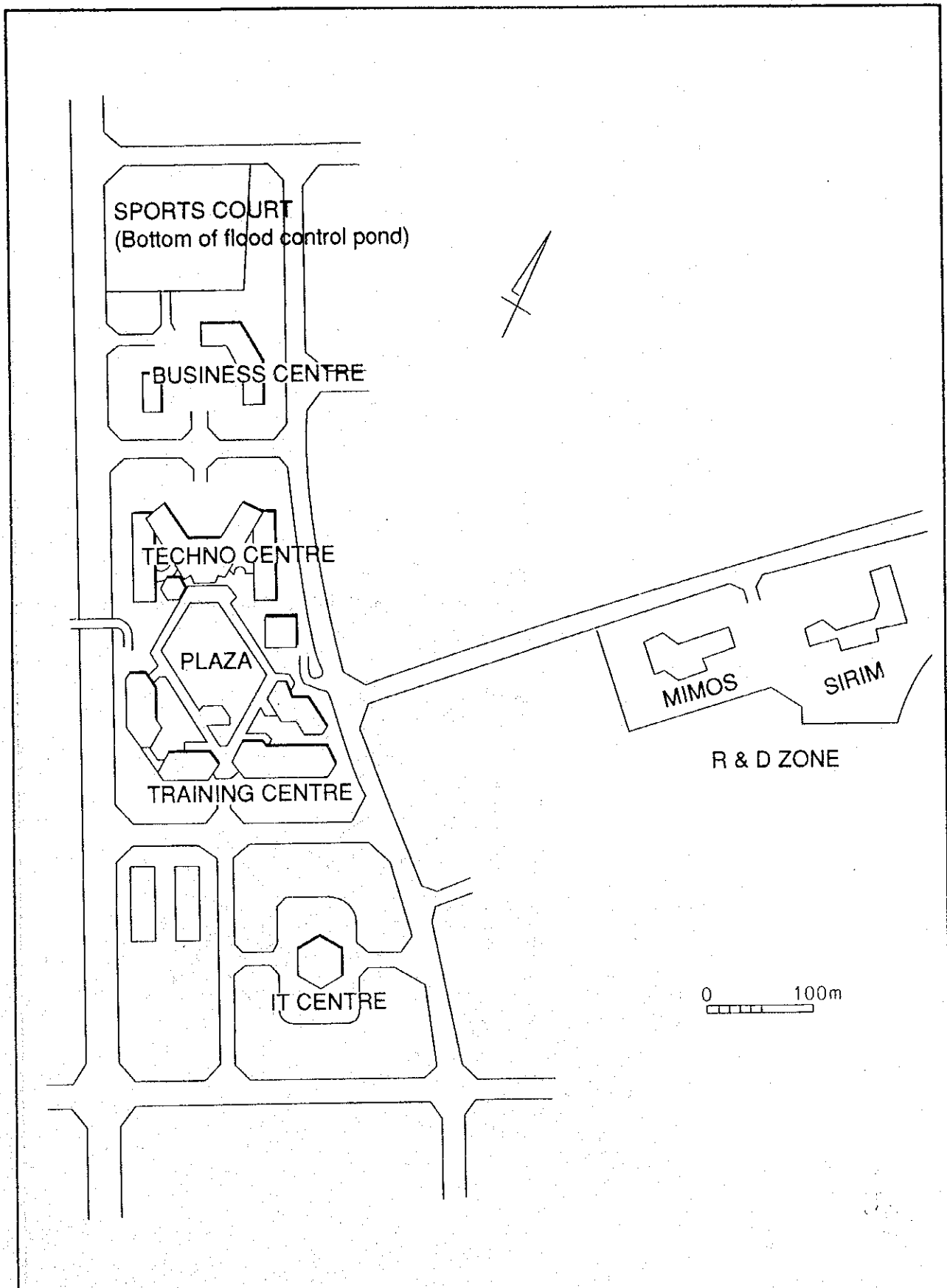
Japan Industrial Location Centre
 Nippon Koei Co., Ltd.



JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)
 ECONOMIC PLANNING UNIT, THE GOVERNMENT OF MALAYSIA
 STUDY ON MANAGEMENT AND PLANNING OF
 R&D SUPPORTING FACILITIES (TECHNO CENTRE) FOR
 KULIM HI-TECH INDUSTRIAL PARK

Figure 5.2
 Terraced Land Reclamation

Japan Industrial Location Centre
 Nippon Koei Co., Ltd.



JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)
 ECONOMIC PLANNING UNIT, THE GOVERNMENT OF MALAYSIA
 STUDY ON MANAGEMENT AND PLANNING OF
 R&D SUPPORTING FACILITIES (TECHNO CENTRE) FOR
 KULIM HI-TECH INDUSTRIAL PARK

Figure 5.3
 Business and R&D Core Layout Plan

Japan Industrial Location Centre
 Nippon Koei Co., Ltd.

