

PROJECT PROPOSAL
FOR
O.P.E.C. ASSISTED HOSPITAL
AT RAICHUR

to
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With
Compliments
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DEPARTMENT OF HEALTH AND FAMILY WELFARE

GOVERNMENT OF KARNATAKA, BANGALORE

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INTRODUCTION

The primary responsibility for health care & family welfare is with the state Government under the department of Health & Family Welfare.

The access to public health facilities in the state is uneven. Even where physical facilities exist, the quality and range of services are poor. Typically, in areas of the state where health status is poor, the gaps in infrastructure are large.

There is need to have a significant increase in the bed capacity in poorly served regions. Only in 18 percent of the taluks, the bed availability is equal to or more than the norm of 1679 persons per bed, determined on the basis of epidemiology. In 35 percent of the taluks, the persons per bed, ranges between 1,700 to 5,000. In 29 percent of the taluks, the bed availability ranges between 5,000 to 10,000 persons per bed. Persons per bed exceeds 10,000 in 18 percent of the taluks.

There is also a major urban-rural divide with most of the well equipped hospitals located in a few urban agglomerations of the state. The rural poor have limited access for obtaining critical health referral services. In the urban areas also, there are imbalances. In major metropolitan cities such as Bangalore, there are glaring inadequacies in the first referral network.

The availability of infrastructure is inadequate, as it has to not only cope with fast rising urban population, but also with pressure from rural areas.

The Northern district of Gulbarga, Bidar, Raichur , Bellary, Dharwad and Bijapur have a relatively poorer developed health infrastructure. Gulbarga and Bellary in particular have hospitals with teaching facilities attached to them

resulting in relatively better infrastructure facilities than Raichur. Raichur is a fairly large town with relatively higher population than other towns but with no advanced medical facilities. Most of the people from Raichur go to Hyderabad for their medical treatment because of non-availability of advanced medical care.

Raichur being a backward area in terms of health infrastructure, it was decided to plan a new multispeciality hospital with the OPEC assisted funds. This hospital will cater not only to the district but even four districts of the neighbouring state service there is no hospital with all facilities in that region.

KARNATAKA

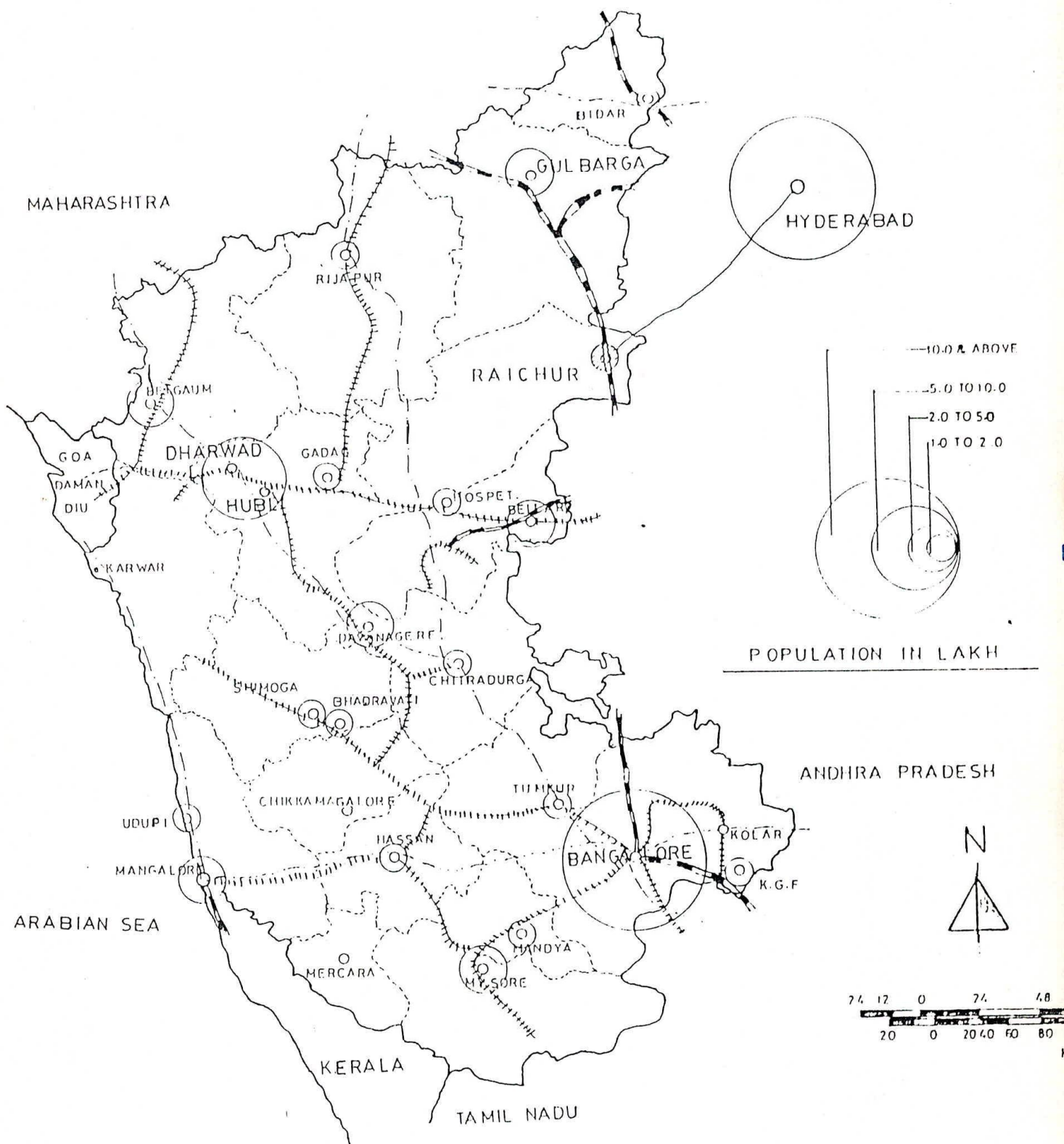


FIG.1: LOCATION OF RAICHUR IN KARNATAKA

PROFILE OF KARNATAKA

2.1. *Area and Administrative Divisions*

Karnataka is located in the South-West part of India and lies between latitudes 11° 5" N and 19° N and longitudes 74° E and 78° E. It is bounded, in the clockwise direction, by the States of Goa, Maharashtra, Andhra Pradesh, Tamil Nadu, Kerala and the Arabian Sea. The area of the State is 191,791 sq. km. and constitutes 5.38 percent of the area of the country. The twenty districts of the State are grouped into four Revenue Divisions with head quarters at Bangalore, Belgaum, Gulbarga and **Mysore**.

Table 2.1: Administrative Division of the State of Karnataka

DIVISION	DISTRICT
Bangalore	Bangalore, Bangalore (Rural), Chitradurga, Kolar, Shimoga and Tumkur
Belgaum	Belgaum, Bijapur, Dharwad, Uttara Kannada
Gulbarga	Bellary, Bidar, Gulbarga and Raichur
Mysore	Chikmagalur, Dakshina Kannada, Hassan, Kodagu, Mandya and Mysore

2.2. *Socio-economic Characteristics*

The population of the State in 1991 was 44.98 million and accounted for 5.31 percent of the population of India. In terms of population, size and area, Karnataka ranks eighth among the States.

Kannada is the mother tongue of 65.7 percent of the population. There are regional concentrations of linguistic groups. Tulu and Konkani are the mother tongues of 59 percent of the population of Dakshina Kannada, while Konkani is

the mother tongue of 22 percent of the population of Uttara Kannada. Kodata is the mother tongue of 28 percent of population of Kodagu. The Telugu speaking population is concentrated in Kolar district (52 percent) and is also present in sizeable numbers in Bangalore, Chitradurga, Tumkur and districts of Gulbarga Division bordering Andhra Pradesh. Marathi is spoken in the districts bordering Maharashtra namely, Belgaum (21 percent) Bidar (19 percent) and Uttara Kannada (9 percent). People with Malayalam as mother tongue are concentrated in Kodagu (22.9 percent) and Dakshina Kannada (12.9 percent), bordering Kerala. The Tamil speaking population is concentrated in Bangalore (16 percent), Kolar (9 percent) and Mysore (5 percent). The Urdu speaking population is distributed in all districts but they form only 5 percent of the population of Mysore division while in other divisions the Urdu speaking population ranges between 10 to 14 percent.

Hindus, including Jains, Buddhists and Sikhs form 86 percent of the population of the State, while 11 percent are Muslims and 2 percent are Christians.

In 1992-93, the per capita net domestic product for Karnataka was Rs. 5898 at current prices which is marginally higher than that for India (Rs. 5583). The per capita income varied between districts. Kodagu district has the highest per capita income of Rs. 10,810 and Bidar the lowest per capita income of Rs. 3,725.

Table 2.2: Per Capita Income 1992-1993

PER CAPITA INCOME	DISTRICT
Over Rs. 9,000	Kodagu (10,810), Bangalore (9,190).
Rs. 6,000 to 9,000	Belgaum (6,206), Uttara Kannada (6,339), Mysore (6,400), Bangalore Rural, Dakshina Kannada (7,203), Chikmagalur (8,065)-----
Rs. 5,000 to 6,000	Tumkur (5,045), Dharwad (5,108), Chitradurga (5,147), Bellary (5,293), Shimoga (5,812)
Below Rs. 5,000	Bidar (3,725), Kolar (4,151), Raichur (4,159), Bijapur (4,414), Gulbarga (4,732), Mandya (4,827), Hassan (4,924).

In 1991, the literacy rate among those aged seven years and above was 67 percent among males and 44 percent among females, which is marginally higher than that for the country (64 percent for males and 39 percent for females).

The proportion of workers to total population in 1991 was 53.9 percent among males and 29.3 percent among females. The corresponding rates for 1981 were 54.6 among males and 25.3 among females. There has been a three percent shift away from agriculture and household industry to other occupations. However, agriculture continues to be the occupation for 63 percent of the male workers.

A requisite to disease control is access to a safe water supply and proper sanitation facilities. In regards to the former, the majority (70%) of the population in Karnataka now have safe drinking water (TABLE 2.3) compared to about 34% a decade ago. This substantial increase has been achieved by a concerted effort by the state authorities to identify and provide bore wells to communities. The increased coverage is particularly substantial in the rural areas. In addition, treated water for drinking is also supplied by the municipal council to urban and some semi-urban areas either directly to homes or to public water tanks. In fact, the increase in provision of safe drinking water is higher in this state than for India as a whole.

TABLE 2.3: Percentage with Access to Safe Water Supply

		SAFE DRINKING WATER	
		1981	1991
Urban & Rural	Karnataka	33.9	71.7
	India	38.2	62.3
Rural	Karnataka	17.6	67.3
	India	26.5	55.5
Urban	Karnataka	74.4	81.4
	India	75.1	81.4

2.3. *Demographic Characteristics*

The compound annual growth rate of the population of Karnataka was 1.93 percent in the decade 1981-91. The decline in population growth rate has been more rapid in Karnataka than in India. While in Karnataka, the compound annual growth rate declined from 2.40 percent during the decade 1971-81 to 1.93 percent in 1981-91, that for India declined marginally from 2.23 percent to 2.16 percent.

In 1991, the urban population accounted for 30.91 percent of the population of the State as compared to 25.71 percent for India. Nearly 30 percent of the urban population of the State lives in Bangalore Urban Agglomeration and another 35 percent in twenty urban agglomerations with population over 100,000. The remaining 35 percent of the urban population live in 233 towns. The rural population is distributed over 27,024 **villages**.

