PROGRAMMING FOR THE NEW DEVELOPMENTS IN HOSPITAL DESIGN: A PROPOSAL FOR URFA CHILDREN'S HOSPITAL

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ABSTRACT

ARCHITECTURAL APPROACH TO THE DESIGNING OF CHILDREN'S HOSPITAL

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In this study, the designing of Children's hospital is the subject.

The primary interest of this study is to develop an architecture program for children's hospitals in the 2000's.

Within the framework of the Turkish Health Care System, all the development of medicine science, the data compiled in this study, the program which is used today, and examples will act as a base for an architectural design.

The design of Urfa Children's Hospital has been chosen as an example for applied the new proposal. The reason of the selection of the Urfa is the high density of children's population and the lack of children's hospital. In addition Urfa can be accepted as a center region after the project of south-east Anatolia (GAP). So Urfa Children's Hospital will be a regional hospital.

Key Words : Hospital, Children's hospital, Architectural approach, Future

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ÖZ

HASTANE TASARIMINDAKİ YENİ GELİŞMELER IŞIGINDA PROGRAMLAMA ÇALIŞMASI : URFA ÇOCUK HASTANESİ ÖNERİSİ

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Bu çalışmanın konusu çocuk hastanelerinintasarımıdır.

Bu çalışmanın ana amacı ikibinli yıllarda çocuk hastanelerinin mimari programının geliştirilmesidir..

Tıptaki yeni gelişmeler, Türk saglık sistemi, çalışma ile ilgili toplanan tüm bilgiler, halen kullanılan program ve örnekler mimari tasarımın iskeletini oluştururlar.

Tezde Urfa Çocuk Hastanesi tasarımı, önerilen bu yeni yaklaşımın uygulandıgı bir örnek olarak eklenmiştir.Urfa'nın seçilomesinin nedeni çocuk nüfusunun yüksek, çoçuk hastanesinin eksik oluşudur. Ayrıca Urfa, GAP projesinden sonra bölge merkez olarak kabul edilmektedir. Dolayısıyla Urfa Çocuk Hastanesi bölgesel bir hastane olacaktır.

Anahtar Sözcükler : Hastane, Çocuk Hastanesi, Mimari yaklaşım, Gelecek

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CHAPTER I

INTRODUCTION

The concept of death has been a frightening matter for human beings since the very beginning. There have been countless efforts to prolong the duration of life. Even in the most primitive tribes, witches tried to cure people by first driving back death. Many centuries have passed since then; we are talking about the science of Medicine. Today, Medical Science is carried out in huge health centers rather than in cottages. These centers and hospitals are a sort of factories where hundreds of doctors and assistant staff work, patients are treated and sophisticated instruments are placed. These health centers built to meet the various needs can not, of course, be considered without the idea of architecture. Architecture, the duty of which is to create decent sites in which people would live and work, is especially interested in the hospital as well. It is absolutely essential that people should be specialized in each subject nowadays. With the help of the network of instant communication, the accumulation of knowledge increases rapidly, when compared to the past. Therefore, under the general heading are constituted the sub-headings and people get expertised in them. This situation is also valid for architecture. It should be also divided into various fields of specialization. The hospital is a similar matter requiring an expertise with sophisticated data.

The architects being interested in the hospital design wish to meet the demand with their best. In order to prevent the project from being out of use, it is necessary to predict the new innovations and approaches likely to occur in near future.

The research subject I chose is on the children hospital. I don't believe that a hospital can be designed successfully without some indispensable knowledge on it. The reason why I chose a more specific hospital is the belief that private branch hospitals would be widespread in the future. The hospital type that constitutes the most distinct features is the children hospital among the private branch hospitals. Children are weak in respect to sensitiveness and are influenced deeply. The psychological wound that we gained during our childhood leave traces that affect us throughout our life. Because of this, hospitals are not to be remembered with their bad effects by the children. This is not a problem only architects can solve on their own. The hospital administration and the whole staff should have such a consciousness. Therefore, I am interested in the architectural side of the matter, where I will emphasize the project and that it is necessary to guess the future accurately.

I want to introduce in my thesis study what kind of children hospital there may be in the 2000's; and how we can direct our projects from today.

At the top of the list of branches that the technological advances influence most, are the units of medical diagnosis. Within a very short time, the instruments such as Nuclear Magnetic Resonance (NMR), and Positron Emission Tomography (PET) have developed rapidly. Sophisticated equipments are used in laboratories. This means that diagnostic centers require larger spaces in modern hospitals. More flexible projects should be considered to keep pace with changes.

In the future, the bed floor area will be less, especially in the children hospital. Ambulatory health service will be wide spread. The diagnosed patient will be treated at

home. The treatment of the children at home with their parents has countless benefits because of the psychological harm to the children especially those who are supposed to stay in the hospital for a long time.

In addition to the enlarged diagnostic centers and shrinking in-patient departments, there will be need for larger space in the rooms of this shrinking departments. Because the use of mobile equipment will increase.(such as mobile x-rays), ward floors will be used mostly for surgical branches, blood diseases, and patients with cancer.

Teleconference systems among hospitals will be wide spread.

There are some of the observations regarding the future of children's hospitals. In this study the criteria affecting the design of future children's hospitals have been put into use in proposed design for the Urfa Children's Hospital.

CHAPTER:II

THE TURKISH HEALTH CARE SYSTEM

2.1. General Background

Medical Facilities which are the main elements of public health facilities are divided into two parts: hospitals and health centers. The term "Hospital" means a small building serving a remote rural area or a complex with over 1000 beds, including large teaching and research units. Hospitals consist of in-patient and out -patient departments, but in some of them there are no out-patient departments.

When we examine the Turkish Medical History, we find a number of hospitals which have been called "Şifahiye", "Bimarhane", "Darülşifa" or "Maristan", all of which were supported by foundations (HEALTH INSTITUTIONS YEARBOOK, 1988:19). The first important hospital was built by Artukoğulları in Mardin in 1108. From the 12th century to the 19th century many hospitals were established; to name some: İstanbul Fatih Sultan Mehmet Hospital in 1470, Edirne II. Sultan Beyazıt Hospital in 1485, İstanbul Kanuni Sultan Süleyman Hospital in 1556, İstanbul Vakıf Guraba and Haydarpaşa Military Hospital in 1898. First Children Hospital in 1899, Cerrahpaşa Hospital in 1910 (HEALTH INSTITUTIONS' YEARBOOK, 1988:20). Since the beginning of the 20th century, particularly after the establishment of the Republic, health facilities have been expected as a government service. As a result hospitals and health centers have been modernized.

Health care facilities have been accepted as a government service during the Turkish Independence War. Ministry of Health was established on 2nd of May, 1920,

Since the declarations of the Republic, the Ministry of Health has continued its development.

In today's world, hospitals particularly are subject to change due to developments in science and technology because they serve a variety of disciplines which are characterized by fluidity rather than constancy. The Ministry of Health (MH) has defined its predominant role by law, leaving aside the role of the Ministry of National Defense, which is governed separately. Its role is defined by the authority vested in it to provide medical care and preventive health services, training health personnel, providing pre-service, and in service training, establishing and operating health institutions by other public and private organizations and exercising control over these institutions; also the Ministry has the function of regulating the price of medical drugs and controlling of the related activities.

The Medical Services Framework Law, law no: 3359 was enacted on May 7th, 1987 in order to govern the basic principles related to medical services (Feasibility STUDY, 1988). According to the this new law:

1. MH has to open new health institutions, increase the bed capacity, organize and control their financial, administration and technical affairs.

2. MH has to give permission to all the health institutions (except the health institution of the Ministry of National Defense). It also regulates the patients' fees.

3. To provide for the supply of blood, MH has established a Blood Bank. The control of that center is carried out by MH which also has the right of checking and closing that center.

2.2. The Health Policy of Turkey

When we look through the health policy of Turkey, we can not come across any study carried out for the purpose of constituting a policy up to 1989. Health policies have been scheduled within the five -year development plans carried out every five years. The basic principles regarding the health services in Turkey are carried out based on the two laws, which were enacted in 1969 and 1987. As a matter of fact, the health services in Turkey are put into use by partially-independent institutions from each other. It is very difficult to formulate policies and apply them throughout the health institutions, because there is no central coordination for this. Despite that, the World Bank has arranged a health sector research covering the subjects on demography, health, and nutrition in Turkey in 1985 in order to produce political alternatives to the government. In 1989, the government had a study leading to the political study called "Health to Everybody in 2000". The National Health Assembly gathered in 1992. The purpose of the assembly is to determine the health policy and discuss the outline of the health reform.

Now, let's have a look at the health targets of the five year development plan starting from 1963.

2.2.1. The First Five Year Development Plan (1963-1967)

The purpose of the 1st 5 years plan was to establish the program of new integrated health services throughout the country. The fundamental purpose of this program was to distribute the health services based on the allocation of the "fee or fee-free" principle in the way the all people can share equally and easily. It is only this time that municipalities under the supervision of the Ministry of the Health will be responsible for the environmental health. The law of 1961 brought a type of service providing unit hierarchies-from bottom to top, classified to the specifications of the regions. This is a process composed of four steps; in the first step, the Health House provides services to

2500 people (these are mobile rather than stationary) ; in the second step, the Health Centers for 10000 / 20000 people ; in the third stage, there are local hospitals ; in the fourth stage the subjects is the general hospitals. However, despite the fact that so much time has passed, this system has not been established thoroughly. [6-th FIVE YEAR DEVELOPMENT PLAN PRE-REPORT, 1991]

2.2.2. The Second Five-Year Development Plan (1968-1972)

It was accepted that health, as the main principle of the second five-year plan, is the only means for the improvement of the economy, and that it is also absolutely necessary to improve both the spiritual and physical health in many respects. On the other hand, the other purpose is to render the equal distribution of the health services. It was thought that it would be essential to keep the private sector under control as well and to manage the health services with an authorized post in order to maintain that equilibrium. Not only the enforcement of preventive services but also the subject regarding its unification with the treatment services were emphasized. [6-th FIVE YEAR DEVELOPMENT PLAN PRE-REPORT, 1991]

2.2.3. The Third Five-Year Development Plan (1973-1977)

The fore-mentioned plan determined the health problems existing at the end of the second five-year development plan term. Health services, especially the medical staff, were not distributed equally. The sources concentrated in the cities, rather than the rural areas. Environmental health care, family planing, children health and health training services were not accomplished adequately. Half of the beds in the hospitals (46%) accumulated in Ankara, Istanbul and İzmir. It meant that the beds of the hospital were not used efficiently together with the absence of both the personnel and other source and coordination. The rate of the bed usage was around 59%.

But, on the other side, the targets regarding the construction and improvement plans of hospitals were reached. The third five-year development stated that the reason why the rate of the beds increased so excessively was largely due to the fact that the preventative services were not developed sufficiently. The reason for such an increase was the lack of coordination among the institutions which were giving the same type of services. The increase in the number of the beds did not provide local facilities for the people, but the applications of the mass to these central institutions.

The third five-year plan gives the number of beds needed according to the patient population as follows:

- the number of the beds in the general hospitals -15 beds per 10000 patients
2 beds per 10000 patients in the maternity hospital
4 beds per 10000 patients in the chest disease hospital
3 beds per 10000 patients in the hospitals of mental disease
1.5 beds per 10000 patients in the oncology hospitals
5 beds per 10000 patients for the hospitals with the other branches

There is a general purpose concerning the augmentation of the bed facilities in the insufficiently equipped hospitals.

In the third five-year development plan, we come across a special branch hospital in the regional scale for the first time. It is also possible to say that the construction of the special branch was achieved between 1973 and 1977. [6-th FIVE YEAR DEVELOPMENT PLAN PRE-REPORT, 1991]

2.2.4. The Fourth Five-Year Development Plan (1978-1984)

The aim of the third five-year development plan was to reach the capacity of 26 beds per 10000 patients. That was achieved ; however, due to the difference between the increase of the bed and of population, the aim was not achieved. The political purpose of the third five-year development plan was to enable the socialization program to expand gradually throughout the country. Therefore, single-purposed institutions would be turned into multi-purposed institutions ; thus, the whole sources will be used effectively.

That target will also increase the standards of the existing social services throughout the country. [6-th FIVE YEAR DEVELOPMENT PLAN PRE-REPORT, 1991]

2.2.5. The Fifth Five-Year Development Plan (1985-1989)

In the fifth plan, the political targets were set without any reference to the previous plan. The equal effective and efficient service, rendering usage of widespread preventive services, the effective usage of the available hospital bed capacities, decreasing the children death, and the establishment of the patient transfer are the main subjects of the target. [6-th FIVE YEAR DEVELOPMENT PLAN PRE-REPORT, 1991]

2.2.6. The Sixth Five Year Development (1990-1994)

In the sixth plan, the previous target has not changed. The rendering usage to widespread preventive service, and the effective usage of the available hospital bed capacities are the summary of the last five -year development plan.

In Turkey meeting to the target defined in the five year development plan is very hard, or impossible, because the health facilities aren't administred from one center. The Ministry of Health doesn't have control over all the health facilities. There are many

ownerships which are opened like the new health institutions, without a centrally coordinated administration it is impossible to apply the health plans, and development plan.

Today, several different ownerships establish a health institution. [6-th FIVE YEAR DEVELOPMENT PLAN 1990-94, 1989]

2.3. Classification of Health Institutions According to the Ownerships

All the Health Institutions are under the responsibility of the Health Care Head Office (Tedavi Hizmetleri Genel Müdürlüğü). However we can analyze or classify health institutions according to their ownership (HEALTH INSTITUTIONS' YEARBOOK, 1988). The bed capacity of Health Institutions is in Table 1.1.

1. Institutions directed administered by the Ministry of Health.

examples: Ankara Numune Hospital

- Haseki Hospital, İstanbul
- Adana MH Hospital

2. Institutions administered by Social Insurance Institutions.

examples: SII (SSK) Ankara Hospital

3. Institutions financed by the Ministry of National Defense.

examples: GATA(Gülhane Askeri Tıp Akademisi)Hospital. İst.

4. Institutions financed by the other government

institutions.

examples: Bakırköy Hospital (Sümerbank Genel

Müdürlüğü) İst.

5. Institutions financed by the other Ministry.

examples: Hospital of Police (Ministry of interior Affair)Ank.

6. Institutions administered by the Faculty of Medicine,

examples: Hospital of Cerrahpaşa Medicine Faculty, İst.

7. Institutions financed by Municipality.

examples: Hospital of Municipality(Belediye Hastanesi Ank.)

8. Institutions financed by the Society Club.

examples: Esnaf Hospital (French), İst.

9. Institutions financed by the Foreign Club.

examples: Pastor Hospital (French), İst.

10. Institutions financed by the Minorities

examples: Surp Agop Hospital (Pious foundation of

Armenians, İst.

11. Institutions financed by the private institutions or

companies,

examples: Bayındır Medical Center, Ankara.

Table 2.1. Bed Capacity and Percentage of Institutions in The Turkish Health Care System

Institutions	Number of Hospitals	Number of Beds	Percentage
Ministry of Health	527	66,426	51,5
Ministry of Defense	42	15,900	12,3
Social Insurance	87	19,305	15,0
Governmental Inst.	16	2,119	1,6
Other Ministry	3	780	0,6
Medicine Faculties	24	17,749	17,7
Municipalities	5	1,160	0,9
Society Clubs	9	653	0,5
Foreign Clubs	8	670	0,5
Minorities	5	934	0,7
Private	93	3,212	2,4
Total	816	128,910	100,0

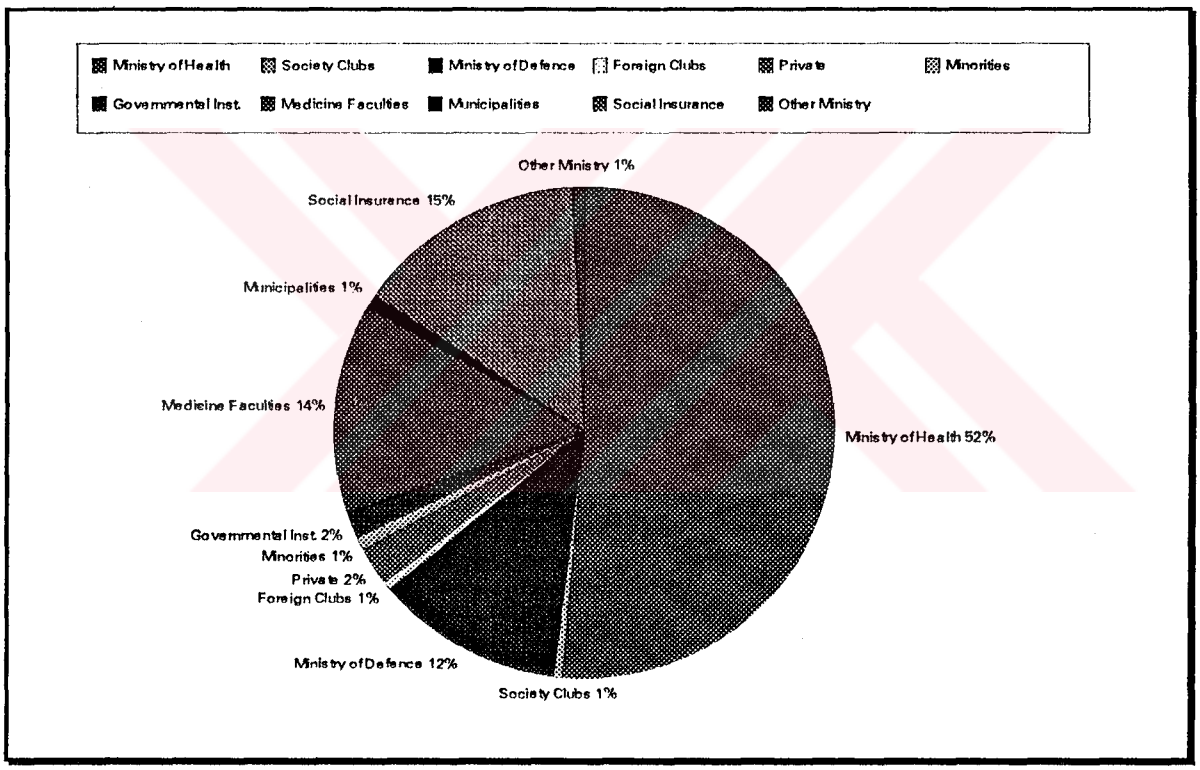


Figure 2.1.Chart of percentage of Institutions in the Turkish Health Care System According to the number of bed.

2.4. Structure and Distributions of Public Health Institutions

Health institutions are analyzed in respect to their structure and distributions in the Health institutions Yearbook (1988:24).

2.4.1. Health Center

They give a emergency and preventive health care. Health centers are in-patient and out-patient medical institutions which have less facilities than a hospital (up to 50 beds). They are divided into two sections

2.4.1.1. Health House (Sağlık evi):

These constitute the first level of the field organization and serve under the direction of a village midwife. Target population is approximately 2500-3000.

2.4.1.2. Medium-Health Center (Sağlık Ocağı)

These are directed by at least one specialist or general practitioner and provide especially emergency health care. Target population is about approximately 5000-10,000.

2.4.2. Hospitals

These are the institutions which provide in-patient and out-patient with medical care and have the necessary medical facilities for rendering those services. Hospital can be observed or analyzed under the different titles such as:

2.4.2.1. General Hospitals:

General Hospitals are the hospitals where patient of all ages and sexes, and having all sorts of diseases are admitted to its out-patient departments. These are:

1. Regional Hospitals: Regional Hospitals have special departments for the patient from regions of about one million to several millions. They provide general medical care for the community within which they are located, and they also receive in their specialized departments, patients referred from intermediate and local hospital. (WHO, No. 122, 1957) e.g.: Antalya MH Hospital

2. Intermediate or District Hospitals: Intermediate or district hospitals provide general or moderately specialized care for the majority of the patient in geographical areas with about 50 000-300 000 inhabitants (WHO, No. 122, 1957) e.g.: Isparta MH Hospital

3. Local or Rural Hospitals: Local Hospitals do not have a full range of departments and are normally restricted to the practice of general medicine and obstetrics (WNO, No. 122,1957). e.g.: Düziçi MHSA Hospital

2.4.2.2. Special Hospitals:

Specialist hospitals - dealing with one category of patient only - form a different class. Much more numerous, though, are small maternity hospitals; there are for children only, and for other special groups. Special hospitals are those which specialize according to sex, age or kinds of disease. Examples are childrens' hospitals, psychiatric hospitals, canser hospitals, ...

2.4.2.3. Teaching Hospitals:

In this type of hospitals, doctors and specialists are educated. Research possibilities are found in teaching hospitals. Teaching Hospitals provide the training of the undergraduate medical facilities for, nurses, technicians, and others. (AYDIN, 1986)

2.4.2.4. Rehabilitation Hospitals:

In the rehabilitation center, the diseases of organs, nerves, muscular and bone systems are treated during a certain period while resting in hospital.

2.4.2.5. Chronic and Long-Stay Hospitals:

There are chronic and long-stay establishments where the patient stays because for some disease like tubercles, treatment takes a long-time to get better.

The responsibility for providing medical care and preventive health services in the country as mentioned above lies with the Ministry of Health.

However, there are other important entities which also take part in providing medical services such as other ministries, municipalities, Social insurance institutions (SSK), and private institutions.

CHAPTER: III

AN OVERVIEW OF CHILDREN'S HOSPITALS IN TURKEY AND IN THE WORLD

3.1. Introduction

All hospitals provide 24 hour medical and nursing care of sick or disabled people. Hospital design has a special place in architecture. Because the modern general hospital is complicated technically, socially and architecturally and has pars that are comparable with a factory, a school, a research laboratory, and department store, it is the fact that makes a study of it's working so difficult (LUCK, and LUCKMAN etc.,1971). Many wasteful failures could have been successful if they had been designed with proper study and basic understanding of the activities that, properly facilitated, help the patient regain his health (HUDENBURG, 1977)

Hospital design is a very complicated problem for architects. What lies behind the belief that hospitals are such difficult design problem? Hospital structure is built generally for a long term. However the development of technology, and the increase in the number of patients create unpredictable problems. Understanding of the hospital traffic and its system is very complex for a hospital builder as well. (ALLEN, 1979). There is tremendous flow in hospital. Architects have to solve this traffic problem in a proper way and they have to understand the function of the all departments, because each department has a relation with other, and works as a different factory. In order to understand the text, below are given an explanation of the terms used in the hospitals, and departments, and the relationships between these departments.

In-Patient:

It is the patient who stays in the hospital for diagnosis or treatment.

Out-Patient Department:

The outpatient can be defined as a patient attending hospital on one or more occasions but who does not stay over night. Main facilities of the complex can be defined as follows:

- Consultation
- Investigation
- Treatment facilities

Patient are examined by a doctors, in the suites. Suits normally consist of one consulting room and one examination room.

Out-patient department must have immediate access to the Diagnostic Department (X-ray department, the laboratories, the pharmacy, and medical records)

Diagnostic Departments:

A. Diagnostic Radiology: In this department x-ray is used in diagnosis research, Special x-ray equipment will be installed in major operating theaters taking neurosurgical, urological, orthopedic or acuts and accident work, A number of mobile machines will also be stored adjacent to wards, for the radiotherapy of inpatient unable to visit the central department.

The best place for the x-ray Department is between Nursing and the Out-patient complex. Convenient access should be directly to Out-patient clinics. Some special services should be oriented towards the wards.

Diagnostic services render a service to a in-patient and out-patient. The use of x-rays for diagnostic purposes has been growing steadily, although some of the new techniques may drastically alter the situation within the lifetime of the hospital. Provision of growth for the diagnostic x-ray department, or additions of related functions, should be possible, either by extension, or by conversion of adjoining "soft area". We assume that the tomography, PET and NMR, momography are new diagnostic equipment which are used in the diagnostic department. Diagnostic department should also be as direct as possible.