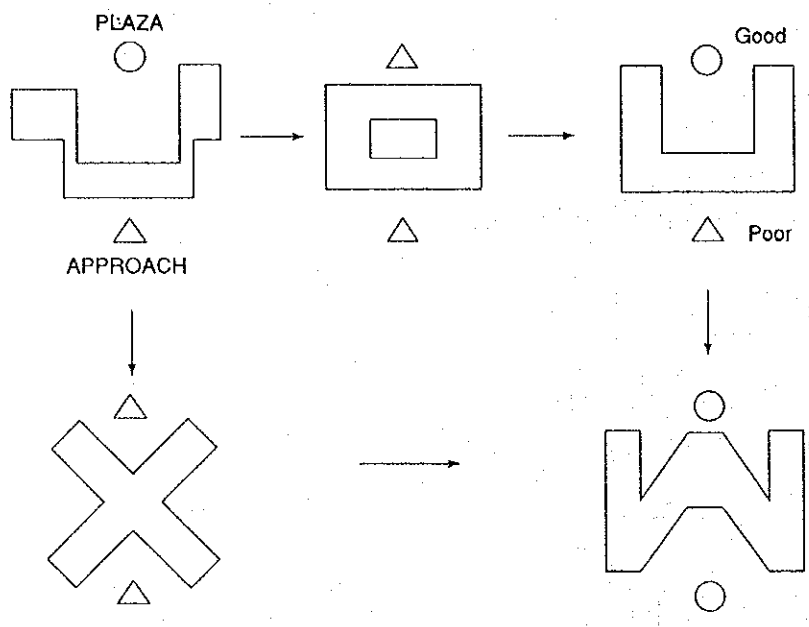


Figure 5.4
Comparison of Building Configuration

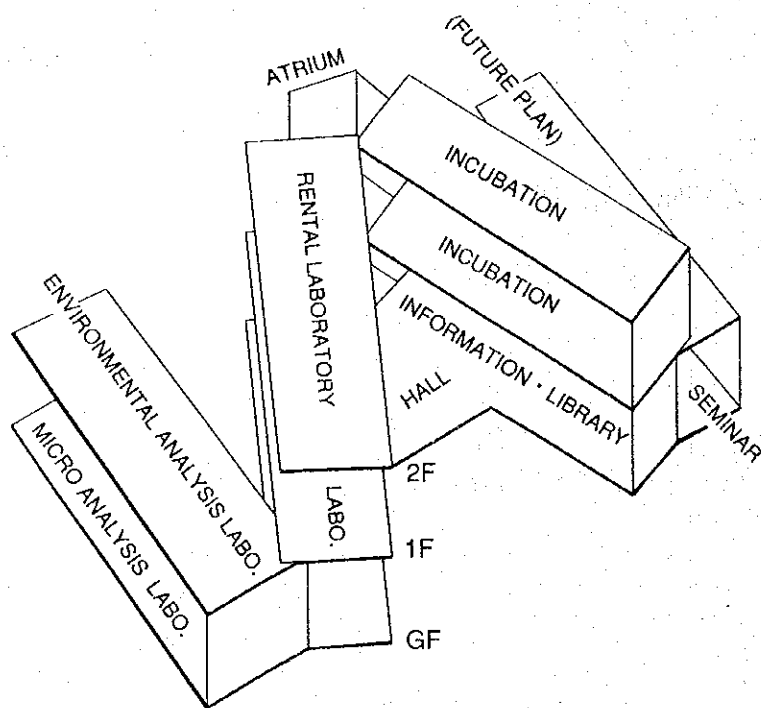
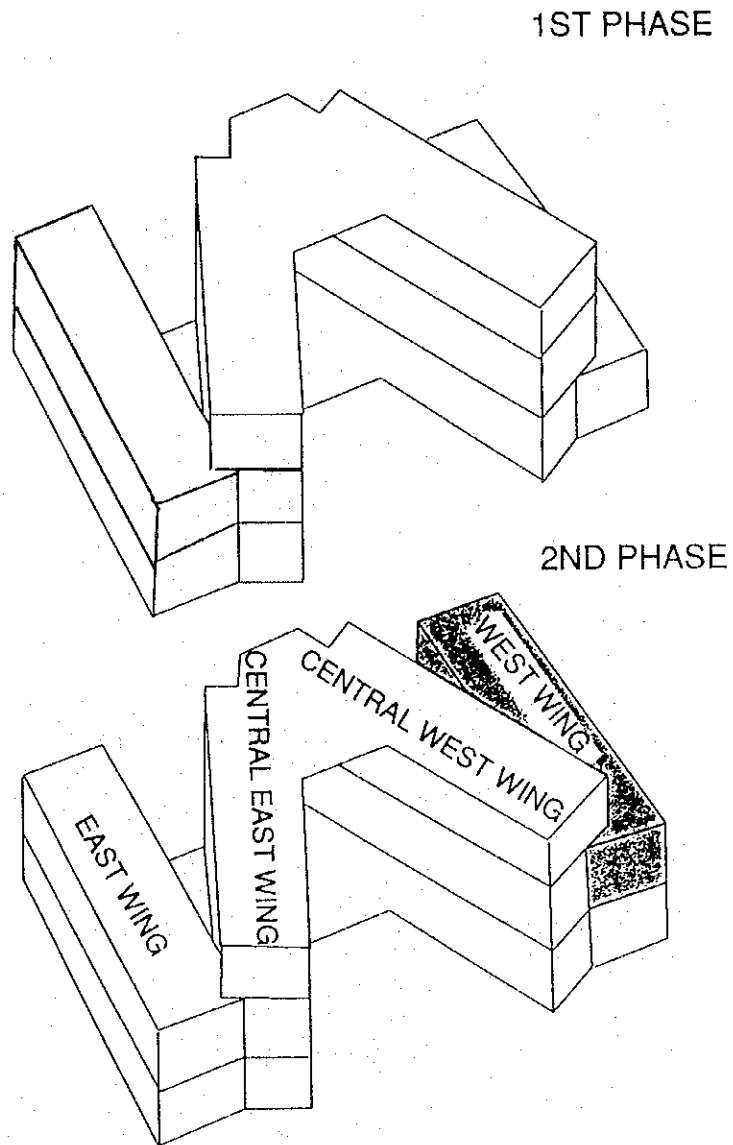


Figure 5.5
Blocking Plan in Isometric

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)
 ECONOMIC PLANNING UNIT, THE GOVERNMENT OF MALAYSIA
 STUDY ON MANAGEMENT AND PLANNING OF
 R&D SUPPORTING FACILITIES (TECHNO CENTRE) FOR
 KULIM HI-TECH INDUSTRIAL PARK

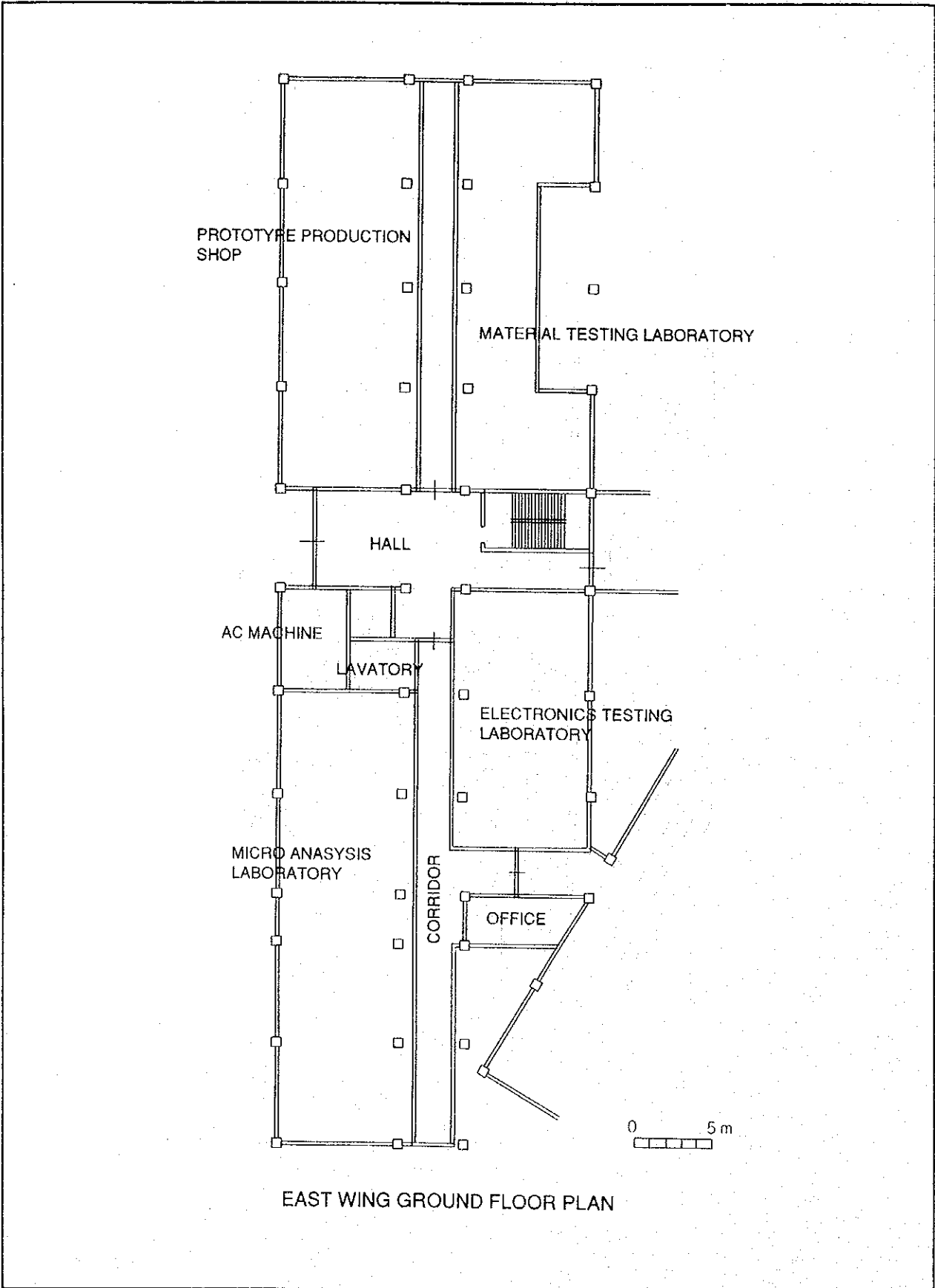
Japan Industrial Location Centre
 Nippon Koei Co., Ltd.



JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)
 ECONOMIC PLANNING UNIT, THE GOVERNMENT OF MALAYSIA
 STUDY ON MANAGEMENT AND PLANNING OF
 R&D SUPPORTING FACILITIES (TECHNO CENTRE) FOR
 KULIM HI-TECH INDUSTRIAL PARK

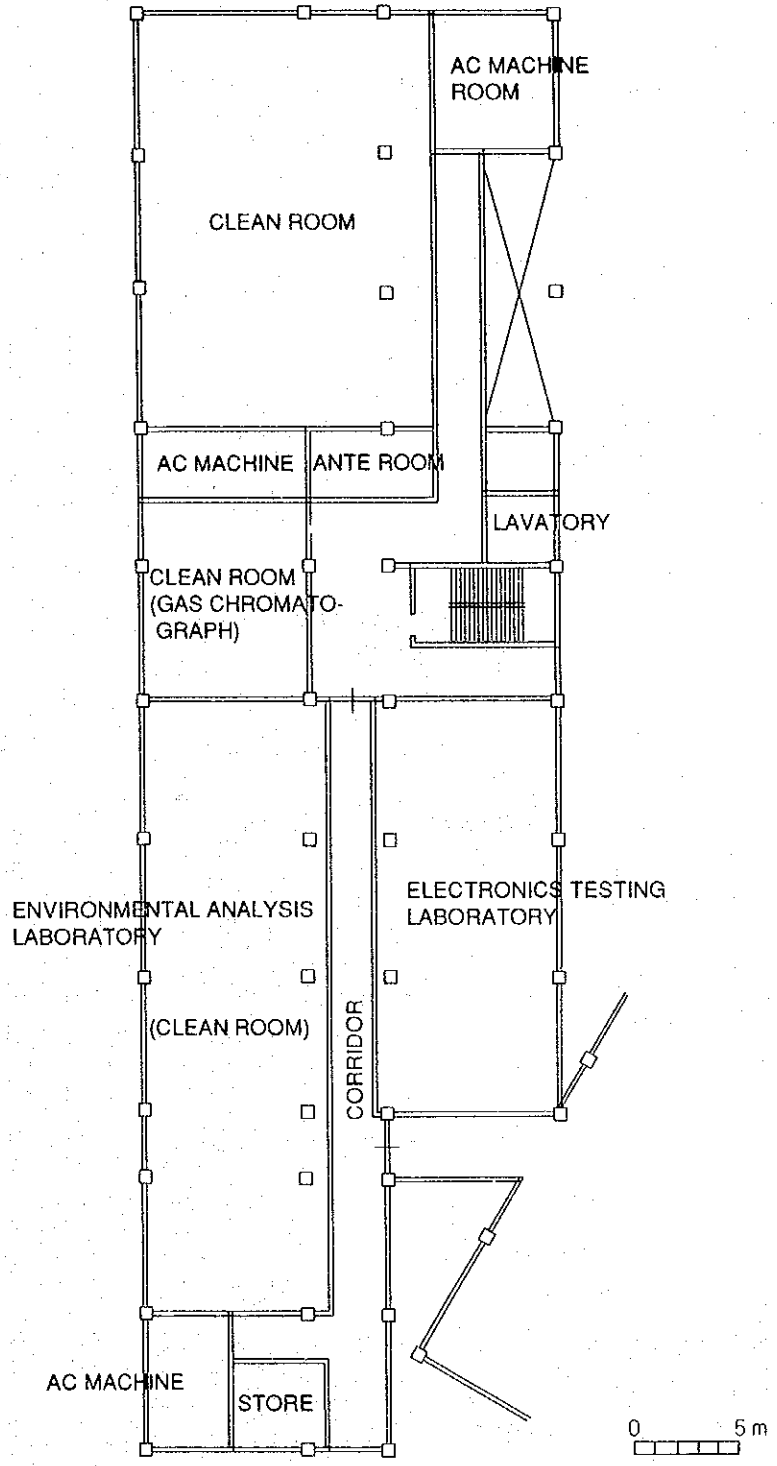
Figure 5.6
 Expansion of Building

Japan Industrial Location Centre
 Nippon Koei Co., Ltd.



JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)
 ECONOMIC PLANNING UNIT, THE GOVERNMENT OF MALAYSIA
 STUDY ON MANAGEMENT AND PLANNING OF
 R&D SUPPORTING FACILITIES (TECHNO CENTRE) FOR
 KULIM HI-TECH INDUSTRIAL PARK

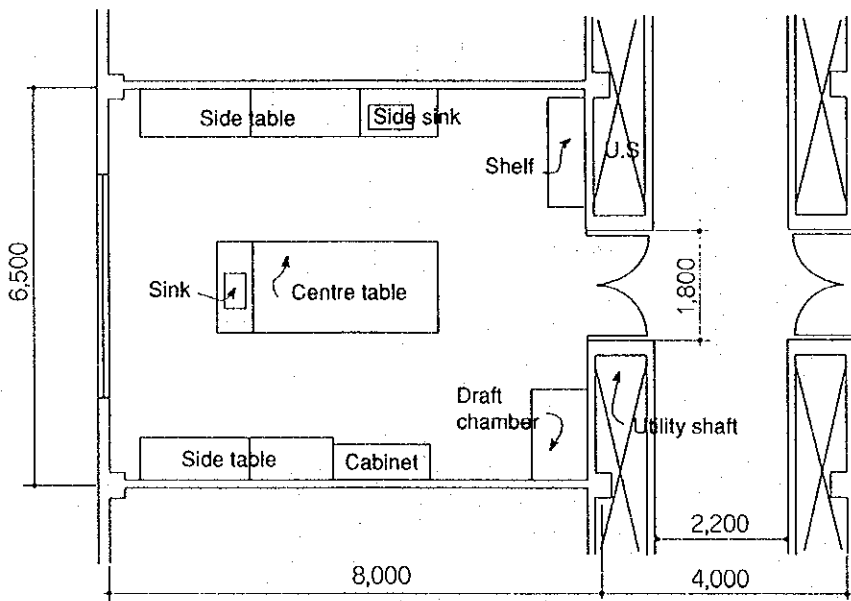
Figure 5.7
Partial Floor Plans (1)
 Japan Industrial Location Centre
 Nippon Koei Co., Ltd.



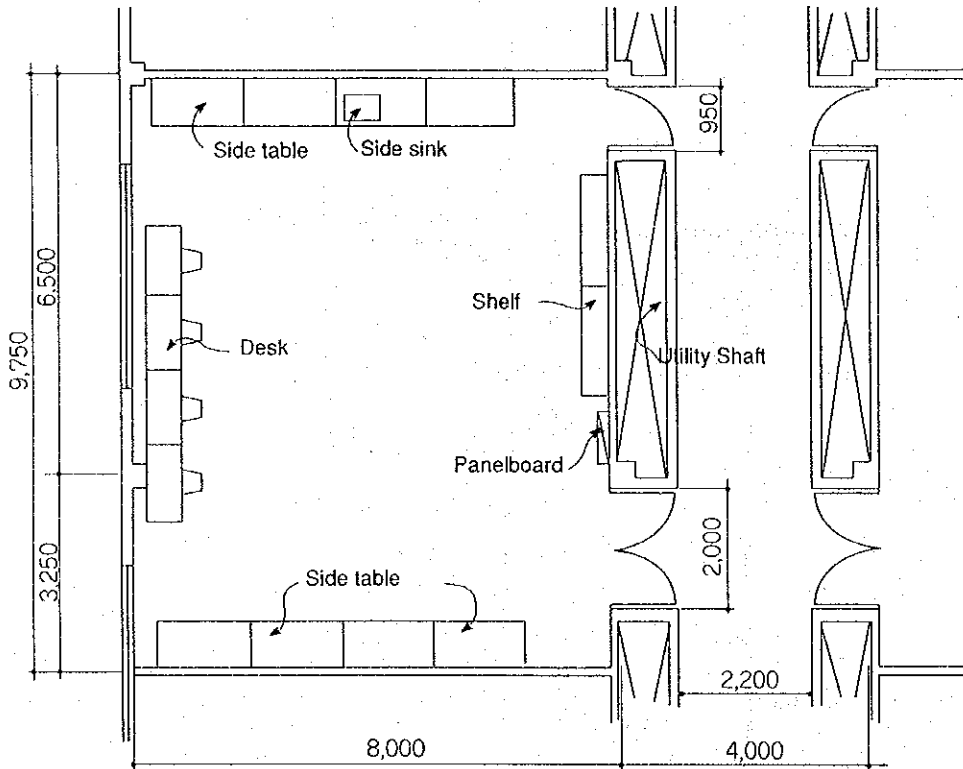
EAST WING 1ST FLOOR PLAN

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)
 ECONOMIC PLANNING UNIT, THE GOVERNMENT OF MALAYSIA
 STUDY ON MANAGEMENT AND PLANNING OF
 R&D SUPPORTING FACILITIES (TECHNO CENTRE) FOR
 KULIM HI-TECH INDUSTRIAL PARK

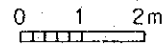
Figure 5.8
 Partial Floor Plans (2)
 Japan Industrial Location Centre
 Nippon Koei Co., Ltd.



STANDARD LABORATORY PLAN
(CHEMICAL)



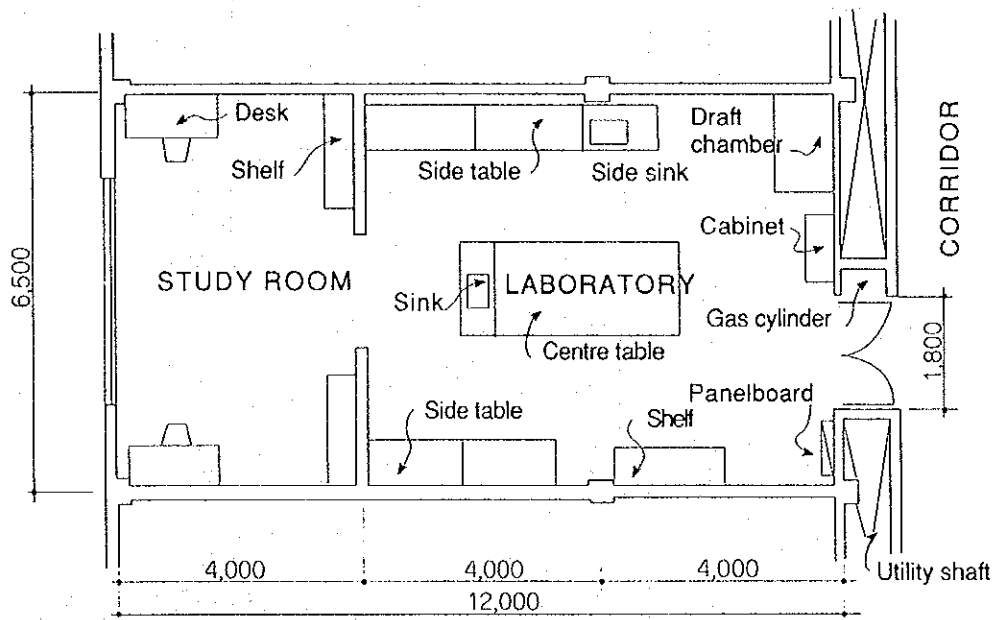
STANDARD LABORATORY PLAN
(PHYSICAL)