The sex ratio expressed as the number of females to thousand males declined from 963 in 1981 to 960 in 1991 in the State. Similar decline occurred at the national level (934 in 1981 to 927 in 1991).

The mean age at marriage of females in Karnataka was estimated for the year 1981 at 19.2 years as compared to 18.3 years for the country.

Scheduled Castes and Scheduled Tribes formed respectively, 16.4 and 4.0 of the total population in 1991.

The Crude Birth Rate (CBR) for Karnataka is estimated at 25.5 for the year 1993. The CBR for urban Karnataka was 23.1 while for rural Karnataka it was 26.7. Estimates of birth rates by district for the year 1993 reveal that Chikmagalur had the lowest birth rate of 19.9 and Raichur the highest birth rate of 35.1.

Table 2.4: Crude Birth Rate (CBR) by District (1993)

CBR PER 1000 POPULATION	DISTRICT
CBR over 29	Raichur (35.1), Bidar (34.9), Gulbarga (33.3), Bijapur (32.0), Bellary (29.2).
Between 24-28	Kolar (27.2), Dharwad (27.1), Chitradurga (26.9), Belgaum (28.9).
Between 22 to 24	Uttara Kannada (23.5), Tumkur (23.2), Shimoga (22.4) Bangalore (22.3).
Below 22	Mysore (21.6), Mandya (21.0), Kodagu (21.0), Hassan (20.6), Dakshina Kannada(22.3), Chikmagalur (19.9).

The crude death rate for the year was 8.5 for the State while it was 6.0 for urban Karnataka and 9.4 for rural Karnataka. The infant mortality rate estimate for the year 1993 was 67 for the state, 41 for urban Karnataka and 73 for rural Karnataka.

2.4. Regional Variations

As mentioned, the population of Karnataka is distributed in twenty districts and four revenue divisions. There are wide variations in the demographic characteristics across the four divisions as may be seen in Table 2.5.

Table 2.5 Demographic Characteristics of Districts

	Thousand Persons 1991	Density sq. km. 1991	Annual Growth Percent 1981-91	Sex Ratio 1991	Mean age at Marriage 1981	Percent Urban 1991	Male		Female		Scheduled	
											Caste s % of Total 1991	Tribe s % of Total 1991
Bangalore	4,839.2	2,210	3.31	903	20.2	85.8	83.1	69.0	14.7	1.1		
Bangalore Rural	1,673.2	288	1.43	950	N.A	18.2	61.1	38.9	19.5	3.0		
Chitradurga	2,180.4	163	2.06	944	19.2	67.0	43.5	36.2	19.8	14.6		
Kolar	2,216.9	224	1.53	966	19.1	23.3	63.0	38.1	25.7	6.9		
Shimoga	1,909.7	351	1.43	961	20.5	26.5	71.1	51.4	17.7	3.9		
Tumkur	2,305.8	135	1.55	959	19.2	16.6	66.6	42.1	17.7	7.3		
Bangalore Division	15,125.2	281	2.12	939	19.8	42.6	71.6	51.1	18.4	5.4		
Belgaum	3,583.6	498	1.87	959	19.4	23.9	65.5	38.7	11.4	2.3		
Bijapur	2,928.0	270	2.00	965	17.3	23.6	70.6	41.3	17.4	1.4		
Dharwad	3,503.2	415	1.75	945	19.2	35.0	71.7	45.5	11.7	3.0		
Uttara Kannada	1,220.3	89	1.29	967	21.2	24.2	76.1	56.7	7.5	0.8		
Belgaum Division	11,235.0	279	1.80	957	19.0	27.3	69.9	43.5	12.6	2.1		
Bellary	1,890.1	116	2.41	957	18.1	29.9	59.3	32.5	19.3	8.8		
Bidar	1,255.8	184	2.35	953	17.6	19.5	59.5	31.0	20.7	8.3		
Gulbarga	2,582.2	629	2.18	962	17.5	23.5	52.3	24.9	23.7	4.1		
Raichur	2,309.9	281	2.62	978	17.5	20.8	49.7	22.3	17.2	7.8		
Gulbarga Division	8,037.9	227	2.39	964	17.7	23.6	54.4	26.9	20.3	6.9		
Chikmagalur	1,017.3	205	1.10	977	20.8	16.9	70.6	51.5	19.3	2.6		
Dakshina Kannada	2,694.3	225	1.26	1063	22.4	28.3	84.7	68.3	6.5	3.9		
Hassan	1,569.7	112	1.47	1000	20.2	17.4	68.9	45.1	17.4	1.1		
Kodagu	488.5	46	0.56	989	21.8	16.1	74.5	61.4	12.1	8.3		
Mandya	1,644.4	155	1.49	962	18.5	16.2	59.1	36.9	13.8	0.7		
Mysore	3,165.0	308	2.00	953	19.3	29.8	56.1	37.9	18.9	3.2		
Mysore Division	10,579.1	170	1.49	993	20.4	23.6	67.8	49.3	14.4	2.9		
Karnataka	44,977.2	235	1.93	960	19.2	30.9	67.3	44.3	16.4	4.3		

* Literacy percent among population aged 7 years and over

Generally, Gulbarga Division, comprising the districts of Gulbarga, Bellary, Bidar and Raichur along with Bijapur district in Belgaum Division, is the most backward in terms of health and socio-economic indicators. These above five

districts show higher growth rates over the ten year period for the years 1981-91. The highest growth was, however, registered in Bangalore District, reflecting rural-urban migration and rapid urban growth. The population growth rate for the decade 1981-91 declined in all districts excepting Bidar, Bijapur, Gulbarga and Raichur. The annual compound growth rate of the population of these four districts increased from 1.99 percent in the decade 1971-81 to 2.25 percent in the decade 1981-91, suggesting that the decline in mortality has been more than the decline in fertility. On the other hand, the annual compound growth rate declined in the remaining sixteen districts from 2.50 percent during the decade 1971-81 to 1.85 percent during the decade **1981-91**.

The sex-ratio is the most favorable in Mysore Division, with Dakshina Kannada and Hassan boasting of a female to male sex- ratio of over 1.0. This division also has the highest mean age at marriage. Conversely, the lowest mean age exists in the four districts of Gulbarga Division together with the adjacent Bijapur district. Crude birth rate is also significantly higher in this part of the State and female literacy is lowest in the Gulbarga Division. Similarly, the Gulbarga Divisions Districts have relatively lower per capita income levels.

In general, one can state that there is a North South divide with the Southern parts of the State, being somewhat better placed in demographic status, compared to their Northern counterparts.

RAICHUR DISTRICT

Raichur District is a developing district in the northern part of Karnataka which is still relative poor in health facilities. Raichur, district headquarters is located about 20 km from Andhra Pradesh boundary, 515 km from Bangalore, capital of Karnataka and 220 km from Hyderabad capital of Andhra Pradesh. Raichur District adjoins, apart from Andhra Pradesh, the districts of Bellary, Dharwad, Bijapur and Gulbarga of Karnataka. Hence the proposed 500 bed hospital in Raichur can serve as a Regional Hospital with specialized medical facilities.

Raichur city is located at latitude 15° 12' north and longitude 77° 21' east at an altitude of 399.45m(1311 ft) above sea level. Krishna and Thungabadra Rivers flow within a distance of 20 km in the north and 30 km in the south respectively from Raichur. The city has good communication with other towns in Karnataka and Andhra Pradesh by road as well as by rail. A map of Karnataka showing the location of Raichur is shown separately.

The climate is very hot and rain fall is scanty as the pre-dominantly wind direction is West and South West.

Raichur city has a population of 1,70,463 in 1991 with a decadal growth of 36.6 percent. The population is expected to reach about 2,40,000 by 2001. The residential density is about 165 persons per hectare.

The district population of 2.3 million has the lowest ratio of population per bed in the state of Karnataka. The district with 78% of rural population is one of the poorest and is also typical for the region with the majority of the population working as agricultural workers. The literacy levels for all talukas in this district are lower than the state average.

Socio Demographic Indicators Raichur District - 1992

	BIRTH RATE	DEATH RATE	LITERACY	IMR	MMR	POPULATIO N
<i>District Raichur</i>	26.2	8.5	35.96	73	3.61	2,309,887
TK Devandurga	24.0	8.8	21.61	79	4.26	176,889
TK Gangawati	21.0	8.4	36.25	71	3.71	255,551
TK Koppal	21.5	8.6	42.39	70	3.13	207,111
TK Kushtagi	26.3	8.8	35.34	72	3.79	189,891
TK Lingsugur	20.9	8.5	35.19	72	3.27	211,096
TK Manavi	24.7	8.9	29.14	81	4.19	241,193
TK Raichur	21.2	8.3	43.62	69	3.89	201,295
TK Sindhur	20.5	8.8	34.48	72	3.58	240,383
TK Yelbarga	24.4	8.1	39.10	71	3.75	196,080

Presently the majority of the patients go to Hyderabad for advanced medical care the inpatient to outpatient ratio is poor due to lack of facilities in Raichur. The present inpatient record is 4218 cases in 6 months whereas the outpatient load is 101, 1923 cases for the last 6 months. The major surgeries conducted are 562 in number and normal deliveries being 788. It is thus seen that there is a urgent need to renovate and expand the existing district hospital with the help of OPEC assistance. The plans to build a modern 350 bed new super speciality hospital at Raichur with all the specialties will reduce the ratio of population to bed from the present 5420 to **2030**.

Health Services Facilities Raichur District








	PHC's		ACTUAL CHC's/GH's		NEW BEDS	FUTURE CHC's/GH's	
	NO.	BEDS	NO.	BEDS	NO.	NO.	BEDS
<i>District Raichur</i>	69	414	13	425	213	13	638
TK Devandurga	5	30	1	30	20	1	50
TK Gangawati	10	60	3	42	70	3	112
TK Koppal	9	54	1	17	33	1	50
TK Kushtagi	6	36	1	30	20	1	50
TK Lingsugur	10	60	2	56	50	2	106
TK Manavi	9	54	1	30		1	30
TK Raichur	6	36	1	130	-	1	130
TK Sindhnur	8	48	1	30	20	1	50
TK Yelbarga	6	36	2	60	-	2	60


