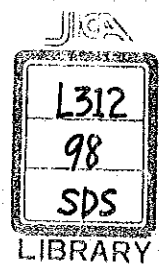


THE NATIONAL CANCER CENTER & THE GENERAL HOSPITAL

BASIC DESIGN SUMMARY

VOL.3

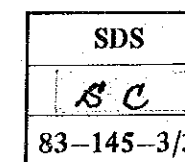
ESTABLISHMENT PROJECT
IN THE KINGDOM OF SAUDI ARABIA



NOVEMBER 1983



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**THE NATIONAL CANCER CENTER
&
THE GENERAL HOSPITAL**

BASIC DESIGN SUMMARY

VOL. 3

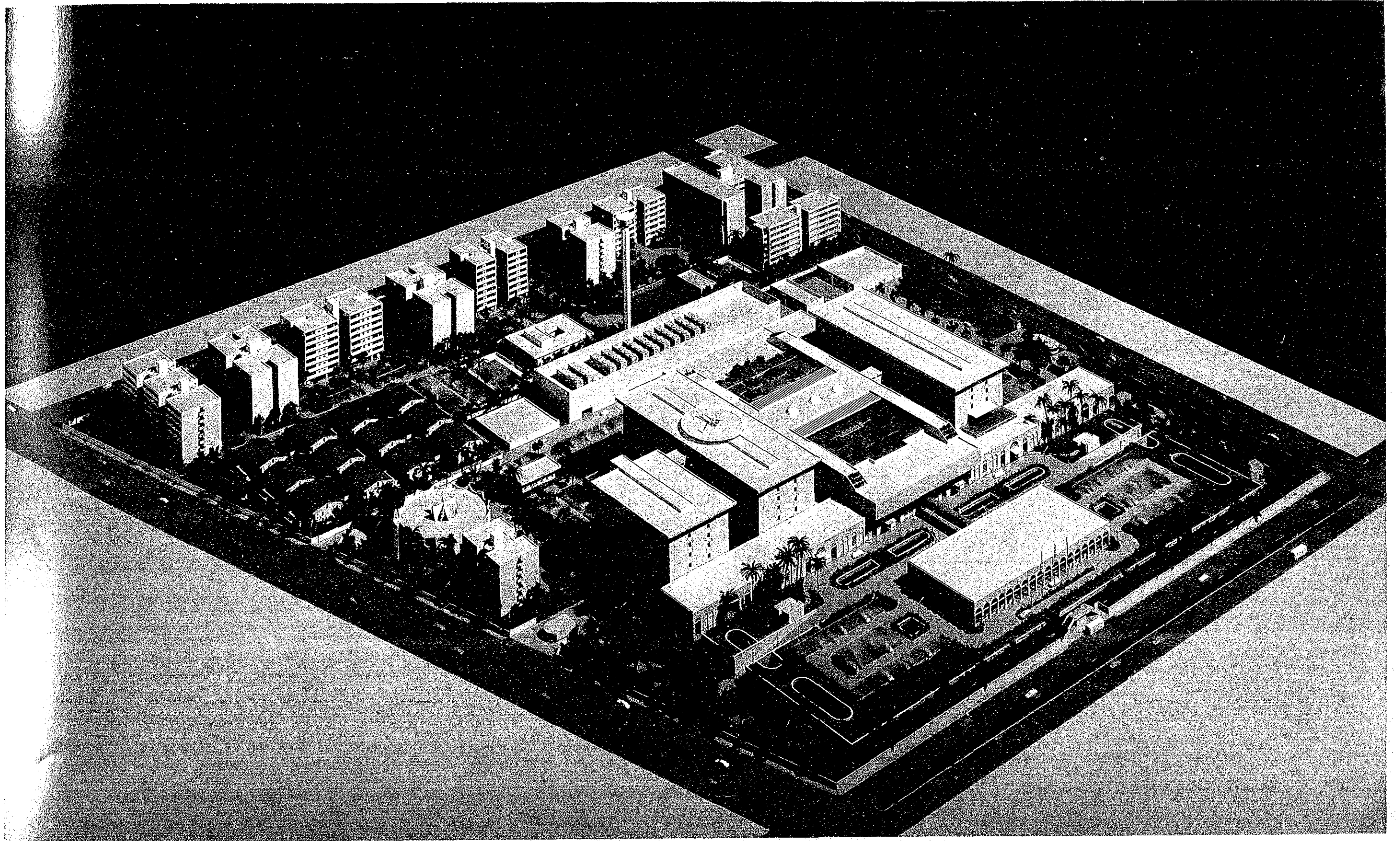
**ESTABLISHMENT PROJECT
IN THE KINGDOM OF SAUDI ARABIA**

NOVEMBER 1983

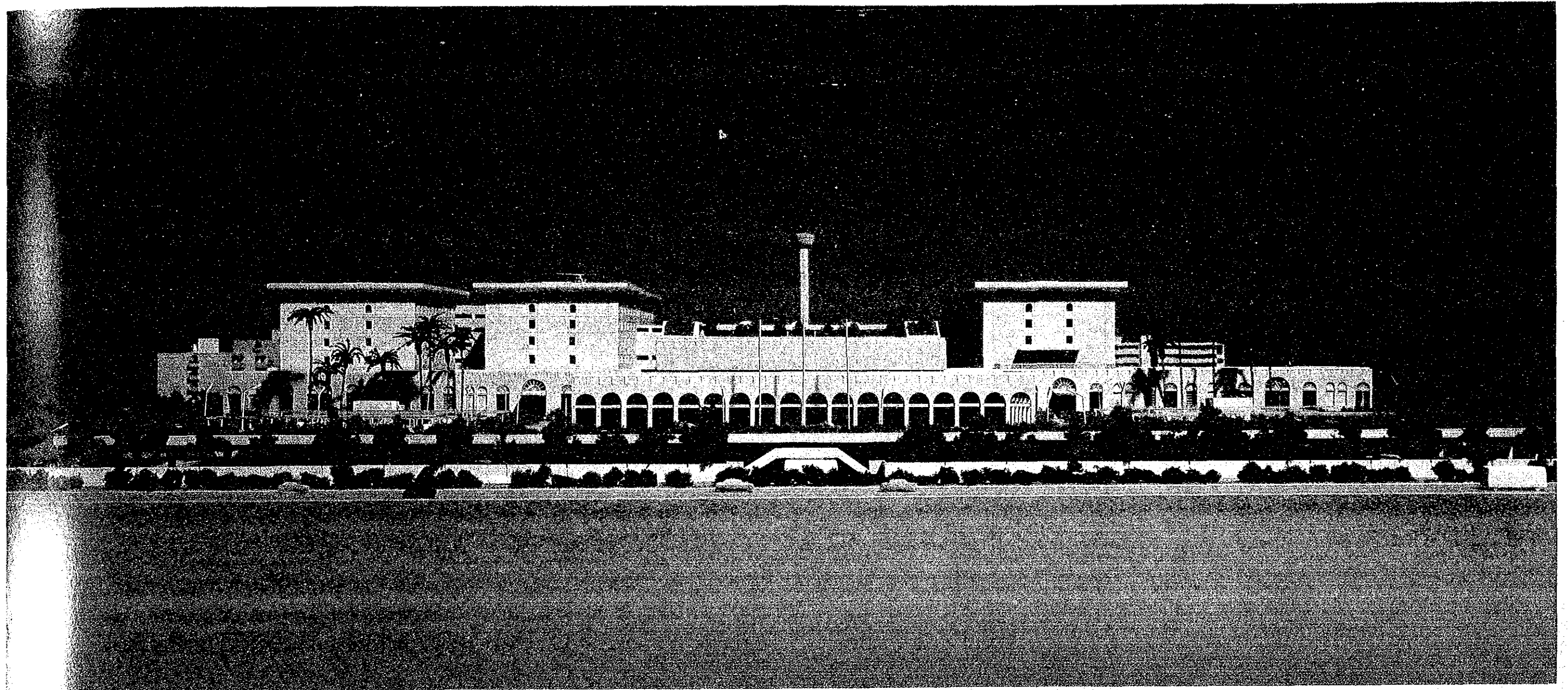


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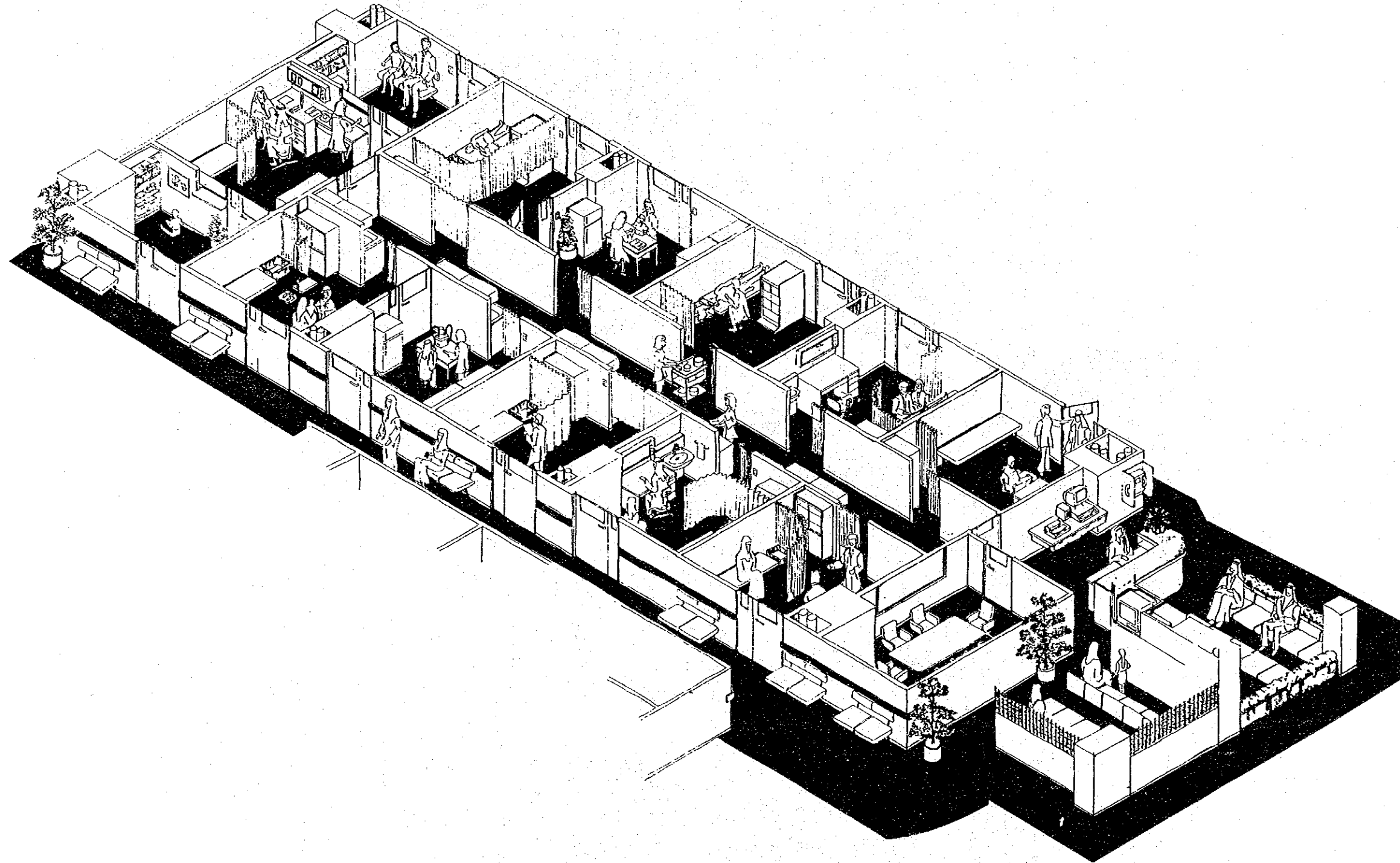