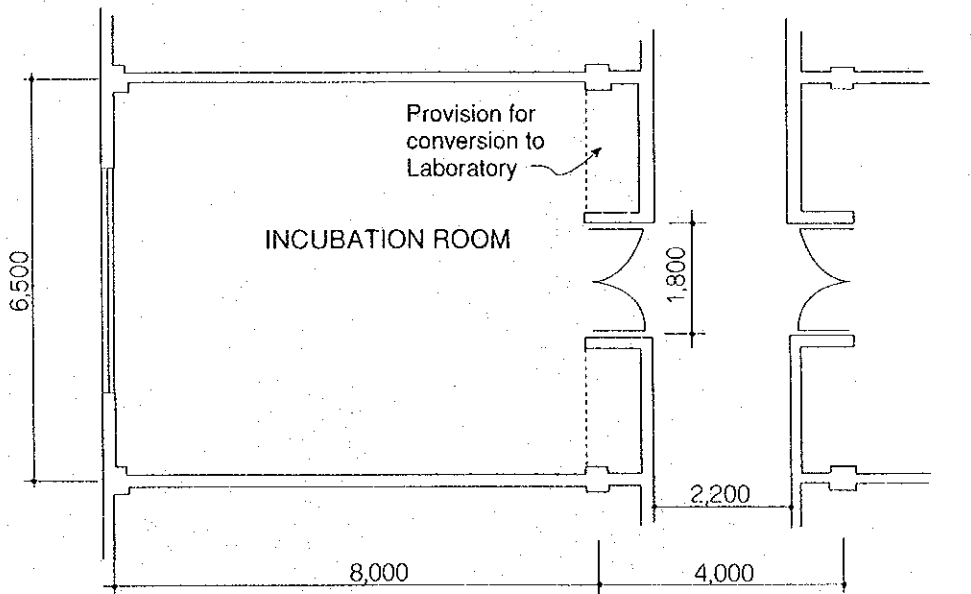
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)
ECONOMIC PLANNING UNIT, THE GOVERNMENT OF MALAYSIA
STUDY ON MANAGEMENT AND PLANNING OF
R&D SUPPORTING FACILITIES (TECHNO CENTRE) FOR
KULIM HI-TECH INDUSTRIAL PARK

Figure 5.9
Partial Floor Plan (3)

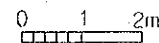
Japan Industrial Location Centre
Nippon Koei Co., Ltd.