B. Laboratories: It carries out tests on specimens received from the inpatient, out-patient and those outside the hospital. The results of the tests form an aid to diagnosis or treatment for those who have requested them. Laboratories render a service to both out-patient, and in-patient so it should also be as direct as possible. In some source it is called a pathology departments.

Laboratories should be classified such us; bio-chemistry, microbiology bacteriology, and pathology.

C. Pharmacy: Main functions of this departments are buying and manufacturing, testing, storing and issuing of all drugs. The pharmacy will also provide an information service on pharmaceutical matters. Prescriptions will adjoin the out- patient complex. There must be rapid service communications with in-patient wards. The biggest single user of pharmacy goods will be the major operating theaters. That's why the route between the theater and pharmacy will be as short as possible.

Accident and Emergency Service:

The two main kinds of patient are those seriously III or injured brought in by ambulance, and the "causal" or walking sick. The different needs of these types requires two entrances. For the former, a short direct route to a fully equipped resuscitation room

is essential; the patient may have the need for x-ray or surgery. There are vital relationships between the accident and emergency out-patient and operating theater.

Operating Department and Anesthetics :

This department is the most technically complex of hospital. An operating department is a unit consisting of one or more operating theater (suites). The operating theater is the room in which surgical operation and certain diagnostic procedures are carried out. This department must be cleaner than the other departments. Septic and aseptic sections must be organized. The theaters should be designed as independent from general traffic and air movement in the rest of the hospital. Easy access from the reception area should be provided. Theaters and accident and emergency should be, if possible on the same level (LEEDS, 1965)

Anesthetics:

This unit will be adjoin the theater complex. Main theater group will inevitably be important group of clinical activity. Close relationship will be provided with intensive care unit.

In-Patient Unit:

This area is required to provide a suitable environment for the care of the in patient. The In patient department can be also called the "nursing section" or "ward". The term "nursing section" describes the groups of patient under care of charge nurse. The term "ward" is avoided as being ambiguous in the contest of modern hospitals. There are no radical differences between the needs of medical and surgical nursing sections, nor with a few exceptions between those of the different specialties of surgery. In-patient units can be divided into 3 main part such as: nurse station, patient beds and secondary place (such as; dirty or clean utility room).

Nurse station:

Nursing staff should be aware of patient needs, and be able to give the necessary care, with the minimum of effort the patient should be as comfortable as possible.

In-patient department can be divided into the following groups:

Intensive care continuous medical care nursing supervision to maintain life, often involving the use of complex and balky equipment.

Intermediate are continuous nursing care in bed.

In the Self care, patient able to get up, but need nursing supervision and assistant. (AYDIN, 1986) In-patient unit should be also classified beds. All accident and emergency wards must be together, related to intensive care units and department of anesthetics, since the anesthetics will be concerned with a large proportion of the patient who require intensive care operating.

The surgical division requires direct access to the major theaters, these should be on the same level as the accident beds. X-ray department and the other investigational units must have direct access from acute the in-patient bed area. Communications must be sufficient with the pharmacy, central sterile supply department and laboratory. Food, supplies, laundry and medical records must be brought to the bed area, and waste removed (AYDIN, 1986).

Pediatrics:

Pediatrics unit is concerned not only with the diseases of childhood, but also with the physiological effects which the hospital environment may introduce. It is

prohibited by the clinical necessities. There must be a special design of accommodation, equipment and furniture.

Nuclear Medicine:

This department is concerned with application of radioactive isotopes, to the investigation and treatment of the patient and in basic research. (LEEDS, 1965)

Medical Service (Support Service)

A. Administration (Management):

Offices of senior administrative and nursing staff should be grouped together to be served by typing and clerical facilities.

B. General Service:

General service comprises the laundry, kitchen, cafeteria, workshops, and conference halls. Each part has to be designed carefully.

C. Technical Service:

Heating center, ventilation, vacuum and electrical, center, general, water and rubbish storage, and central oxygen supply constitutes the technical service.

3.2. A Critical Evaluation Of The Children's Hospitals in Turkey

The aim of the Children's Hospital is not only to give treatment to the child but also to control the physiological and psychological development of children. Every year approximately 1.5 million baby are born in Turkey and there are 20 million children smaller than 14 years old. (DEMİRAĞ-1981) in Table 3.1. It was determined that 46 % of the children of that age category belonged to families with lower income group. The death

rate of babies was 115 per thousand in Turkey; İn contrast to, 16.5 per thousand in USA. (According to the 1980 census of Turkey). 41 % of the whole population was below 15.

Paradoxically, children's hospitals are extremely scarce and insufficient. According to the Annual of 1988 (Tedavi Kurumları İstatistiği), there are only 5 hospitals available for children. Four of them are connected to the Ministry of Health and Social Aids, and have 895 beds; one of them is connected to the other institutions, it has 350 beds. Consequently, there is a total of 1245 beds, which constitutes 0.4 % of the total number of the beds.

However, it would be wise to have a look at the number of the beds in the departments of child care and diseases to get a reliable result (see table 3.2).

When we add the children beds which are in the children's department of general hospitals, the number of the beds for child patient rises to 10,337; its proportion, in respect to the total number of the beds, is 4.0 %. Would that be sufficient? Under there circumstances, there appears a hopeless situation: 1,797 children for each bed. It should be kept in mind that these figures were determined according to the data received in 1988. Our population has increased rapidly; however, the number of the beds is far from meeting the demand.

Table 3.1. Deaths by Age Group And Sex

In province and district center

A. Male B. Female

Age group	Sex	1985	1986
-1	A	14492	13006
	B	11558	10220
1-4	A	2881	2061
	B	2442	1711
5-15	A	1862	1600
	B	1252	1851
16-24	A	2213	2115
	B	1228	1121
25-34	A	2626	2605
	B	1579	1521
35-44	A	4056	3912
	B	2137	2061
45-54	A	8495	8196
	B	3783	3805
55-64	A	13427	13534
	B	6738	6843
65+	A	29853	27532
	B	30302	28971
Unknown	A	234	1118
	B	166	156
Total		141324	133939

Table 3.2. Dissociation of Hospital Beds According to The Special Service-1988

Hospital	Total			Health Min.		Other	
	Num Hos.	Num. Bed.	% Bed	Num Hos.	Num. Bed.	Num Hos.	Num. Bed
General Hos.	618	101,387	78,6	343	42,602	292	62,482
Health Center	111	1,700	1,3	111	1,700	--	--
Maternity Hos.	31	6,026	4,6	26	4,790	5	1,236
Chest Dis. Hos.	30	7,968	6,1	23	6,380	7	1,588
Surgical Center	3	1,067	1,0	3	1,067	--	--
Psychiatry Hos.	7	6,416	1,1	5	6,040	2	375
Bond Dis. Hos.	3	1,450	1,0	3	1,450	--	--
Children's Hos.	5	1,245	--	4	895	1	350
Rehabilitation	5	730	--	4	700	1	--
Oncology Hos.	1	400	--	1	400	--	30
Venereal Dis. Hos.	2	100	--	1	70	1	--
Lepra Hos.	2	315	--	2	315	--	--
Tooth Hos.	1	20	--	1	20	--	--
Welfare Hos.	--	86	--	--	--	--	86
Total	819	128,910	100,0	527	66,428	292	62,482

Accepting the idea of putting the children's hospitals in a special status dates back to 1897. From the first children's department in the general hospitals have been established. However, the number of beds is insufficient, in addition the condition of this department is far from the image hospital.

In order to explain the condition of children's hospitals in Turkey, we should examine critically some of the examples:

3.2.1. İstanbul Çocuk Hastanesi-(İstanbul Child Hospital)

Following the death of Hatice Sultan, (the daughter of Sultan Abdulhamid) from the diphteria, the first children's hospital was established(Etfal Hastanesi).The architect of the hospital was a German carpenter called Frans.Nazım Paşa helped the carpenter The walls of the hospital were made in double-brick for. The hospital consisted of 9 sections during its early years. When you are on the way to the hospital from Şişli, the building surrounded on, its two sides by two buildings; in the front were the central service department in which library, pharmacy, the hospital director and the rooms for official documents were located. The building to the south of the center housed the bacteriology, polyclinic, laboratories, contagious diseases department, and to the north a polyclinic for only poor children. After its early establishment, the hospital was redesigned taking the new needs into consideration. The place of internal diseases polyclinic, was changed, and a new building for internal diseases pavilion was constructed in 1900. Under the ground floor of this building is situated the pharmacy and laboratory. Free treatment and the medicine are supplied down in there. The same year after the polyclinics, a new section with 10 beds for the women and "the weak" was built. The surgery department was built 3 years later. The same year a building with two flats in which serum and experiment animals would be kept was built. 5 or 6 years later chemical laboratory, a mosque and a clock tower were added. The hospital built at the beginning of the 20th century was as

developed as its contemporaries. Our first children's hospital style is the pavilion style. It is a pretty institution designed to the scales of the children with its own small buildings, beautiful garden. Despite the fact that the distances between the buildings are not long enough, pines were planted among them. The walls are not noticed due to the reason that the slopes of the hill of the hospital area extends to the north and south directions.

Out-patient department is an additional separated section of the hospital. The entering the main gate of polyclinic are led to the waiting room after receiving the number ticket from a place in the corridor (fig 3.1). The interior waiting room is a corridor into which ticket room and consulting rooms open. Consulting rooms are the rooms that open into each other. The first child hospital, Şişli Eftal Hastanesi, was completely pulled down and rebuilt. The clock-tower is the only part of the old design which achieve come to now a days. 113 specialist doctors work in the New Şişli Hospital where is a children diseases clinic. New hospital has a 1000 beds capacity.(see figure 3.2 new Şişli Etfal Hospital)

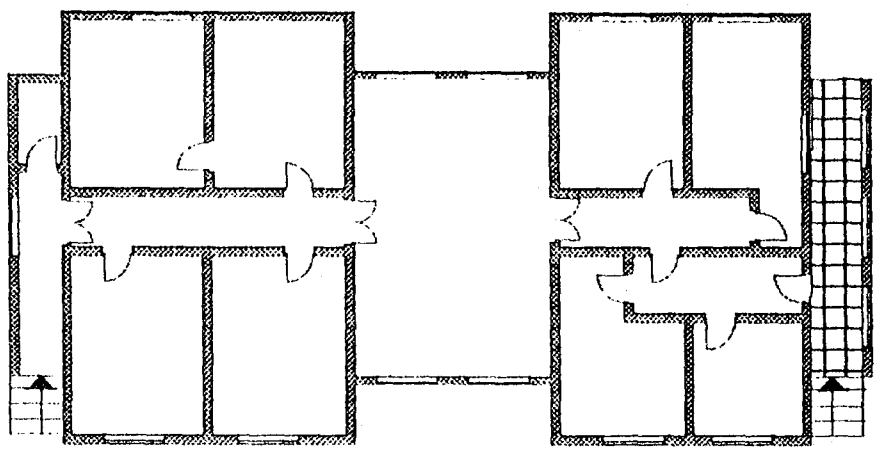


Figure 3.1.Outpatient of İstanbul Child Hospital

figure3.2 New Şişli Etfal Hospital

3.2.2. The First Children's Sanitarium

The first children's sanitarium was opened in Eftal Hastanesi in 1904. The building is made up of 2 separated wards with 12 beds. They have separate toilet and bathrooms, each of which is for both interior and exterior patient. Each ward with 12 beds has a total area of 54m2, a total area of 4.5 m2, and an air volume of 17 m3 per patient. The first Sanitarium was built in 1859 by German Dr. Bernner. The Sanitarium built by Sultan Hamit is not considered to be built so late when compared to the Sanitarium built in 1859. Our first sanitarium was a sympathetic building with its simple plan, rustic character, wooden skeleton (BOLAK, 1950).

Unfortunately, this building has been pulled down.

3.2.3. Cerrahpaşa Hospital, İstanbul

Cerrahpaşa hospital, built by Sultan Abdülhamit in 1910, is the second biggest hospital of İstanbul with its 2282 beds. The children clinics, with 38 beds, is a three storey building with a basement in the garden. The first and the second floors serve as the in-patient rooms, ground floor for patients suffering from contagious diseases; and the basement clinics (for out-patients). (see figure 3.3, 3.4 and fig.3.5, 3.6).

Treatment floors are divided according to age. The children between 0-15 years old are accepted in the hospital. There is no special floor designed for extensive care. The treatment of the patient in need of extensive care is carried out in a different building called gynecology. There hasn't been a consideration for the new-born; however, only a

Figure 3.3 Cerrahpaşa Children Department.

Figure 3.4Entrance of Outpatient Department of Cerrahpaşa Children Department.

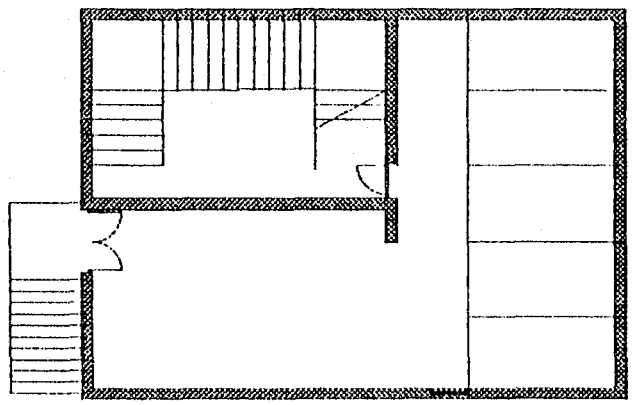


Figure 3.5 Outpatient Department of Cerrahpaşa Children's Department.

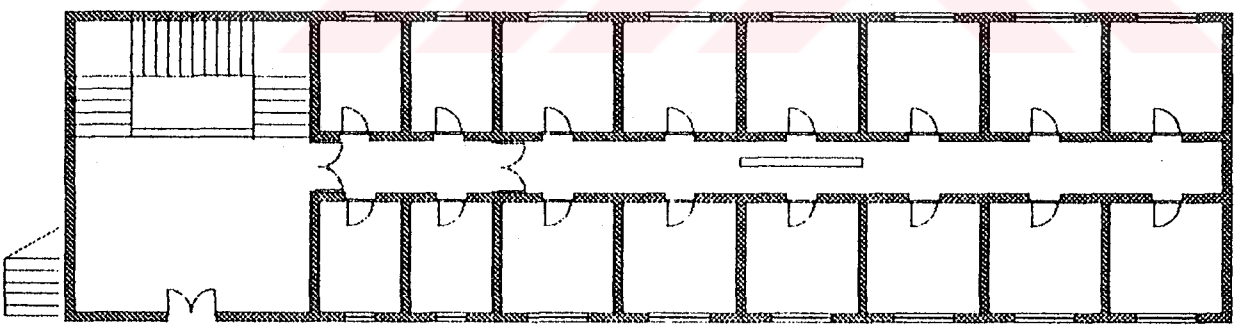


Figure 3.6 Inpatient Department of Cerrahpaşa Hospital.

room with 3 cuvezs were used for that purpose.(see figure 3.7) However, 8 cuvezs were reserved for that. The wards are for 8 people; besides that, there are private rooms(see figure 3.8). Patient's rooms extend along the corridor(see figure 3.9). The laboratory is also carried out in some units such as baby food kitchen.(see figure 3.10, 3.11)

Despite the fact that Cerrahpaşa children clinics look nice, it is still behind the advanced technological innovations in many respects; e,g, insufficiency of doctor, medical equipments, sterilization. The polyclinics (also used as emergency) are worse than the others. You can also reach the polyclinics through the stairs hall used as the doctors' lounge separated with a curtain. (See figure. 3.5)

Doctors' rooms are too small to accomodate both; a bed and a bath. Patients come down the doctors' rooms through stairs. The waiting hall is also very small. Cerrahpaşa children's clinic, which is the second biggest hospital with respect to bed capacity in İstanbul, is extremely insufficient and dirty.

3.2.4. Zeynep Kamil Hospital

Zeynep Kamil Hospital was founded in 1862. It has 650 beds, 150 of 650 beds are for obstetric, 400 beds are for children' diseases and gynecology, and 90 of 400 beds were only for children. There is a seperate entrance to the children's hospital . The ground floor is used as polyclinics by the out-patients. The bed units for child patients is in an old building. The laboratory takes place on the way to the polyclinics and bed units. The laboratories are painted with impressive and relaxing colors e.g.. pink, yellow.(see figure 3.12) The walls are tiled. Children Hospital consists of two floors. There are two services with 20 beds on each floor. On the first floor is the older child internal and infections; on the second floor is the premature services and orthopedics. The balcony placed before the patient' rooms is used by the visitors.(see figure 3.13 The visitors go directly to the balcony before entering the services, and look into the rooms from outside.

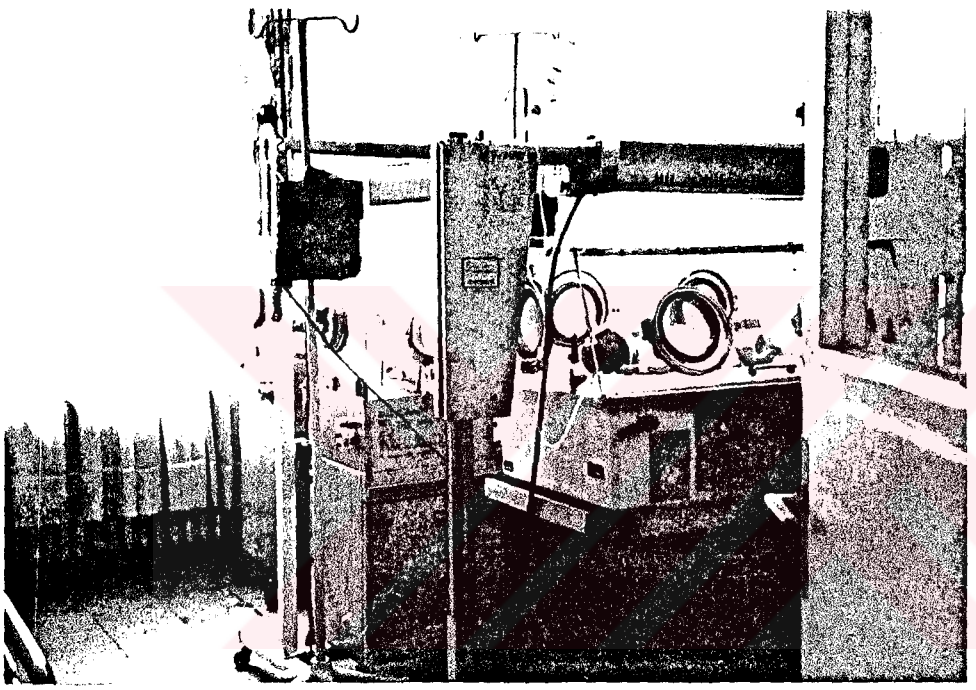


Figure 3.7.Cuvezs in Cerrahpaşa Hospital

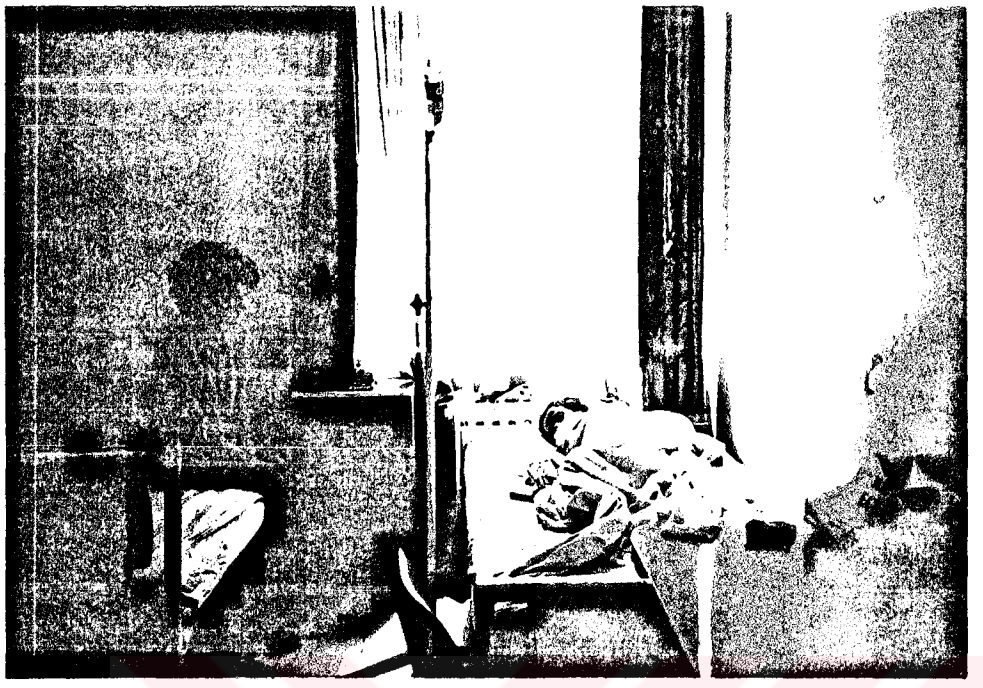


Figure 3.8 Private patient room in Cerrahpaşa Hospital

Figure 3.9. Nurse Station in Cerrahpaşa Hospital

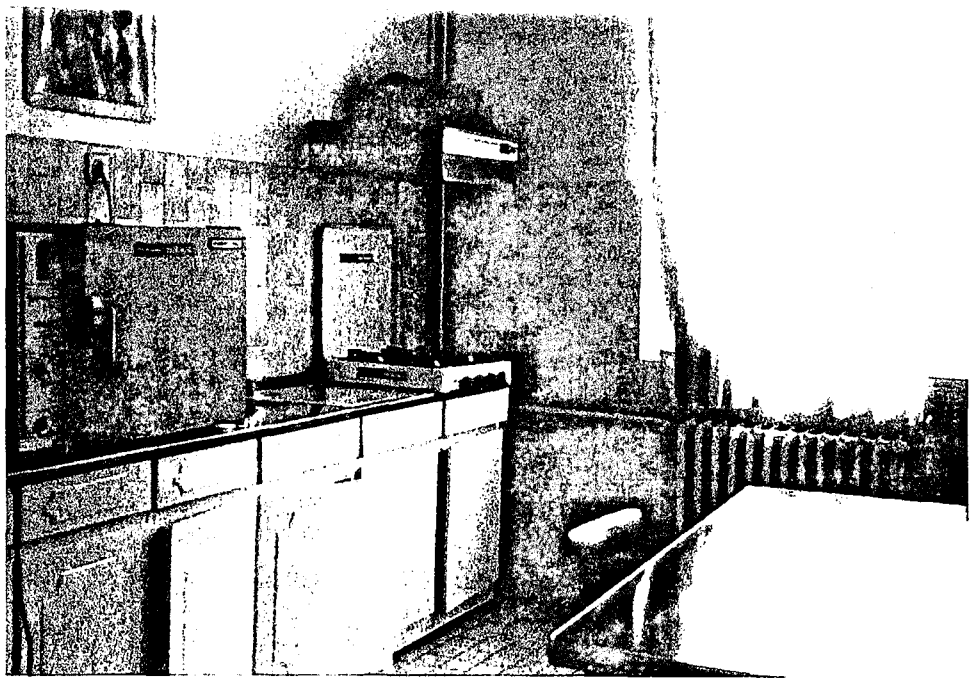


Figure 3.10. The Kitchen in Cerrahpaşa Hospital

Figure 3.11 Laboratory in Cerrahpaşa Hospital

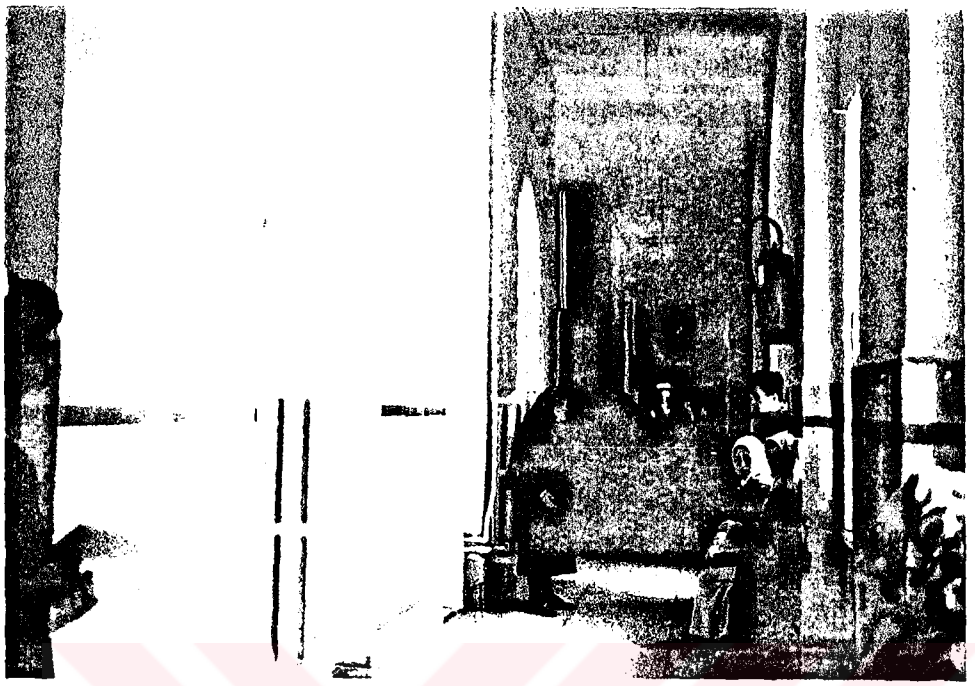


Figure 3.12 Corridor of Laboratories Department in Zeynep Kamil Hospital.