RAICHUR
URBAN LAND USE

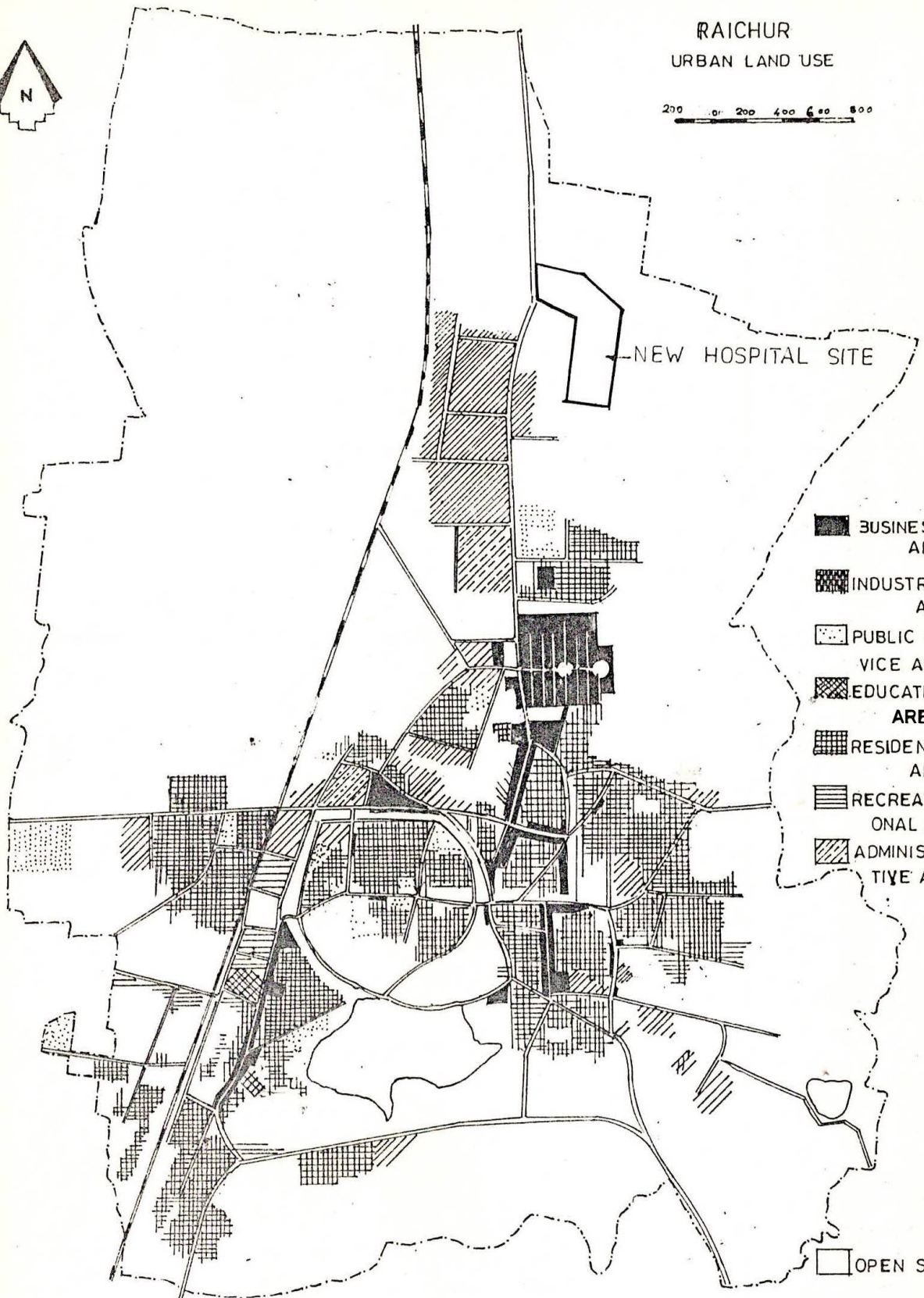
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NEW HOSPITAL SITE

-  BUSINESS AREA
-  INDUSTRIAL AREA
-  PUBLIC SERVICE AREA
-  EDUCATIONAL AREA
-  RESIDENTIAL AREA
-  RECREATIONAL AREA
-  ADMINISTRATIVE AREA

 OPEN SPACE



EXISTING DISTRICT HOSPITAL

Raichur is situated on the Krishna river approachable by road on state highway no 30 and National highway no 13. Approachable by railway also connecting Bangalore via Guntakal to Bombay.

The present District hospital is located around 5 kms from the main town. The facility not only covers nearby villages & districts, also caters to across Andhra Pradesh border areas.

The existing District Hospital, Raichur is functioning as a referral Hospital is not able to cope with all the cases in the absence of necessary infrastructure facilities. So it was decided to modernize and expand the Hospital and also setup a new Hospital in addition to the old with OPEC assistance. To this effect an agreement for a loan of 9 Million U.S. Dollars has been signed with OPEC on 6.6.1991.

The existing 250 bedded Hospital has the following Departments :-

Medicine	40
Surgery	40
Obstetrics and Gynecology	30
Orthopedics	40
Pediatrics	20
E.N.T.	20
Ophthalmology	20
Emergency	40
Dental	
Radiology	
Skin and STD	
	<hr/> 250 <hr/>

From the above mentioned departments the following will be shifted to the NEW HOSPITAL complex:

1. Medicine
2. Surgery
3. Orthopedics
4. E.N.T.
5. Ophthalmology
6. Dental
7. Emergency/Trauma

The existing hospital will be exclusively Women and Children hospital with skin and psychiatry.

The additional beds mentioned below will be retained in the old hospital

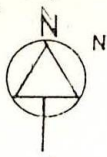
Additional Beds Available :-

Leprosy	20
T.B	20
Isolation	10
Prisoners	5
	63

The distribution of the 250 beds in the existing hospital will be as follows :

OBG	120
Post Partum	20
Pediatrics	50
Neonatology	20
Psychiatry	20
Skin	20
	<hr/>
	250
	<hr/>

INDEX MAP



NEW HOSPITAL SITE

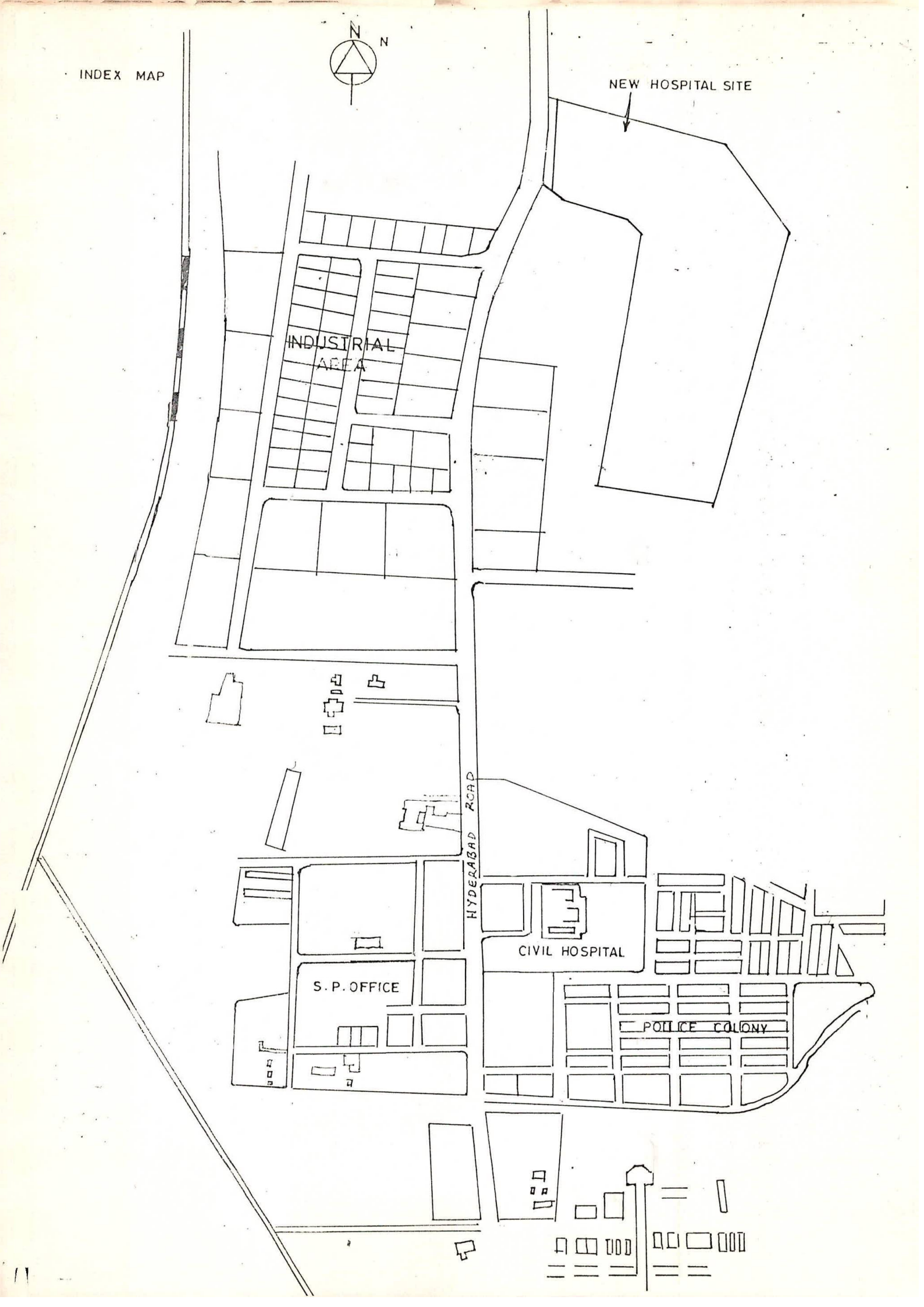
INDUSTRIAL
AREA

HYDERABAD ROAD

CIVIL HOSPITAL

S. P. OFFICE

POLICE COLONY



NEW HOSPITAL

Raichur has the potential to grow due its strategic location, being on the National highway & closer to district borders. A modern hospital located at Raichur can very well cater to not only its own district but to neighbouring districts and the transborder district of Andhra Pradesh. There is a long felt need for a modern state of the art hospital at Raichur as there is no such hospital in the entire region.

It is proposed to build a new 350 bed multispeciality hospital at Raichur close to the existing district hospital. Land has already been acquired for this purpose.

The bed distribution of the 350 beds is given as an annexure. The hospital apart from general medicine & emergency will also have super speciality departments like Cardiology, Gastroenterology, Neurology, Neuro surgery & Urology, Plastic surgery, Trauma.

The present plan will include 73 quarters & some of these will be located in the premises of the old hospital.

DEPARTMENTS AND BEDS DISTRIBUTION AT NEW HOSPITAL RAICHUR

	Beds
Out-Patient Department	
Casualty	8
ICU (Intensive care Unit)	6
ICCU (Intensive Coronary Care Unit)	6
Medical	72
Surgery	72
E.N.T.	12
Orthopedic & Physiotherapy	60
Cardio Vascular & Thoracic Surgery	6
Ophthalmology	24
Nephrology & Urology	24
Neurology/Neuro Surgery	36
Burns Ward	12
Gastroenterology	12
O.T. (Major O.T, Minor O.T.)	4 No.
Bio-Chemistry-Pathology & Micro Biology Laboratory	
Radiology	
C.S.S.D.	

	350

New Facilities

The phase consists of a new Hospital Complex with the following facilities, in consultation with the Directorate of Health and Family Welfare, Government of Karnataka, are as follows :

The in-patient block of 350 bed capacity, including 48 special beds.

The out-patient block for consultancy and administration with a staff canteen, and a basement for stores and parking facility for Ambulances.

A Diagnostic and Treatment Block with 4 Operation theatres, ICU + ICCU in the first floor.

A Casualty and Emergency Block with Laboratories, Blood Bank.

Kitchen, Electric Substation and Generator room in the rear of the hospital complex.

A Public Canteen.

Incinerator, overhead water tank and a septic tank for waste **water** treatment.

Staff quarters- 73 dwelling units of 6 categories as per state government scales and standards.

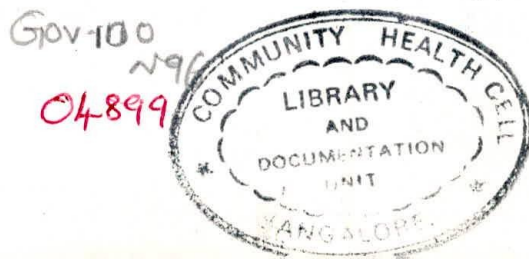
External and internal services like water supply, sanitary and electrical works required for the entire campus including the staff quarters and future use.