PHOTOGRAPH OF SCALE MODEL I

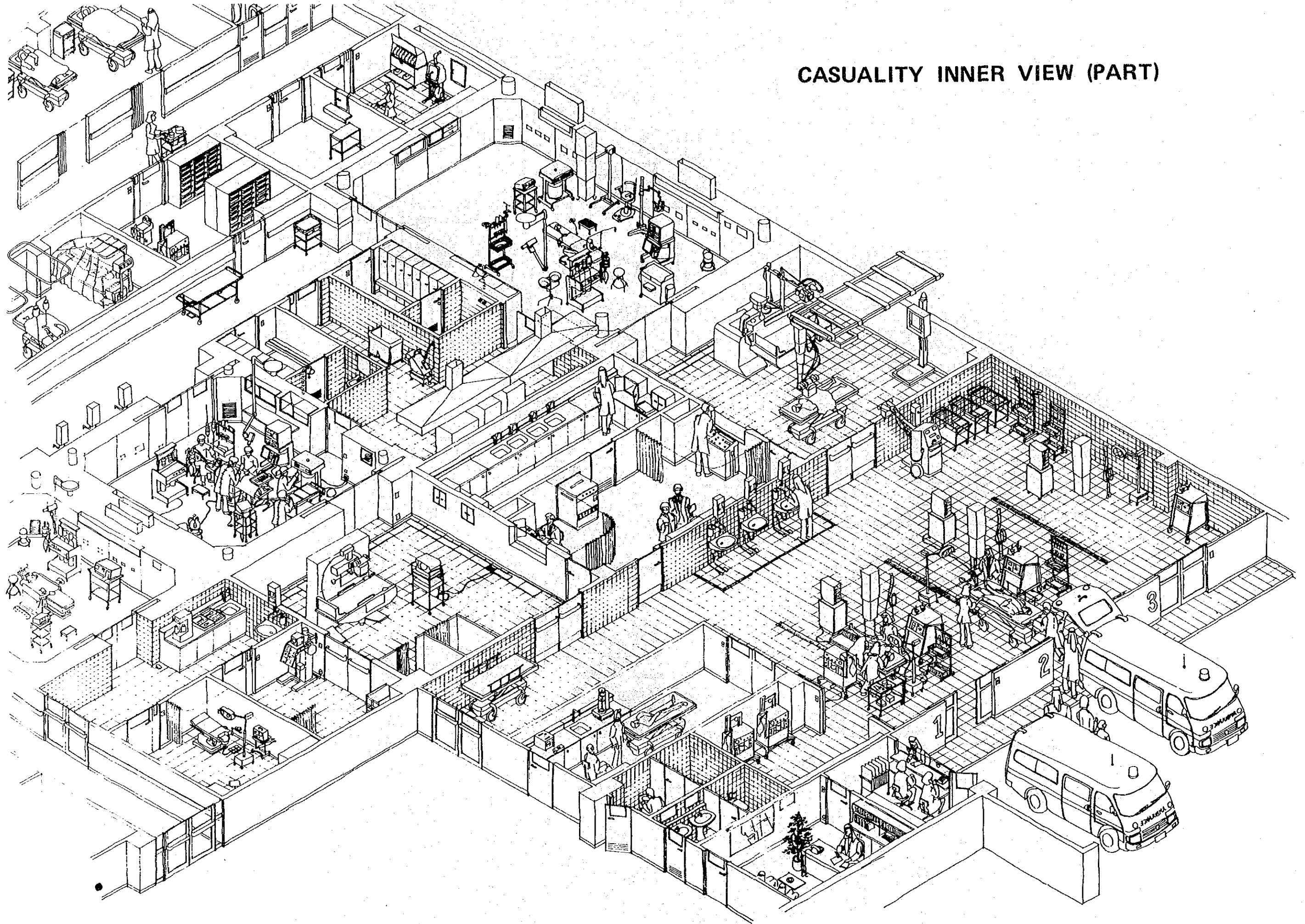


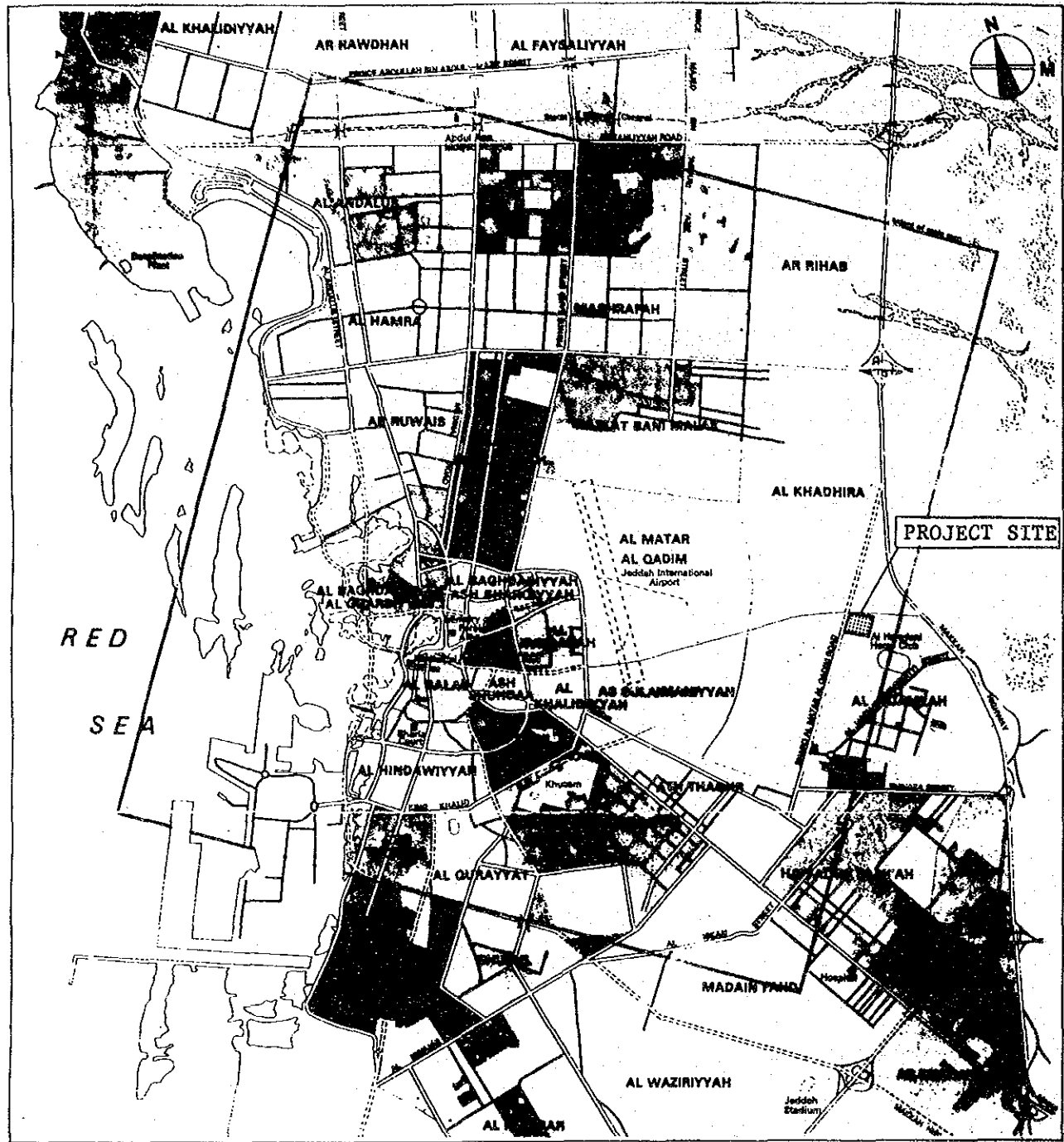
PHOTOGRAPH OF SCALE MODEL II

OPD INNER VIEW (PART)