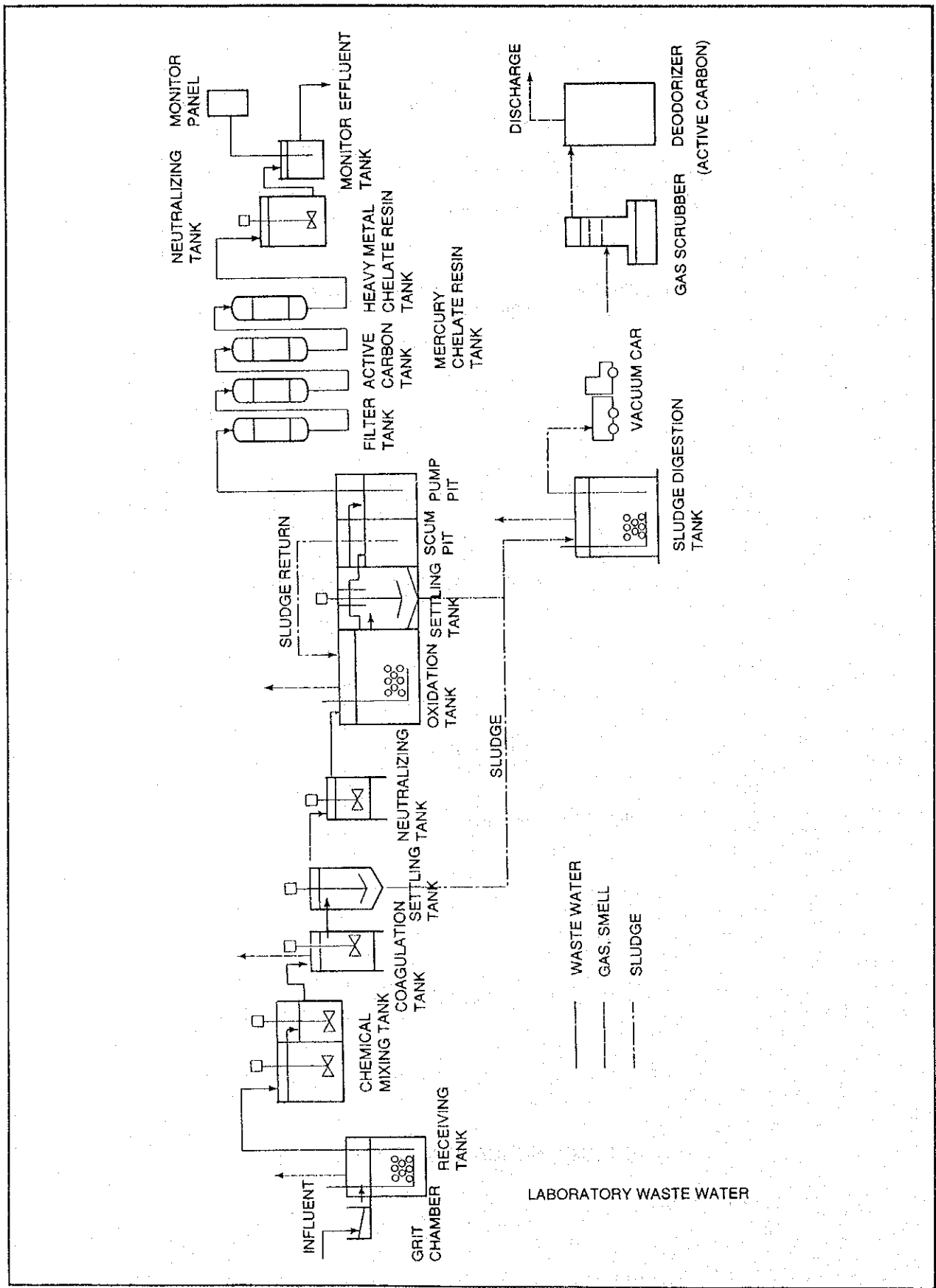
LABORATORY W/STUDY ROOM



STANDARD INCUBATION ROOM

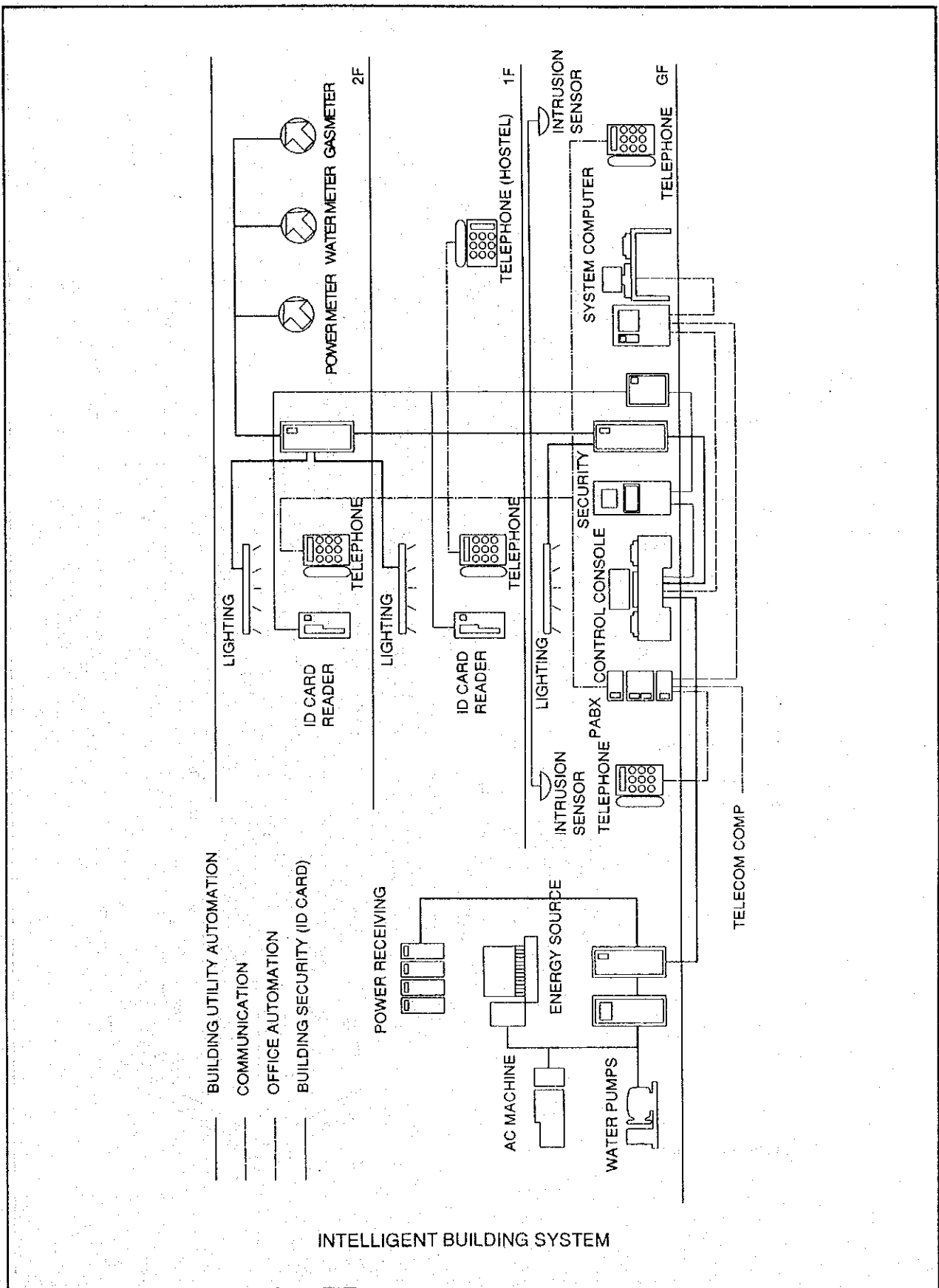


<p>JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)</p>	<p>Figure 5.10</p>
<p>ECONOMIC PLANNING UNIT, THE GOVERNMENT OF MALAYSIA</p>	<p>Partial Floor Plan (4)</p>
<p>STUDY ON MANAGEMENT AND PLANNING OF R&D SUPPORTING FACILITIES (TECHNO CENTRE) FOR KULIM HI-TECH INDUSTRIAL PARK</p>	<p>Japan Industrial Location Centre Nippon Koei Co., Ltd.</p>



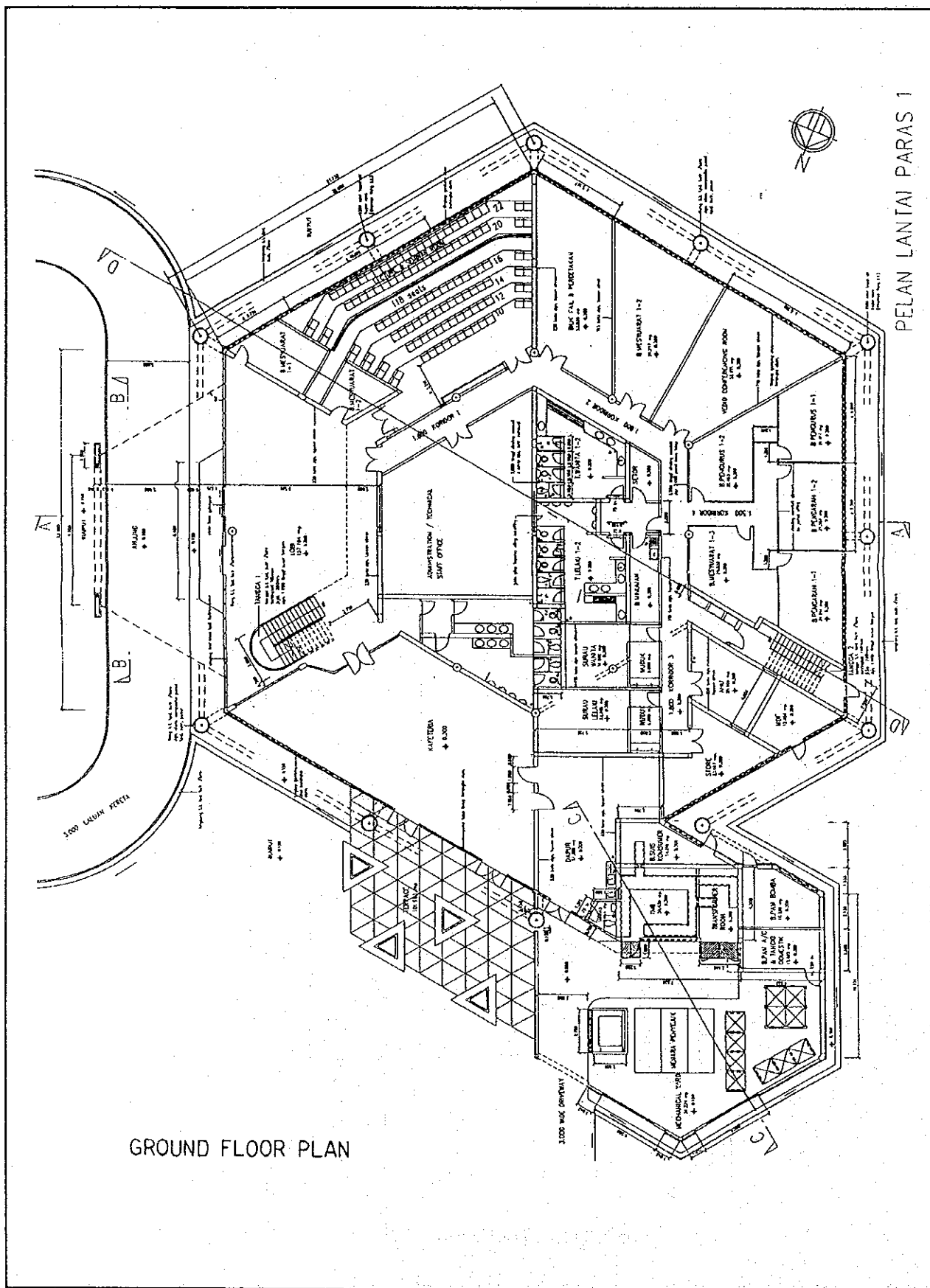
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)
 ECONOMIC PLANNING UNIT, THE GOVERNMENT OF MALAYSIA
 STUDY ON MANAGEMENT AND PLANNING OF
 R&D SUPPORTING FACILITIES (TECHNO CENTRE) FOR
 KULIM HI-TECH INDUSTRIAL PARK

Figure 5.11
Laboratory Waste Water Disposal Plant
 Japan Industrial Location Centre
 Nippon Koei Co., Ltd.



JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)
 ECONOMIC PLANNING UNIT, THE GOVERNMENT OF MALAYSIA
 STUDY ON MANAGEMENT AND PLANNING OF
 R&D SUPPORTING FACILITIES (TECHNO CENTRE) FOR
 KULIM HI-TECH INDUSTRIAL PARK

Figure 5.12
Intelligent Building System
 Japan Industrial Location Centre
 Nippon Koei Co., Ltd.

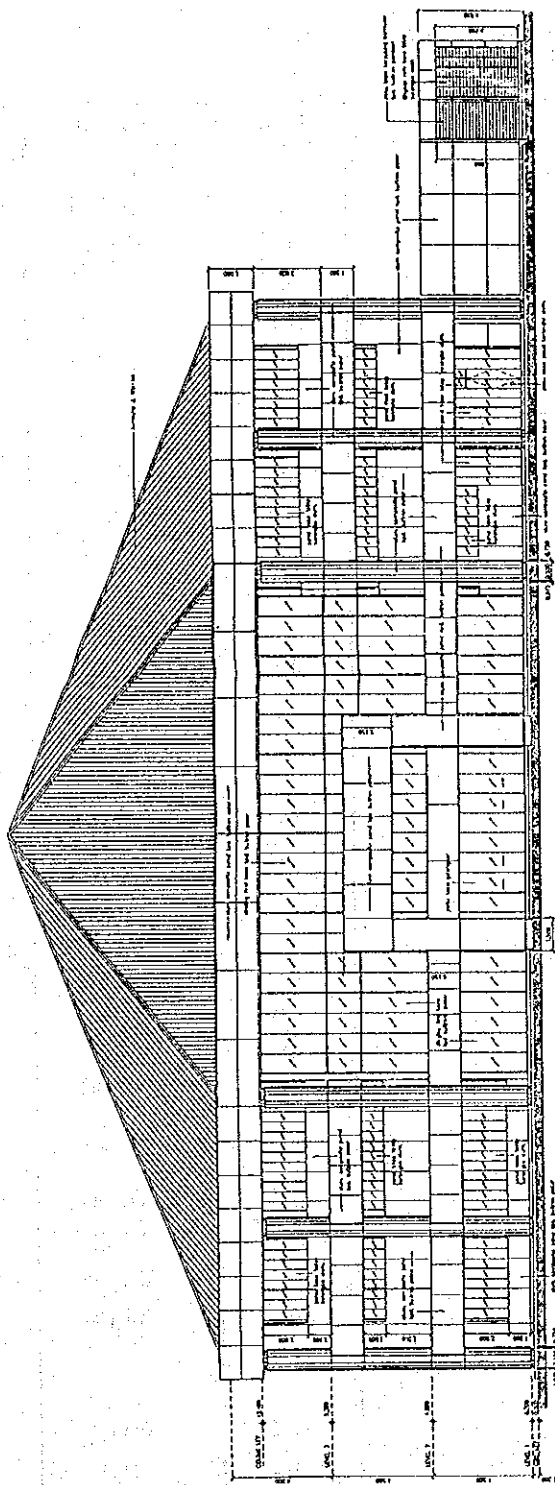


GROUND FLOOR PLAN

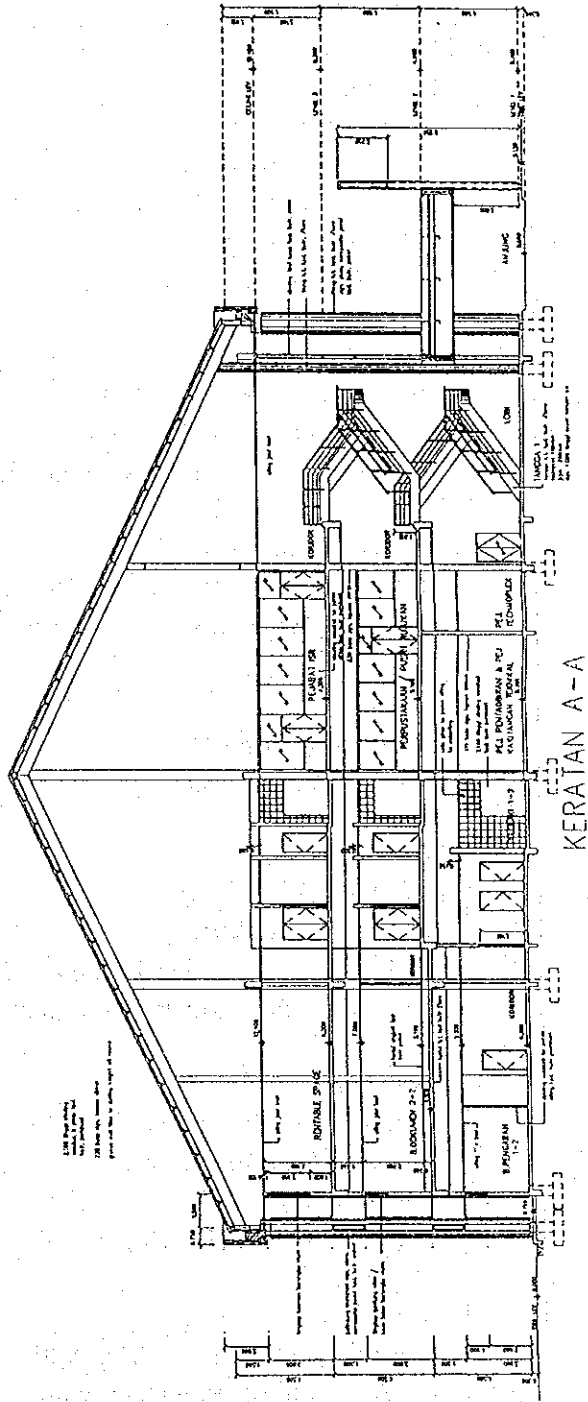
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)
 ECONOMIC PLANNING UNIT, THE GOVERNMENT OF MALAYSIA
 STUDY ON MANAGEMENT AND PLANNING OF
 R&D SUPPORTING FACILITIES (TECHNO CENTRE) FOR
 KULIM HI-TECH INDUSTRIAL PARK

Figure 5.13
 IT Centre (I)

Japan Industrial Location Centre
 Nippon Koei Co., Ltd.