Layout :

Land has been purchased from Agricultural Produce Marketing Committee, Raichur in two installments - 50 acres were acquired in 1990 and an additional 23 acres 2 guntas in 1992 i.e. a total of 73 acres 2 guntas (29.25 hectares) at a cost of Rs 35 lakhs. In addition, about Rs 5 lakhs is spent by the State PWD for clearing shrub jungle and upkeep of the site. The new hospital complex with some staff quarters is proposed in this site with sufficient area reserved for the future extension. All the buildings of the new hospital complex and ancillary buildings are located with a setback of 155 meters from the center line of Raichur-Hyderabad Highway. Proper circulation pattern within the site is proposed for easy movement of men, materials and equipment. The main feature in the layout of the Hospital has been to segregate the Casualty Block, the OPD, the Treatment Block and the various functions within the hospital run **smoothly**.

The orientation of the In-patient Block and staff quarters is north and south, so that western sun as well as summer sun is avoided and sunlight is allowed into the rooms from south during winter. The street pattern and space between buildings so designed that the east-west wind is allowed to flow freely along roads, corridors and the intervening open spaces.

An incinerator is proposed on the east to avoid air pollution in the hospital area. Over-head water tank is located on the highest point in the east of the site with necessary sump tank and pumping facility. Waste water treatment unit (septic tank) is proposed at the lowest point of the site near the road



bridge, so that the treated sewage can be let into the nallah nearby, avoiding environmental pollution.

Buildings :

All the buildings in the hospital complex are designed as RCC framed structures with modules of 6.8m x 6.8m - center to center. Brick mullions are provided a 3.4m in-between on the exterior of buildings to accommodate down-water pipes and to provide vertical treatment to the outer surface of buildings. The RCC frames have an in-filling of brick or hollow block masonry in cement mortar. Foundations have been designed as per standard specifications. The buildings have sufficient waiting areas and corridors .The necessary architectural drawings have been prepared.

The cost of the civil works is shown below:

	Unit	Rs(million)
1.	OPD	10.3
2.	Diagnostic	28.1
3.	Inpatient	37.7
4.	Kitchen	2.9
5.	Mortuary	1.3
6.	Canteen	0.8
7.	Electrical Substation	2.0
	Services	
	Internal Services(Hospital)	10.0
	External Services	12.0
	Air Conditioning	10.0
	Formation of Layout	6.0
	Staff Quarters	18.9
	Total	140.0

The project is expected to be completed in 3 years.

The new hospital plans to accommodate the list of departments and their bed strength as indicated earlier. In addition provision is made to accommodate cardiology, trauma, burns and plastic surgery in appropriate places in the OPD and Diagnostic blocks. Copies of the plans are enclosed . The total plinth area of the hospital complex(stage-1) is furnished below.

	Name of Building	Plinth area in Sq. m
1.	Out-patient Block	3,904.00
2.	Diagnostic Block	7,574.48
3.	In-patient Block	11,523.00
4.	Kitchen Block	781.00
5.	Mortuary & Post mortem	364.36
	Grand Total	24,146.36

The present proposal includes only 73 quarters to accommodate the following staff.

	Type	No. of Dwellings
1.	Medical Superintendent	01
2.	Surgeons	04
3.	Asst Surgeons	08
4.	Nurses	24
5.	Para -Medical	12
6.	Group-D staff	24
	Total	73

LIST OF EQUIPMENT FOR RAICHUR HOSPITAL UNDER O.P.E.C. ASSISTANCE.

	Name of the Equipment	Cost in Rs. (Millions)
I.	<u>RADIOLOGY</u>	
	a) Ultrasound machine with colour doppler	5.0
	b) 800 mA X-Ray Unit with IITV/Motorised table	3.6
	c) C.T. Scanner	12.5
	d) 300 mA with motorised table	0.95
	e) C-arm Image Intensifier	2.0
	f) Mobile 60 mA X-Ray	0.18
	g) Automatic processor	0.25
	h) X-Ray Accessories	0.15
		<u>24.63</u>
II.	<u>DENTAL</u>	
	a) Dental Chair	0.6
	b) Dental X-Ray	0.2
	c) Other Dental Instruments	0.6
	d) Dark Room equipment	0.2
	e) Orthopentomograph	0.7
		<u>2.3</u>
III.	<u>CARDIOLOGY</u>	
	a) Computerised Tread mill with Analyser	0.8
	b) ECG Machine (3 Channel) - 3 Nos	0.135
	c) Ecko Cardiography (with colour doppler)	5.0
	d) Central Cardiac monitor with 6 bed side monitors (colour)	2.5
	e) ICU Ventilators (two) Adult & paed	2.8
	f) Ward Instruments	0.4
	g) Miscellaneous	0.3
	h) Defibrillator	0.3
	I) Holter monitoring	0.6

		12.835

IV.

OPERATION THEATER

a) Operating Lamps (4 OT's)	1.0
b) Operation tables (Four section with Radiology back and accessories)	1.2
c) Anaesthesia Equipments	0.8
d) Microsurgical Instruments	0.8
e) Ordinary surgical Instruments' (IND)	1.2
f) Operating Microscope with Accs.	0.5
g) Motor driven syringe pumps	0.3
h) Volumetric Infusion pumps	0.3
i) Cell seperators	0.4
j) Surgical Diathermy with Accs. (4 Nos)	1.5
k) Adjustable Recovery room trolleys transfer trolleys	0.5
l) Standby Electrical Suction Machine	.005
m) Ventilators (2 Nos)	2.0
n) Central gas supply O ₂ , n ₂ , Vacuum	0.8
o) OT head light (4 Nos)	0.008
p) Mobile OT lamps (2 Nos)	0.1
q) Flash sterilizer (2 Nos)	0.15
r) OT monitors (4 Nos)	0.2
s) Defibrillator (2 Nos)	0.15
t) Pulse Oximeter (4 Nos)	0.4

	12.358

V.

NEUROLOGY

a) E.E.G. Machine	1.5
b) Ward Instruments	0.5
c) Infusion Syringe Pumps	0.3
d) Others like suction machines, trolley	0.4
e) E.M.G. Machine	1.0

	3.7

VI.

LABORATORY

A.	a) Computerised Haematology Analyser	1.0
	b) Computerised Bio-Chemistry Analyser	2.0
	c) Microbiology & Histopathology equipment	0.5
	d) Others Lab. Instruments, test tubes, Refrigerators etc.,	0.5
	e) Blood gas analyser	1.5
	f) Elisa reader	0.15
	g) Electrolyter	1.0
	h) Micro scope (2 Nos)	0.5
	I) Semi Auto analyser	0.2
B.	BLOOD BANK EQUIPMENTS :	0.55

		7.9

VII. ORTHOPAEDICS & PHYSIOTHERAPY

a) Various Implants (Surgical)	1.5
b) Physiotherapy equipments (Gonimeter, Ecp, Nemetrome etc.,)	3.0
c) Plaster room equipments	0.5
d) Monitors, ECG & other instruments	0.3
e) infusion pumps (Syringe)	0.2

	5.5

VIII. NEPHROLOGY/UROLOGY

a) Haemodialysis equipment	1.5
b) Water treatment system	0.5
c) Infusion pumps & monitors	0.2
d) Ward instruments	0.3
e) Humidifier	0.1
f) Urodynamic studies equipment	0.3
g) Cysto scopes and Accessories	1.0

	3.9

IX. GAESTROENTEROLGY

a) Various Endoscopes	1.0
b) Ward instruments	0.3
c) Infusion pumps	0.1
d) Monitors	0.1
e) Miscellaneous	0.5

	2.0

X. ENT

a) ENG (Multi channel)	0.3
b) Operating Microscope	1.2
c) Monitors, Infusion Pump & etc.,	0.1
d) Audio metery	0.15
e) Others	0.2

	1.95

XI. PLASTIC SURGERY & BURNS WARD

a) Ventilators (Adult & paediatrics)	0.5
b) Pulse Oximeter	0.15
c) Four channel monitor	0.5
d) Micro instrument set	0.2
e) Sink bank	0.2
f) Infusion pumps	0.2
g) Ward instruments	0.2
h) Head light illumination	0.4
i) Humidifier	0.1
j) Zimmer mesher	0.1
k) Feeding pump	0.1
l) Liposuction	0.1
m) Dermotome	0.1
n) Suction machine	0.05

	2.9

XII. OPHTHALMOLOGY

a) Keratometer	0.025
b) Indirect ophthalmoscope meter	0.015
c) Ophthalmic chair	0.1
d) Ophthalmoscope (2 Nos)	0.1
e) Slit lamp	0.060
f) Instruments	0.2
g) Miscellaneous	0.2

	0.7

XIII. GENERAL FURNITURE/EQUIPMENTS.

1) 350 Beds	5.5
2) ICU Beds(15)	0.3
3) Emergency trolley Beds (12)	0.250
4) Other Equipments - Bed side lockers, stands, trolley (Instruments, Dressing trolley.	1.0
5) Generator 65 kWA	0.3
6) Administration	0.6
7) Ambulance (2 Nos)	0.8
8) C.S.S.D.(Autoclaves etc.,)	0.5

	9.2.5

ABSTRACTS

1)	Radiology	24.63
2)	Dental	2.3
3)	Cardiology	12.8
4)	O.T.	12.358
5)	Neurology	3.7
6)	Laboratory	7.9
7)	Orthopaedics/Physiotherapy	5.5
8)	Nephrology	3.9
9)	Gaestroenterology	2.0
10)	E.N.T.	1.95
11)	Plastic surgery & Burns Ward	2.8
12)	Ophthalmology	0.7
13)	General Furniture/Equipments	<u>9.25</u>
		<u>89.923</u>

The euipments are further classified into imported and indigenous. The imported equipment are 100% financed by OPEC funds and the indigenous 70% by OPEC and 30% by the state.

STAFFING NORMS FOR 350 BED SUPERSPECIALITY HOSPITAL :

Category	Grade	No.
I Administration		
1. District surgeon	3300-5300	1
2. RMO	3300-5300	1
3. Nursing Supdt. Grade I	2150-4200	1
4. Nursing Supdt. Grade II	1900-3700	5
5. Lay Secretary	1900-3700	1
6. Office superintendent	1720-3370	2
7. Senior Asssistant/FDA	1280-2375	2
8. Junior Assistant/SDA	1040-1900	3
9. Computer Programmer	1280-2375	2
10. Stenotypists	1280-2375	2
11. Typist-cum-clerk	1040-1900	2
12. Medical Record Technician	1400-2675	2
13. Electrician	1400-2675	1
14. Carpenter	870-1520	1
15. Plumber	870-1520	1
16. Cook	870-1520	2
17. Helper to Cook	840-1340	4
18. Group D	840-1340	60
19. Driver	1040-1900	4

II Paramedical Staff

1	Staff Nurse	1520-2900	80
2	Pharmacist Grade I	1400-2675	3
3	Pharmacist Grade II	1280-2580	3

III Technical staff

1	Physiotherapist	1520-2900	2
2	Senior Lab Technician	1400-2675	2
3	Junior Lab Technician	1280-2375	2
4	Refractionist	1280-2375	1
5	Radiographer	1400-2675	2
6	X-Ray Technician	1280-2375	2
7	Dark Room Assistant	840-1340	1
8	ECG Technician	1280-2375	2
9	Technicians (Superspeciality Departments)	1400-2675	5
10	Lab attendants	870-1520	2

Contract for security and maintenance of sanitary and general cleanliness of hospital to be given to outside agencies.