Figure 3.13.Balcony of Zeynep Kamil Hospital.

In the services are the nurse station, playing room, stores, laboratory, clean and dirty rooms.(see figure 3.14) In the infection service is also a laundry. The laundry of that section is not taken to the general laundry.

3.2.5. Göztepe Insurance Hospital, İstanbul

Göztepe SSK Hospital is a developed hospital with its 868 beds. The section for children's diseases is especially developed. It has six floors, on the ground floor is administration, bacteriology, infections diseases and biochemistry laboratories. Only first floor is left for the operations and the children surgery; in the second floor are the orthopedics, ear-nose-throat service and urology service, specialists' room, and restaurant; in the third floor are hematology and internal diseases; in the fourth floor are infant service, specialist's room meeting hall; in the fifth and top floor are premature, the new born and diet kitchen. When the distribution of the departments are examined according to the plan of the floors, it would be easy to observe that the services such as the new born and premature which are sensitive, are placed in the top floors. There are 14 curves and even a baby food kitchen in premature services. There is a different approach to the interior arrangements of the departments which is not easily found in the other floors. Patient rooms are completely made up of glass separators, and nurse rooms are situated in there; therefore, they are able to observe everything around them easily. (see figure 3.15) There are offices, nurse rooms, consulting rooms, and the other additional units.

There aren't any playing or TV. rooms for children available. An interesting point encountered in that hospital was the absence of the handless of the doors to the services and their baing kept locked instead. In these circumstances, the people who want to enter the service was obliged to ring the bell outside. Thus, everything is under the control of the nurses.(see figure 3.17, 3.18) In addition to that, the children in that service are not allowed to go out. In the infection service, there is an outer path for the patient

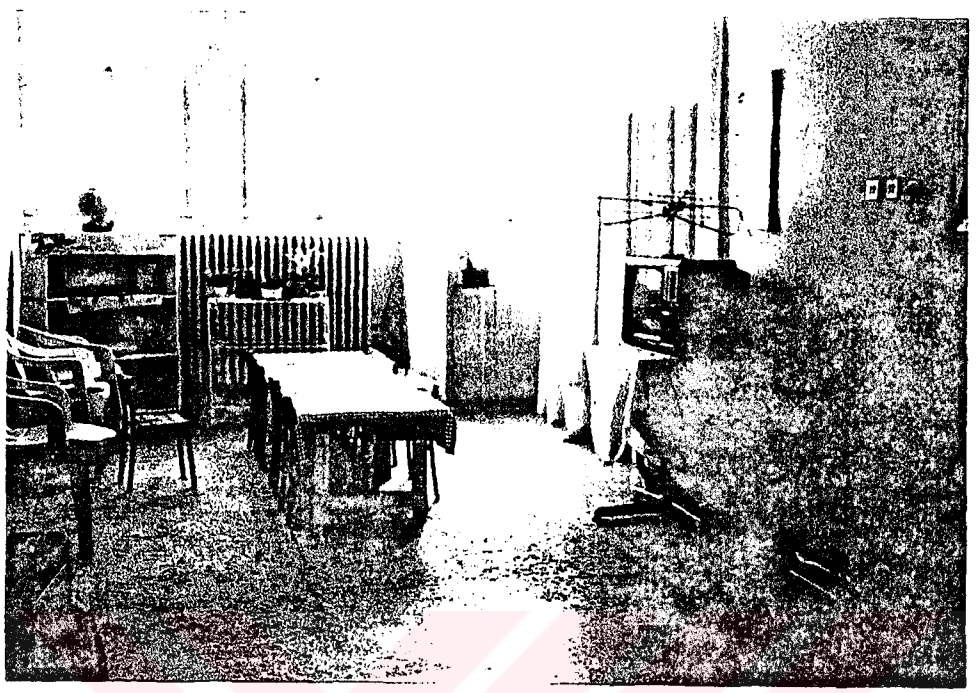


Figure 3.14.Play room of Zeynep Kamil Hospital.

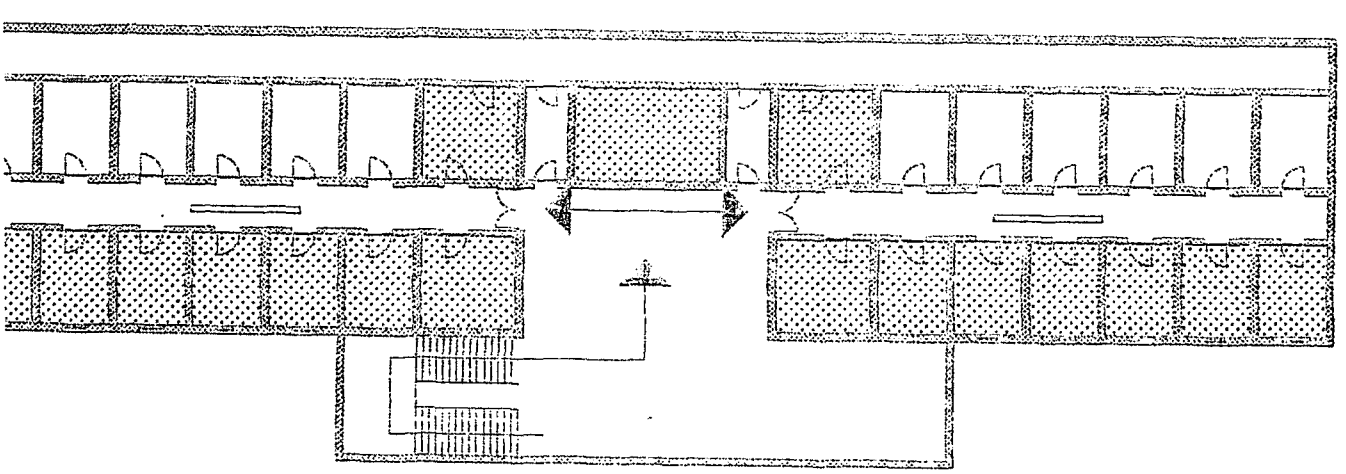


Figure 3.15.Inpatient Department of Zeynep Kamil Hospital.

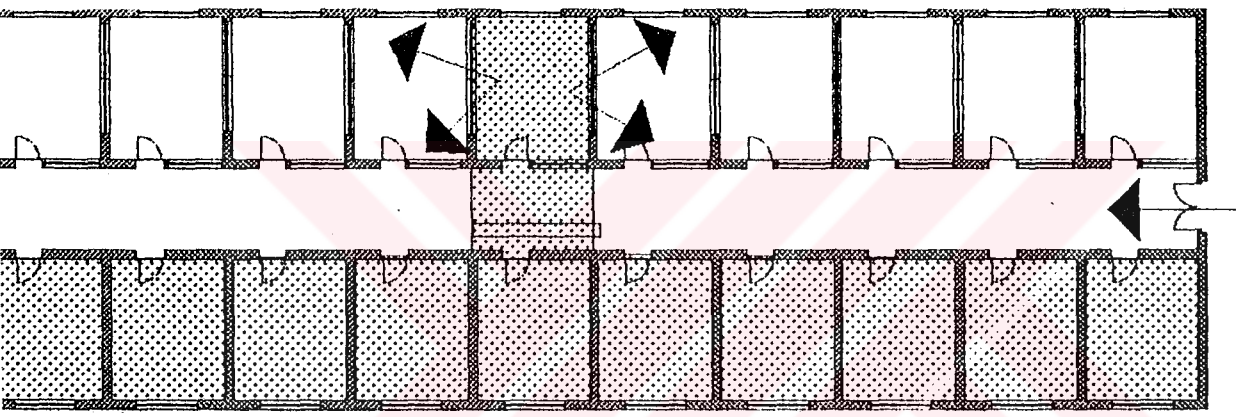


Figure 3.16.Inpatient Department of Göztepe SSK Hospital

visits. The laboratories of that service is also separated. The laboratories on the ground floor are not used.

3.2.6. Çapa Hospital, İstanbul

The hospital of İstanbul Faculty of Medicine is also called Çapa Hospital. It is the biggest hospital in respect to bed capacity: about 2500. It is a university hospital, and about 345 specialists and 380 practitioners work in there. Child health and child diseases are in another building. the number of the beds is about 200. It also has the child emergency unit in the same building; however, the two have separate doors. The building consists of two blocks and a hall that connects them to each other. (see fig. 3.15) On the ground floor of block-A are polyclinic emergency service, teller, emergent observation transfusion, and the head of the hospital.

In the basement are polyclinics, physical therapy, archive, x-ray, EKG and EEG, endoscopy and polyclinic's laboratory. In the second basement are nutrition and metabolism, child control, and ultrasonography. On the first floor are laboratories, immunology and allergy, biochemistry, nefrology and genetic, classrooms. On the second floor are the rooms of the professors and private consulting room of the doctors; secretariat of the institute the meeting room of the assistants, library, classrooms and conference hall. On the third floor is the administration. On the fourth floor is the institute of child health, and on the top floor are the flats of the nurses. As it is quite obvious that the lower floors at the block were reserved for administrative affairs, because the stairs hall, the floors in which the patient are looked after are freed from the traffic. In the block-B, the elevator is in the same place. There is nothing on the ground floor except for the stairs hall and entrance control. On the first floor is the infection-KL- immunology; on the second floor endocrinology; on the third floor nefrology and cardiology, play child; on the fourth floor hematology and new born; on the fifth floor restaurant and milk kitchen. The

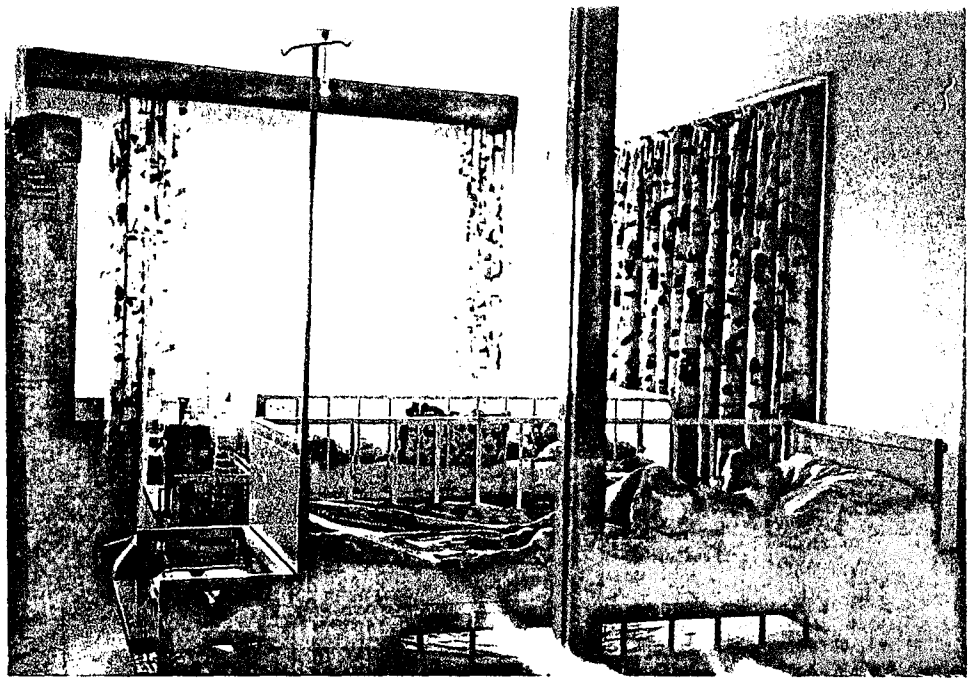


Figure 3.17 Patient room of in Göztepe Insurance Hospital

Photo 3.18.Small Patient Room of Göztepe Hospital

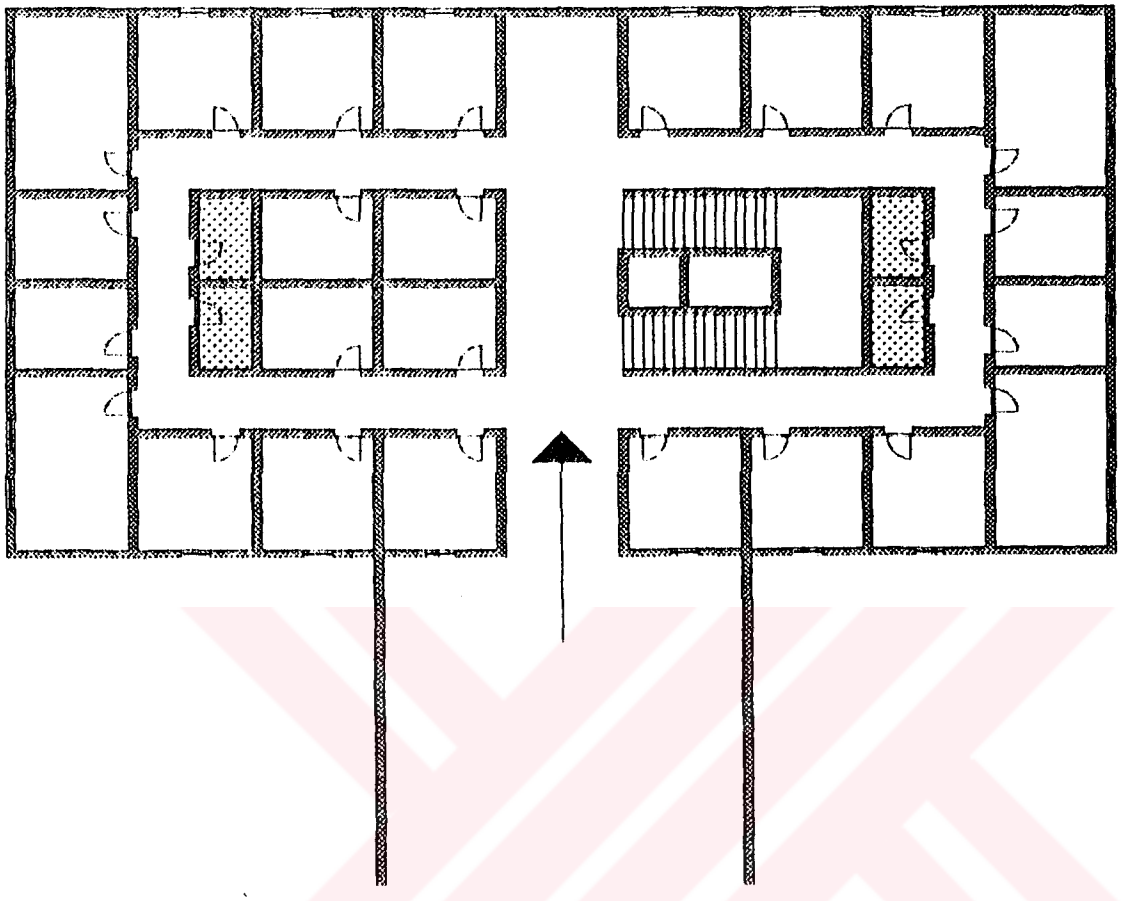


Figure 3.19 Outpatient Department of Çapa Hospital.

basement is used as the housing for the assistance. Although sterilization receives great attention in Çapa Hospital, the patients wander around in the service on some floors. It is possible to see ever children wandering around with serum bottles in their hands. However, there is a very careful and diligent application in the department of hematology, premature, and the new born. The services are usually locked, and could be entered by just knocking on the door to the services. Just a part of the new born is used an a laboratory. In the department there are mother's room and milk room. There are also 12 cuvezs, blood transfusion room, photo-teraphy room, private rooms, stores, and baby food kitchen.(see figure 3.20, 3.21) The sterilization of that service is seperated from the rest of the hospital. Mothers could be taken into that room to feed their babies. Visitors use a different corridor, but to find the corridor isn't easy. It doesn't have a direct entrance into the rooms. To get into the room, people first get into the interior corridor, and then into the rooms. All the separators in that place are made of glass; thus, there is no obstruction of vision. However the range of vision is narrow because the nurse station is inside. The precautions for cleaning were fairly good. People without special shoes and uniform are not taken into the service; however, attendants are allowed to be in there occasionally.

The hospital has a center for the research and applications of oncologial diseases and the transplantations of marrow, besides that, there is a department that treats the congenital and gained heart diseases in the hospital. The problem is diagnosed in 3 days, and treated in 3 months. In this section, children between 0-15 are treated. There are play rooms in the services; however, they are not used in every services. There is also a TV room. In the play rooms, embroidery and drawing are practiced. There are two private room in each service. The rooms are usually for 2 people. Attendants beds under the patient' beds are not used unfortunately. the rooms of the interns and doctors are not sufficient. There is no kitchen in the services. There is not also a special solution for the laundry. They are all carried with trolley. There is no any

Figure 3.20.Nurse Station of Çapa Hospital

Figure 3.21. New Born Unit Çapa Hospital

other laboratory except for the polyclinic laboratories and the laboratories at the infant service. The laboratory at infant service was built to prevent infection diseases. The services were redecorated to make the children feel happy and relaxed w using colored curtains with flower figures, and accessories. The size of the wash-basin and toilets were not taken into the consideration according to the children in all of the hospitals.

3.2.7. Hacettepe Children's Hospital, Ankara

The bed capacity is about 300, and the children between-18 years of age are accepted. On the ground floor are the consulting rooms of the polyclinics. There, the patients are treated at the polyclinic level. The different halls are painted in different colors in order for patients to differentiate between different polyclinics; thus, the overcrowdedness of the polyclinics are prevented.

Blue - and Green Halls

The patients who step in the hospital for treatment, diagnosis, or control are checked first a "door doctor" which is found only in the Hacettepe Hospital. In this system, after the doctors determine the patient' type of illness, they are sent to the polyclinics; thus, loss of time for both the doctors and patients are prevented and overcrowdedness in the corridors is avoided. Patients are given green or blue cards which enable them to be in the green or blue halls where patient checkups are. The general consulting rooms on the ground floor were built in such a way that they would easily be in touch with each other through intra-accessible rooms. There are also special waiting halls for the patient. There are 13 polyclinic consulting rooms parallel to each other.

In the polyclinics are virology, genetics, metabolism, neurology, child psychology, oncology, allergy endocrinology, cardiology, pediatric surgery, nefrology, hematology immunology, adolescent, Ear-Nose-Throat, neuroşiruji, Pediatrics,

cardiology, surgery orthopedics, eye dermatology, reconstructive surgery, urology, burnt, pathology. The hematology polyclinic is different from the other polyclinics. Hematology polyclinics were built below the ground floor next to childrens General Surgery Polyclinic. Both have different entrances. Neurology is placed on the fourth floor of the hospital. Children's Emergency Polyclinics are in the entrance hall in which official document are processed. However, that place has many disadvantages in respect to location, because the doctor-by-the-door, official writings, entrance into the emergency polyclinic and consulting hall are gathered in that place when you turn right by the door. The entrance to the emergency should be isolated for the other entrances. There should be a special the emergency polyclinics entrance. There should be special entrance and parking place for.

In-Patients Clinics:

		Num Of Cuves	Num Of Beds
1.	Premature department	18	-
2.	Infant (new born) department	12	-
3.	Intensive care unit for 0-3 age	-	28
4.	Young child department 2-6 age	-	25
5.	Old child department 6-12 age	-	30
6.	Adolescent department 12-17 age	-	30
7.	İntaniye department	-	25
8.	Emergency department	-	8
9.	Pediatric surgery 0-1 age	-	25
10.	Pediatric surgery 1-17 age	-	32
11.	Pediatric cardiology	-	30
12.	a) Orthopedy department	-	20
	b) Urology department	-	15
13.	a) Nöroşiroji department	-	24
	b) E.N.T. department	-	10

3.2. A Critical Evaluation of Some Children's Hospitals In The World

Being ill, influences the mental health of a child, if hospitalization is required, this experience provides a further emotional impact on a child, both during and after the illness episode (THORPE, ROUSSEAU, 1969). In addition environmental factors affect

the sick child's emotion, so we can not neglect the architectural aspects. There are firms when, because of dense program requirements or other reasons, the emotional needs of the child should be forgotten. However children's hospitals have to be designed according to children's needs. Thus, there are two points on our hand; one is the children's (or patient's) needs, and the other is hospital's working system. A good design combines these two points on the same platform.

In order to make more clear the good design or solution, two example are selected. The first one is from Canada (Architecture d'aurjourd'hui, 1990), and second is from USA. The main reason of this selection is that both hospitals have been designed for children. In addition both of them were constructed in 1992, so they reflect the new ideas, and technologies behind the hospital design.

3.3.1. The Hospital For Sick Children, in Toronto Ontario

The Challenge

Through a series of additions made in the past, the famous children's hospital had crowded itself into a tight down site and its outdated facilities were in urgent need of upgrading. The problems were: how to decant the existing site; how to create a connected functional unit out of the program requirement; but most importantly, how to achieve an environment that responded to the emotional needs of a sick child.

The Program

The total area required in the first phase was 101 700 m2; four levels of parking for levels of parking for 950 cars, below grade; and eight levels above grade. The total number of hospital beds is 584. The program includes: admitting, emergency, cafeteria, kitchen, pediatric, intensive care units and surgery related areas; the third floor

houses the service laboratories such as biochemistry pharmacy; levels four to eight contain the new patient wings. Each floor has 96 beds and 4 nursing stations.

The Architectural features

1. The Atrium

The atrium is the result of a rigorous investigation to achieve the most effective building form. The accepted functional program anticipates replacing most of the existing buildings for services needed in the expected long- range development.

By their very nature, teaching hospitals are rather large institutions that never present a clear impression of their interior organization, neither to the staff nor to visitors, seem to lose their users in a maze of corridors. It is not uncommon for visitors or even staff to become disoriented in one of these institution; being lost is an irritating and uncomfortable experience. In the case of the patient, particularly children, this could be a frightening event. The atrium design however, visually explains the organization of the hospital; one understands where to go and can also see how to get there. This creates a sense of comfort to the users, because nothing is more reassuring than a clear sense of orientation in a large complex.

Three additional important points for the atrium space are: the emotional enjoyment of such a space; the beneficial effects of this space to the patient; and the amelioration of adverse climate conditions.

An atrium space is not only economically affordable; it is in fact less expensive than a traditional solution. Furthermore, it creates a series of beneficial effects that are important in the hospital environment: it creates a sense of belonging to staff and patient, a sense of orientation for visitors and staff, and a green space of hope during all seasons. it

also establishes a space for entertainment and in so doing, aids the healing process, which is the ultimate purpose of any hospital. (figures 3.22, 3.23)

2. The Patient Room

A unique feature is the creation of single rooms for the children. Room is equipped with a private bath and a bad sofa, so a parent may speed the night with their child Each pair of single rooms has a sliding door to join them into a two bedroom situation if so desired for a child who feels alone. two model rooms were built and tested by patents, present and staff. (figures 3.24).