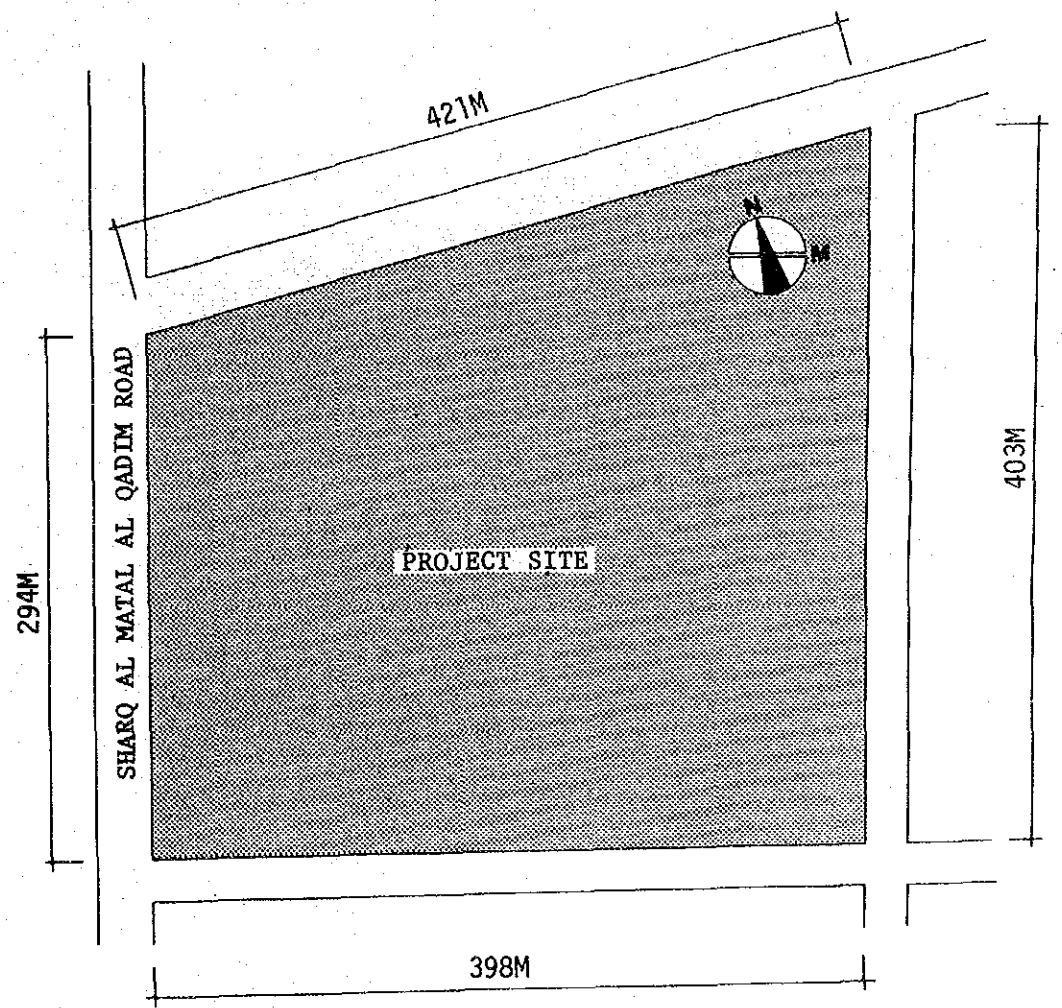


CASUALTY INNER VIEW (PART)





LOCATION MAP



SITE MAP

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DRAWINGS

1. BACKGROUND AND OBJECTIVES

Under the 3rd Five-year Development Plan (1980~85) of the Kingdom of Saudi Arabia, the development of medical services is given a high priority and the Ministry of Health is endeavoring to expand medical facilities and to train medical personnel.

In recent years, the progress made in establishing general hospitals and implementing free medical care has resulted in a decreasing mortality rate and an increasing life span.

Infectious diseases, such as cholera, dysentery and tuberculosis, are decreasing, but adult diseases, such as cancer and circulatory organ diseases, are becoming problems to be addressed. The medical field of cancer is still in its infancy and cancer statistics, which is the basis for cancer research and care, is still inadequate.

In these background the Government of Saudi Arabia requested technical cooperation to the Japanese Government in August 1982, to establish the National Cancer Center in Jeddah. In response, the Japan International Cooperation Agency (JICA) sent series of missions to Saudi Arabia for discussions and exchange of views (a basic mode of operations for the joint venture), resulting in an agreement by both governments on the purposes, the Basic Concepts, and the Scope of Work of the Cancer Center. Basic Design works began immediately on the Cancer Center.

Under the progress of the Basic Design of the National Cancer Center, the Government of Saudi Arabia also decided to set up the plan for the establishment of the General Hospital within the same complex of the Cancer Center alongside, with joint-use facilities being provided to enable savings through centralization and sharing of various services, personnel, construction and equipment costs.

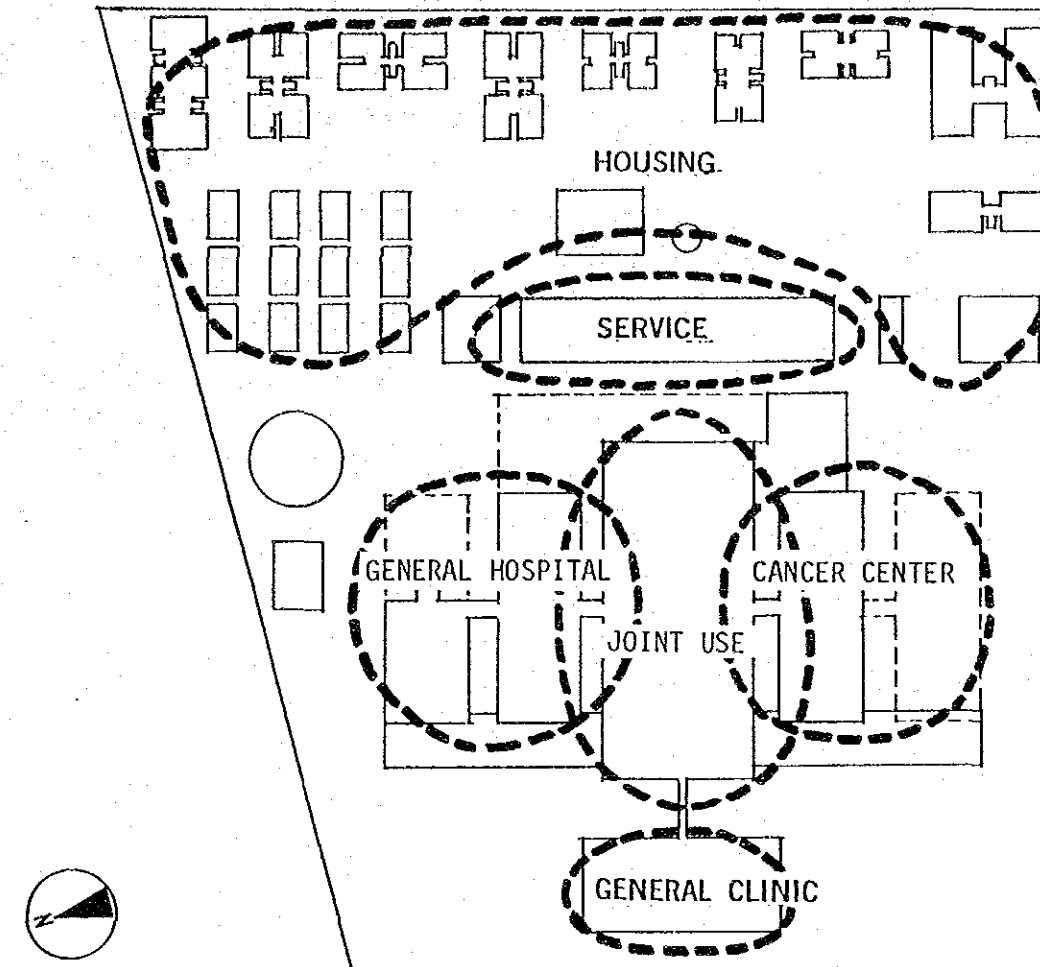
The National Cancer Center and the General Hospital will not only provide specialized diagnostic and therapeutic services but also such special functions as clinical research, education and training of medical staff, medical information system and public health services effectively using this high standard facility and will also enable to establish the focal point of medical service in the Middle East.

2. BASIC DESIGN PRINCIPLES

The design provides for a hospital community with efficient block plans for buildings and traffic circulations, with landscaping to harmonize with the surrounding and mitigate the harsh environmental elements. All necessary facilities for the operation of the Cancer Center and the General Hospital, including housing, parking, and other facilities for staff, patients and visitors will also be provided. So will overnight accommodations and community facilities such as shops, a supermarket, a bank, a library, a restaurant, a mosque, and recreational facilities.

The Cancer Center and the General Hospital will have their own facilities and equipment for their respective functions, but diagnostic, therapeutic and other departments lending themselves to common usage are planned for joint-use to avoid unnecessary duplication. Plans for future extensions in the research area of the Cancer Center and in the radiotherapy, radiodiagnosis, endoscopy and rehabilitation areas of the General Hospital are also included.

To provide for the special circumstances of the Complex, the locale, and the culture, careful considerations have been exercised to assure efficient and disaster-resistant structures, comfortable environment, efficient maintenance and operations, and facilities especially built and arranged in ways respectful of the religion and customs of Saudi Arabia.



3. BASIC DESIGN CONCEPTS

A. Location:	Close to the east side of the former Jeddah International Airport (see maps.)
B. Site area:	138,703 m ²
C. Number of beds:	
Cancer Center	200 beds (future extension - 100 beds)
General Hospital	350 beds (future extension - 150 beds)
D. Accomodation capacity (Cancer Center + General Hospital):	
In-patients	550 persons (final 800)
Out-patients	3,000
Emergency patients	250
Hospital personnel	2,070
Visitors	2,000 estimated
E. Staff (for 550 beds)	
Medical staff	1,000 persons
Doctors	130
Nurses	620
Paramedical staff	250
Administration	300
Energy & maintenance	130
Service	640
Total	2,070 persons