DOCTORS BY SPECIALIZATION FOR 350 BED SUPERSPECIALITY

HOSPITALS

I	Senior Specialists	Grade	No
1	Physician	3300-5300	2
2	General Surgeon	3300-5300	2
3	Dental Surgeon	3300-5300	1
4	Anaesthetist	3300-5300	10
5	Ophthalmologist	3300-5300	1
6	Orthopaedics Surgeon	3300-5300	2
7	E.N.T. Surgeon	3300-5300	1
8	Radiologist	3300-5300	1
9	Pathologist	3300-5300	1
10	Forensic Expert	3300-5300	1
11	Microbiologist	3300-5300	1
12	Biochemist	3300-5300	1

II	Super specialists	Grade	No
1	Cardiologist	3300-5300	2
2	Thoracic Surgeon	3300-5300	1
3	Neurologist	3300-5300	1
4	Neuro Surgeon	3300-5300	1
5	Urologist	3300-5300	1
6	Nephrologist	3300-5300	1
7	Plastic Surgeon	3300-5300	1
8	Gastro Enterologist	3300-5300	1

III	G.D.M.O.	Grade	No
1	General Duty Doctors	2375-4450	8
	Gr. Total		178



FINANCIAL IMPLICATIONS OF THE PROJECT

The soft loan is extended to Civil works, Medical Equipment's, consultancy services and contingencies. Out of total cost, 90% of cost will be met by OPEC and the rest 10% of the cost of the Project has to be borne by the State Government and apart from this the State Government has to meet recurring expenditure for running the Hospital.

Presently the total project cost is estimated at Rs. 263.90 million for the new hospital plus 28.60 million for the expansion and renovation work of the old hospital building, which will be completed in Phase I of the Project The project cost will be as follows :-

New Hospital	Rs.(million)
Civil Construction	140
Equipment	90
Land preparation	4
Consultancy services	4.9
Contingencies	25
Total	<hr/> 263.9 <hr/>

The total project cost of Rs. 292.5 million is including Phase I covering the old hospital and Phase II of the new hospital. Rs. 29.25 million (10% of total project cost) to be borne by the State Government and this expenditure is to count as part of the State Government contribution to the whole project. OPEC has agreed to fund 90% of the entire project cost. Thus, the State Government has only to fund 10% of the total project cost. This has been a major gain for the State Government through current negotiations with GOI and OPEC.

The OPEC has agreed to reimburse 90% of Rs. 28.6 million (spent by the State Government on Phase I) - or Rs. 25.74 million to the State Government and has requested the Central Government to submit withdrawal application for this amount and transfer this amount to State Government immediately. It is proposed to use this amount by the State Government as bridge finance for execution of project activities. The phase I of the Project would cover the entire cost of the renovation and expansion of the old hospital.

The recurring cost will have to be borne by the State Government. The project is expected to be completed within 3 years that is by 31.12.1998. The annual recurring cost for the new hospital is Rs. 35 million . The details are enclosed as annexure.

TOTAL PROJECT COST
(In Rupees Millions)

Items		I Phase			II Phase			Grand Total (Phase I + II)		
Sl No.		Total cost	OPEC Share	State Share	Total cost	OPEC Share	State share	Total	OPEC Share	State Share
1.	CIVIL WORKS.									
a	Existing Hospital	17.70	15.93	1.77	--	--	--	17.70	15.93	1.77
b	New 350 Bed Hospital	--	--	--	121.10	108.99	12.11	121.10	108.99	12.11
c	Residencial Quarters	--	--	--	18.90	17.01	1.89	18.90	17.01	1.89
	Total	17.70	15.93	1.77	140.00	126.00	14.00	157.70	141.93	15.77
2	Medical Equipments (Imported & Indian)	5.40	4.86	0.54	90.00	81.00	9.00	95.40	85.86	9.54
3	Land	--	--	--	4.00	3.60	0.40	4.00	3.60	0.40
4	Consultancy Services									
a	Building	0.40	0.36	0.04	3.50	3.15	0.35	3.90	3.51	0.39
b	Equipments	0.10	0.09	0.01	1.40	1.26	0.14	1.50	1.35	0.15
	Total	0.50	0.45	0.05	4.90	4.41	0.49	5.40	4.86	0.54
5	Contigental & Miscellaneous	5.00	4.50	0.50	25.00	22.50	2.50	30.00	27.00	3.00
	Grand Total	28.60	25.74	2.86	263.90	237.51	26.39	292.50	263.25	29.25

Note : - OPEC share 90% and State Share 10% of Project Cost.

YEAR WISE FLOW OF FUNDS (Rs. IN MILLIONS)

Items & Particulars		I phase		II Phase		Grand Total (Phase I + II)				
Sl no		1 Year 96-97	1 Year 96-97	II Year 96-97	III year 97-98	Total	I Year 96-97	II Year 97-98	III year 98-99	Total
1	CIVIL WORKS	15.93	44.01	40.50	41.49	126.00	59.94	40.50	41.49	141.93
2	Medical Equipment	4.86	--	32.40	48.60	81.00	4.86	32.40	48.60	85.86
3	Land	--	3.60	--	--	3.60	3.60	--	--	3.60
4	Cousultancy Services	0.45	2.52	1.89	--	4.41	2.97	1.89	--	4.86
5	Contigencies & Misc. Charges	4.50	7.20	7.20	8.10	22.50	11.70	7.20	8.10	27.00
	Total	25.74	57.33	81.99	98.19	237.51	83.07	81.99	98.19	263.25

(Rs. In Millions) **PROJECT COST ANNUAL BREAKUP OF FOR 3 YEARS**

		I Phase		II Phase				Grand Total (Phase I + II)			
		Total Cost	1year 96-97	Total cost	1year 96-97	IIYr.	IIIIYr.	Total Cost	IYr.	II Yr.	III Yr.
Sl.No											
1	CIVIL WORKS										
a	Existing Hospital	17.70	17.70	—	—	—	—	17.70	17.70	—	—
b	New Hospital	—	—	121.10	40.00	40.00	41.10	121.10	40.00	40.00	41.10
c	Residence Quarters	—	—	18.90	8.90	5.00	5.00	18.90	8.90	5.00	5.00
	Total	17.70	17.70	140.00	48.90	45.00	46.10	157.70	66.60	45.00	46.10
2	MEDICAL EQUIPMENTS	5.40	5.40	90.00	—	36.00	54.00	95.40	5.40	36.00	54.00
3	LAND	—	—	4.00	4.00	—	—	4.00	4.00	—	—
4	CONSULTANCY										
a	Building	0.40	0.40	3.50	1.80	1.70	—	3.90	2.20	1.70	—
b	Equipments	0.10	0.10	1.40	1.00	0.40	—	1.50	1.10	0.40	—
	Total	0.50	0.50	4.90	2.80	2.10	—	5.40	3.30	2.10	—
5	CONTIGENCY & MISCELLANEOOUS CHARGE	5.00	5.00	25.00	8.00	8.00	9.00	30.00	13.00	8.00	9.00
		28.60	28.60	263.90	63.70	91.10	109.10	292.50	92.30	91.10	109.10

NOTE : I Phase Programmed for 1 year

RECURRING COST

The annual recurring costs will be as follows and the State Government will meet entire recurring cost to run the 350 bedded Hospital.

Sl.no	Items	Rs.Millions
1	Salaries	17.81
2	Travelling Allowance	0.05
3	Office Expenses	1.00
4	Drugs & Chemicals	5.00
5	Diet Expenses	2.00
6	X-Ray films	0.30
7	Electricity & Water charges	0.60
8	Building Maintenance	0.80
9	Equipment Maintenance	1.60
10	Other Expenses	5.84
	Total	35.00

The annual recurring cost for the new superspeciality hospital will be Rs. 35 million.

PROJECT IMPLEMENTATION COMMITTEE

All the project related activity decisions will be taken by two committees, one at the State level and another Implementation committee at the district level.

STATE LEVEL EMPOWERMENT COMMITTEE

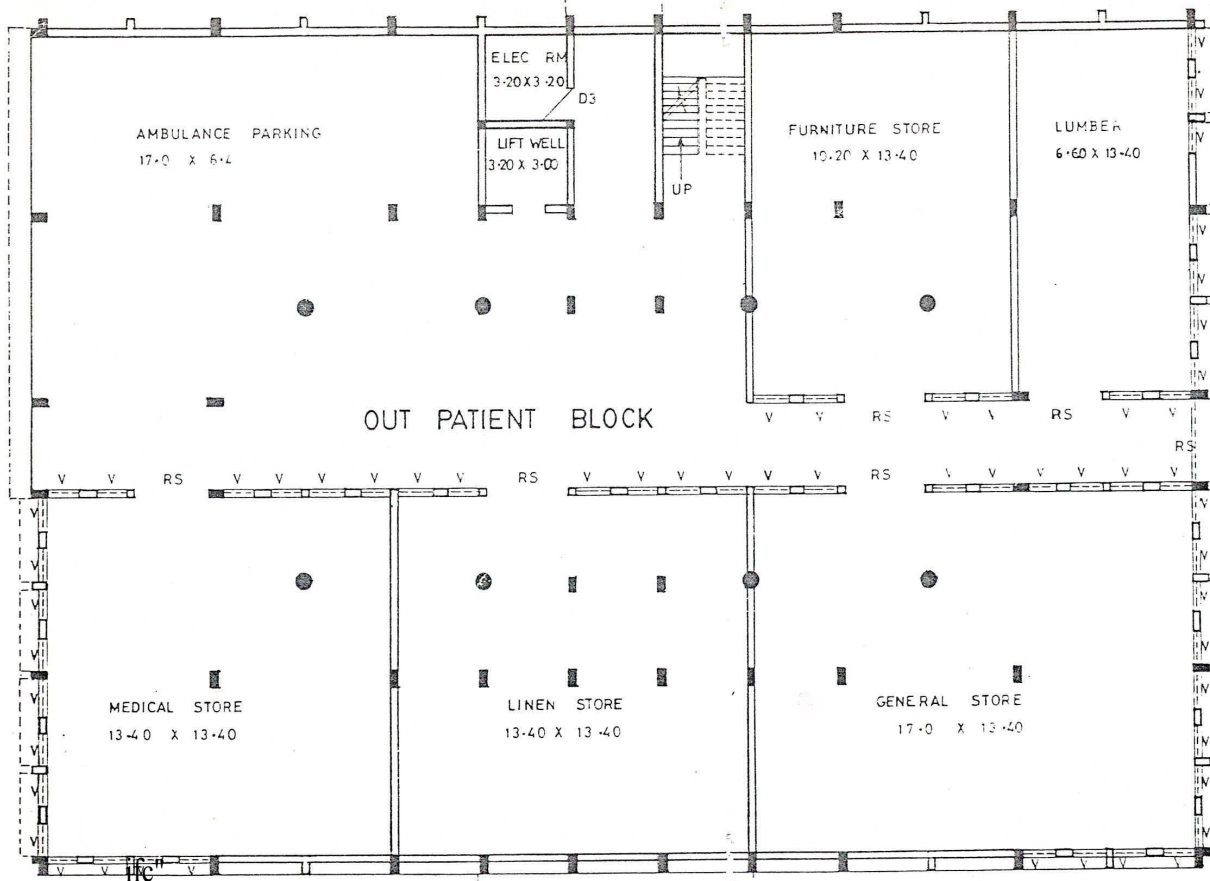
The composition of the empowered committee at the State level will be Additional Chief Secretary as Chairman and will have the following **members** :-