3. Main Street

The pedestrian traffic from the city demanded a new entrance from the east, An interior "main street" links this new entrance and its public space and activities (cafeteria, gift shops, etc.) with the existing west entrance and the clinics and research departments in the existing buildings

4. The Exterior

The new building attempts to blend into the existing urban context in its massing and materials. On the new facades however, though more complex, details relieve the monotony of the old complex.(figure 3.25). The building was completed in 1992.

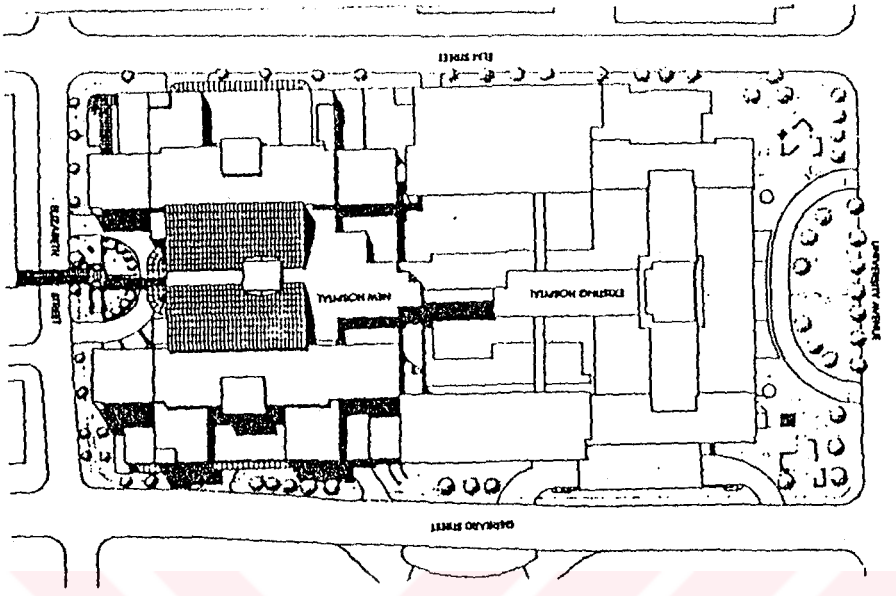


Figure 3.22. Site Plan of Hospital in Toronto

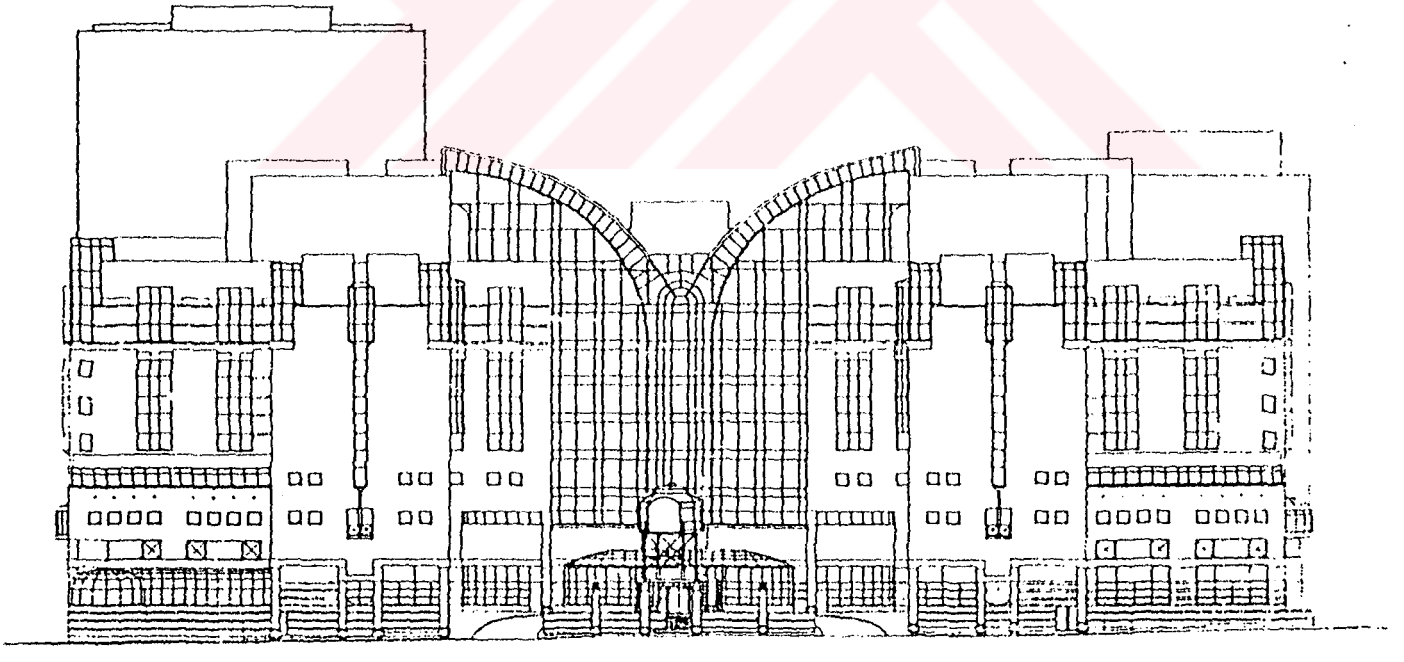


Figure 3.23. Façade of Hospital in Toronto

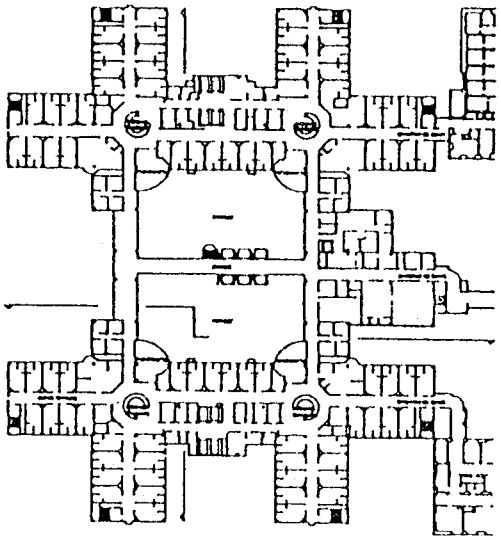


Figure 3.24. Plan of Inpatient Department in Toronto

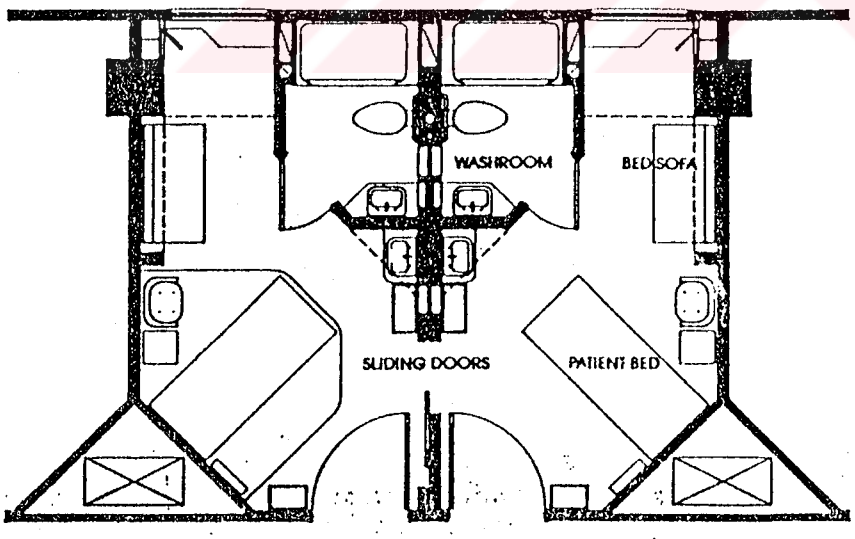


Figure 3.25.Inpatient Unit in Toronto

3.3.2. Children's Medical Center in Dallas, Texas

Children's Medical Center is presently located in one corner of a Medical Center complex directly adjacent to the county teaching hospital. Children's Medical Center was continually mistaken as the back of the county hospital, thus causing difficulty for patient to access and locate the facility. An overall master plan has been developed for expansion and upgrading. the design solution was to create a new front entry for the hospital in a position facing a major highway between two interconnected bed towers, establishing a new medical center. The entry is located in position to permit continued horizontal growth without future disruption for those arriving at the facility.

The building forms and outdoors spaces were designed with the child and his parents in mind. An outdoor play area adjacent to the main entry provides activity and a point of orientation for those traveling into the main lobby and primary circulation spines along two major levels of the building. The curved building form adds an element of playfulness that visually relates to the main entry.

The typical nursing unit was designed to accommodate 24 patients in two 12 bed clusters of rooms, with a centralized nurses station and decentralized support functions. Each 12 bed cluster is designed to contain its own nourishment, medication and line areas and greatly reduces nursing travel distance. The cluster design groups 24 patient in a very efficient layout, maximizing operating efficiently while encouraging the interaction of the large number of people required in the treatment and educational process present in a teaching facility. (figure 3.26).

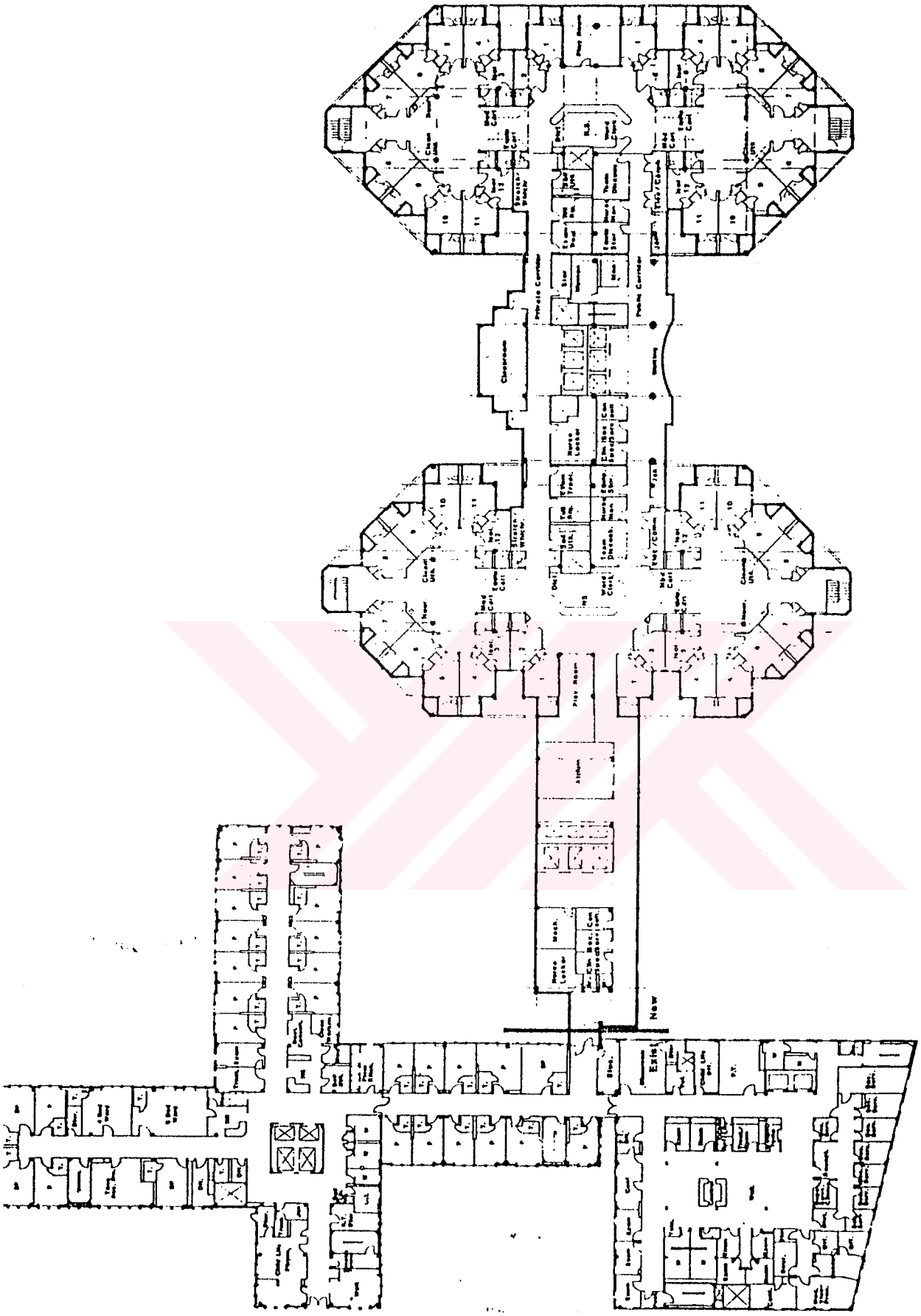


Figure 3.26 Plan of The Hospital in Dallas

CHAPTER IV :

CHARACTERISTICS OF CHILDREN'S HOSPITAL

4.1. The Behaviour of the Children In the Hospital

In this master study, hospital has been investigated. But child hospitals, which are at the same time special departments, are included, as well.

Long time stay at hospital, when considered that it even affects adults, will no doubt have a stronger impact on small children. The scope of the investigation is on what behaviors of children, and how, this effect is made.

Assoc. Prof. C. Ayden and Dr. Figen Çelikkol carried out research on depressive findings of children who stayed at hospital for some time. The study was for the first time made by Birleson (1981) with the purpose of determining depressive symptoms by applying on hospital children a self-report depression scale, which was developed to make an evaluation of depression in children with ages between 7-13.

The subject group consisted of a total of 85 events of 32 girls and 53 boys between 4-16 age groups, all mentally normal.

The normal control group in the study comprised 288 primary school students between 7-11.

The psychiatric control group covered 26 subjects who applied to the child Psychiatry Department of Ege University, with complaints about psychological troubles.

Relations between the hospital atmosphere and data concerning the illness, and the grades of the depression scale were inquired into, and no meaningful connection in statistical terms was found the high average grades of the depression in those who were not able to attend the school due to their illness, and the average grades in those who were successful at school.

In the study, hospital experience the type of illness and treatment methods were mentioned to be among factors that are creative of anxiety in child, and they were defined as symptoms which are said to be in connection with the increased anxiety about separation, sleep anxiety, aggressiveness to authority, irritability, fear, depressive attitude, stay at hospital, etc. It was reported that these effects could emerge both during the acute period and during the future life is in a way to break the psycho-social adjustment. It was found that stay at hospital at older ages, being together with the mother, being visited regularly, being involved in suitable game programs in the hospital, are all factors that decrease hospital anxiety.

Kashani and his colleagues found that the rate of depression was at a level of 23% in children who were in hospital due to orthopedic problems. At the General Pediatry Department depression was considered to be a frequent event. In spite of this, well-organized investigations showed that a great number of children left the hospital with no change and that long term effects were rare. Even some writers claim that a modern pediatric hospital environment doesn't have a very significant influence upon the child's later behaviors.

But, it is investigated that the symptoms of anxiety in the children between ages 6-15 who underwent treatment at various clinics in the Ege Medical Hospital, and determined that anxiety grade decreased in 11% of the events, but not changed in 7% and increased in 82%. It was also found that the level of anxiety during stay had a meaningful

surplus over the pre-stay period. As a result, hospital stay was believed to play a creative role on anxiety and to increase the existing anxiety. In addition, it was concluded that lower socio-economic conditions of those from rural areas, the suitability of the period of hospital stay before, inadequate psycho social adaptation during the pre-stay, were all closely related with the anxiety in existence, and that no statistical difference was found between the age and sex, and the level of anxiety.

The findings of Assoc. Prof. C. Ayden and Dr. Figen Çelikkol indicate that the depressive expressed by the hospital children to be in themselves were not more than the normal group, an in contrary at lower rates. These results are regarded as that children do not have psychiatric deformities and that therefore they are to a little extent and indication of depressive symptoms, some findings different from the normal group are expected to be obtained from the normal group are expected to be obtained. On the other hand depression grade averages obtained from children under treatment at hospitals, being lower than the normal group values can be explained in some ways. The sick children's denial of their depressive feelings and indications.

In conclusion, it appears that children either show too much depressives or, in contrast, deny any depressive feelings, thus becoming silent, which is not considered normal. Children are greatly affected when they have to stay in a hospital.

4.2. Factors Which Affect Child Emotion

There are some extra characteristics of children hospitals that differentiate the other hospitals from them. First of all, the children being in the hospital for treatment have extremely important problems so long as they stay in the hospitals. Dr. Güliz Eryılmaz (psychological consultant of Hacettepe University) gives an example of his when a group of sick children were observed using only black and white colors. Their friends, however, preferred colored pencils. It was determined that the more the children recovered, the

more colored pencils, they used. Thus it seems that children are more sensitive while they are ill. The literature of the past 20 years has demonstrated similar concerns, until the middle fifties. Thereafter followed a hiatus of almost a decade when pediatric centers again began to develop and write about their individual hospital care programs. To asses current mental health practices, in comparison to published guidelines, this thesis research consisted of visits to six general hospitals with pediatric service.

Using the standards of the American Academy of Pediatrics, and current literature as guidelines, surveyed the following aspects:

1. Prehospitazation Preparation of child and family in the community of potential patients;
2. Admission preparation, polices, and procedures;
3. Architectural Aspects

The interviewing resulted in "program-centered administrative consultation", a mental health consultation technique described by Caplan. The unique aspect of this study was that the consultant was a pediatrician, not a psychiatrist; she utilized her skills and knowledge in pediatrics, public health and child psychiatry in consultation and study. (THORPE, ROUSSEAU, et al., 1969).

With respect to mental health implications, the consultant assessed each hospital program by collecting essential data via direct interviews of physicians, nurses, social workers, playroom staff, and administrative or direct responsibility for the care of children requiring elective and emergency hospitalization for physical illness. Questions covered above mentioned aspects 1,2, and 3. The values and traditions of the individual hospital were taken into account. Recommendations were ones feasible within current and

future reality of the individual hospital. Both the short-term solutions and the long-term suggestions offered were within the reality of expectations and capacities of the recipients.

4.2.1. Pre hospital Preparation

Rarely were pediatricians or nurses involved in talking to parents or child groups about the processes of hospitalization. Some of the pediatricians have had past experience in this area but have had no requests for over ten years. The anticipatory approach currently in vogue in some eastern centers apparently has become history in this area of the West. (THORPE, ROUSSEAU, et al, 1969).

4.2.2. Admission Procedures

All hospitals studied allowed parents to accompany their child to the pediatric unit and remain for a while, until both the parents and the child were oriented by the nursing staff. This procedure is compatible with the approach recommended by the pediatrics and current pediatric literature, which suggest that having a parent accompany the child and seeing him settled in the hospital environment decreased the child's feeling of abandonment and desertion. (THORPE, ROUSSEAU, 19697).

A unique feature offered by one teaching hospital was a baby-sitting service for siblings, to enable parents to accompany or visit their child. Another hospital has started experimenting with a similar service for out-patient use and hoped to offer care of siblings to families included with in-patient pediatric care.

4.2.3. Architectural Aspect

In the light of data, the architects plan to produce the best solutions using the current facilities; however, these are not enough to build a good hospital. At the same time, it is absolutely necessary that good administrators should be involved in it. Due to

the reason that we are interested in the architectural side of the matter, we are trying to find out the best design data parallel to child psychologist and other subjects.

4.2.3.1. General Data

It would be wise to design more than one entrance to the hospital. The children's observing the other patients around affects them because as they go to their room children should especially be prevented from seeing the adults being treated, if there are any.

According to the research which is made by American Academy of Pediatrics, less than one third of all rooms in each pediatric unit should be visible from the nursing station. Children under age 5 bring their needs to staff attention by crying. The time between the cry to the nurse's response varies inversely to the nurse- patient ratio. Nurse station must be located in a point where all the rooms can be control.

Children sometimes stay in the hospital in some cases up to 3 months; (15 days in average). They only gather in the more than one floor hospitals. The children are generally congined to the patient rooms and service corridors; however, the hospitals with less floors are more appropriate for children and should be in touch with nature. The places such as balcony, terraces at the department in which especially the children are treated help them not to focus their attention on their illness. To be in touch with nature helps not only the children's but also the adults' recovering soon; therefore, the architect should be aware of the fact that the height of the floor shouldn't be too high to prevent the vision of the children, which stops the relation with nature; that should be taken into consideration prior to giving the final decision on the model of hospital. For the hospital site, less dense areas could be chosen, rather than the ones such as downtown, etc..

The rooms should be placed as if they would be observed from the nurse stations. There may be 20 or 30 beds for patients in each unit. The placement of the wide windows facing the interior side of the units in which the children under 12 are treated would be appropriate to keep the children busy. Those windows also enable the nurses to control the rooms.:Because, after 12 years, the feeling of embarrassment is observed, and that the opposite sexes are aware of their differences, these glasses should be removed for older childrens. In these rooms, the patients are required not to look at the walls directly. There may be some pictures and TV. sets which would make the patients busy (October 1st., 1991 the opinion of a group of nurses of H.U.H)

The control of sound is very important, because it was proved that the level of sound in the hospital causes the patients to have high temperatures. It is certain that the sound has a bad influence upon the patients. (The opinion of a group of doctors of H.U.)

4.2.3.2. Rooms of attendants

The case of attendants in the children hospitals is considered to be very important. The majority of the children laid down has the characteristics of either nervous, aggressive or introvert behaviors. In contrast to the children of rich families those with lower income consider themselves to be left in the hospital; therefore, they are aggressive. Many of the families misinform them rather than telling them the truth and relaxing them. Children lose their confidence in their parents just because they say that they would be back soon. The families with lower level of education create problems like that. An attendant can stay with children in case the children refuse to leave their parents leave the hospital or to be elm without them. As a matter of fact, the mother has a different effect on children. Children want especially their mother with themselves. For this reason, a comfortable armchair may be placed by the patient bed. In childrens hospitals a second sliding bed is placed under the beds. These beds, however, are not used. The relatives of

the patients are obliged to spend the night sitting on a chair. In Hacettepe University, there is a niche in some rooms for that purpose. There is a wide armchair in that niche.

4.2.3.3. Dining Room

Children have their meals without any rules. It is an futile effort to teach them how to eat. Children shed around and throw the food. Eating is a part of learning process. Children may eat in the hospital together; therefore, a dining room may be arranged.

•On such occasions;

- The rooms should be big enough and lightened well.
- The tables and goods should be chosen to the size of the children
- All sharp points should be removed.
- The floors and the furniture should be cleaned easily.

4.2.3.4. Play Rooms

Until recently planning play rooms for the pre-school children was regarded a luxury, It was decided that playing rooms were among the essential needs of children. In hospitals, playing and sleeping sections can be planned both separately and together. If the sleeping section is planned with playing section, the sufficient place for the playing section should be taken into consideration. But the most useful of all is to only plan a playing room (THORPE, ROUSEAU, 1969). Playing room is a special place that should be in the hospitals. The consultants on child psychologist work in these rooms. Under the supervision of these consultants, children gather after morning, meal, and daily controls.

The children who spend the first half hour freely are educated about the basic concepts briefly such as. recognizing the figures. Children attending the primary school and over are not educated. These children, however, can be educated in association with the Ministry of Education in order not to keep the children behind the schedule.

Classrooms could be added to the playing rooms for this reason (NOTE FROM THE LECTURE OF H.Ü.). Playing rooms are made up of different sections: infant, playing house corner, block corner, embroidery corner, etc. Especially salt ceramics and drawing pictures have relaxing effects on children. Play rooms could be equal to twice the size of two patient rooms. (approximately 35 m2).

The ceilings must be high in the playing rooms. The furniture in that room should be equal to the size of children. Shelves should be placed between the floor and the height of about 120 cm. Pointed furniture should be avoided. There shouldn't be a difference of height between two floors. Playing can be arranged in a different way according to the sexes.