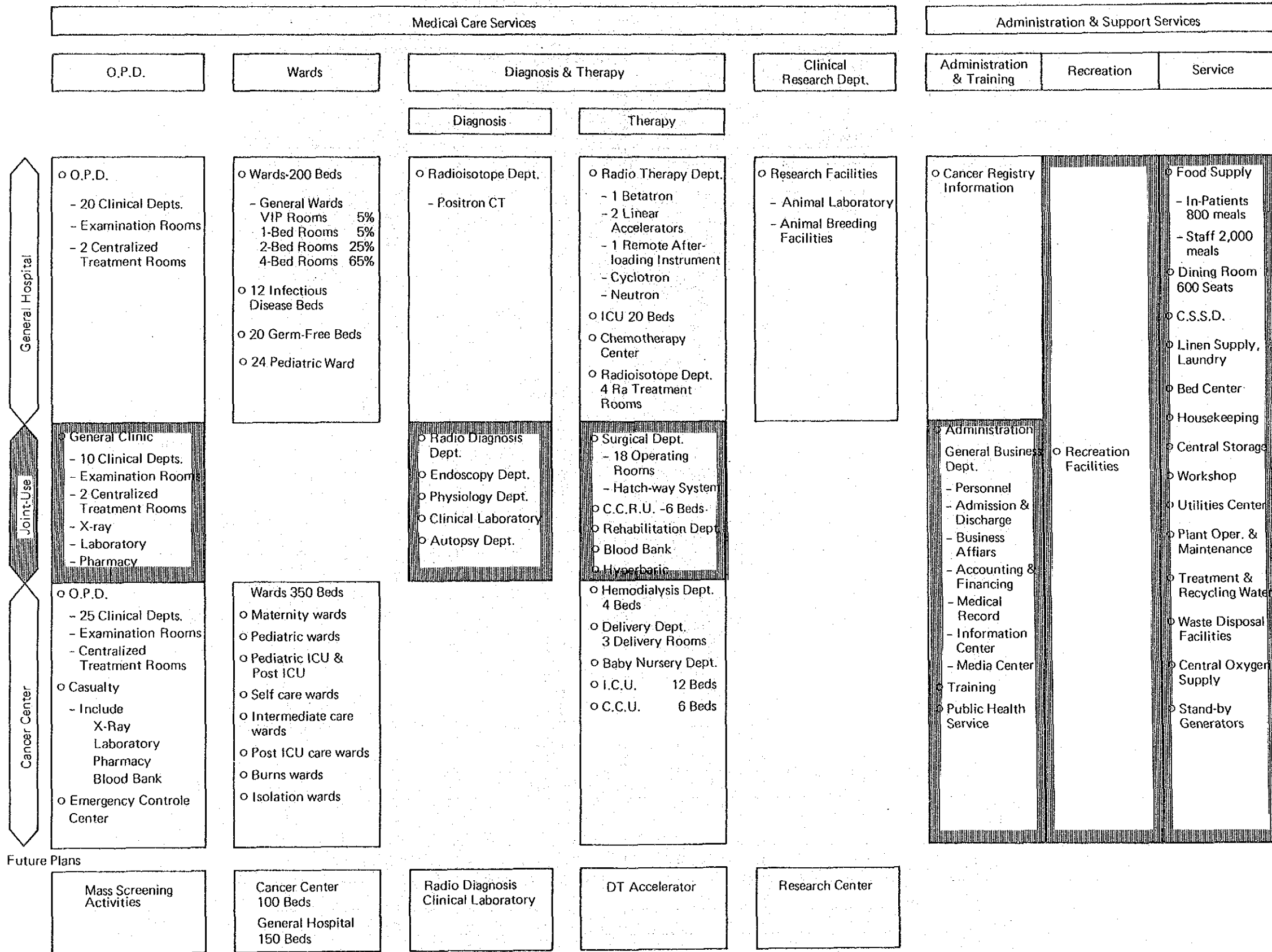
F. Housing

	<u>No. of Units</u>
Doctors	136
Nurses	728
Paramedical staff	250
Maintenance and service staff	46
Total	<u>1,160</u>

G. Parking

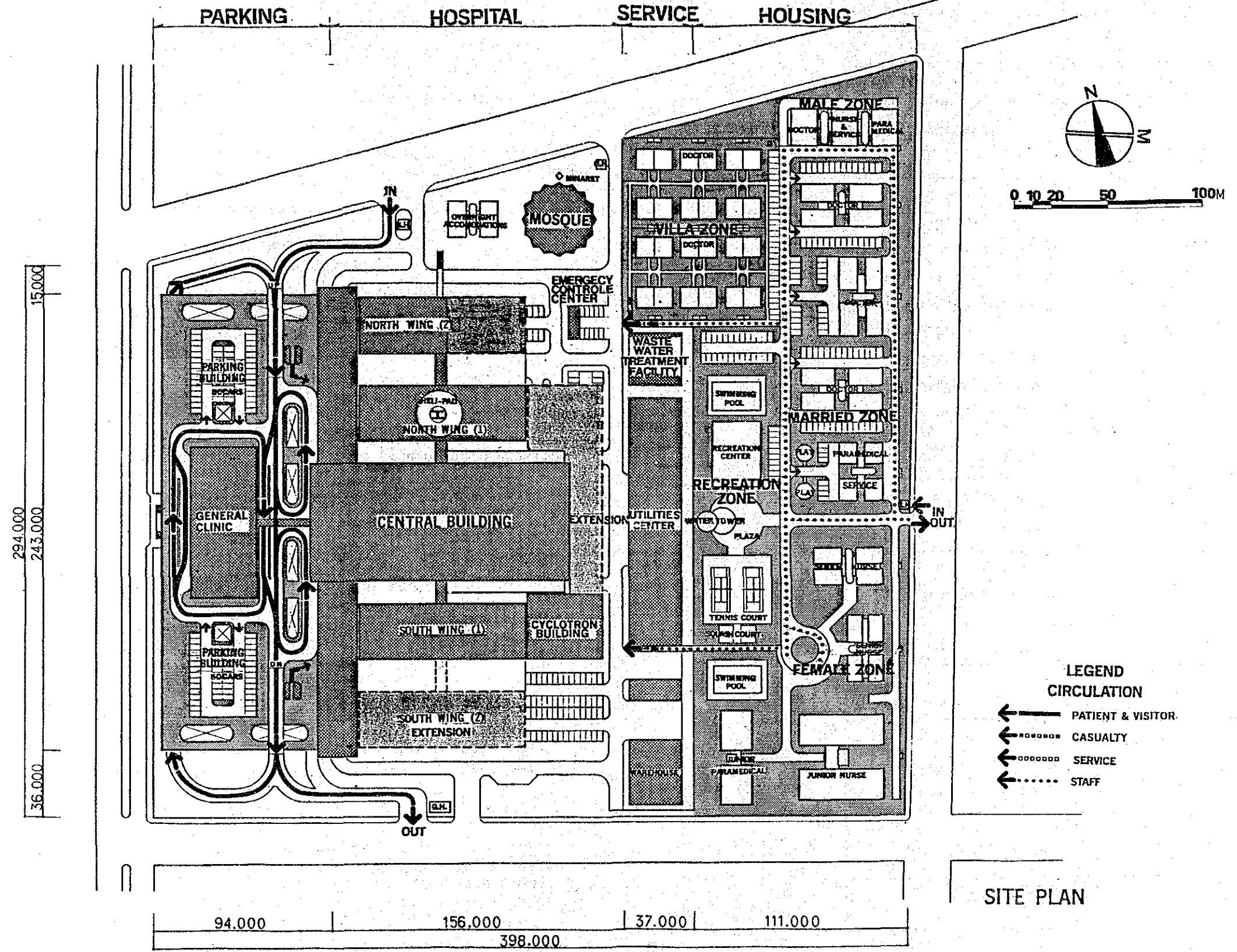
Total number of parking stalls	
Hospital zone	
for Patients & Visitors	1,200
for Staff	~ 1,050
for Emergency Patients	~ 50
for Service	~ 200
	<hr/>
	Total ~ 2,500
Housing zone	250

General requirements



Distribution of floor space for each department

Department		Cancer Center 200 Beds	Joint Use Dept.	C.C. + J.U.	General Hospital 350 Beds	Total	Remarks
		(A) m ²	(B) m ²	(A) + (B) m ²	(C) m ²	(A) + (B) + (C) m ²	
Wards		11,542	-	11,542	18,845	30,387	
O.P.D.	O.P.D.	2,131	-	2,131	3,183	5,314	
	Casualty General Clinic	- -	- 3,240	- 3,240	2,459 -	2,459 3,240	
	Sub Total	2,131	3,240	5,371	5,642	11,013	
Diagnosis & Therapy	Radio Therapy	3,428	-	3,428	-	3,428	
	Radio Diagnosis	-	2,079	2,079	-	2,079	
	Radioisotope	1,123	-	1,123	-	1,123	
	Clinical Laboratory	-	2,751	2,751	-	2,751	
	Physiology	-	674	674	-	674	
	Endoscopy	-	943	943	-	943	
	Blood Bank	-	322	322	-	322	
	Pharmacy	-	1,484	1,484	-	1,484	
	Rehabilitation	-	1,386	1,386	-	1,386	
	Surgical Dept.	-	3,703	3,703	-	3,703	
	I.C.U., C.C.U.	1,512	-	1,512	1,164	2,676	
	C.C.R.U.	-	348	348	-	348	
	Hemodialysis	-	-	-	217	217	
	Delivery & Baby Nursery	-	-	-	1,466	1,466	
Autopsy	-	560	560	-	560		
Hyperbaric	-	284	284	-	284		
Chemotherapy	49	-	49	-	49		
	Sub Total	6,112	14,534	20,646	2,847	23,493	
Clinical Research		1,151	-	1,151	-	1,151	
Administration		-	7,946	7,946	-	7,946	
Services	C.S.S.D. & Laundry	-	1,869	1,869	-	1,869	
	Kitchen	-	1,884	1,884	-	1,884	
	Dining	-	1,092	1,092	-	1,092	
	Locker Room	-	940	940	-	940	
	Utilities	532	*1 14,015	14,547	886	15,432	*1 The floor area of the Utilities Center is included in this figure.
	Maintenance & Workshop	-	420	420	-	420	
	Storage	-	3,901	3,901	-	3,901	
Morgue	-	476	476	-	476		
	Sub Total	532	24,597	25,129	886	26,015	
Recreation Facilities		-	2,214	2,214	-	2,214	
Total		21,463	52,531	73,999	28,220	102,219	(185.9 m ² /bed)
Emergency Control Center		-	-	-	110	110	



4. MEDICAL EQUIPMENTS

The medical equipment for the proposed Cancer Center and its joint-use medical departments and the General Hospital will be selected to conform to the medical standards in cancer and general medical practices.

The medical equipment were selected with the following considerations:

- Equipment necessary for general purposes plus those necessary for higher level diagnosis, therapy and research;
- Future medical progress;
- Flexibility to use the equipment for extra detail application when required; and
- Equipment of the highest standard in the market; when the standards of foreign and Japanese equipment were equivalent, the Japanese equipment was selected.

5. MANAGEMENT AND OPERATION

"Dual Structure" administrative organization of both HOSPITAL ADMINISTRATION and MEDICAL ADMINISTRATION is proposed and covers both the National Cancer Center and the General Hospital.

The Hospital Administration consists of four departments: the General Business, Services, Maintenance and the Computer Center. They will provide services in these areas to the combined institutions. The Medical Administration consists of eight departments as shown in the organizational chart. They will provide will provide professional and technical medical services to the combined institutions.