- | | |
|--|------------------|
| a) ACS and Principal Secretary-Finance Department. | Member |
| b) Secretary - I - to Government, HFW Department. | Member |
| c) Secretary to Government, Planning Department. | Member |
| d) Secretary to Government, PWD Department. | Member |
| e) Chief Engineer, PWD C & B (North) | Member |
| f) Chief Engineer (Health Systems Project) | Member |
| g) Director of H & FW Services. | Member Secretary |

DISTRICT IMPLEMENTATION COMMITTEE

The Implementation Committee at the district level will have the Divisional Commissioner of Gulbarga as the Chairman with the following members :-

- | | |
|--|------------------|
| a. Deputy Commissioner, Raichur. | Member |
| b. Executive Engineer , PWD, Building Div, Raichur | Member |
| c. Divisional Joint Director, Health & FW Services | Member |
| d. Joint Director,Health Systems Project | Member |
| e. District Surgeon, Raichur | Member |
| f. Deputy Director Medical/Project Officer | Member Secretary |

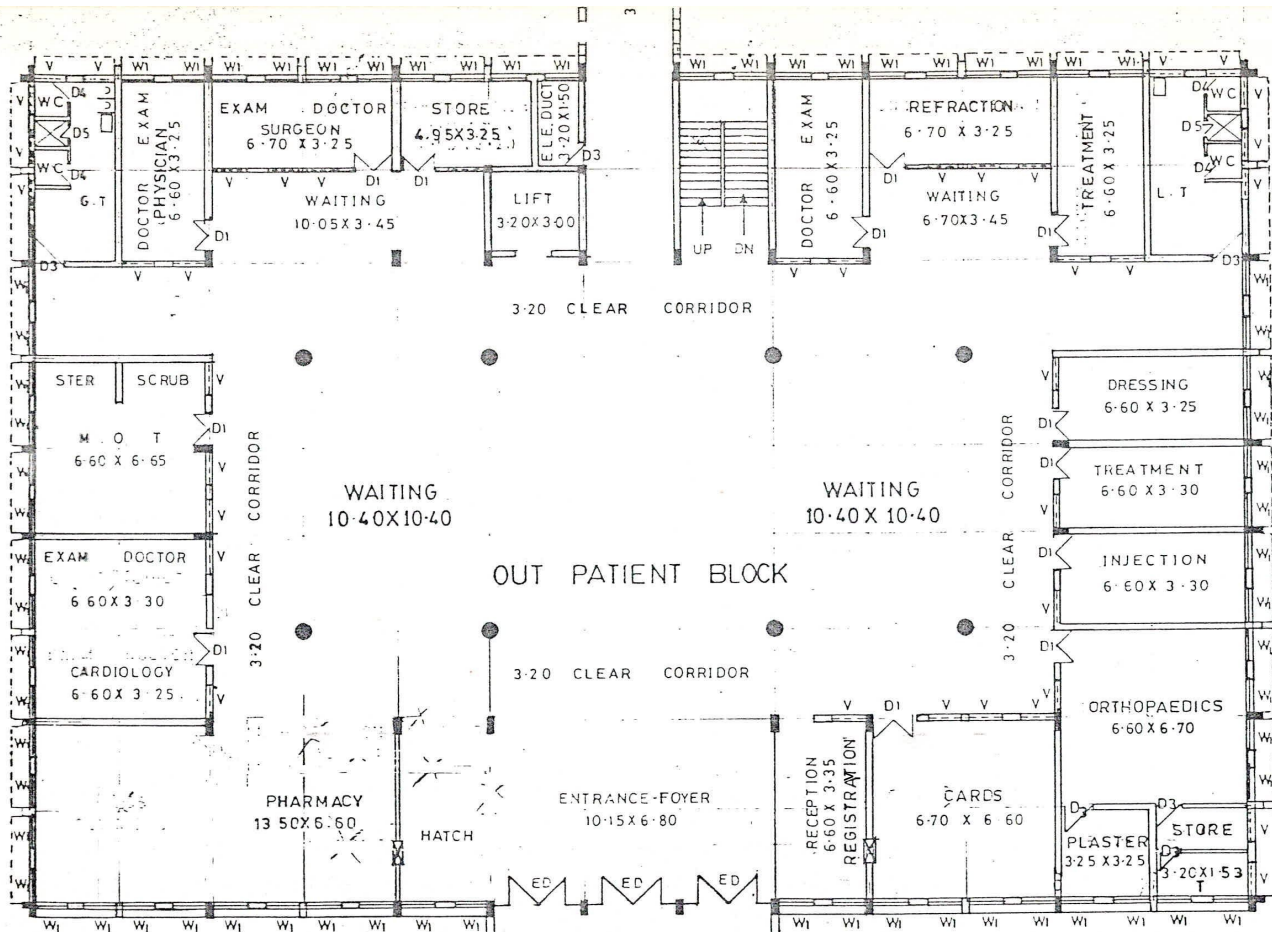


BASEMENT FLOOR PLAN

SCALE - 1:200

AREA - 1380.00 SQM

RAMEGOWDA ASSOCIATES
ARCHITECTS, PLANNERS & ENGINEERS
No. 361/GF. 7th Cross 1st Block
Jayanagar, Bangalore-560 011.

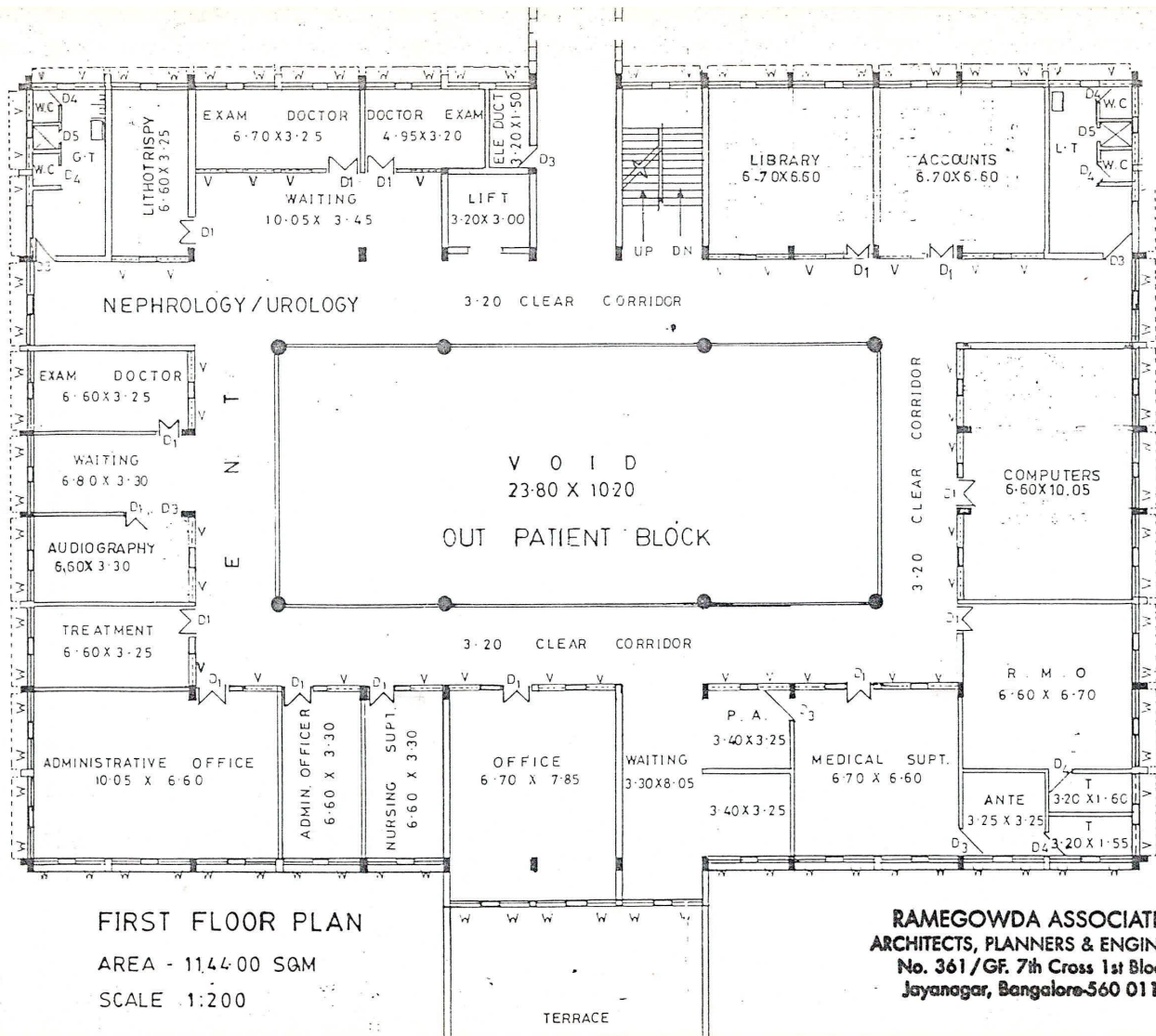


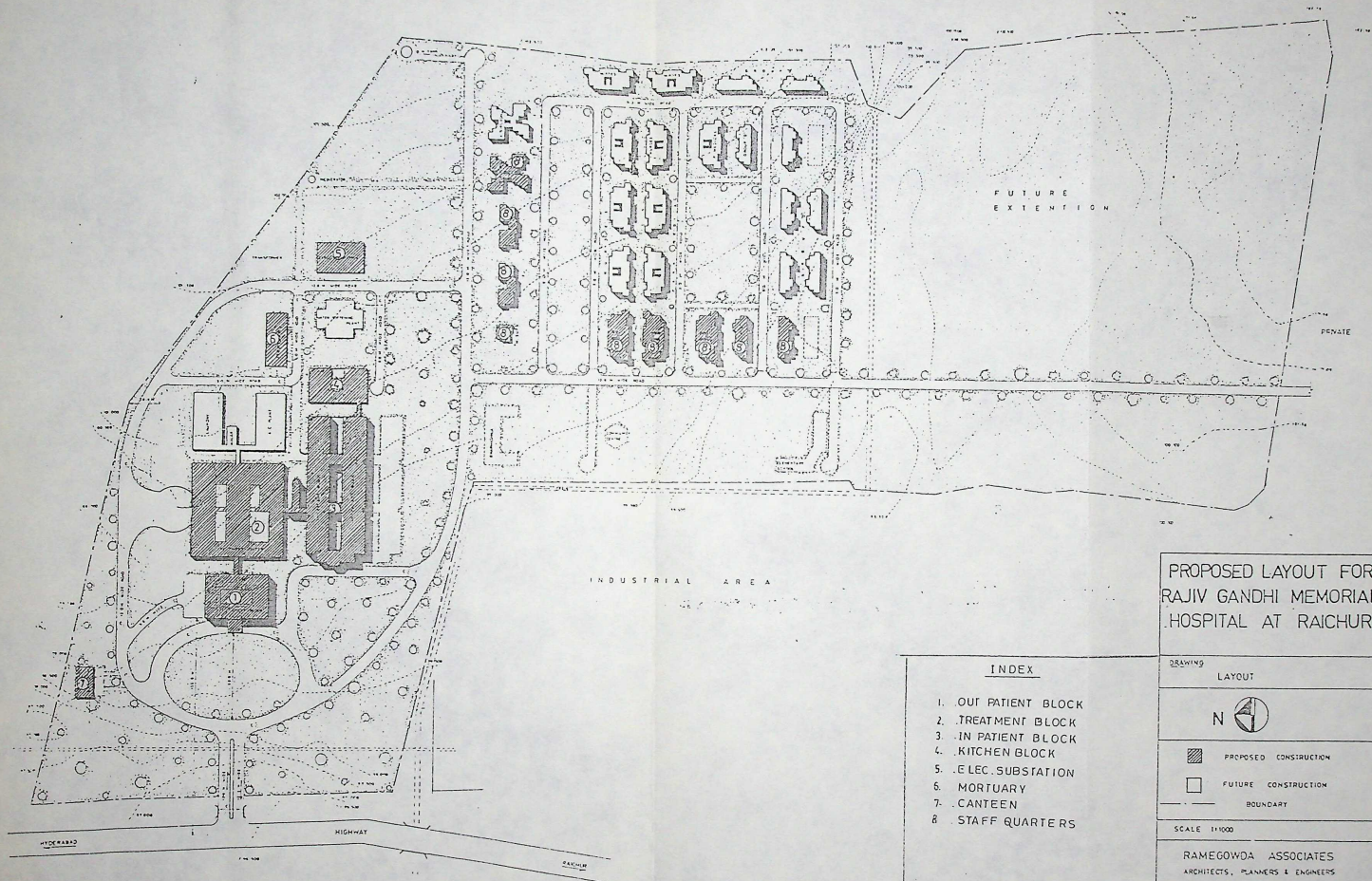
GROUND FLOOR PLAN

AREA : 1380.00 SQM

SCALE 1:200

RAMEGOWDA ASSOCIATES
ARCHITECTS, PLANNERS & ENGINEERS
 No. 361/GF, 7th Cross 1st Block
 Jayanagar, Bangalore-560 011.