The carpet could be used as floor covering. Socket and switches should be placed high enough to prevent damage to children. The windows should be low enough for the children to see the outside and the room should be lighted sufficiently(NOTE FROM THE LECTURE OF H.Ü.). Many of the rooms designed for this purpose were either changed into the other sorts of rooms or not used due to administrative failure and the need for more place.

4.2.3.5. Bathrooms-(WC)

All the fixtures should be chosen according to the size of children and fitted in a lower position. Baths should be placed higher than standards because children may be washed in them; therefore, the nurses are urged not to bend down(NOTE FROM THE LECTURE OF H.Ü.).

4.2.3.6. Open Air Activities

Except for the patients having fever and contagious diseases, children having congenital problems were thought that they could play outside the children department

because it is a need. It is necessary that children should have playing grounds for grown children not different from others; however, special facilities should be supplied for the children of pre-school period.

Outdoor playing area should be in relation with indoor playing area. All the points should be seen by the teacher.

Outside and inside playing grounds should be at the same level.

There should be trees and water in the garden; the playing grounds are to be designed in the sun or in the shadow according to the climate.

4.2.3.7. Patient Room

Pre-school children like to be together; therefore, a room of 4 bays would be ideal. These rooms help them develop their friendship and removes the noise problems of the bigger dormitory. Niches are considered for the attendants. The hospital should supply the boys and girls with separate bedrooms. Near the bed 2 place big enough for the children to do their handicrafts should be left. The notice board should be placed in order to help children having their pictures. The beds should be placed such that they could see outside from their beds. The beds should be separated with panels if necessary. Rooms should be classified into three groups:

Children between 1 and 6
Children between 6 and 12
Children between 12 and 16

The rooms of the 1-6 and 6-12 groups of children could be separated by means large glasses. This both helps the nurse connote easily and enables the children to spend time more enjoyable seeing each other.,

4.2.3.8. Intensive care units

The second half of the 20th century has produced an explosion of knowledge applied to the critically ill. The pathaphysiology of lige-threatening processes such as shock, respiratory failure, and increased intracranial pressure has been explored extensively. Advances in electronic patient monitoring, pharmacology, and improvement in transport systems are but a few of the factors which have drastically changed the nature of critical care. (BERGESON, HALBROOK, 1983)

An institution providing pediatric intensive care should be a comprehensive child care center capable of providing 24-hour accessibility to a broad range of pediatric subspecialty services necessary for optimal care. Effective regionalization of children's intensive care is highly desirable. The special needs of the critically ill child demand a high level of expertise provided by teams of physicians, nurse, and ancillary personnel in sophisticated facilities with a wide variety of special equipment. Not all hospitals, even those treating a significant number of children, will be able to support a fully developed Pediatric Intensive Care Units (PICU). There are many factors which affect the PICU such as organization, medical director, physician staff, nursing staff, other team members, physical characteristics -internal, external-portable and emergency equipment, physiologic monitoring, child life and family concerns, and technical equipment-electrical equipment, heating, ventilating, air conditioning.

Physical Characteristics-External

The PICU should be a geographically distinct unit within the hospital, with controlled access. It should be located adjacent to or within direct elevator travel to the emergency room, operating room, recovery room, and laboratory and radiology. It may be advantageous for critical care units to be close to each other. A physician's on-call

room should the director's and head nurse's offices. No traffic, it possible. Adjacent elevators should have key control.

A waiting room for families should be provided nearby, ideally including arrangements for sleeping. In addition, a space for family counseling is essential.

Other facilities located nearby should include a staff lounge and personnel locker space, sufficient storage area for equipment, janitor's supplies, linen, and patient belongings is important. A nourishment station, and clean and soiled workrooms should be close by.

An intermediate care adjacent to the PICU is desirable, and allows for continuing care of the patient as he/she recovers. Because of the close association of intermediate care areas to the PICU, it is recommended that both units be administered by the same personnel. (BERGESON, HALBROOK, 1983)

Physical Characteristics-Internal

The ideal size for a PICU is unknown, units smaller than approximately six beds risk inefficiency, and units larger than approximately 16 beds may be difficult to manage unless appropriately subdivided.

Isolation rooms with separate washing and growing facilities should be provided within the ICU for critically ill patients who may be infected or who are at increased risk for nosocomial infection. In addition, each patient should be allowed a medium of privacy via curtains when necessary.

A central station serves the function of information exchange and communications center. It is helpful if patients are directly visible from the central station.

Central electronic patient monitoring may be utilized but does not substitute for bedside observation. A computer/microprocessor is highly beneficial. There should be a medication station with a drug refrigerator and narcotics cabinet. A separate charting area for physicians and nurses allows for undisturbed be adequate working and charting space, shelf space, drawers and cupboards for individual supplies, and appropriate mechanism for hanging of intravenous fluid. A hand washing lavatory should be near each patient's bedside. Staff and patient toilets should be provided. There should be a mechanism for summoning additional personnel from the PICU to the bedside in a emergency and a hospital-wide system. Provision for administration of inhalation anesthetics within the unit may be appropriate in some settings.

The presence of windows and clocks allows for day-night orientation. Television sets, mobiles, decorations, and attractive colors may provide some distraction for the child. Designs on ceilings may be helpful for children who must lie on their backs.

The bedside arrangement of equipment should provide for complete accessibility to the patient. For resuscitation, access to the patient's head and neck is imperative, and there must be sufficient floor space to assemble the necessary personnel and equipment. Each bedside must be provided with the appropriate electrical, illumination, gas supply, and vacuum outlets.

The PICU should have appropriate heating, ventilating, plumbing, and air conditioning as well as relevant fire safety features. Various local and federal codes govern these factors, (BERGESON, LABROOK, 1983)

Illumination

1. Background or night lighting: Low intensity lighting below the patient's bed level to allow an attendant to move safely and still not interfere with the patient's sleep.

2. Reading lights should produce a minimum of 35 foot candles at the patient's reading material. The light fixture should be located so that the beam will not be eclipsed by the head of the bed when it is raised.

3. General illumination from an overhead fixture giving an intensity of 20 foot candles. The lenses in this fixture should be designed to cut off the light to avoid excessive brightness in the patient's face.

4. Emergency lighting from an overhead fixture should give at least 100 foot candles at the bed for use during emergencies and treatment.

Note: Both general illumination and emergency lighting can be obtained from the same fixture. The unit is an area lighting device consisting of four 40 watt fluorescent tubes in a housing approximately two by four feet. The wiring is arranged so that two tubes light for general use and four tubes light for emergencies.

Deluxe warm or deluxe cool white fluorescent tubes produce the most natural skin colors for patient observation. These tubes may have a lower output than commercial lamps, and in some cases more tubes may be required to obtain the necessary level of illumination.

Spotlights which give a high level of illumination in a small area area often necessary for examination and treatment. Permanently mounted wall or ceiling spotlights are difficult to adjust when the angle or distance must be changed. Portable spotlights for these procedures have greater adaptability (BERGESON, HALBROOK, 1983)

Heating, Ventilating and Air Conditioning

The federal minimum requirements include certain standards that are fundamental in facility design for new construction or modernization projects:

1. The temperature, based on individual room control, must be adjustable between 21 and 25 C..

2. The relative humidity must be in the range of 30-60%.

3. The ICUs must have a positive air pressure relationship with the adjacent area.

4. A minimum of two air changes per hour of outdoor air must be supplied to the room.

5. A minimum of six total air changes per hour must be supplied to the room.

6. Air may be recirculated provided the outdoor air requirements is met and the recirculated air passes through a two-bed filter.

7. Central make-up air systems that supply intensive care units are to be equipped with two-bed filtration equipment.

8. Induction units-Hospital patient rooms are frequently air conditioned with air supplied from induction units. With this system air from within the room is mixed with the supply air which does not meet the requirement of a two-bed filter system to treat recirculated air. If an induction system must be used, the units will require modification. (BERGESON, HALBROOK, 1983)

CHAPTER V :

CHANGES IN HOSPITAL DESIGN AND HOSPITALS IN 2000'S

It is impossible to predict events 20 years ahead for we cannot anticipate in any scientific way the forces that will shape the future (ZEIDLER, 1985). Society generally expects its architecture to be humane, aesthetically acceptable, functional and cost-effective. To respond adequately to the task of predicting what future physical health care delivery environments may be like, it is important to understand the nature of prime movers which cause society to expect or demand certain things, the definition of a prime mover is neither scientific, nor elegant. The terms simply means factors which are responsible for setting a trend or direction. For example, societal and individual values, morals, wants needs, and dreams are potential prime movers as are "resources" such as manpower, energy, money, goods, science, technology, knowledge, information, etc. Each of these prime movers can be individually responsible for initiating a trend, but more frequently, a combination of prime movers set a trend in motion (OGRODNICK, 1984).

5.1. Evolution of Hospital Design

If we can't look clearly into the future it might be useful to look into the past to study changes that have taken place in the hope of discovering the forces that have influenced our development to date. Health care is one of the most elusive realms to comprehend, and yet it is also one of the most rapidly expanding sectors in our society. During the last 20 years we have seen a tremendous advance in medical technology and

steadily increasing expenditures on health care-with only a small impact on the health status of the population.

5.1.1. Early Design

Having explained the highly complex process of the evolution of trends. We can explain it by giving an example: The earliest Canadian hospitals, many of which were established primarily for the treatment of indians, were run by charitable institutions. The first of such hospitals-a four room and two closet house- was established in Quebec City in 1639 by three sisters of Les Religleuses hospitalieres de Dieppe. There was almost a total absence of trained and skilled physicians matched by the lack of furniture as well as any notion of asepsis. (OGRODNIK, 1984)

Although hospitals very slowly increased in numbers and size, their condition continued to be "desperate", mainly due to the limited scientific basis to medicine, lack of trained and skilled people, as well as lack of funding.

"Even in 1867, it was only with the greatest difficulty that patient could be induced to go into a hospital. It was the popular belief that if they went in they would never come out alive. No records were kept. The clinical thermometer had not come into use; the patients had to look after themselves; fresh air was not thought necessary. Armies of rats disported themselves about the wards. Instruments were looked after by a man who assisted in the operating room and at post-mortems in the dead house. Nothing was known of sepsis or antisepsis. Surgeons operated with dirty instruments and septic hands and wore coats which had been for years baptized with the blood of victims" (AGNEW, 1974)

The change in the condition of hospitals and hospital design, from serving only as a protection from elements to serving distinct purposes of patient care and treatment, took many years.

5.1.2. Medical Advances

"The prime movers of this change were the continuously accelerating advances in medical science and technology, from the middle of the 19th century onward.

For example, Lister's development of antiseptic and aseptic surgery procedures dramatically altered the nature and outcome of surgery in hospitals." (OGRODNIK, 1984)

These developments increased the public's acceptance of hospitals which lead to more funds being available from the increasingly affluent sectors of society; this in turn, encouraged the growth of medical science and technology, with corresponding improvements in hospital building design.

By the beginning of the 20th century, a distinctive hospital building form emerged in response to the requirements placed on design by the new medical knowledge, technology and nursing care concepts. Rudolph Virchow Hospital (2000 beds), built in Berlin in 1907, exemplified this particular design trend and was considered the ideal "pure pavilion" single floor type plan. The carefully sited and oriented pavilion hospital provided maximum possible sunlight, outside as well as inside the buildings; natural ventilation; and a significant protection against cross-infection at least between the groups of people. It also provided "accessibility for friends of the patient and for visiting physicians; remoteness from disturbing influences; a site of sufficient size to ensure privacy" (THOMPSON, 1967)

The pavilion design found its way quickly to North America and, with certain modifications to allow for the extremes of the American climate, gained acceptance.

A 1921 review of plans for the Ottawa Civic Hospital indicates that the essential design features of the European pavilion hospital remain in the Canadian version;

"The H-shaped building, practically two T-shaped building, far enough apart for air and sun, is planned as two services, there being no necessity for crossing between the two. Elevators take the place of wagons or carriers over ground, thus doing mechanically what would otherwise be done manually. The section of the building shows the relation of the various departments. It is a good practice to divide the hospital horizontally as well as vertically. Separate floors are as disconnected as separate buildings" (STEVENS, 1921)

This review also indicates that even carefully made future predictions can be wrong and that "cost containment" is not a new factor to be considered in hospital design:

"In locating the Ottawa Civic Hospital, Ottawa, Canada careful study was made to secure a high, well drained site, near the City, of sufficient area to provide for recreational grounds for patient and staff. Though set in a plot of twenty-three acres, it is a block, or self-contained building. Under ordinary conditions a hospital have been built; but with the present enormously increased cost of building high wages for the help to care for it, difficulties in getting nurses, etc., a concentrated service is more economical and more manageable" (STEVENS, 1921)

5.1.3. Depression Year

During the depression years of the 1930's hospital construction was retarded and virtually came to a stand sill during the Second World War. However, pressures to consolidate the loose hospital layout for other than climatic reasons increased. Post World War II years witnessed a dramatic change in health care and related fields. Society's view on health insurance schemes, which provided more resources for further development of medical and related knowledge and technologies.

5.1.4. Boom Years

New concerns with the efficiency of hospital operations led to a reorganization and centralization of hospital services. This, in turn, led to a more consolidated building and related technologies, particularly in air conditioning, pressurization, horizontal and vertical transportation systems, and electronic communication.

A typical plan form emerged which can still be seen today-a horizontal podium containing service departments and a inpatient tower-colloquially known as a matchbox on a muffin. (OGRODNIK, 1984)

Various other innovations, notably the double corridor, zoning of clean and soiled areas, conductive floors in Operating Rooms (OR), automation of supply systems, the "no-nursing-stations" concept, fire prevention systems, etc., further increased the efficiency and safety of our hospitals, while long span structural systems provided the

freedom from having to cope with structural elements which restricted the use of space. As the complexity of the hospital grew, so did the need for increased flexibility, loose fit (indeterminacy), and long life, and produced a plethora of differently shaped plane; triangles, circles, four leaf clovers and the range of shapes in between.

However, the then favorable economic climate changed with the energy crisis, inflation and recession, and so changed the way we design health facilities.

5.1.5. Last 35 Years

First of all, we improve the efficiency of the existing physical plant, we retrofit, we add only what is essential. Only when we must, we build new hospitals using the latest economic, functional and energy use criteria. New cost efficient design concepts such as a "best buy hospital" are being researched, tried and evaluated. The need for the presently applied standard of sophistication of OR air conditioning systems, the need for uniformly high levels of illumination, and the necessity to give beth in the hospital are questioned. At the same time, our designs must also accommodate the ever increasing abundance of the "high-tech" health care harvest; computer imaging; ultrasound devices; fiber-optics; microprocessors; digital subtraction angiography; nuclear magnetic resonance imaging; positron emission tomography scanners-to name a few.

In health architecture, this trend towards humanization of heilth care facilities is evident in all facets of planning and design of the health care physical environment. Conferences and studies are dedicated to this topic, behavioral post-occupancy evaluations are being conducted and psychological design consideration manuals are being developed. But, what is most important to the patient and health care staff alike, is that health care buildings are being built with this objective in mind. (OGRODNIK, 1984)

There are many examples of energy conserving hospitals with the intimate atmosphere of a home, and lively air of an elegant hotel or shopping plaza. Architects are becoming increasingly aware of the role the physical environment plays in patient therapy.

"The acceptance, or the following of, the humanization of health care trend appears to be worldwide irrespective of level of economic development or political system. A Soviet architect, in summarizing the development of Russian health architecture at the international Hospital Federation last June in Lausanne, stated that architects concerned with the buildings believe that they should bring the stay of a patient in a hospital as near as possible to the stay in domestic surroundings so that the sick person's spirits may be maintained and his psychological condition benefited." (OGRODNIK, 1984)

A century ago, humanization of health care services, in terms of physical setting, meant structurally sound shelter, as hygienic as possible conditions, proper equipment, and trained and skilled staff. Today, those "basics" are still essential and humanization means assurance of quality of care; human dignity and privacy; availability of options; and ability to make decisions.

Survival statistics being collected from the beginning of this century confirm that as we become more successful in combating various chronic and other diseases, life expectancy is moving closer to life span. The number of elderly who will stay healthy and productive until death, contrary to the notions that this large segment of our society will become an expensive burden to rest of society, is increasing, more resources may be required in the health education and promotion areas, but savings will accrue in acute and long-term health care. What then will the hospital system of the future look like? There seems already to be a consensus that home care will expand, leaving only highly specialized forms of treatment to hospitals, which will become hyper-intensive care centers and, of course, there will be fewer of them. It is also reasonable to assume that developments in space medicine will give rise to health care space centers where zero gravity will be an essential treatment component.

There may be three ways in which we can respond to future needs:

1. In our planning anticipate the needs arising from future trends;

2. Build flexible space that will readily adjust to future requirements; and

3. Consider that health care facilities must respond not only to functional and technical requirements, but also to emotional needs.

5.2. Future Trends

Mark Twain's comment on the weather applies as well to hospital design: "Everyone talks about it, but nobody does anything about it." (MC DERMIT, 1984)

Since the onset of rapid development in hospital construction at the end of World War II, experts have stressed that health facilities must be extremely flexible. Although there have been marked improvements in laboratories so that there is open, flexible space and moveable, multi-purpose furnishings-there has not been much change in our attitudes toward basic hospital design. As a result, extensive renovation is often necessary whenever an improvement in services is suggested or a new technology developed. (MC DERMIT, 1984)

It is possible to foresee tremendous strides in technologies by the end of the decade; hospitals will be faced with the need to provide facilities for new services.

In order to be better prepared for these changes, we need to know what trends might influence our planning and how we respond to them.

1. Concentration of health services;
2. Changes in medical technology;
3. The computer and its optimization;
4. Ambulatory care;
5. Geriatric care;
6. Psychiatric care;

7. Preventative care;
8. Efficacy, cost-effectiveness-social responsibility;
9. Patient care areas;
10. Research areas; and
11. Consulting areas.

5.2.1. The Concentration of Health Care Services

There are two major forces that will direct the future growth of health services into larger centers;

1. The needs of increasingly complex, yet interrelated, fields of specialization brought about by the advancement of medical science and technology; and

2. The requirement for a greater concentration of services bought about by the increased concentration of population in the third wave society. (ZEIDLER, 1985)

5.2.2. Changes in Medical Technology

It is extremely difficult to plan for changes in medical technology. We are bombarded with new equipment and new technology that changes as rapidly as we are able to pay for it. For example we are presently moving a radiology department into new facilities in a health science center. In the next 10 years, the change in the use of imaging modalities for patient diagnosis will be as dramatic as changes in other technologies have been within the last 50 years.

With the use of digital radiography, we are going to see small hospitals connected with large hospitals so that specialists can be immediately available even in remote areas. With the new computer radiology systems, the traditional x-ray department is disappearing, digital images show greater disease detail and more normal anatomy through conversion into millions of bits of computerized information can be stored in

easily accessible, and considerably smaller data banks and be hooked up to terminals for viewing thousands of miles away. (MC DERMIT, 1984)

Furthermore, these digital systems eliminate the need for large film storage areas while allowing physicians immediate viewing of stored materials from readily accessible data bank. As well, through teleradiology, films can be viewed at a distance; this will allow small hospitals to seek specialist consultation from experts in larger centers, or allow doctors to view x-ray images at the bedside or in surgical suites, while the radiologist views and advises from his office. Furthermore, some of the new equipment is difficult to fit into an existing situation. Makeshift arrangements outed have to be made to accommodate new equipment in existing buildings. (ZEIDLER, 1985)

Other new approaches to imaging, such as Positron Emission Tomography (PET) and Nuclear Magnetic Resonance (NMR), will also radically change hospital design. NMR has some special requirements. It involves a large magnet and therefore any metal used in construction will affect the final balance and calibration of the unit. Special shielding may be required, either to protect the magnet or to protect metal objects and delicate instruments used in the area. Although there may be a few space savings in storage areas, most of these new imaging techniques. Examination rooms need to be larger because of the complexity of the procedures and the need for additional technicians to carry them out.

A survey of hospital architects revealed that, in future, increased space will have to be planned for radiology departments in particular. As well, all this current-sensitive equipment will create a greater need for clean, conditioned electrical sources and power supplies. Some of this equipment requires special environmental considerations, such as air conditioning or special venting. (MC DERMIT, 1984)

5.2.3. The Computer and Its Optimization

Although few hospitals are completely computerized, computers are being introduced rapidly because of the positive effects they have on patient care and because of the savings they can effect. However, the introduction of the computer has almost eliminated the need for the old system.

With an Order Entry System connected to every department in the hospital, requisitions can be sent instantaneously using the terminals. Consider the tremendous changes this development alone has engendered in the transfer of requisitions, in the use of porters, in other methods of exchanging information. (ZEIDLER, 1985) For example, the use of computers affects the use of telephones. Interdepartmental calls have been enormously reduced. In the past, telephones were needed at almost every work station in the medical laboratory; these have been displaced, in a lot of cases, by terminals, There has been a dramatic decrease in staff time, going to the telephone, dialing the number, waiting for the required information, waiting for a return call (which can come at an inconvenient time). etc. and still there is no format copy of the information for the records. With the computer, an individual can enter a request, receive an immediate response and get "hard copy" at once. (MC DERMIT, 1984)

The significance of on-line information and the ability to contact all departments through a modern, effective, efficient and cost-saving system using minicomputers in existing areas and to provide space to them in new design. The use of mini-computers does not require a lot of room. Most terminals can be set up in existing areas, in a space not much larger than that needed for a telephone. Printer design has advanced so that they are almost noiseless; this has eliminated the need for a separate closed-off area for the printer; however, the need for a quiet environment in patient areas should still be considered (MC DERMIT, 1984).

5.2.4. Ambulatory Care

Perhaps the most obvious trend in health care is the direction taken by ambulatory care. Twenty years ago (with the possible exception of certain teaching hospitals which served low-income patient), it was the exception rather than the rule to stress ambulatory care within the hospital. Today not only is the hospital encouraging the growth of these clinics, there is a discernible trend toward reducing bed care and treating people in ambulatory facilities while using the hospital's diagnostic and therapeutic facilities. The effect of this has been twofold. On one hand it has reduced the required bed count (as a provincial average per hospital), while on the other, it has further increased the average per bed operating cost of the hospital due to this new and more intensive use of each active bed. (ZEIDLER, 1985)

5.2.5. Geriatric Care

"We are currently faced with-and will continue to be in the future- a new generation of elderly people demanding health car, yet we also lack an understanding of how this health care should be provided. The needs of geriatric care are quite different from those of acute care. For this reason, it may not be the best solution to mix the two categories within the general hospital, both from the point of view of quality of care and effectiveness. Geriatric care must be considered within its broad social and emotional contest, striving to keep the elderly person independently active for as long as possible adjacent to community and special medical facilities. The "home for the aged" plan of 20 years ago has not proven to use the most satisfactory solution. We must investigate new approaches, and I believe they will point towards a greater dependency on the general hospital which must be intimately involved in this process." (ZEIDLER, 1985)

5.2.6. Psychiatric Care

The stress of a third wave society and the social structural changes that it produces are significant factors in the growing needs of psychiatric care-so, too are improved methods of psychological screening. Perhaps it is because we have problems in assessing and treating this field of medicine that we find its true extent and many facts concealed from public awareness. One just doesn't talk about it. Although attempts to

bring psychiatric wards within the wails of the general hospital were started as long as 20 years ago, we have still not made much progress. Mental illness remains one of the least effectively handled illnesses. Perhaps different categories of mental disease need to be better separated to avoid labeling problems and facilitate treatment and appropriate services. (ZEIDLER, 1985)

5.2.7. Preventative Care

"In the 1960s it appeared that early detection would be one of the physician's most potent tools in maintaining public health. For example, multiphasic soreening and the tremendous experiments initiated by the Kaiser Institute promised to change the hospital of the future. With the exception of fields such as high blood pressure and cancer of the cervix, little of this hope remains, however, our attitudes toward health constitute one of the most important elements in the health status of our population. As a notion, we pay for too little attention to nutrition, smoking, physical exercise, public health and health education. We have come to realize that me cannot totally neglect our bodies and the expect that medical science will put them beck into shape, preventative care will perhaps only indirectly affect health care facilities, yet it may result in use of these facilities being different." (ZEIDLER, 1985)

5.2.8. Efficacy Cost-effectiveness and Social Responsibility

Perhaps the most difficult issue we face is in weighing the cost of a medical service against the quality of the services and the attendant moral and social consequences. No one will argue that a universal prepaid health system has not improved the general availability and accessibility of health services, but the question is: how much of the nation's resources can be allocated to health care? (ZEIDLER, 1985)

5.2.9. Patient Care Areas

Radiology is only one of the areas that requires more space in the "ideal" hospital. Hospital architects also stress the need for larger quarters to house specialty care areas. We have long been aware of the need for more space in intensive care units and coronary care areas, although units are still too crowded.