A management team consisting of the Executive Director and the top administrators of the Cancer Center and the General Hospital will be responsible for the overall budget-making and management control of the Cancer Center Complex. The Hospital Audit will oversee the medical expenditures, and the Public Relations Department will keep the public informed about health and medical services available.

Gradual introduction of computer toward the total hospital information system is proposed. And for smooth introduction of computer system, proposal is also made to set-up the promoting organization for this purpose in sufficiently earlier phase before hospital operation.

6. PROJECT SCHEDULE AND COST

- (1) The minimum duration of Detailed Design Phase is estimated 10 months.

The construction period is estimated 36 months.

- (2) Construction Cost of Total Complex

i) Hospital Zone

	FL.AREA	SR	SR/M ²
1) Cancer Center	21,470	163,670,000	7,623
2) Joint Use	45,450	327,190,000	7,199
3) General Hospital	28,220	182,306,000	6,460
4) Utilities Center	7,080	156,220,000	22,065
5) Parking Building	95,800	207,980,000	2,170
6) Mosque	1,100	14,780,000	13,436
7) Overnight Acom.	2,910	12,310,000	4,230
8) Emergency Control Cen.	110	578,000	5,260
9) External Works (incl. 130M ² Guard House)	30	30,840,000	-
10) Medical Equipment (C.C. + J.U.)	-	214,290,000	3,202
11) Medical Equipment (G.H.)	-	54,430,000	1,929
12) Management Equipment (C.C. + J.U.)	-	41,540,000	621
13) Management Equipment (G.H.)	-	7,529,000	267
1) ~ 13) TOTAL	202,270	1,413,663,000	6,989

ii) Housing Zone

14) Housing	52,450	219,490,000	4,185
15) Recreation Center	1,040	8,630,000	8,298
16) External Works (incl. 30M ² Guard House)	30	33,800,000	-
14) ~ 16) TOTAL	53,520	261,920,000	4,894
1) ~ 16) GROUND TOTAL	255,790	1,675,583,000	6,551

(3) Consultant Service Fee and Cost

Total service fee and cost SR 76 million

- Detail design fee and cost (including tender assistance service) SR 34.5 million
- Supervising Service fee and cost with one year maintenance
Service after completion of project:
SR 41.5 million

(4) Conditions for the estimation of the construction costs and consultant service fee and cost

- Estimation is made on the premises that the proposed plan will be implemented as in shown in the Report.
- Estimation of consultant service fee and cost is shown as standard figures.
- Exchange rate 240 yen = US\$ 1
70 yen = SR 1
- Development cost of computer soft wear is excluded.
- Escalation is not considered.
- ZAKAT and tax are not included.
- General conditions and conditions of contract will be provided in both English and Arabic texts, but other tender documents will be provided only in the English text.

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BUILDING AREA & FLOOR SPACE OF EACH ZONE

ZONE	SITE AREA (M ²) (A)	TOTAL BUILDING AREA (M ²) (B)	TOTAL FLOOR SPACE (M ²) (C)	B/A (%)	C/A (%)
HOSPITAL	89,866	55,470	202,270	61.7	225.1
HOUSING	48,837	11,280	53,520	23.1	109.6
TOTAL	138,703	66,750	255,790	48.1	184.4

BUILDING AREA & FLOOR SPACE OF EACH BUILDING

ZONE	BUILDING	BUILDING AREA (M ²)	FLOOR SPACE (M ²)
HOSPITAL ZONE	HOSPITAL MAIN BLDG.	26,320	91,900
	GENERAL CLINIC	2,920	3,240
	UTILITIES CENTER	3,720	6,100
	WAREHOUSE	980	980
	EMERGENCY CONTROL CENTER	110	110
	SUB-TOTAL	34,050	102,330
	PARKING BUILDING	19,700	95,800
	MOSQUE	1,100	1,100
	OVERNIGHT ACCOMMODATIONS	490	2,910
	GUARD HOUSES	130	130
TOTAL	55,470	202,270	
HOUSING ZONE	HOUSING	10,530	52,450
	RECREATION CENTER BUILDING	720	1,040
	GUARD HOUSE	30	30
	TOTAL	11,280	53,520
GRAND TOTAL	66,750	255,790	

HOSPITAL MAIN BLDG.

FLOOR	CANCER CENTER AND JOINT-USE* (M ²)	GENERAL HOSPITAL (M ²)	TOTAL (M ²)	REMARKS
PENTHOUSE FL.	530	890	1,420	
6 TH FL.	2,540	2,630	5,170	
5 TH FL.	3,500	4,060	7,560	
4 TH FL.	2,540	4,020	6,560	
3 RD FL.	9,720	5,230	14,950	
2 ND FL.	7,690	5,750	13,440	
1 ST FL.	14,780	3,180	17,960	
GROUND FL.	16,730	2,460	19,190	BUILDING AREA: 26,430 M ²
BASEMENT FL.	5,650	0	5,650	
TOTAL	63,680	28,220	91,900	

* GENERAL CLINIC NOT INCLUDED IN THIS TABLE
 ** OTHER BUILDING SPACE SUCH AS THE PILOTI PARKING, THE BALCONY, OPEN CORRIDORS... 18,800 M²

GENERAL CLINIC

FLOOR	FLOOR SPACE (M ²)	REMARKS
2 ND FL.	1,210	OVER-BRIDGE NOT INCLUDED
1 ST FL.	2,030	BUILDING AREA: 2,920 M ²
TOTAL	3,240	

* OTHER BUILDING SPACE SUCH AS THE OPEN CORRIDOR THE OVER BRIDGE AND THE PASSAGE WAY: 2,790 M²

UTILITIES CENTER

FLOOR	FLOOR SPACE (M ²)	REMARKS
1 ST FL.	1,790	
GROUND FL.	3,720	BUILDING AREA: 3,720 M ²
BASEMENT FL.	590	
TOTAL	6,100	

* OTHER FLOOR SPACE FOR THE UNDERGROUND WATER TANKS: 3,140 M²

WAREHOUSE

FLOOR	FLOOR SPACE (M ²)	REMARKS
GROUND FL.	980	BUILDING AREA: 980 M ²
TOTAL	980	

EMERGENCY CONTROL CENTER

FLOOR	FLOOR SPACE (M ²)	REMARKS
GROUND FL.	110	BUILDING AREA: 110 M ²
TOTAL	110	

PARKING BUILDING

FLOOR	FLOOR SPACE (M ²)	REMARKS
GROUND FL.	19,700	BUILDING AREA: 19,700 M ²
BASEMENT 1 ST FL.	19,700	
2 ND FL.	36,700	INCLUDE HOSPITAL BASEMENT FLOOR SPACE: 17,000 M ²
3 RD FL.	19,700	
TOTAL	95,800	

* OTHER BUILDING SPACE FOR THE DRY AREA: 750 M²

MOSQUE

FLOOR	FLOOR SPACE (M ²)	REMARKS
GROUND FL.	1,100	BUILDING AREA: 1,100 M ²
TOTAL	1,100	

OVERNIGHT ACCOMMODATIONS

FLOOR	FLOOR SPACE (M ²)	REMARKS
5 TH FL.	485	
4 TH FL.	485	
3 RD FL.	485	
2 ND FL.	485	
1 ST FL.	485	
GROUND FL.	485	BUILDING AREA: 490 M ²
TOTAL	2,910	

HOUSING

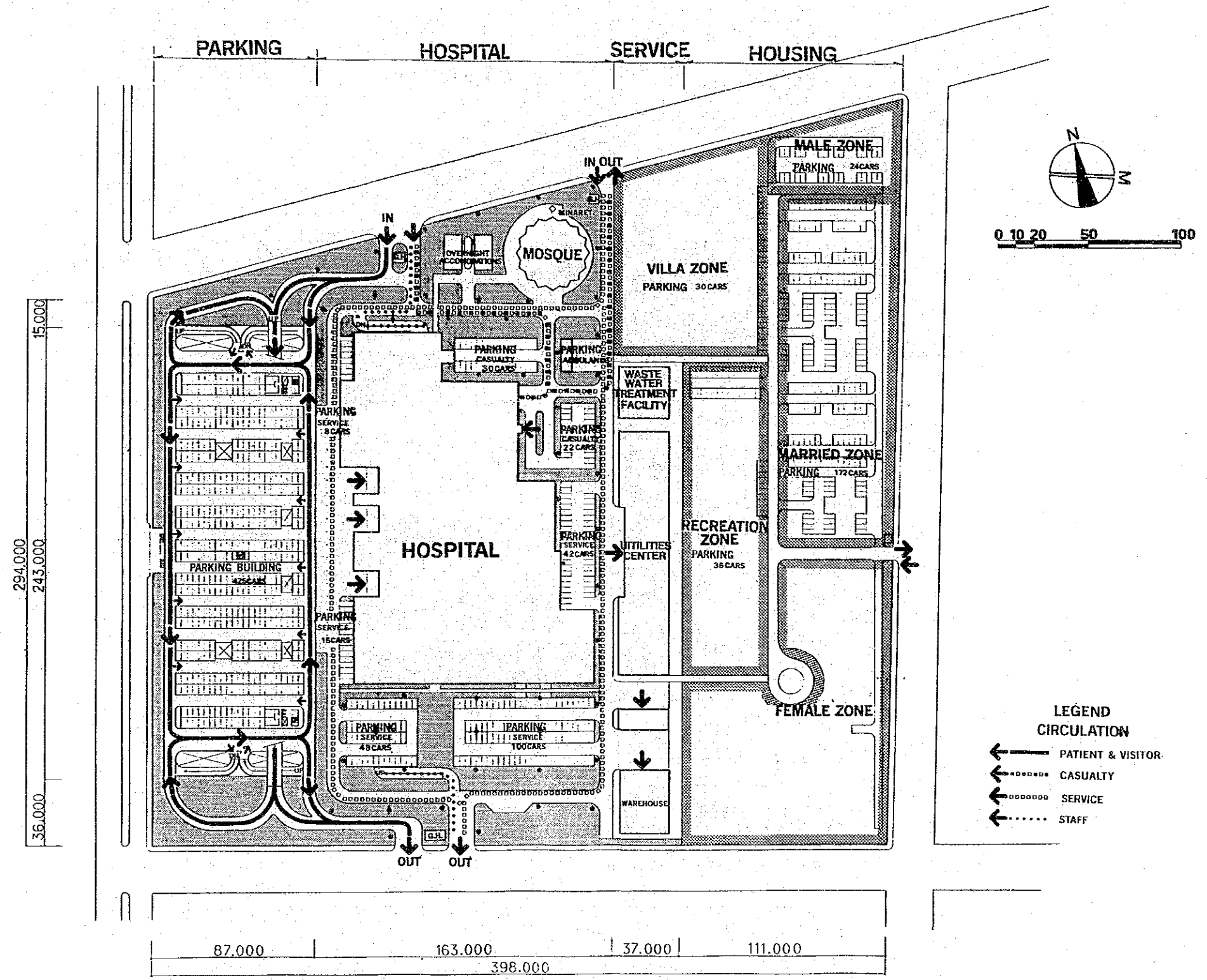
ZONE	QUANTITY	STORIES	FLOOR SPACE (M ²)	REMARKS
VILLA	12	2F	5,300	BUILDING AREA: 2,500
MARRIED	3	8F	16,700	2,500
	1	8F	3,900	550
MALLE	1	8F	6,700	1,130
FEMALE	2	7F	4,400	1,310
	1	7F	10,850	1,780
	1	7F	4,600	760
TOTAL			52,450	TOTAL BUILDING AREA: 10,530