PROPOSED LAYOUT FOR RAJIV GANDHI MEMORIAL HOSPITAL AT RAICHUR

INDEX

1. OUT PATIENT BLOCK
2. TREATMENT BLOCK
3. IN PATIENT BLOCK
4. KITCHEN BLOCK
5. ELEC. SUBSTATION
6. MORTUARY
7. CANTEEN
8. STAFF QUARTERS

DRAWING

LAYOUT



PROPOSED CONSTRUCTION

FUTURE CONSTRUCTION

BOUNDARY

SCALE 1:1000

RAMEGOWDA ASSOCIATES
ARCHITECTS, PLANNERS & ENGINEERS
100, THE COTELLY BLOCK, JAYANGAR, BANGALORE

ARCHITECT

DR. S. S. RAO

DATE

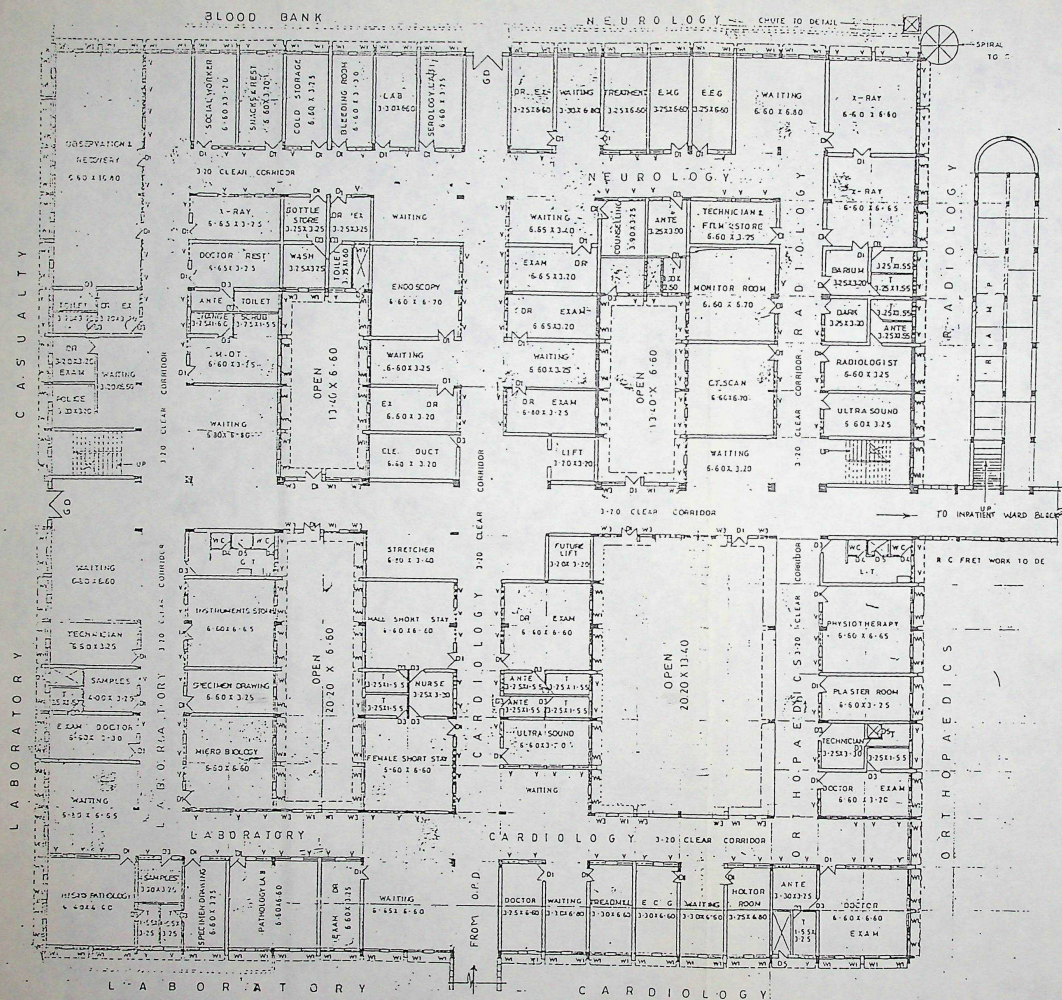
DESIGNED

DATE

REVISIONS

DATE

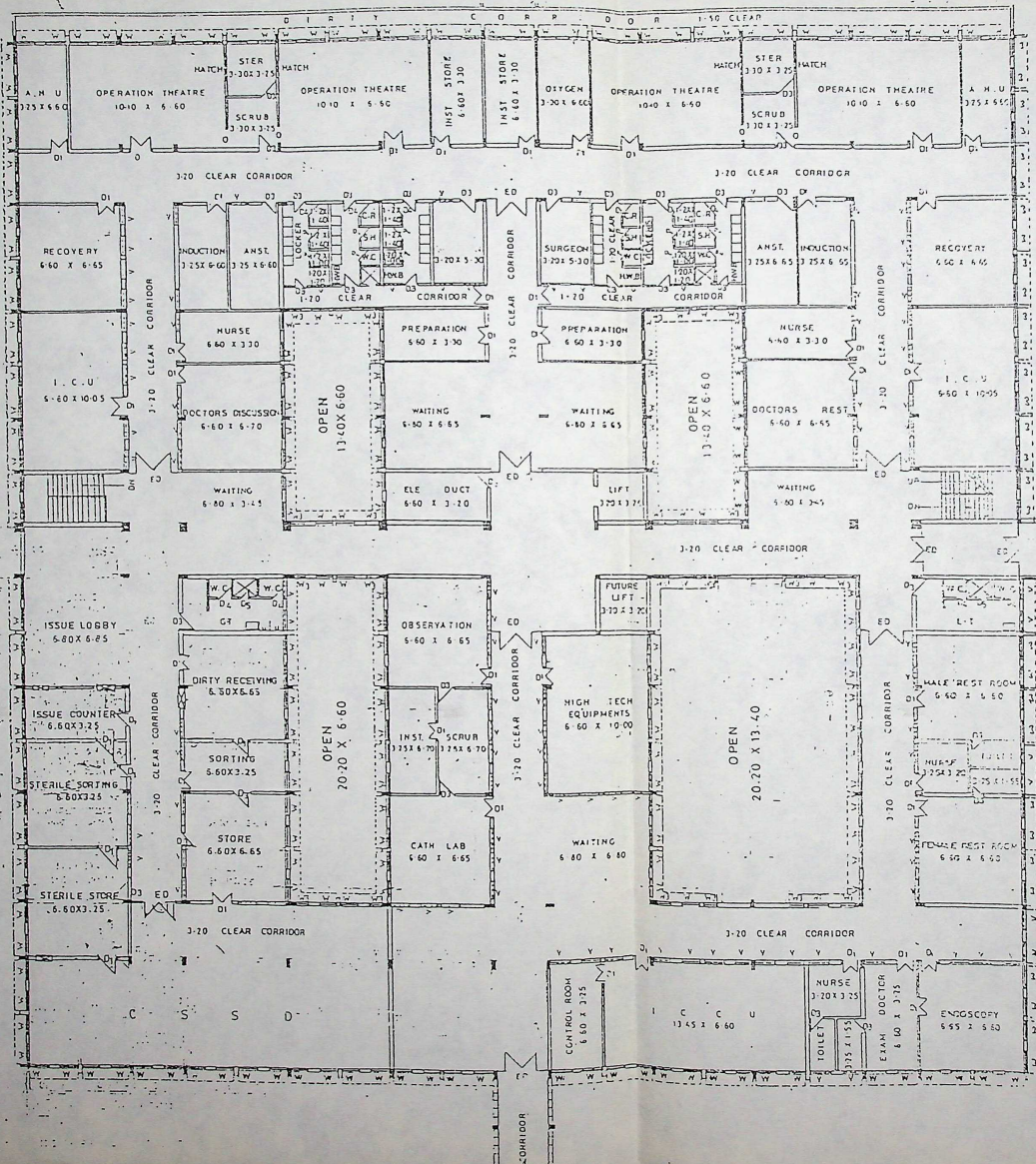
RGH-01



DIAGNOSTIC BLOCK GROUND FLOOR PLAN

AREA - 3787.24 SQM.

RAMEGOWDA ASSOCIATES
ARCHITECTS, PLANNERS & ENGINEERS
No. 361/GF. 7th Cross 1st Block
Jaynagar, Bangalore-560 011.