Increased technology has led most planners to consider an increase in space for equipment, the portable x-ray equipment, and the increasingly large teams of health professionals can be underestimated. The space needs for the more traditional nursing units have also changed. Computer terminals, printers and monitoring devices have altered the work-flow patterns and design needs of ward areas. For example, although most printers are noiseless, the noise level in the ward must be considered. Nurses have adapted quickly, but more consideration needs to be given to plans that easier, quicker and more efficient. As well, many hospitals still have not made changes in the supply distribution systems to facilitate the distribution of supplies to the units. (ZEIDLER, 1985)

5.2.10. Research Areas

Hospital planners must also consider research facilities. The leave time for development of new biological and pharmaceutical agents today is about 18 months from the introduction of the product to clinical trials. In the ideal set-up, there would be a small research unit, a small product development laboratory, an ambulatory care clinic and a few inpatient beds available on one hospital floor. This would allow close liaison between the research and clinical teams in the development of new products. (ZEIDLER, 1985)

5.2.11. Consulting Areas

The same kind of planning strategies should be applied in designing consulting areas. Even with the use of computers, possible increases in use of staff working from home via terminals and use of teleconferencing, it can still be cheaper to have a place for a consultant to work within the hospital than to pay for time spent in commuting. Hospitals must learn to make better use of short, term consultations with professional and technical experts who have knowledge related to specialty areas, the same planning concepts apply to space near or in the hospital for physicians offices.

5.3. Planning for Future Flexibility

The tragic situation is that although any building we erect today will easily last 20 to 50 years, if not longer, many facilities-particularly those for special medical purposes- become obsolete the moment that medical procedures change. Often facilities that were less than 10 years old became obsolete and financially useless. The most important factor that will allow us to incorporate "the enchanting miracle of change" is a change in attitudes. Throughout the 1980's we will see a tremendous development in technologies and services for patient care. (MC-DERMIT, 1984)

What is the solution?

The obvious answer is thus to consider a health care building in the same way that a developer considers an office building. This means not to build it in a tailor-made fashion for tenant but rather to build it so that if radiology has to move into a nursing unit, this can be readily accomplished without destroying the whole building. Flexibility is a principle, not a technical solution. Of course flexibility is achievable not only through the basic building system, as I have outlined, but also through the use of reusable building elements (such as partitions and laboratory systems), as well as spaces capable of serving many functions. (ZEIDLER, 1985)

The importance of flexibility in the physical environment is clearly demonstrated by the fact that inefficiency in facility layout increases operating costs, and in a health sciences center, the operating cost equals the initial capital cost in only two years.

We must also understand, however, that even the best foresight in planning and the provision of a flexible, adaptable environment are not enough. Health care facilities cannot simply be machines that "process" bodies- they must also be environments in which the best technical and emotional care is provided. Only then will those facilities

fulfill their promise (ZEIDLER, 1985) It is astounding and critical-to realize that despite the rapid advances in medical technology, the emotional response of humans to for environment has not changed in the last few hundred years. If wee could bring platform into the present, he would function emotionally pretty much as we do (ZEIDLER, 1985)

Thus we must realize that in the creation of health care facilities we have to deal with two opposing forces: rapidly changing technological health care and a nearly static emotional response of humans to the health care environment.

So to design a hospital for the years 2000, we must extrapolate today's trends, while realizing that because of the limitations of these predictions, we must design buildings flexible enough to respond to unforeseen events. In addition, we must also consider that the health care environment affects our emotions and therefore must be designed in such a way that the stimulus created within the facility responds to our emotional needs.

CHAPTER VI :

FUNCTIONAL PROGRAMMING

Table of the Square of Departement

6.1. Administration

6.1.1. Scope

Hospital administrative center will include accommodation for all the principal management functions.

6.1.2. Parts of the Department

- Entrance Hall of Hospital
- Administration Section
- Chief Doctor's Room
- Patient Admission and Discharge and Data Center

6.1.3. How It Works

Administration consists of different sections and each section works in a different way. There are offices of senior administrative and nursing facilities. Also in this rarea will be a committee room, interview and waiting space.

Administration section is the head to the Hospital. Accounting office is placed in this section. Outpatients and inpatients come to this office for payment. Therefore, the location of accounting office must be easly accessible.

Chief Doctor's rooms are silent working places. Doctors use their rooms for reading, or working.

Patient Admission and Discharge Office are used by patients who become inpatients. Some official work is done here. There is a cashier for patients.

6.1.4. Relationships

Administration and Patient Admission section must have easy access from the entrance hall. In accordence with hospital traffic, outpatients stop at the administration offices and after the termination of official procedure, pass to the diagnostic department. Patient Admission and Discharge Office must have easy access from the main entrance, outpatient, and emergency. Patients should reach easily to the elevator hall and the inpatient department from the admission office. Doctors' rooms can be located independent from the general traffic.

Table 6.1.1. Administration Department -

The Programme In Use Today — Proposed Programme

GENERAL

Name of Space	N.rm	Per.s	m2	m2	Per.s	N.rm	Name of Space
Entrance Hall(easy access to vertical circulation)	1		200	200		1	Entrance Hall(easy access to vertical circulation)
Cloakroom&Janitor's rm(with WC)	1	1	16	16	1	1	Cloakroom&Janitor's rm(with WC)
Information desk			16	16	**3**		Information desk
Music broadcasting&clock rm	1	1	8	8	1	1	Music broadcasting&clock rm
Main telephone switchboard	1	2	24	24	3	1	Main telephone switchboard
Souvenir shop	1	-	16	16	-	1	Souvenir shop
				16	-	**1**	**Post office(telephone alcove)**
				16	-	**1**	**Flower shop**
				40	-	**1**	**Tea & coffee refreshment bar**
				32	-	**1**	**Market(daily food)**
				2	-	**3**	**Bank office**
WC(men&women)							WC(men&women)

ADMINISTRATIVE DEPARTMENT

Name of Space	N.rm	Per.s	m2	m2	Per.s	N.rm	Name of Space
Head Doctor's working rm	1	1	24	24			Head Doctor's working rm
Head Doctor's rest rm(WCS)	1	1	16	16			Head Doctor's rest rm(WCS)
Head Doctor's secretary rm	1	1	24	24			Head Doctor's secretary rm
Meeting rm(related with Dr.rm)	1	30	32	32			Meeting rm(related with Dr.rm)
Deputies of Head Dr.rm(one will be in the polyclinics area)	4	-	16	16			Deputies of Head Dr.rm(one will be in the polyclinics area)
				8	-	2	**Secretary of deputies of head dr**
Head Nurse's working rm(with WC)	1	1	24	24	1	1	Head Nurse's working rm(with WC)
Deputies of head nurse	2	1	16	16	1	2	Deputies of head nurse
Manager of hospital(WCS)	1	1	24	24	1	1	Manager of hospital(WCS)
Deputies of Manager hospital	2	1	16	16	1	2	Deputies of Manager hospital

Table 6.1.2 Administration Department -

The Programme In Use Today							Proposed Programme
ADMINISTRATIVE DEPARTMENT (Cont.)							
Name of Space	**N.rm**	**Per.s**	**m2**	**m2**	**Per.s**	**N.rm**	**Name of Space**
Administation office	3	2	16	16	2	5	Administation office
Accounting office	1	4	24	24	4	1	Accounting office
Mutemet Bürosu	1	1	24	24	1	1	*Mutemet Bürosu*
Mutemet Gişesi	1	1	16	16	1	1	*Mutemet Gişesi*
Döner sermaye merkez bürosu	1	8	64	64	8	1	*Döner sermaye merkez bürosu*
Sayman	1	1	16	16	1	1	*Sayman*
Statistics officer's rm	1	4	16	16	4	1	Statistics officer's rm
Director's rm	1	1	16	16	1	3	Director's rm
Duty staff office(WCSB)	1	1	24	24	1	1	Duty staff office(WCSB)
Duty chief Dr rm(WCSB)	1	1	24	24	1	1	Duty chief Dr rm(WCSB)
General Archive	1		200	200		1	General Archive
Administrative Archive	1		100	100		1	Administrative Archive
Archive office	1	4	24	24	4	1	Archive office
				40		**1**	**Health council hall**
				16	**1**	**3**	**Health council office**
				32	**1**	**1**	**Archive for statistics office**
				16	**2**	**1**	**Diet specialists rm**
				32	**3**	**1**	**Payroll office**
				24	**2**	**1**	**Media preparation office**
				16	**1**	**1**	**Public relation**
				32	**6**	**1**	**Supplies office**
				24	**3**	**1**	**Technical affairs office**
				16	**1**	**1**	**Director of technical office**
				16	**2**	**1**	**Reassurance office**
				60		**1**	**Reading rm(with book shelves)**
				24	**3**	**1**	**Computer Office**
WC(men&women)							WC(men&women)

Table 6.1.3. Administration Department -

The Programme In Use Today							Proposed Programme
ADMINISTRATIVE DEPARTMENT (Cont.)							
Name of Space	**N.rm**	**Per.s**	**m2**	**m2**	**Per.s**	**N.rm**	**Name of Space**
Kitchennete	1		16	16		1	Kitchennete
Clean rm(with washbasins)	1		16	16		1	Clean rm(with washbasins)
PATIENT ADMISSION&DISCHARGE DEPARTMENT							
Name of Space	**N.rm**	**Per.s**	**m2**	**m2**	**Per.s**	**N.rm**	**Name of Space**
Waiting rm				**24**		**1**	Waiting rm
Admission office(computer links between the other departments)	1	1	16	16	2	1	Admission office(computer links between the other departments)
Public service office	1	2	16	16	2	1	Public service office
				16	**2**	**1**	**Discharge office(computer link)**
				16		**2**	**Changing rm(WCS)**
				32		**1**	**Archive and store**
CHIEF DOCTOR'S ROOM							
Name of Space	**N.rm**	**Per.s**	**m2**	**m2**	**Per.s**	**N.rm**	**Name of Space**
Chief Doctor's rm(related outp. dept.)	10	1	16	16	1	10	Chief Doctor's rm(related outp. dept.)
Deputies of chief Dr. rm	10	1	16	16	1	10	Deputies of chief Dr. rm
Office	1	2	16	16	2	1	Office

6.2. Out-Patient Department

6.2.1. Scope

The outpatient can be defined as a patient attending hospital on one or more occassions and who does not stay over night. The outpatient department acceptes mainly outpatients, but on some occasions, inpatients may use it.The basic activities are:

- Consultation
- Examination
- Treatment facilities

6.2.2. Parts of the Department

- Reception and administration
- Waiting place
- Examination and consultation place
- Social services
- Cashier's office-administrative office

6.2.3. How It Works

On arrival at the outpatient reception counter, the patient is directed to a First Consultant space under the control of the receptionist who looks after one or more clinics. In the First Consultant space, doctors decide to which clinic the patient should go and the patient is given a number. But before passing to the waiting area, the patient goes to the cashier's office for payment and then returns to the waiting place. Then the Patient goes to the doctor according to the number. If necessary, the patient is directed to the diagnostic department (such as x-ray, laboratories), or administration for making the procedure of legal documents.

Suites will normally consist of one consulting room and an examination room. Some specialties (e.g. densiticy, ear, nose and throat and opthaltmic) because of special

equipment need purpose, designed suites of consulting and ancillary rooms. In some examples, the consulting and examination rooms are designed as separate rooms. But there must be a close relation between them.

In the former, those patient requiring examination move to a separate room, where they undress, are examined, and dress again. In the latter the patient remains in the one room. The doctor may, following consultation and while the patient is undressing, move to see a patient in an adjoining combined consulting/examination (C/E) room. For this reason intercommunicating doors between C/E rooms are often provided, these need to have a high level of sound insulation, or the essential confidentiality will be lost.

6.2.4. Relationships

There must be immediate access to the diagnostic x-ray department, the laboratories, the pharmacy and medical records. There also must be ready access for outpatients to EEG and EMG facilities and the rehabilitation center.

6.2.5. New Suggestions

- Minimum two different entrances have to be considered: one for general entrance, second for social pediatric section.

- In Turkish hospitals, we observe that the waiting area are insufficient. Our people come to the hospital with their families. So there are two or three persons minimum near the patient. As a result, the waiting area must be designed as larger as possible. If we assume that there are 12 consultation rooms, that each doctor could examine 5 patient per hour and then each patient comes to the hospital with 2 persons (one hour before their rendezvous), then we would, need 108 m2 per subwaiting area.

12(variant)*5*3*2=360 we assume that for each person

0.3 m2

variant: number of consultation room

360*0.3=108 m2 (for sub waiting space)

- Following the same reasoning, the consultation room also must be larger than the standard. There must be sitting places for three persons. If the examination and the consultation room is designed as a separate and related room, outpatient department can be used more flexible. Thus, the utilization of this room can be reorganized according to the different administration policies.

- Reception has to be located in an area which can be easily found, or on the main access. Computer terminals have to be used in all the reception desks so the size of tables have to be designed accordingly.

- Waiting areas have to have nice vistas and take enough natural light. Air conditional systems, and artificial lighting have to be sufficient.

- The outpatient department has to be located at the ground floor. It may also be on the first floor. But for patient traffic, the ground floor is preferable.

Table 6.2.1 Outpatient Department -

The Programme In Use Today							Proposed Programme
GENERAL AND ADMINISTRATIVE UNITS							
Name of Space	**N.rm**	**Per.s**	**m2**	**m2**	**Per.s**	**N.rm**	**Name of Space**
Entrance Hall							Entrance Hall
Waiting area	1	-	200	200	350	-	Waiting area
							Telephone alchove
Information, Registration				12	3		Inform. (with comp)
Cashiers desk	-	12	64	64	12	-	Cashiers desk
				16	**2**	**1**	**Social welfare office**
				24	**1**	**1**	**Cloakroom and janitor's room**
				16	**1**	**2**	**Archive**
				16	**1**	**1**	**Director of outpatient**
				8	**1**	**1**	**Secretary of Director**
				16	**2**	**1**	**Nurse of outpatient dept.**
First Consultation	2	1	16	16	4	4	First Consultation
Education, rest rm	1		32	32		1	Education, rest rm
Canteen (for outpatient)	1	1	16	24		1	Canteen (for outpatient)
Men, women WC(for outpatient)							Men, women WC(for outpatient)
Men, women WC(for staff)							Men, women WC(for staff)
Clenary machine storage	1	-	16	16		1	Clenary machine storage
Stretcher place							Stretcher place
				16	-	-	Rest rm for Dr.
				16	-	-	Rest rm for Nurse
				16	-	-	Rest rm for staff
				12	-	-	Dirty linen supply rm
				12	-	-	Clean linen supply rm

Table 6.2.2 Outpatient Department -

The Programme In Use Today — Proposed Programme

MAIN OUTPATIENT SECTION

GENERAL PEDIATRIE SECTION

Name of Space	N.rm	Per.s	m2	m2	Per.s	N.rm	Name of Space
Application & waiting	1	1	16	30	3	1	Application&waiting
Gen. Ped. Chief rm	1	1	16	16	1	1	Gen. Ped. Chief rm
				16	**1**	**1**	**Chief secretary**
				24	**3**	**1**	**Dept. secretary**
Nurse preparation&wieght rm (place before the examining, 1 nurse for 4 examining rm)	1	3	16	16	3	1	Nurse preparation&wieght rm (place before the examining, 1 nurse for 4 examining rm)
Examining rm	12	1	16	18	1	12	Examining rm
				9	**1**	**12**	**(or consultation rm &**
				9	**1**	**12**	**examination rm)**
Interference rm(L)	2	1	16	16	1	2	Interference rm(L)
Laboratory(CBC, urine & parazitology tree section interrelated)	-	32	32	-	1		Laboratory(CBC, urine & parazitology tree section interrelated)
				8	**-**	**3**	**pattern rm**
				8	**-**	**2**	**Linen supply rm**

SOCIAL PEDIATRIE SECTION(healhty children comes this section)

Name of Space	N.rm	Per.s	m2	m2	Per.s	N.rm	Name of Space
Application & waiting				24	2	1	Application & waiting
Vaccination rm(L)	1	-	16	16	-	1	Vaccination rm(L)
Nurse preparation rm	2	-	16	16	-	2	Nurse preparation rm
Examining rm	2	-	16	16	-	2	Examining rm
Dietist rm	1	1	16	16	1	1	Dietist rm
Dierrhea&oral rehydration rm (treatment&education) (L)	1	-	48	48	-	1	Dierrhea&oral rehydration rm (treatment&education) (L)

The Programme In Use Today **Proposed Programme**

SOCIAL PEDIATRIE SECTION(Cont.)

Name of Space	N.rm	Per.s	m2	m2	Per.s	N.rm	Name of Space
Patient Bedroom for short treatment with examning table	1	-	16	16	-	1	Patient Bedroom for short treatment with examning table
Nursing rm (see the patient bed, with desk&office type)	1	-	16	16	-	1	Nursing rm (see the patient bed, with desk&office type)
				8	-	**2**	**Linen supply rm**
				16	-	**1**	**Playing inner garden**

CONTAGION DISEASE SECTION

After the first consultation room, patient is taken directly to this section

Name of Space	N.rm	Per.s	m2	m2	Per.s	N.rm	Name of Space
				24	-	**1**	**Private waiting area**
							Information desk
				16	-	**2**	**Specialist Dr rm**
Examining rm	2	-	16	16	-	2	Examining rm
Interference rm	1	-	16	16	1	2	Interference rm
Men&women WC(staff)							Men&women WC(staff)
Men&women WC(patient)							Men&women WC(patient)

SECONDARY OUTPATIENT SECTION

It is related with other outpatient, but seperate from them

ENDOKRIN&METABOLISME OUTPATIENT

Name of Space	N.rm	Per.s	m2	m2	Per.s	N.rm	Name of Space
				-	-	-	**Waiting area**
							Information desk
Specialist Dr rm	1	1	16	16	1	2	Specialist Dr rm
Examination rm	2	2	16	16	2	2	Examination rm
Test rm(2 section)	1	1	16	16	1	1	Test rm(2 section)

Table 6.2.4 Outpatient Department -

The Programme In Use Today — Proposed Programme

NEUROLOGY OUTPATIENT

Name of Space	N.rm	Per.s	m2	m2	Per.s	N.rm	Name of Space
				-	-	-	**Waiting area**
							Information desk
Specialist Dr rm	1	1	16	16	1	2	Specialist Dr rm
Examination rm	2	2	16	16	2	2	Examination rm
EEG rm(2 related rm with sound insulation)	1	-	16	16	-	1	EEG rm(2 related rm with sound insulation)
EMG rm(sound ins.)	1	-	16	16	-	1	EMG rm(sound ins.)

ONKOLOGY OUTPATIENT

Name of Space	N.rm	Per.s	m2	m2	Per.s	N.rm	Name of Space
				-	-	-	**Waiting area**
							Information desk
Specialist Dr rm	1	1	16	16	1	2	Specialist Dr rm
Examination rm	2	2	16	16	2	2	Examination rm
Small interference rm	1	-	32	32	-	1	Small interference rm
Laboratory(hematology clinic also use it)	1	-	16	16	-	1	Laboratory(hematology clinic also use it)

HEMATOLOGY OUTPATIENT

Name of Space	N.rm	Per.s	m2	m2	Per.s	N.rm	Name of Space
				-	-	-	**Waiting area**
							Information desk
Specialist Dr rm	1	1	16	16	1	2	Specialist Dr rm
Examination rm	2	2	16	16	2	2	Examination rm
Small interference rm	1	-	32	32	-	1	Small interference rm
				16	-	1	Laboratory
				8	-	-	Steril store

Table 6.2.5 Outpatient Department -

The Programme In Use Today | **Proposed Programme**

NEFROLOGY OUTPATIENT

Name of Space	N.rm	Per.s	m2	m2	Per.s	N.rm	Name of Space
				-	-	-	**Waiting area**
							Information desk
Specialist Dr rm	1	1	16	16	1	2	Specialist Dr rm
Examination rm	2	2	16	16	2	2	Examination rm
Small interference rm	1	-	16	16	-	1	Small interference rm

CARDIOLOGY OUTPATIENT

Name of Space	N.rm	Per.s	m2	m2	Per.s	N.rm	Name of Space
				-	-	-	**Waiting area**
							Information desk
Specialist Dr rm	1	1	16	16	1	2	Specialist Dr rm
Examination rm	2	2	16	16	2	2	Examination rm
Ekokardiografi rm	1	-	16	16	-	1	Ekokardiografi rm
EKG rm	1	-	16	16	-	1	EKG rm

ALLERGY OUTPATIENT

Name of Space	N.rm	Per.s	m2	m2	Per.s	N.rm	Name of Space
				-	-	-	**Waiting area**
							Information desk
Specialist Dr rm	1	1	16	16	1	2	Specialist Dr rm
Examination rm	2	2	16	16	2	2	Examination rm
Test&vaccination rm	1	1	16	16	1	1	Test&vaccination rm

Table 6.2.6 Outpatient Department -

The Programme In Use Today				Proposed Programme			
PSYCHIATRY OUTPATIENT							
Name of Space	**N.rm**	**Per.s**	**m2**	**m2**	**Per.s**	**N.rm**	**Name of Space**
				-	-	-	**Waiting area**
							Information desk
Specialist Dr rm	1	1	16	16	1	2	Specialist Dr rm
Examination rm	2	2	16	16	2	2	Examination rm
Test related with Dr. rm	1	1	16	16	1	1	Test related with Dr. rm
Psychologist rm	1	-	16	16	-	1	Psychologist rm
DENISTRY OUTPATIENT							
Name of Space	**N.rm**	**Per.s**	**m2**	**m2**	**Per.s**	**N.rm**	**Name of Space**
				-	-	-	**Waiting area**
							Information desk
Dr&treatment rm	1	1	16	16	1	2	Dr&treatment rm
ORTHOPREDICS&TRAVMATOLOGY OUTPATIENT							
Name of Space	**N.rm**	**Per.s**	**m2**	**m2**	**Per.s**	**N.rm**	**Name of Space**
				-	-	-	**Waiting area**
							Information desk
				16	1	2	Specialist Dr rm
				16		2	Examining rm
				32		1	Interference rm
				32		1	Plaster prep. rm

OUTPATIENT DEPARTMENT - 7

Table 6.2.7 Outpatient Department -

The Programme In Use Today — Proposed Programme

DERMATOLOGY OUTPATIENT

Name of Space	N.rm	Per.s	m2	m2	Per.s	N.rm	Name of Space
				-	-	-	**Waiting area**
							Information desk
				16	1	2	Specialist Dr rm
				16	-	1	Examining rm

EAR,NOSE AND THROAT OUTPATIENT

Name of Space	N.rm	Per.s	m2	m2	Per.s	N.rm	Name of Space
				-	-	-	**Waiting area**
							Information desk
				16	1	2	Specialist Dr rm
				16	-	2	Examining rm
				16	-	1	Audiometry rm

OPHTHALMOTOLOGY OUTPATIENT

Name of Space	N.rm	Per.s	m2	m2	Per.s	N.rm	Name of Space
				-	-	-	**Waiting area**
							Information desk
				16	1	2	Specialist Dr rm
				16	-	1	Consultation rm

6.3. X-ray (Radiology) Diagnosis Department

6.3.1. Scope

In this department x-ray is used in diagnosis and research. The aim is to provide efficient and economic service. The use of x-ray for diagnostic purposes has been growing steadily. Special x-ray equipment will be installed in major operating theaters. A number of mobile machine will also be stored adjacent to wards, for the radiotherapy of in-patients unable to visit the central department. The main activity of this department is:

•to document the source of illness?