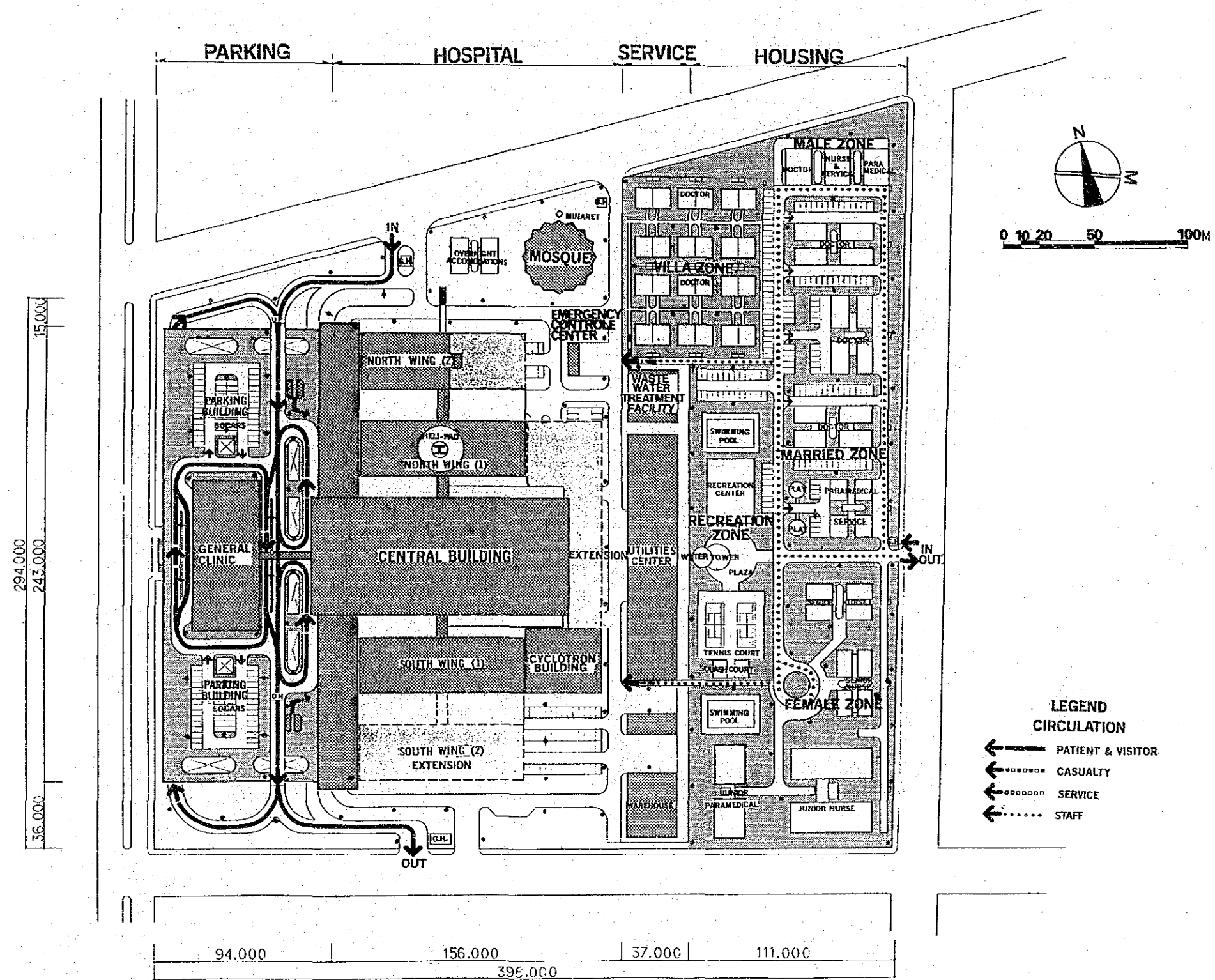
RECREATION CENTER BUILDING

FLOOR	FLOOR SPACE (M ²)	REMARKS
1 ST FL.	580	
GROUND FL.	460	BUILDING AREA: 720 M ²
TOTAL	1,040	

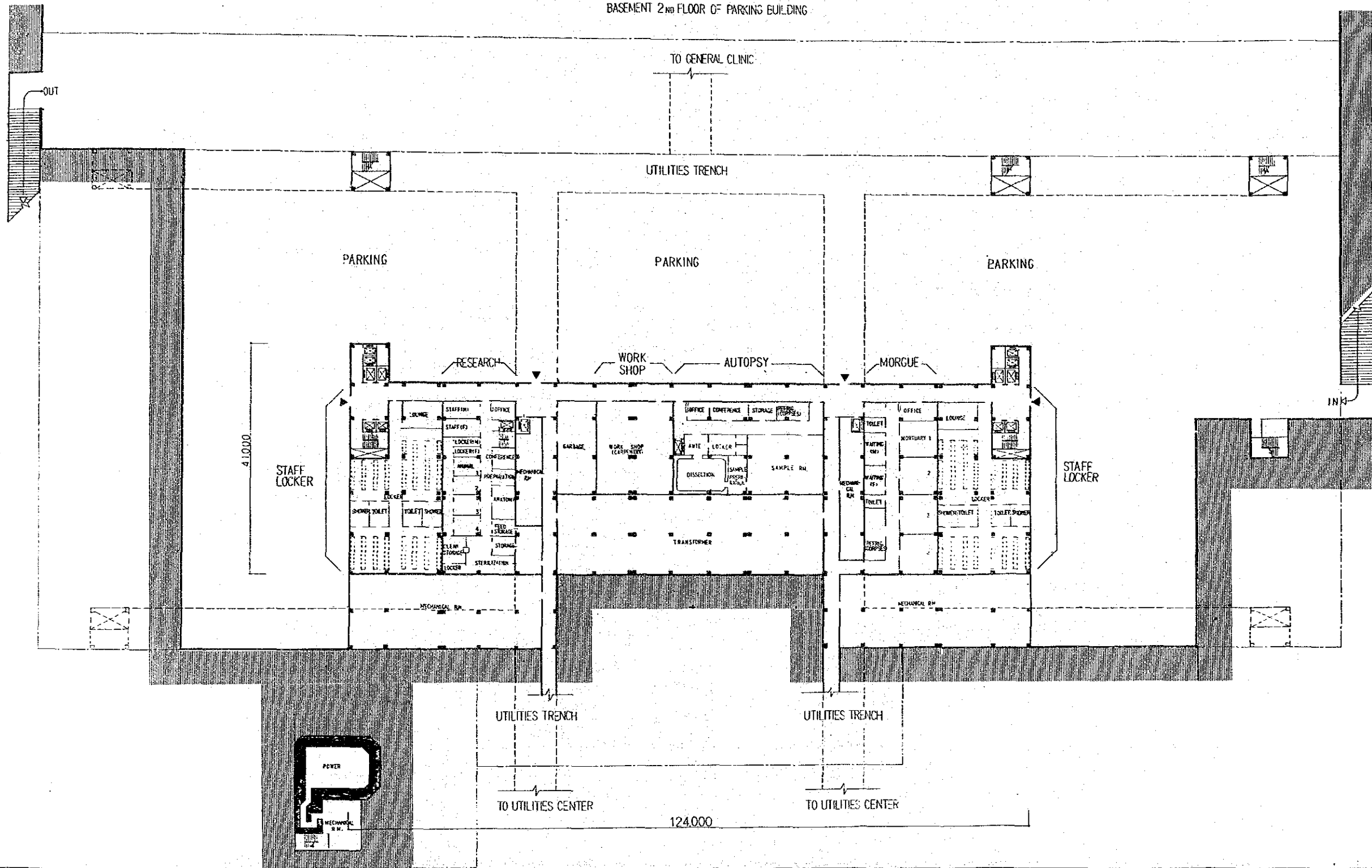
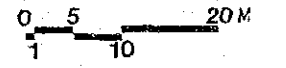
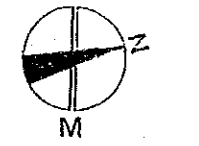
GUARD HOUSES