PANDANGAN TIMUR-LAUT



KERATAN A-A

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)
 ECONOMIC PLANNING UNIT, THE GOVERNMENT OF MALAYSIA
 STUDY ON MANAGEMENT AND PLANNING OF
 R&D SUPPORTING FACILITIES (TECHNO CENTRE) FOR
 KULIM HI-TECH INDUSTRIAL PARK

Figure 5.14
 IT Centre (2)

Japan Industrial Location Centre
 Nippon Koei Co., Ltd.

Table 5.1 CONSTRUCTION UNIT COST

No.	Work Item	Unit	Unit Cost
1	Earthwork		
	- Excavation by hand	m ³	35.00
	- Excavation by machine	m ³	15.00
	- Backfilling incl. compaction	m ³	25.00
	- Disposal of surplus soil	m ³	25.00
	- Gravel subbase	m ³	50.00
2	Concrete work		
	- Structural concrete Fc 210	m ³	165.00
	- Lean concrete Fc 120	m ³	145.00
	- Leveling concrete Fc 120, 5 cm thick	m ²	8.00
3	Reinforcement work		
	- Reinforcement bars Dia. 10-16 mm	kg	1.65
	- Reinforcement bars Dia. 19-25 mm	kg	1.60
4	Formwork		
	- Formwork, ordinary	m ²	28.00
	- Formwork, fair faced	m ²	35.00
5	Masonry Work		
	- Brick masonry 1/2 B	m ²	26.00
	- Brick masonry 1 B	m ²	52.00
	- Hollow concrete block 10 cm thick	m ²	25.00
	- Hollow concrete block 20 cm thick	m ²	35.00
6	Plastering Work		
	- Cement plastering to wall & ceiling	m ²	16.00
	- Cement plastering to floor	m ²	13.50
	- Terrazzo to floor	m ²	48.00
	- Terrazzo to base H = 10 cm	m	38.00
7	Tiling Work		
	- Ceramic wall tile to exterior wall	m ²	80.00
	- Ceramic wall tile to interior wall	m ²	80.00
	- Porcelain tile to floor	m ²	-
8	Interior Finishing Work		
	- Vinyl tile to floor	m ²	24.00
	- Vinyl tile to base H = 10 cm	m ²	14.00
	- Marble to wall (imported)	m ²	280 (400)
	- Marble to floor (imported)	m ²	260 (370)
	- Mineral fiber tile to ceiling	m ²	28.00

No.	Work Item	Unit	Unit Cost
9	Painting Work		
	- Vinyl emulsion paint to wall & ceiling	m ²	3.50
	- Oil paint	m ²	7.50
10	Doors and Windows		
	- Steel flush door	pc	950.00
	- Wood flush door	pc	450.00
11	Glazing Works		
	- Sheet glass 3 mm	m ²	33.00
	- Sheet glass 5 mm	m ²	45.00
12	Waterproofing		
	- Bituminous built-up waterproofing	m ²	25.00
	- Synthetic coating	m ²	-
13	Plumbing		
	- Galvanized steel pipe Dia. 25 mm	m	20.00
	- Galvanized steel pipe Dia. 40 mm	m	32.50
	- Cast iron pipe Dia. 100	m	40.00
	- Vitreous clay pipe Dia. 100	m	58.00
	- Concrete pipe Dia. 200	m	-
	- Water closet	pc	550.00
	- Urinal	pc	350.00
- Lavatory sink	pc	360.00	
14	Electric Work		
	- Conduiting Dia. 20	m	7.00
	- Conduiting Dia. 40	m	15.00
	- Joint box for conduit	pc	5.00
	- Lighting fixture FL 40 w	pc	40.00
	- Lighting fixture FL 40 w x 2	pc	70.00
15	Foundation Pile Work		
	- Precast concrete pile Dia. 40 cm, L = 20 cm	m	110.00
	- Precast concrete pile Dia. 50 cm, L = 20 cm	m	-
	- Cast-in-site concrete pile Dia. 80 cm, L = 20 cm	m	-
	- Cast-in-site concrete pile Dia. 100 cm, L = 20 cm	m	-

Table 5.2 LOCAL MATERIAL COST

No.	Description	Unit	Unit Price
1	Cement, 50 kg/bag	bag	9.50
2	Reinforcement bar	kg	1.23
3	Timber	m ³	381.00
4	Wood plank, 2 x 30 cm	m	
5	Sand	m ³	70.00
6	Gravel	m ³	11.30
7	Plywood, 0.4 x 90 x 180 cm	pc	15.00
8	Plywood, 0.6 x 90 x 180 cm	pc	24.00
9	Brick	pc	0.25
10	Concrete hollow block, 10 x 20 x 40 cm	pc	0.73
11	Concrete hollow block, 20 x 20 x 40 cm	pc	1.30
12	Glass, 3 mm	m ²	15.00
13	Glass, 5 mm	m ²	30.00
14	Galvanized iron sheet #36, 90 x 180 cm	pc	
15	Concrete pipe Dia. 150, 200 cm	pc	45.00
16	Concrete pipe Dia. 200, 200 cm	pc	53.00
17	Vitreous clay pipe Dia. 100, 60 cm	pc	14.00
18	Vitreous clay pipe Dia. 150, 60 cm	pc	22.00
19	Galvanized steel pipe Dia. 32, 5.5 m	pc	71.00
20	Galvanized steel pipe Dia. 40, 5.5 m	pc	82.00
21	Cast iron pipe Dia. 75, 180 cm	pc	21.50
22	Cast iron pipe Dia. 100, 180 cm	pc	24.50
23	PVC drain pipe Dia. 75, 6 m	pc	91.70
24	PVC drain pipe Dia. 100, 6 m	pc	150.50

Table 5.3 LOCAL WAGES

No.	Description	Unit	Wage
1	Foreman	day	85.00
2	Electric technician	"	80.00
3	Mechanical technician	"	80.00
4	Carpenter	"	60.00
5	Mason	"	70.00
6	Welder	"	75.00
7	Pipe fitter	"	80.00
8	Rigger	"	
9	Plasterer	"	80.00
10	Painter	"	70.00
11	Metal worker	"	80.00
12	Barbender	"	60.00
13	Truck driver	"	85.00
14	Const. machine operator	"	80.00
15	Skilled labor	"	50.00
16	Common labor	"	40.00
17	Service boy	"	40.00
18	Janitor	"	30.00
a	Sr. engineer	month	8000.00
b	Jr. engineer	"	4000.00
c	Draftsman	"	2000.00
d	Office administrator	"	2500.00
e	Office clerk	"	1000.00
f	Accountant	"	3000.00
g	Typist	"	1000.00
h	Computer operator	"	1500.00
i	Interpreter	"	5000.00