6.3.2. Parts of the Department

- Reception and administration
- Waiting place
- Diagnostic rooms
- X-ray room
- Ultrasonography room
- Floroscopy room
- Colored Doppler sonography room
- Computered tomography room
- Dark rooms
- Secondary space such as film's archive and film's storage

6.3.3. How It Works

The outpatients arrive first at the out-patient department, and then, if necessary, they are transferred to the x-ray department, but before taking a number from the x-ray reception, they go to the cashier's. If the outpatient doesn't have, any social insurance, he has to pay. If there is some social insurance, formal procedures are applied. Then he passes to the x-ray department. At the entrance to the departments, there are reception and records areas, waiting spaces for ambulant patients to sit and for patients in bed, trolley or wheel chairs to wait before or after the x-ray. The x-ray department should be used by inpatients and emergency patients. Therefore waiting areas and a separate

entrance to the x-ray room are preferable things. The patient passes to the x-ray room from the waiting area. After the x-ray, the patients wait to have their films taken.

6.3.4. Relationships

The best place for the x-ray department is between nursing unit and the outpatient complex. Convenient access should be directly to out-patient clinics.

6.3.5. New Suggestion

- Waiting areas have to have nice vista and take enough natural light. Air condition systems, and artificial lighting have to be sufficient.

- X-ray has to be located at the ground floor; in other words, the patient has to arrive at this department without going up or down a staircase.

- An inner corridor has to be designed between the emergency, outpatient department, and x-ray department.

We can not forget the development in the radiology, so putting only a x-ray room is not sufficient at today's conditions.We should add a new place for new diagnostic machine, such as:

Fluoroscopy

This machine is used for dynamic diagnostic analyses by using a contrast matter. The patient drinks a special liquid. The need of fluoroscopy room is one bed for the patient, one box for dressing, a place for the machine and a special room or lead screen for doctors. The visual relationship between doctors and the patient should not be obscured.

Ultrasonography

Ultrasonography ismaking a diagnosis by sending a sound wave which is converted to a view by the aid of the computer. The need of the ultrasonography room is approximately the same as the floroscopy room.

Colored Doppler Sonography

This machine resembles the ultrasonography, the main difference is the observation of the flowing. For example, the flowing of blood can be observed by the aid of colored Doppler Sonography. The need of place is the same as ultra-Sonography.

Computered Tomography

It is a diagnostic machine which uses x-ray or contrast way. The view which takes form on the gray scale, reflects on the screen of the computer. This machine is used especially to take a view from the brain. In the Computered tomography, patients and doctors are in the separated room. Doctors observe the patient behind a leaded glass.The place where the machine is located, is covered by lead. so the need of tomography as a place is two interrelated room; one for doctors, and one dressing room.

Magnetic Resonance

Magnetic Resonance is also a new diagnosis machine, but not necessary for the children's hospital, because, this machine works by the aid of electro magnetic waves, and patient have to rest motionless in the machine. However to keep a child a motionless is very difficult. In addition magnetic resonance is a very expensive for a 250 beds hospital.

X-RAY DEPT. - 1

Table 6.3.1 X-RAY -

The Programme In Use Today X-RAY DEPARTMENT Name of Space	N.rm	Per.s	m2	m2	Per.s	N.rm	Proposed Programme Name of Space
Waiting area for out&in-patient	1	-	64	64	-	1	Waiting area for inpatient
				64	**-**	**1**	**Waiting area for outpatient**
Registration	1	-	16	16	-	1	Registration
Doctor's rm	2	-	16	16	-	1	Doctor's rm
Command rm (direct relation with x-ray rm)	2	-	8	8	2	2	Command rm (direct relation with x-ray rm)
X-ray rm (with dressing box, command table)	4	-	32	32	-	4	X-ray rm (with dressing box, command table)
Lavman rm (related with x-ray rm)	1	-	16	16	-	1	Lavman rm (related with x-ray rm)
Ultrasonography rm	1	-	16	24	-	1	Ultrasonography rm
				8	**1**	**1**	**Command rm(related with Ultrasonography rm)**
				24	**-**	**1**	**Floroscopy rm (with dressing box)**
				8	**1**	**1**	**Command rm(related with Ultrasonography rm)**
				24	**-**	**1**	**Doopler sonography**
				8	**1**	**1**	**Command rm(related with Ultrasonography rm)**
Computer Tomography rm	1	-	56	56	-	1	Computer Tomography rm
- Tomography section			24	24			Tomography section -
- Computer section			16	16			Computer section -
- Drying section			16	16			Drying section -
Changing rm for personnel (men&women)	2	-	8	16	-	2	Changing rm for personnel (men&women)
Technician's rm	1		16	16	-	1	Technician's rm
Film reading rm (related with doctor's rm&archive)	2	-	8	16	-	2	Film reading rm (related with doctor's rm&archive)

X-RAY DEPT. - 2

The Programme In Use Today **Proposed Programme**

X-RAY DEPARTMENT (Cont.)

Name of Space	N.rm	Per.s	m2	m2	Per.s	N.rm	Name of Space
Film storage	1	-	16	16	-	1	Film storage
Film archive	1	-	16	16	-	1	Film archive
Dark rm(related with x-ray rm&film archive air condition)	1	-	16	16	-	2	Dark rm(related with x-ray rm&film archive air condition)
				16	-	1	Chief doctor's rm
				16	2	2	Main assistant's rm
				24	-	1	Assistant rm
				64	-	1	Lecture Hall (projection facilities)

Table 6.3.2 X-RAY -

6.4. Laboratory Diagnosis Department

6.4.1. Scope

The specimens received from in-patient, and outpatient are examnined. The results of the tests aid the diagnosis and treatment.

6.4.2. Parts of the Department

It general there are four main sections:

- Bio-chemistry laboratoties.
- Pathology laboratories.
- Micro-biology & bacteriology laboratories.
- Haemotology laboratories.

Before entering these four sections, there is a

•common space

Then in each section there are

- reception and waiting area
- laboratory section
- specialists' rooms
- technicians' rooms

6.4.3. How It Works

Like other diagnostic departments, patients pay to have tests made, so that the patient arrives to the common space after stopping at the cashier's office. In the common space, the tissues are taken. The tissues are then sent to different laboratories according to the kind of tests wanted. The results of the tests are also given from the common space.Therefore there is no direct relation between the patient and the laboratories.

Each laboratory has a different function.

Pathology Laboratory

This laboratory includes histopathology, the microscopic study of diseased tissue and cytology, the study of individual cells. Tissue es often received from operating theaters or the post-mortem room. In the former case, an urgent test is frequently required in the course of an operation. The specimen is brought to this laboratory a 'frozen section carried out, and the result telephoned to the operating department. (TK)

Hematology Laboratory

It is the study of the functions and disorders of blood.Since part of this section deals with the testing (for compatibility) of the blood bank, should be nearby, part of it being accessible in emergency at night (TK)

Bio-Chemistry Laboratory

It is the study of the chemistry of the living tissues and fluids of the body. Much of the routine testing can be done on mechanized equipment. There is scope for associating this work with the similar routine testing of the hematology section, which can enable both to be automated by use of a computer (TK)

Microbiology Laboratory

It includes parasitology. It is the study of the nature, life and actions of micro-organisms. Some virology may be included, but this usually forms a separate section in the larger or more specialized laboratories-including those which, in England and Wales serve also the Public Health Laboratory services' needs.

6.4.4. Relationships

A functional diagram would show the pathological revises area lying between its associated academic accommodation and the hospital with particular close ties an the hospital side with wards, medical records department, pharmacy, mortuary, and operating theater. in addition out-patient have to arrive easily.

6.4.5. New Suggestions

- On the architectural space programme given by the Ministry of Health, the hematology laboratory is not listed. But we may assume that this laboratory has to be added to the list because the hematology laboratory is one of the main type of laboratories, in addition the blood which diseases are increasing day to day. Therefore, blood has to be examined in a different laboratory.

- The laboratory department is one of the fastest, growing functions of the hospital, although automation has enabled many more tests to be undertaken without increasing size. Nevertheless, design for easy expansion is very important.

- Special ventilation equipment has to be placed in laboratories.

DIAGNOSTIC DEPARTMENT
LABORATORIES - 1

The Programme In Use Today				Proposed Programme			
COMMAND AREA							
Name of Space	**N.rm**	**Per.s**	**m2**	**m2**	**Per.s**	**N.rm**	**Name of Space**
Waiting area	1	-	64	64	-	1	Waiting area
Registration area	-	2			2	-	Registration area
Getting supply rm (for blood, urine, gaita)	1	-	32	16	-	3	Getting supply rm (for blood, urine, gaita)
Sterilization rm	1	-	32	32	-	1	Sterilization rm
				16	**-**	**2**	**doctor(men&women)**
				16	**-**	**2**	**Changing rm for nurse and technician**
				16	**-**	**2**	**hanging rm for staff(men&women)**
				64	**-**	**1**	**Archive**
				16		**3**	**Stores for glass utilities, dry reactive supplies, liquid supplies**
				16	**-**	**1**	**Supplies preparation**
				16	**-**	**1**	**Clean supply&dist**
				16	**-**	**1**	**Dirty supply**
				24	**-**	**1**	**Distile service**
				16	**-**	**1**	**Chief doctor's rm**
				16	**2**	**4**	**Doctor's rm**
				16	**-**	**4**	**Asisstant rm**
				16	**-**	**1**	**rest rm**
WC for staff							WC for staff
WC for patient							WC for patient

Table 6 4.1 Labrotaries Department -

LABORATORIES - 2

The Programme In Use Today | **Proposed Programme**

BIO-CHEMISTRY LABORATORY

Name of Space	N.rm	Per.s	m2	m2	Per.s	N.rm	Name of Space
Reception&Waiting	-	-	32	32	-	-	Reception&Waiting
Specialists rm(related with laboratory	1	1	32	16	1	1	pecialists rm(related with laboratory)
Ria Laboratory	1	-	16	16	-	1	Ria Laboratory
Elisa Laboratory	1	-	16	16	-	1	Elisa Laboratory
				16	-	1	Urine examining rm
				16	-	1	Spectrometric rm
				16	-	1	Tirri metric analysing rm
				16	-	1	Photo metri rm
				16	-	1	Tubaj rm
				16	-	1	Measure rm
Reactive storage	1	-	16	16	-	1	Reactive storage
Chief rm	1	1	16	16	1	1	Chief rm
Nurse rm	1	-	16	16	-	1	Nurse rm
Laborant rm	1	-	16	16	-	1	Laborant rm

Table 6 4.2 Labrotaries Department

DIAGNOSTIC DEPARTMENT
LABORATORIES - 3

The Programme In Use Today **Proposed Programme**

PATHOLOGY LABORATORY

Name of Space	N.rm	Per.s	m2	m2	Per.s	N.rm	Name of Space
Waiting area&reception	1	-	16	24	-	1	Waiting area&reception
Specialists rm	1	-	16	16	-	1	Specialists rm
Technicians rm	1	-	16	16	-	1	Technicians rm
Laboratory	1	-	32	32	-	1	Laboratory
Piece admission rm (related with piece preparation rm)	1	-	16	16	-	1	Piece admission rm (related with piece preparation rm)
Piece preparation rm	1		16	16		1	Piece preparation rm
Microton rm	1	-	16	16	-	1	Microton rm
Nurse rm	1	-	16	16	-	1	Nurse rm
				16	-	**1**	**Laborant rm**
				16	-	**1**	**Chief rm**

MICRO-BIOLOGY&BACTERIOLOGY LABORATORY

Name of Space	N.rm	Per.s	m2	m2	Per.s	N.rm	Name of Space
Waiting area&reception	1	-	16	24	-	1	Waiting area&reception
Specialists rm	1	1	16	16	1	1	Specialists rm
Laboratories (two related rms)	1		32	32	-	1	Laboratories (two related rms)
				16	-	1	Bacteriology kitchen
Storage	1	-	8	8	-	1	Storage
Kültür Odası	1	-	16	16	-	1	*Kültür Odası*
Nurse rm	1	-	16	16	-	1	Nurse rm
Blood admission rm	1	-	16	16	-	1	Blood admission rm
Getting blood rm	1	-	16	16	-	1	Getting blood rm
Santrifüjleme odası	1	-	16	16	-	1	*Santrifüjleme odası*

Table 6.4. 3 Labrotaries Department -

The Programme In Use Today **Proposed Programme**

MICRO-BIOLOGY&BACTERIOLOGY LABORATORY (Cont.)

Name of Space	N.rm	Per.s	m2	m2	Per.s	N.rm	Name of Space
				32	**-**	**1**	**Parasitology lab**
				16	**-**	**1**	**Serology lab**
				16	**-**	**1**	**Cold rm**
				16	**-**	**1**	**Dirty material analyzing rm**
Chief rm	1	2	16	16	2	1	Chief rm

HEMATOLOGY LABORATORY

Name of Space	N.rm	Per.s	m2	m2	Per.s	N.rm	Name of Space
				24			Waiting area&reception
				16	2	1	Specialists rm
				8	-	1	Getting blood area
				16	-	1	Technicians rm
				16	-	1	Patient material rm
				16	-	1	Morphological examining rm
				16	-	1	Bone marrow examining
				16	-	1	Congulation lab
				16	-	1	Immunohematology rm
				16	-	1	Bio chemistry rm
				16	-	1	Manipulation rm
				16	-	1	Chief rm

Table 6.4.4. Labrotaries Department -

6.5. Inpatient Department Or Nursing Section

6.5.1. Scope

Groups of patients are under the care of nurses in this department. Children who are smaller than 16 can be accepted to the nursing section. However the maximum child age is decided by each hospital council.

6.5.2. Parts of the Department

Nursing section or wards consists of

- Nurse station
- Day room & play room
- Bed rooms
- Secondary spaces

6.5.3. How It Works

Patient Admission office accepts those patient who will stay in the nurse section. The accepted system is that, patients will be grouped according to the degree of illness and dependence on the nurse. This systematic grouping introduces better care for the patient, better deployment of nursing staff and more economical use of equipment than obtained in many traditionally organized hospitals. Inpatient department consists of:

- three medical care units
- one surgical care unit
- two baby care units (one of them is surgical care unit)
- one baby intensive care unit
- one new born & premature baby care unit
- one infectious diseases care unit

In this section the place of the nurse and auxiliary spaces are very important. From the nurse station, the nurse should be in contact with all the patients. The distance

between the nurse station and patient beds should not be so far. Auxiliary spaces like the clean utility room or the dirty utility room have to be near the nurse station because this rooms give a support service to the nurse. Day room or play room also have to be near the nurse station. Because the children who are in the play room, are also under control of the nurse. In addition here families can see their children without entering the wards. Therefore the location of the play and the day room is very important.

In the infectious disease wards unit, beds are isolated. Main difference between the infectious disease unit and the normal unit is that visitors can not enter the unit. There is a visitor corridor which passes from the outside of the patient bed rooms.

6.5.4. Relationships

The surgical division requires direct access to the major theaters. These should be on the same level as the accident beds. X-ray department and other investigation units must have direct access from acute patient bed area. Communication must be sufficient with the pharmacy, central sterile supplies, laundry and medical records must be brought to bed area and waste removed.

6.5.5. New Suggestion

- Nursing staff should be aware of the patients' needs and able to give the necessary care with minimum effort and patients should be as comfortable as possible. The nurse station can be placed at the center of the bed room. However, bed rooms have to be separate from each other by a glass. Therefore the nurse should be able to control all patient rooms.

- There should no sex difference between children who are smaller than coming of age so that girls and boys should be able to stay together in the ward. Therefore units can be grouped according to ages.

- Childrens' bed rooms have to be separated by glass (window) because children become more quiet by looking at other children. However, for bigger children (8-14), glass separators have to be omitted.

- Play room have to consists of different sections like; eating, playing, TV. section.

Color is a factor on physiology of child. So that warm and soft colors can be used in the wards unit.

- An additional room may be suggested, that is, a teaching room. Teachers coming from the Ministry of Education have to give lesson in these teaching room. Therefore, children who go to school, will not remain behind their education during the time they stay in the hospital.

- Accompanist is an other factor on the physiology of the child. Each child needs a companion. Therefore one bed or chair will be added near each patients' bed. So that room sizes have to be calculated according to new needs.

Table 6.5. 1 Labrotaries Department -

The Programme In Use Today				Proposed Programme		
COMMAN SPACE						
Name of Space	**N.rm**	**Per.s**	**m2**	**m2**	**Per.s**	**N.rm**	**Name of Space**
Chief assistant rm	1	1	16	16	1	1	Chief assistant rm
Duty Dr rm(WCS)	2	1	16	16	1	2	Duty Dr rm(WCS)
Examination rm(L)	1	1	16	16	1	1	Examination rm(L)
Interference rm	1		16	16		1	Interference rm
Nurse Station(easy access)	1	5	32	32	5	1	Nurse Station(easy access)
Changing rm	1		8	8		1	Changing rm
Nurse equipment store	1		8	8		1	Nurse equipment store
Clean utility rm(related with nurse station)	1		8	8		1	Clean utility rm(related with nurse station)
Dirty utility rm	1		8	8		1	Dirty utility rm
Laboratory (L)	1		8	**16**		1	Laboratory (L)
Cleaning Equipment rm (L)	1		8	8		1	Cleaning Equipment rm (L)
Ördek sürgü temizleme mahalli	1		8	8		1	Ördek sürgü temizleme mahalli
Day rm(for playing&eating)	1		48	48		1	Day rm(for playing&eating)
Kitchennette	1	1	16	16	1	1	Kitchennette
Stretcher's space				**8**			Stretcher's space
WCL for personnel	2					2	WCL for personnel
WCL for patient	2					2	WCL for patient
				16		**1**	**Rest rm for assistants**
				16		**1**	**Rest rm for nurses**
				24		**1**	**Education rm(for big child)**

TPYCAL PATIENT BED UNIT

Name of Space	**N.rm**	**Per.s**	**m2**	**m2**	**Per.s**	**N.rm**	**Name of Space**
One bed rm(with Accompanist place)	5		24	24		5	One bed rm(with Accompanist place)
Two bed rm (L)	4	2	16	**24**	2	4	Two bed rm (L)
Four bed rm (L)	3	4	32	32	4	3	Four bed rm (L)

Table 6.5. 2 Labrotaries Department -

The Programme In Use Today							Proposed Programme
SMALL CHILD UNIT (0-2 AGE)							
Name of Space	**N.rm**	**Per.s**	**m2**	**m2**	**Per.s**	**N.rm**	**Name of Space**
Chief assistant rm	1	1	16	16	1	1	Chief assistant rm
Duty Dr rm(WCS)	1	1	16	16	1	1	Duty Dr rm(WCS)
Examination rm(L)	1	1	16	16	1	1	Examination rm(L)
Interference rm	1		16	16		1	Interference rm
Nurse station(easy access)	1	5	32	32	5	1	Nurse station(easy access)
Changing rm	1		8	8		1	Changing rm
Nurse equipment store	1		8	8		1	Nurse equipment store
Clean utility rm(related with nurse station)	1		8	8		1	Clean utility rm(related with nurse station)
Dirty utility rm	1		8	8		1	Dirty utility rm
Milk&baby food kitchen	1		16	16		1	Milk&baby food kitchen
Suckling rm(L)	1		8	8		1	Suckling rm(L)
Baby basin	1	2	8	8	2	1	Baby basin
One bed patient rm(with accompanist)	5	1	16	16	1	5	One bed patient rm(with accompanist)
Five bed patient rm(easy control from corridor side&acceptsy place)	4	5	16	**24**	5	4	Five bed patient rm(easy control from corridor side&acceptsy place)
INTENSIVE CARE UNIT OF SMALL CHILD							
Name of Space	**N.rm**	**Per.s**	**m2**	**m2**	**Per.s**	**N.rm**	**Name of Space**
Chief Assistant rm	1	1	16	16	1	1	Chief Assistant rm
Duty Dr rm(WCS)	1	1	16	16	1	1	Duty Dr rm(WCS)
Examination rm(L)	1	1	16	16	1	1	Examination rm(L)
Interference rm	1		16	16		1	Interference rm
Nurse station(eqasy access)	1	5	32	32	5	1	Nurse station(eqasy access)
Changing rm	1		8	8		1	Changing rm
Nurse equipment store	1		8	8		1	Nurse equipment store

The Programme In Use Today							Proposed Programme
INTENSIVE CARE UNIT OF SMALL CHILD (Cont.)							
Name of Space	**N.rm**	**Per.s**	**m2**	**m2**	**Per.s**	**N.rm**	**Name of Space**
Clean utility rm(related with nurse st.)	1		8	8		1	Clean utility rm(related with nurse st.)
Cleaning equipment rm(L)	1		8	8		1	Cleaning equipment rm(L)
Dirty utility rm	1		8	8		1	Dirty utility rm
Milk&baby food kitchen	1		16	16		1	Milk&baby food kitchen
Baby basin	1	2	8	8	2	1	Baby basin
Ten baby bed(with monitoring facility	1	10	48	48	10	1	en baby bed(with monitoring facility)
Five baby be rm	3	5	24	24	5	3	Five baby be rm

the bed room have to be seperated from the corridor by a glass seperator

NEW BORN&PREMATURE UNIT

NEW BORN

Name of Space	**N.rm**	**Per.s**	**m2**	**m2**	**Per.s**	**N.rm**	**Name of Space**
Patient admission rm	1		8	8		1	Patient admission rm
Chief Assistant rm	1	1	16	16	1	1	Chief Assistant rm
Duty Dr rm(WCS)	1	1	16	16	1	1	Duty Dr rm(WCS)
Steril changing rm	1		24	24		1	Steril changing rm
Education rm(outside the unit)	1		16	16		1	Education rm(outside the unit)
Suckling rm(outside the unit)	1		16	16		1	Suckling rm(outside the unit)
				8		**1**	**Nurse equipment**
				8		**1**	**Clean utility rm(related with nurse st)**
				8		**1**	**Cleaning equipment rm**
				8		**1**	**Dirty utility rm**
Nurse station(easy access)	1	5	32	32	5	1	Nurse station(easy access)
Baby bed with phototherapy(L)	2	5	16	16	5	2	Baby bed with phototherapy(L)
Baby bed rm	3	5	32	32	5	3	Baby bed rm

The Programme In Use Today **Proposed Programme**

NEW BORN&PREMATURE UNIT (Cont.)

NEW BORN (Cont.)

Name of Space	N.rm	Per.s	m2	m2	Per.s	N.rm	Name of Space
Exchange rm	1		16	16		1	Exchange rm
Baby basin	1		8	8		1	Baby basin
Baby food kitchen	1		16	16		1	Baby food kitchen

PREMATURE(This section is seperated from the new born section with a glass seperator)

Name of Space	N.rm	Per.s	m2	m2	Per.s	N.rm	Name of Space
Five baby bed rm	1	5	32	32	5	1	Five baby bed rm
Cuves rm	2	10	32	32	10	2	Cuves rm
Baby food kitchen	1		16	16		1	Baby food kitchen
Laboratory	1		8	8		1	Laboratory
WC for personnel							WC for personnel

INFECTIOUS DISEASES UNIT

Name of Space	N.rm	Per.s	m2	m2	Per.s	N.rm	Name of Space
Entrance hall(with control)							Entrance hall(with control)
Steril changing rm	1		24	24		1	Steril changing rm
Patient admission rm	1		16	16		1	Patient admission rm
Chief Assistnat rm	1	1	16	16	1	1	Chief Assistnat rm
Duty Dr rm(WCS)	1	1	16	16	1	1	Duty Dr rm(WCS)
Interference rm	1		16	16		1	Interference rm
Nurse station(easy access)	1	5	32	32	5	1	Nurse station(easy access)
Baby food kitchen	1		16	16		1	Baby food kitchen
One bed rm(at two part)	25	1	16	16	1	25	One bed rm(at two part)
Clean utility rm(related with nurse st.)	1		8	8		1	Clean utility rm(related with nurse st.)