BUILDING	FLOOR SPACE (M ²)	REMARKS
GUARD HOUSE 1	70	
2	30	
3	30	
4	30	HOUSING ZONE
TOTAL	160	





BASEMENT 2ND FLOOR OF PARKING BUILDING



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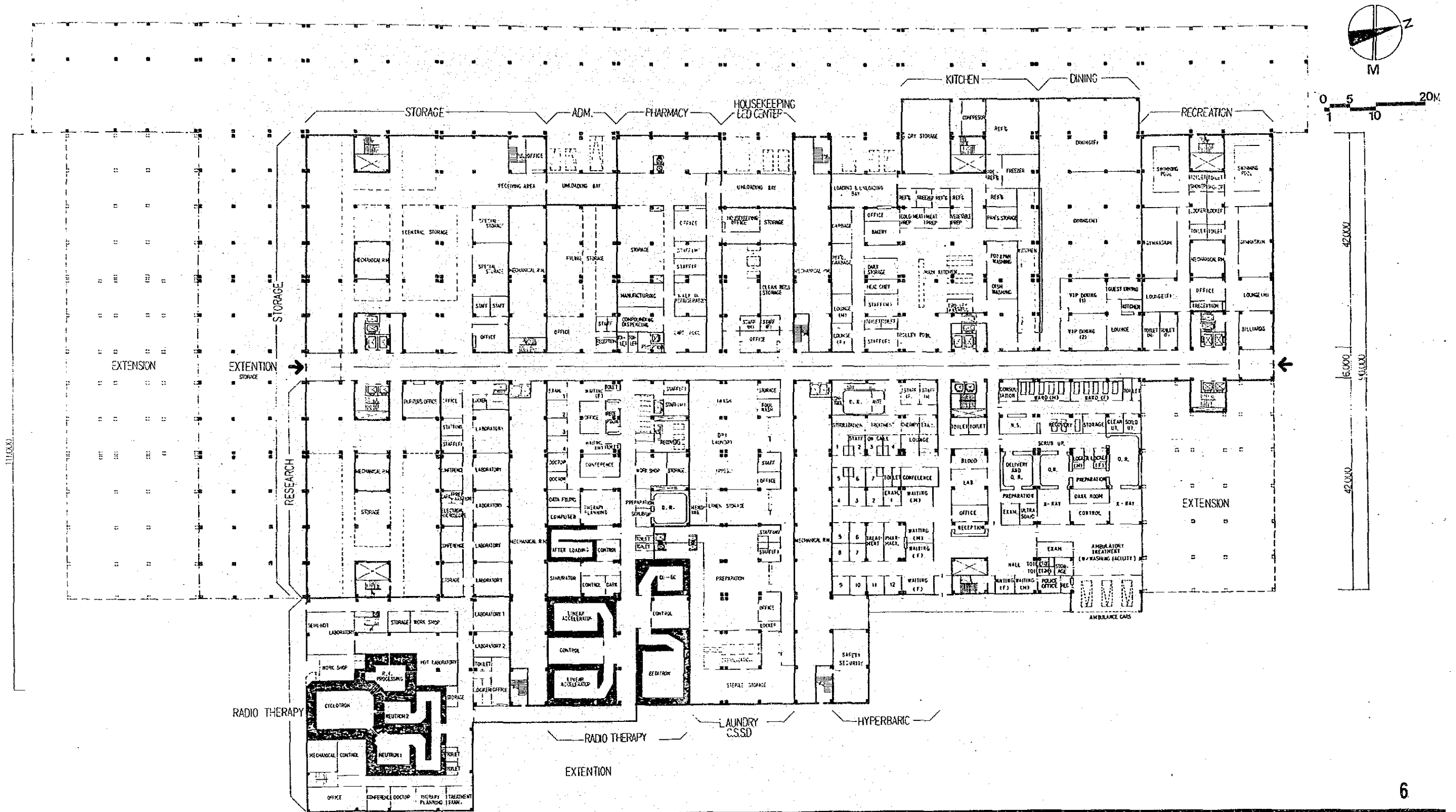
BASIC DESIGN

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HOSPITAL BASEMENT FLOOR PLAN

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BASIC DESIGN

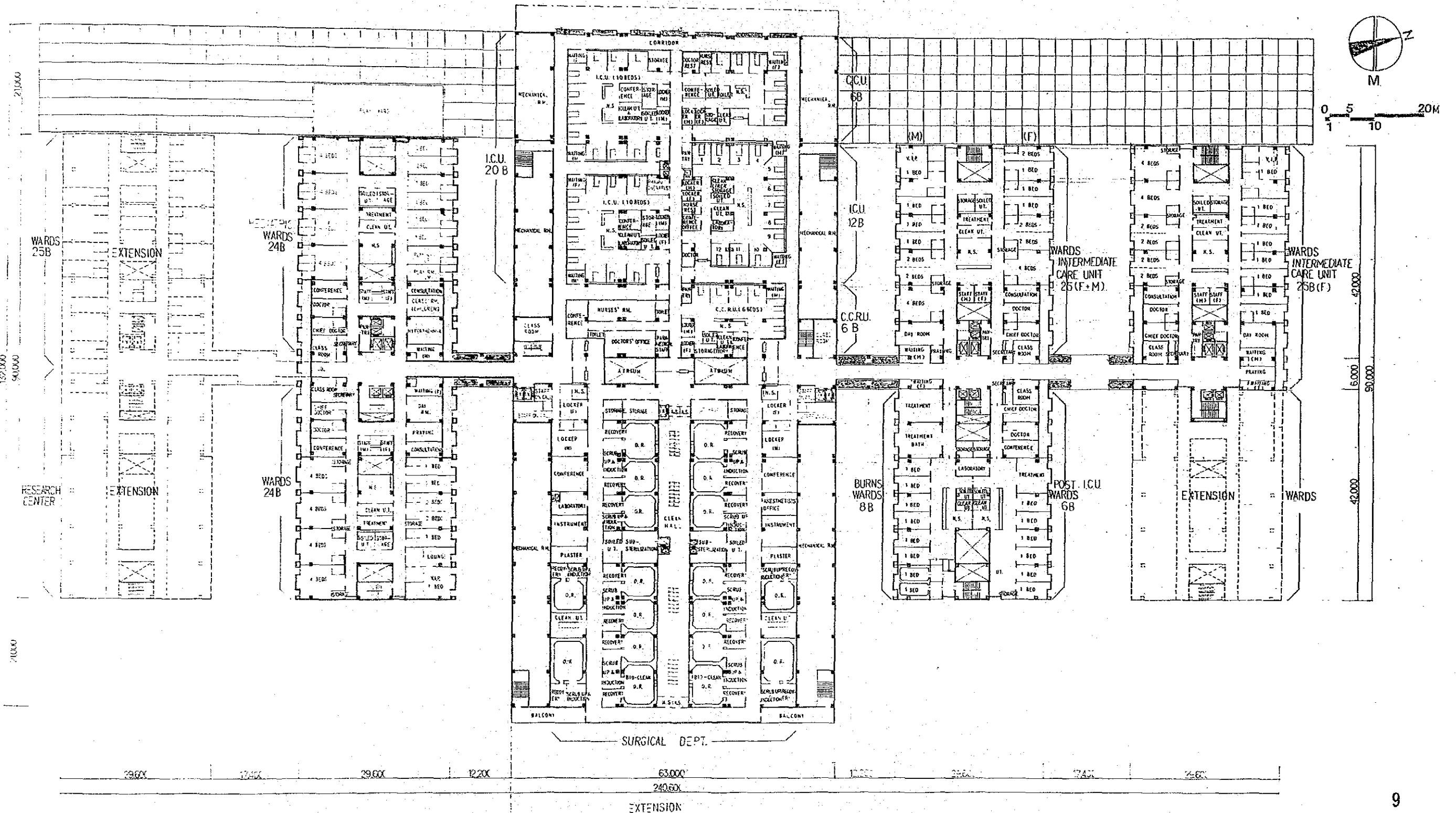
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HOSPITAL GROUND FLOOR PLAN