MTS 5 0 5 10 MTS
FT 20 10 0 10 20 30 FT

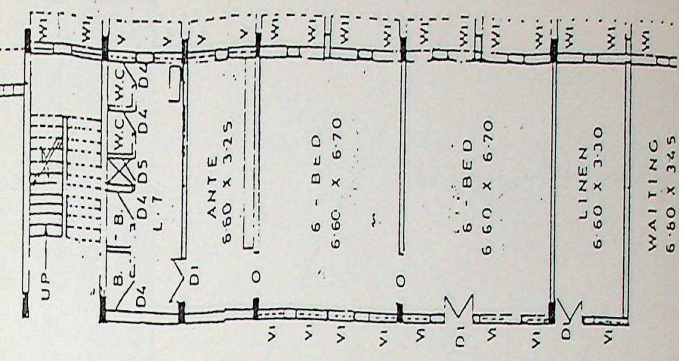
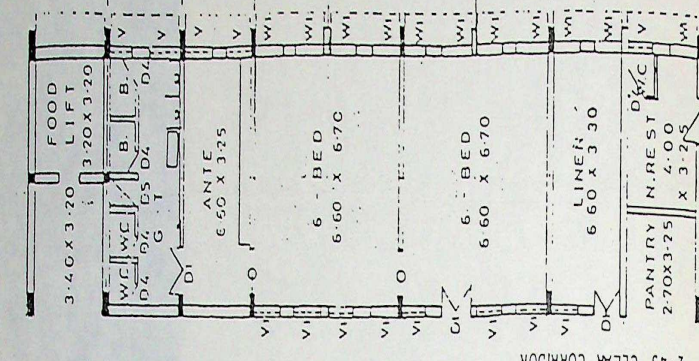
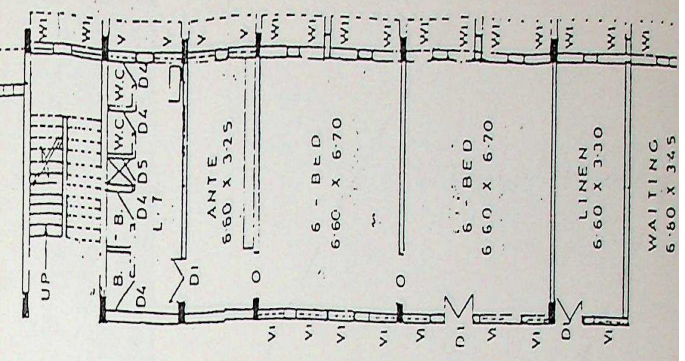
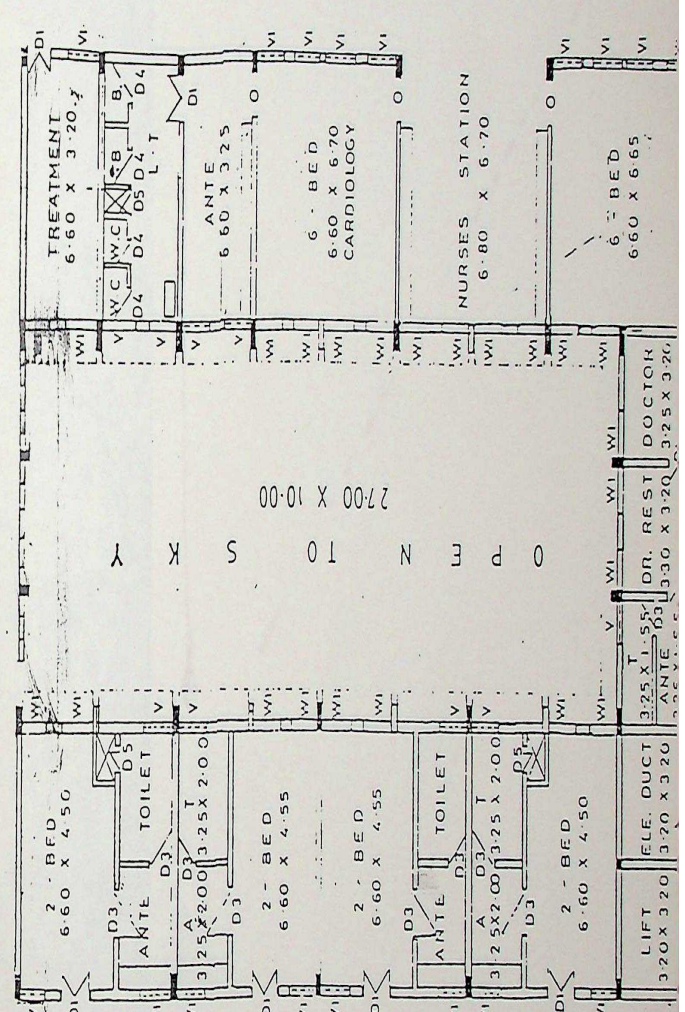
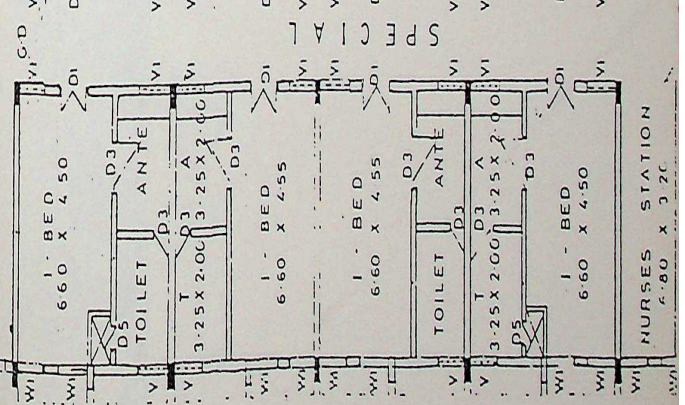
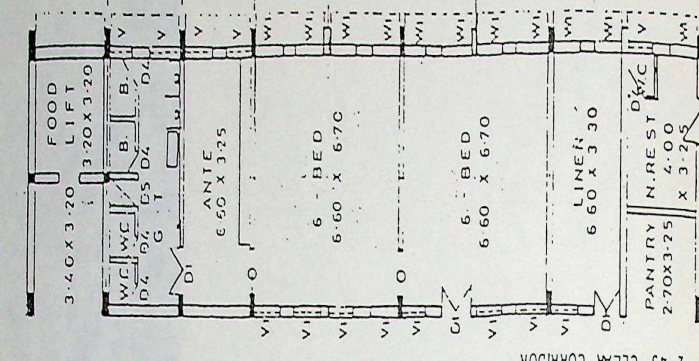
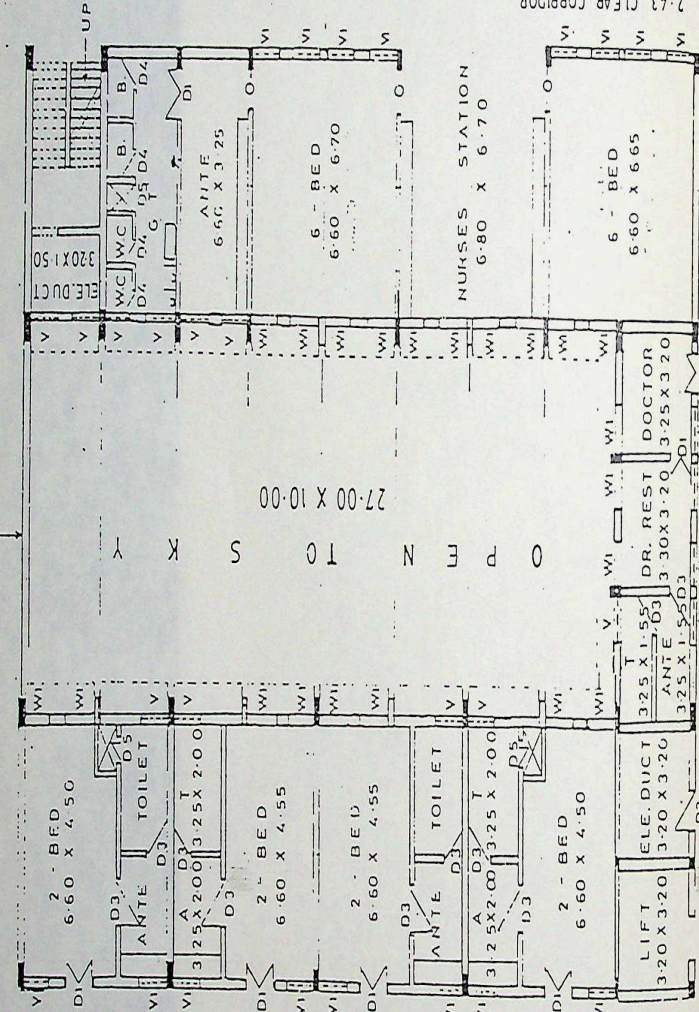
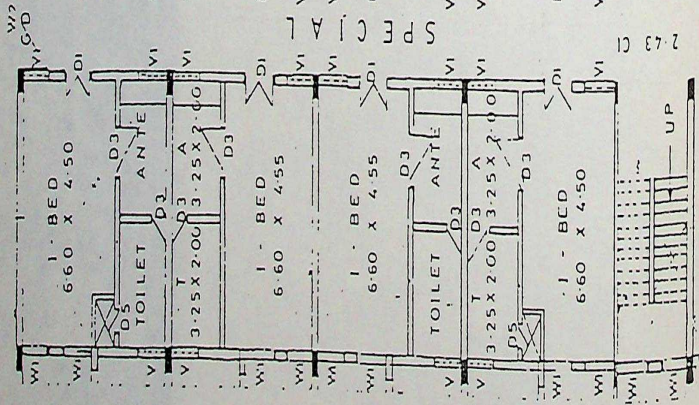


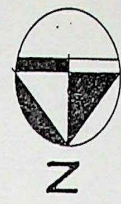
DIAGNOSTIC BLOCK

FIRST FLOOR PLAN

AREA - 3787.24 SQM

RAMEGOWDA ASSOCIATES
ARCHITECTS, PLANNERS & ENGINEERS
No. 361/GF. 7th Cross 1st Block
Jayanagar, Bangalore-560 011.





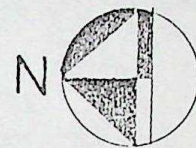
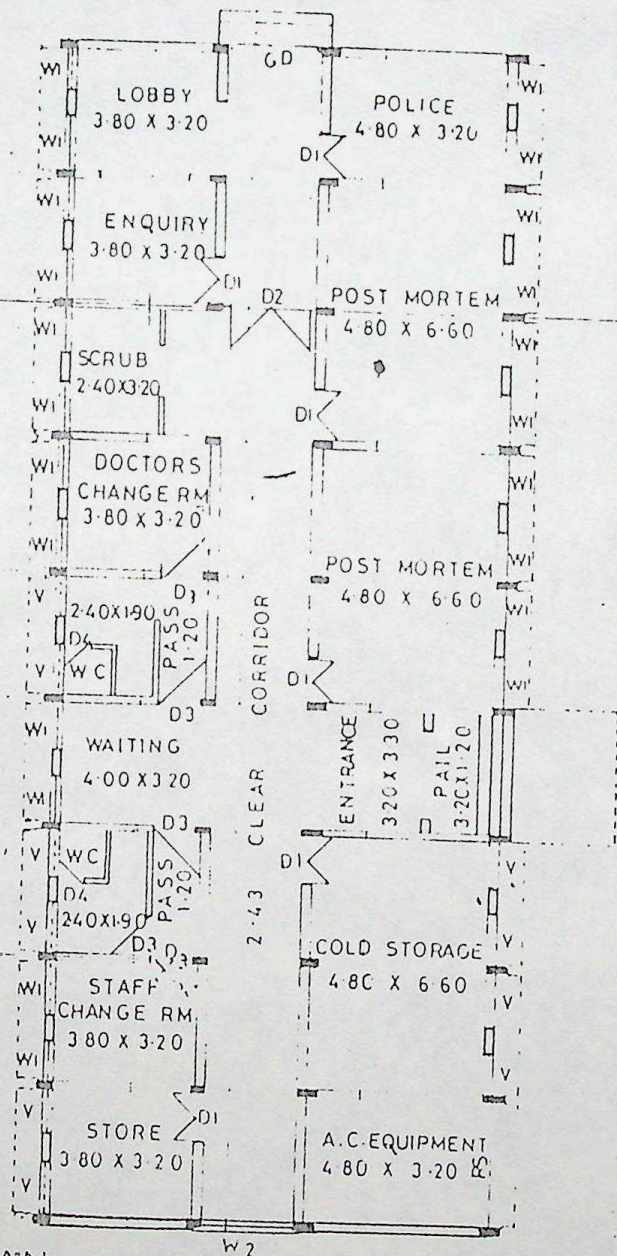
TYPICAL FLOOR PLAN,

AREAS:

FIRST FLOOR - 3847.00 SQM

SECOND " - 38 47.00 SQM

SCALE - 1:200



GROUND FLOOR PLAN

MORTUARY

SCALE - 1:200

AREA - 364.36 SQM

RAMEGOWDA ASSOCIATES
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 Jayanagar, Bangalore 560 011.