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ESTABLISHMENT PROJECT IN THE KINGDOM OF SAUDI ARABIA

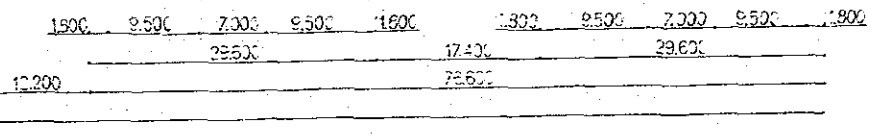
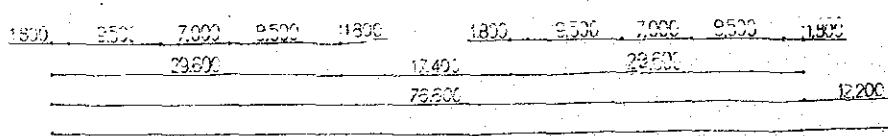
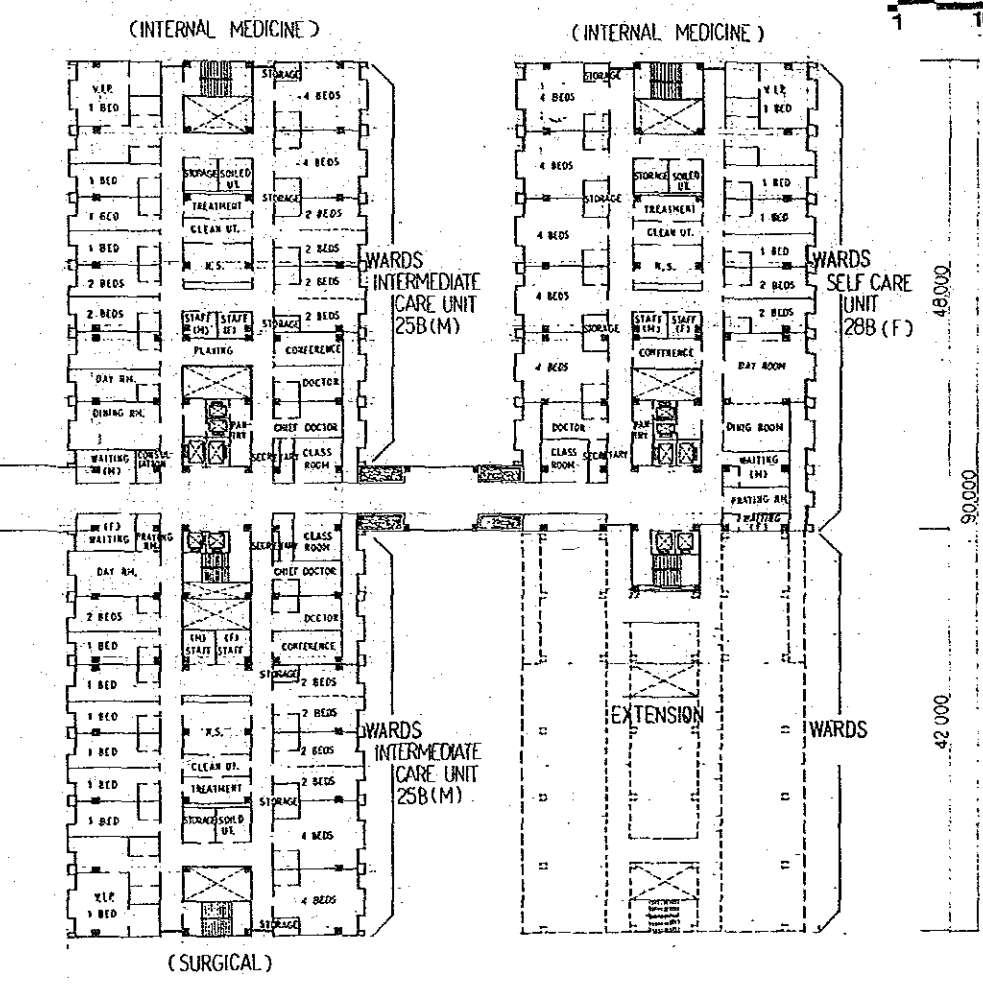
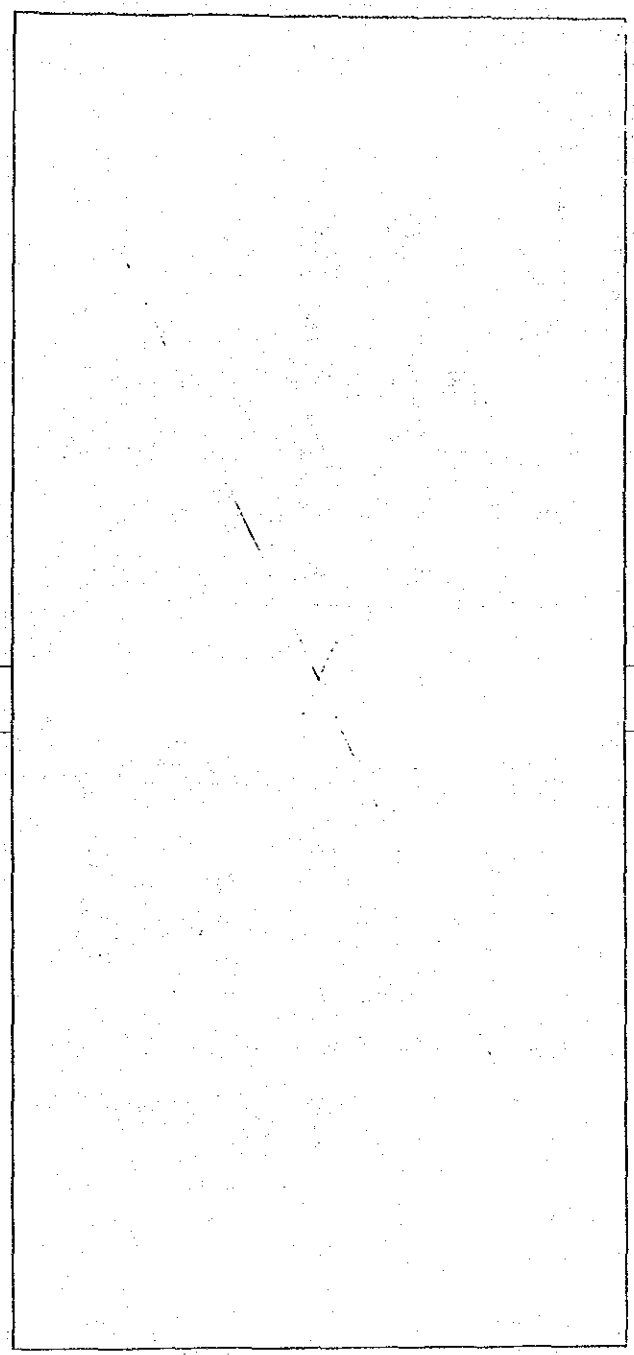
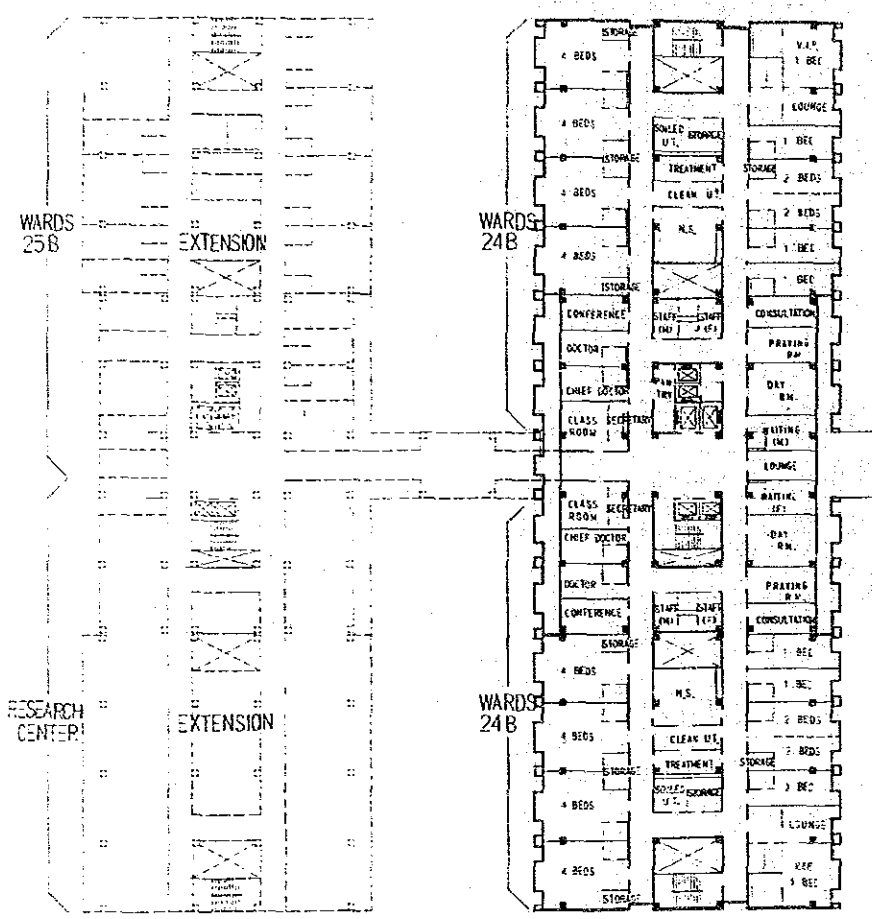
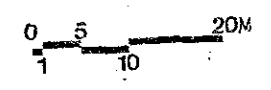
BASIC DESIGN

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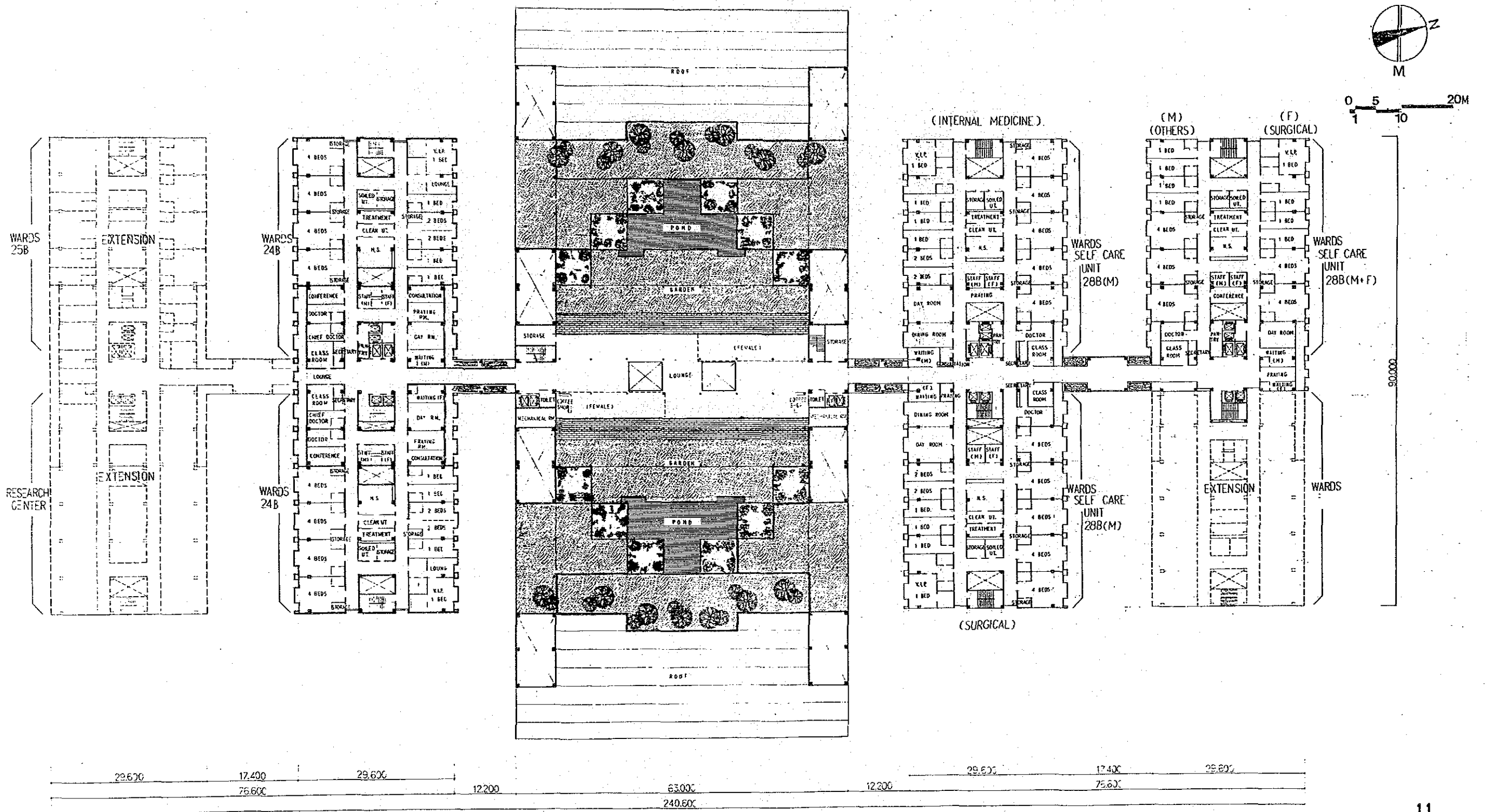
ARCHITECTURAL

HOSPITAL 3rd FLOOR PLAN

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THE NATIONAL CANCER CENTER & THE GENERAL HOSPITAL
ESTABLISHMENT PROJECT IN THE KINGDOM OF SAUDI ARABIA

BASIC DESIGN

JAPAN INTERNATIONAL
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ARCHITECTURAL

HOSPITAL 5th FLOOR PLAN

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