The Programme In Use Today **Proposed Programme**

INFECTIOUS DISEASES UNIT (Cont.)

Name of Space	N.rm	Per.s	m2	m2	Per.s	N.rm	Name of Space
				8		**1**	**Cleaning equipment rm**
Dirty utility rm	1		8	8		1	Dirty utility rm
Laboratory	1		8	8		1	Laboratory
Baby basin	2		8	8		2	Baby basin
Nurse equipment store	1		8	8		1	Nurse equipment store
WC for children							WC for children
WC for staff							WC for staff
Ördek sürgü temizleme mahalli	1		8	8		1	*Ördek sürgü temizleme mahalli*

Visitors can see the children from outside of infectious diseases unit

Table6.5.5 Labrotaries Department -

6.6. Operating Theaters Department

6.6.1. Scope

Operating department consists of operating theaters or suits. An operating theater is the room where surgical operating and certain diagnostic procedures are carried out.

6.6.2. Parts of the Department

The operating department consists of one or more operating suites, together with ancillary accommodation provided for the common use of these suites such as

- changing room
- rest room
- reception
- transfer area
- recovery room

In general, the operating department is divided in two sections.

Aseptic

The operating suites are placed. This section is the most sterile area in the operating theater department.

Septic

The operating suites and ancillary area are placed.

Therefore, the main part of the department consists of the following area:

- Common section
- Waiting area
- Transfer area
- Septic section
- Ancillary area

- Septic operating suite
- Septic corridor or area
- Dirty corridor
- Aseptic section
- Aseptic suites
- Aseptic corridor
- Dirty corridor
- Medical surgical intensive care unit
- Chancing room
- Doctors' room
- Intensive care bed unit
- Ancillary area

6.6.3. How It Works

Patients come from the wards unit or emergency department to the operating department. In the transfer area, the patient's stretcher is changed after which the patient passes to the sterile area. Doctors and other staff can pass to the sterile section after taking a shower in the chancing room. Patients stop at the anesthesia room before entering the suite, doctors and nurses stop at the scrup-up. After finishing the operation, the, patient goes to the recovery or intensive care area. Doctors go to the rest room. All the material which are used in the operating go to the dirty room.

6.6.4. Relationships

The theaters should be designed as independent from general traffic and air movement in the rest of the hospital. Easy access from the reception area should be provided. Theaters and accident and emergency should be, if possible on the same level (LEEDS, 1965)

6.6.5. New Suggestion

- Mechanical Ventilation (cooling) is required. Normal and artificial lighting, medical gas and function inlets and closed circuit TV. are also required. When air conditioning systems are designed, the critical areas such as the theaters are pressurized to minimize entry of air-borne contamination.

- Two corridors; one for all circulation of people and things, other for disposal and fire escape, are preferable.

- If possible, making a viewing dome for one of the theaters, will be used for teaching purpose. In addition the family of the patient could see the operation.

- A special light for sterilizing the theater should be used.

OPERATING THEATRES DEPT. - I

(related with blood center*intensive care unit)*

Table 6.6.1 Operation Theatre -

The Programme In Use Today

Proposed Programme

COMMAN SECTION

Name of Space	N.rm	Per.s	m2	m2	Per.s	N.rm	Name of Space
Family waiting hall	1		16	16		1	Family waiting hall
Stretcher controlling space	1		32	32		1	Stretcher controlling space
rm(WCS)	1		32	32		1	rm(WCS)
Doctors&women staff changing rm(WCS)	1		32	32		1	Doctors&women staff changing rm(WCS)
Rest rm for doctors(in steril section)	1		32	32		1	Rest rm for doctors(in steril section)
Rest rm for nurse(in steril section)	1		32	32		1	Rest rm for nurse(in steril section)
Doctor's rm	2	1	16	16	1	2	Doctor's rm
				16	**1**	**1**	**Director of surgical department rm**
				16	**1**	**1**	**Secretary of director of dep.**
				32		**1**	**Nurse station**
				32		**1**	**Central monitoring station**

FIRST SECTION(Septic section)

Name of Space	N.rm	Per.s	m2	m2	Per.s	N.rm	Name of Space
Septic surgical suites	2		40	40		2	Septic surgical suites
Scrub-up							Scrub-up
Preparation rm(one for 2 suites)	1		16	16		1	Preparation rm(one for 2 suites)
Anestesia rm	1		24	24		1	Anestesia rm
Anestesia storage	1		16	16		1	Anestesia storage
Anestesiologist's rm(related with storage)	1	3	16	16	3	1	Anestesiologist's rm(related with storage)
Anestesia technicians rm	1		16				Anestesia technicians rm
Mobile roentgen rm	1		8	8		1	Mobile roentgen rm
Surgical equipment store	1		16	16		1	Surgical equipment store
Dirty rm	1		8	8		1	Dirty rm
Clean rm	1		8	8		1	Clean rm

OPERATING THEATRES DEPT. - 2

(related with blood centerntensive care unit)

The Programme In Use Today							Proposed Programme
FIRST SECTION(Septic section) (Cont.)							
Name of Space	**N.rm**	**Per.s**	**m2**	**m2**	**Per.s**	**N.rm**	**Name of Space**
Recovery rm	1		32	**48**		1	Recovery rm
				32		**1**	**Organ&pathology laboratory**
SECOND SECTION(Aseptic section)							
Name of Space	**N.rm**	**Per.s**	**m2**	**m2**	**Per.s**	**N.rm**	**Name of Space**
Aseptic surgical suites	2		40	40		2	Aseptic surgical suites
Scrup-up							Scrup-up
Preparation rm(one for 2 suites)	1		16	16		1	Preparation rm(one for 2 suites)
Anestesia rm	1		24	24		1	Anestesia rm
Dirty rm	1		8	8		1	Dirty rm
Clean rm	1		8	8		1	Clean rm

Table 6.6.2 Operation Theatre -

OPERATING THEATRES DEPT. - 3

(related with blood center*ntensive care unit)*

The Programme In Use Today **Proposed Programme**

MEDICAL&SURGICAL INTENSIVE CARE UNIT

Name of Space	N.rm	Per.s	m2	m2	Per.s	N.rm	Name of Space
Entrance-information desk				16		1	Entrance-information desk
Dress changing rm	1		24	**16**		**1**	Dress changing rm
				24		**1**	**Monitoring&meeting rm**
Director of intensive care unit rm	1	1	16	16	1	1	Director of intensive care unit rm
Doctor's rm	2	1	16	16	1	2	Doctor's rm
Duty doctor's rm(WCS)	1	1	16	16	1	1	Duty doctor's rm(WCS)
Intensive care bed unit(10 beds)	1	10	96	96	10	1	Intensive care bed unit(10 beds)
Nurse station(in bed unit)	1			**16**	**2**	**1**	Nurse station(in bed unit)
Sterile store	1		8	8		1	Sterile store
Clean&dirty utilities rm	2		8	8		2	Clean&dirty utilities rm
Cleaning rm(L)	1		8	8		1	Cleaning rm(L)
Stretcher rm	1		8	8		1	Stretcher rm
				16		**1**	**Isolated rm**
				16		**1**	**Assistants rm**
WC							WC

Table 6.6.3 Operation Theatre -

6.7. Central Sterilization Department

6.7.1. Scope

This department will provide to all materials of hospitals which is used for, instruments for out-patients in fields where central supply would be economic or impractical, sterile fluids, which will be produced in the pharmacy.

6.7.2. Parts of the Department

- Dirty reception
- First washing
- Sterilization space
- Clean-sterile reception

6.7.3. How It Works

Dirty materials are grouped in the dirty reception like glass, injection, soiled linen, ext. Then in the first washing place, dirty materials are washed. Next, materials arrive to the sterilization place. Finely sterilized materials are stored.

6.7.4. Relationships

The department must be sited with direct service access to the major operating theaters. In addition, it must be near the other wards unit.

Table 6.7.1 Central Ste. -

The Programme In Use Today					Proposed Programme		
CENTRAL STERILIZATION							
Name of Space	**N.rm**	**Per.s**	**m2**	**m2**	**Per.s**	**N.rm**	**Name of Space**
Chief rm	1	1	8	8	1	1	Chief rm
Non-steril equipment store	1		8	8		1	Non-steril equipment store
Dirty arrivals of soiled linen&appliences	1		16	16		8	Dirty arrivals of soiled linen&appliences
Sorting&first washing(glass, various appliances, injections)	1		24	24		1	Sorting&first washing(glass, various appliances, injections)
Operating equipment preparation rm	1		16	16		1	Operating equipment preparation rm
Sterilization division(related with first washing)	1		16	16		1	Sterilization division(related with first washing)
Hall for loading				**16**		**1**	Hall for loading
				16		**1**	**Sterile appliances' store**

6.8. Blood Center

6.8.1. Scope

Blood center is the place where blood is stored and supplied from healthy persons.

6.8.2. Parts of the Complex

- Waiting & administration
- Blood donor's rm
- Blood testing rm
- Store & distribution

6.8.3. How Does It Work

Persons arrive to the blood center administration, passing from the main entrance. After giving the blood, they go to the soft drink bar. Otherwise, bloods are tested in testing room. Then they are stored or distributed.

6.8.4. Relationships

This department should provide direct access from the outside, in addition to easy access from the operating theaters department.

Table 6.8.1 Blood Center -

The Programme In Use Today				Proposed Programme			
BLOOD CENTER							
Name of Space	**N.rm**	**Per.s**	**m2**	**m2**	**Per.s**	**N.rm**	**Name of Space**
Waiting&admission hall				**16**		**1**	Waiting&admission hall
Nurse station	1		16	16		1	Nurse station
Dr. Examination rm(L)	1		16	16		1	Dr. Examination rm(L)
Blood donor's rm	1		32	**64**		1	Blood donor's rm
Blood testing rm	1		16	**24**		1	Blood testing rm
Blood store&distribution rm	1		16	16		1	Blood store&distribution rm
Bottles store	1		8	8		1	Bottles store
Technician office	1	1	8	8	1	1	Technician office
				16		**1**	**Caffee&tea pantry**
				16		**1**	**Cold store**
				16		**1**	**Changing rm for technicians&nurses**

6.9. Emergency Department

6.9.1. Scope

This department serves help and treatment to the patients who need emergent help.

6.9.2. Parts of the Department

- Registration office
- Examining and consultation
- Doctors' room

6.9.3. How Does It Work

First the patient arrives to the registration office than he/she passes to the examining and consultation rooms. According to the decision of the doctors' patient will be sent to the inpatient department or diagnostic department.

6.9.4. Relationships

This department must have easy access to the operating theaters department, x-ray department, patient admission office and laboratory. Making a separate entrance is an obligation.

The Programme In Use Today				Proposed Programme			
EMERGENCY DEPARTMENT							
Name of Space	**N.rm**	**Per.s**	**m2**	**m2**	**Per.s**	**N.rm**	**Name of Space**
Registration office	1	-	16	16	-	1	Registration office
Duty officer rm	1	-	16	16	-	1	
Examining rm(with examining table, L, dressing box)	1	-	16	16	-	1	Examining rm(with examining table, L, dressing box)
Examining rm(with examing table, L, dressing box)	1	-	32	32	-	**2**	Examining rm(with examing table, L, dressing box)
Consultation rm (for 6 beds)	1	6	24	**32**	6	1	Consultation rm (for 6 beds)
Operational suite(with operational table, L)	1	-	24	24	-	**2**	Operational suite(with operational table, L)
Doctor's rm(with bed, WCLS)	1	-	24	24	-	2	Doctor's rm(with bed, WCLS)
				16	-	1	Nurse rm
				16	-	1	Nurse station
				24	6	1	Patient bed rm
				8	-	1	Storage

Table 6.9. 1 Emergency -

6.10. Hemodialise Center

6.10.1. Scope

This department used by the hemodialise patient.

6.10.2. Parts of the Department

- Entrance Hall
- Doctors' rooms
- Nurse Station
- Patient rooms

6.10.3. How Does It Work

Patient who needs dialyze machine arrives this unit. This department seems like a wards unit. There is a nurse station. Patient stay in this department less than a day.

6.10.4. Relationships

This department can be designed as a separate units.

Table 6.10. 1 Hemodialize -

The Programme In Use Today				Proposed Programme			
HEMODIALIZE CENTER							
Name of Space	**N.rm**	**Per.s**	**m2**	**m2**	**Per.s**	**N.rm**	**Name of Space**
Entrance Hall	1			**8**		1	Entrance Hall
Patient admission&reception	1		8	8		1	Patient admission&reception
Waiting area	1		24	24		1	Waiting area
Patient changing rm	2		8	8		2	Patient changing rm
Dr's&examination rm	1		16	16		1	Dr's&examination rm
Nurse station(with washbasin)	1		8	8		1	Nurse station(with washbasin)
Staff rm	1		8	8		1	Staff rm
				8		**1**	**Nurse rest rm**
Interference rm	1		8	8		1	Interference rm
Ten bed patient rm	1	10	64	**32**	**5**	**2**	**Five bed patient rm**
One bed patient rm(for infectious deseass)	1	1	8	**16**	1	1	One bed patient rm(for infectious deseass)
Washing&sterilization rm	1		8	8		1	Washing&sterilization rm
Water disposable equipment rm	1		32	32		1	Water disposable equipment rm
Cleaning rm	1		8	8		1	Cleaning rm
Storage	1		8	8		1	Storage
WC							WC

6.11. Pharmacy

6.11.1. Scope

The Medicine requirement of the hospital is answered by this department. Some of the medicine are produced in the pharmacy.

6.11.2. Parts of the Department

- Medicine Storage
- Medicine Production Space
- Doctors' room
- Cotton and Serum Storage

6.11.3. How Does It Work

In the production area medicines are produced. Some of them are daily used. So they are sent to the daily storage. The other goes to the medicine storage. In medicine storage there are a lot of medicine which is bought from the factories.

6.11.4. Relationships

This department must be located near to the patient units, operating theaters departments.

Table 6.11. 1 Pharmacy -

The Programme In Use Today						Proposed Programme
PHARMACY						
Name of Space	**N.rm**	**Per.s**	**m2**	**m2**	**Per.s**	**N.rm**	**Name of Space**
Dr. rm	1		16	16		1	Dr. rm
Chief Dr. rm	1		16	16		1	Chief Dr. rm
Cerum Storage	1		32	32		1	Cerum Storage
Medical Storage	1		32	32		1	Medical Storage
Medicine Storage	1		32	32		1	Medicine Storage
Daily Medicine Storage	1		32	32		1	Daily Medicine Storage
Medicine Storage	1		32	32		1	Medicine Storage
Cotton Storage	1		32	32		1	Cotton Storage
				32		**1**	**Medicine Production Laboratory**

6.12. Mortuary

6.12.1. Scope

The corpse of patients who has just died will wait here before the burial.

6.12.2. Parts of the Department

- Cold room
- Body washing room
- Egg-box store
- Imam's room

6.12.3. How Does It Work

The corpse of the patient arrive to the cold room. It will wait a necessary time duration in this room. It will be moved to body washing room. After being washed by the Imam, it will be put in an egg-box and will leave the hospital. So this department will nececiates a separate entrance.

6.12.4. Relationships

It must have easy access to the operation theaters and inpatient department.

The Programme In Use Today MORTUARY Name of Space	N.rm	Per.s	m2	m2	Per.s	N.rm	Proposed Programme Name of Space
				64		**1**	**Entrance,waiting&ceremony hall**
				16		**1**	**Special waiting rm**
Imam's rm(with WC&washbasin)	1		8	**16**		1	Imam's rm(with WC&washbasin)
				24		**1**	**Entrance for bodies**
Body washing, shaving rm	1		16	16		1	Body washing, shaving rm
Autospy rm	1		24	24		1	Autospy rm
Cold rm(for eight box)	1		24	24		1	Cold rm(for eight box)
ventilation)	1		8	8		1	ventilation)
Egg box store(related with body washing)	1		16	16		1	Egg box store(related with body washing)
Changing for staff(with shower)	2					2	Changing for staff(with shower)

Table 6.12.1 Mortuary -

6.13. Technical Center

6.13.1. Scope

This department gives technical support service to the hospital.

6.13.2. Parts of the Department

- Heating Center
- Ventilation Center
- Central Oxygen Supply
- Vacuum Central
- Electrical Center
- Rubbish Storage

6.13.3. How Does It Work

Each center of the department is a standalone center, can located in the different places of the hospital. It needs a separate entrance.

6.13.4. Relationships

This department has no relation with the patient & health stuff.

Table 6.13. 1Technical -

The Programme In Use Today							Proposed Programme
HEATING CENTER							
Name of Space	**N.rm**	**Per.s**	**m2**	**m2**	**Per.s**	**N.rm**	**Name of Space**
Hot water boilers space	1		240	240		1	Hot water boilers space
Cold water tanks space	1		120	120		1	Cold water tanks space
Daily use tank	1		40	40		1	Daily use tank
Technical center panels	1		40	40		1	Technical center panels
Technical center ventilation santral	1		32	32		1	Technical center ventilation santral
Door keeper rm	1		24	24		1	Door keeper rm
VENTILATION CENTER							
Name of Space	**N.rm**	**Per.s**	**m2**	**m2**	**Per.s**	**N.rm**	**Name of Space**
Local climatisation space			80	80			Local climatisation space
- Operating theatre							Operating theatre -
- Intensive care unit							Intensive care unit -
Ventilation santral			120	120			Ventilation santral
- Kitchen							Kitchen -
- Laundry							Laundry -
- Dining hall							Dining hall -
- Conference hall							Conference hall -
- All the entrance&waiting hall							All the entrance&waiting hall -
- Outpatient&diagnostic dept.							Outpatient&diagnostic dept. -
- Garage							Garage -
- All the place which haven't a natural ventilation possibility							
Fan coil(is used in the inpatient dept)							
CENTRAL OXYGEN SUPPLY			**40**				
VACUUM CENTRAL			**24**				

Table 6.13.2 Technical -

The Programme In Use Today							Proposed Programme
GENERAL STORAGE		6		24			
ELECTRICAL CENTER							
Name of Space	**N.rm**	**Per.s**	**m2**	**m2**	**Per.s**	**N.rm**	**Name of Space**
Measurement unit			40	40			Measurement unit
Main table			32	32			Main table
Generator			40	40			Generator
CONCRETE WATER STORAGE(2x250 Ton)							
RUBBISH STORAGE			80	60			
CAR PARKING							
Name of Space	**N.rm**	**Per.s**	**m2**	**m2**	**Per.s**	**N.rm**	**Name of Space**
Duty driver rm(S)	1		16	16		1	Duty driver rm(S)
Equipment store	1		8	8		1	Equipment store
Drivers' rm	1		16	16		1	Drivers' rm
Garage(for 4 cars)	1		100	100		1	Garage(for 4 cars)
Open car parking (for 80 cars)							Open car parking (for 80 cars)

6.14. General Services

6.14.1. Scope

This department gives support service to the hospital.

6.14.2. Parts of the Department

- Cafeteria
- Kitchen
- Conference Hall & Library
- Bed Disinfection Space
- Laundry
- Stuff Dormitory
- Appliances Workshop

6.14.3. How Does It Work

Each center of the department is a standalone center, can located in the different places of the hospital.

6.14.4. Relationships

Cafeteria, conference hall & library can be used by the patient and stuff so it must be easily accessible. Kitchen, Laundry and stuff dormitory and appliance workshop has less priority than the others.

Table 6.14. 1 General Services -

The Programme In Use Today							Proposed Programme
CAFETERIA							
Name of Space	**N.rm**	**Per.s**	**m2**	**m2**	**Per.s**	**N.rm**	**Name of Space**
Drs'.&nurses' dining hall	2	75	96	**264**	**200**	**1**	**Drs',nurses',staffs'&technicians' dining hall**
Staffs' dining hall	1	50	64				
Office&service desk	1		40	40		1	Office&service desk
Rest rm	1		32	32		1	Rest rm
				48		**1**	**Ten, coffee&beverage bar**
WC							WC
KITCHEN			**480**				
Name of Space	**N.rm**	**Per.s**	**m2**	**m2**	**Per.s**	**N.rm**	**Name of Space**
Chief of kitchen							Chief of kitchen
Entrance&scaling area							Entrance&scaling area
Kitchen responsable office							Kitchen responsable office
Dieticians office							Dieticians office
							Changing rm(S)
Store							Store
- Cold rm&compressor							Cold rm&compressor -
- Silo (for flour&grain)							Silo (for flour&grain) -
- Daily store							Daily store -
- Daily cold rm							Daily cold rm -
Preparation Section							Preparation Section
- Preparation&cleaning							Preparation&cleaning -
- Hot kitchen							Hot kitchen -
- Cold kitchen							Cold kitchen -
- Meat, fish&vegetable prep.							Meat, fish&vegetable prep. -
- Pastry preparation							Pastry preparation -
- Diet kitchen							Diet kitchen -

Table 6.14.2 General Services -

The Programme In Use Today							Proposed Programme
CAFETERIA (Cont.)							
Name of Space	**N.rm**	**Per.s**	**m2**	**m2**	**Per.s**	**N.rm**	**Name of Space**
- Breakfast kitchen							Breakfast kitchen -
- Milk&baby food kitchen							Milk&baby food kitchen -
- Bread store							Bread store -
- Service desk&conveyors' park							Service desk&conveyors' park -
							Arrival dirty dishes
- Washing the dishes							Washing the dishes -
- Store of clean dishes							Store of clean dishes -
- Conveyors' park							Conveyors' park -
Changing rm for staff(S)							Changing rm for staff(S)
CONFERENCE HALL&LIBRARY			**400**				
Name of Space	**N.rm**	**Per.s**	**m2**	**m2**	**Per.s**	**N.rm**	**Name of Space**
Entrance							Entrance
Foyer							Foyer
Cloak rm							Cloak rm
Buffet							Buffet
Conference hall	2	200			200	1	Conference hall
Simultenous translation boxs	4		16	**4**	**1**	**6**	Simultenous translation boxs
Preparation rm	1		16	16		1	Preparation rm
Projection&film demonstration rm			16	16		1	Projection&film demonstration rm
Library			64	64			Library
				64		**1**	**Exhibition hall**
							Tea&coffee box
WC							WC
Store							Store

The Programme In Use Today				Proposed Programme			
LAUNDRY(Mechanical or natural ventilation)			**200**				
Name of Space	**N.rm**	**Per.s**	**m2**	**m2**	**Per.s**	**N.rm**	**Name of Space**
Controlling rm							Controlling rm
Chief office							Chief office
Dirty laundry seperation space							Dirty laundry seperation space
Disinfection space							Disinfection space
Laundry preparation							Laundry preparation
Laundry							Laundry
Soap store							Soap store
Drying							Drying
Sewing							Sewing
Ironing							Ironing
Controlling							Controlling
Clean laundry store							Clean laundry store
Clean laundry distributing area							Clean laundry distributing area
Conveyors' park							Conveyors' park
Staff changing(S)							Staff changing(S)
BED DISINFECTION SPACE			**80**				
STAFF DORMITORY							
Name of Space	**N.rm**	**Per.s**	**m2**	**m2**	**Per.s**	**N.rm**	**Name of Space**
Women staff dormitory	1		24	24		2	Women staff dormitory
WC&Shower							WC&Shower
Men staff dormitory	1		24	**24**		**2**	Men staff dormitory
WC&Shower							WC&Shower

The Programme In Use Today							Proposed Programme
APPLIANCES WORKSHOP							
Name of Space	**N.rm**	**Per.s**	**m2**	**m2**	**Per.s**	**N.rm**	**Name of Space**
Chief office	1	1	16	16	1	1	Chief office
Carpentry rm	1		24	24		1	Carpentry rm
Palster rm	1		16	16		1	Palster rm
Electrical&elevator technicians' rm	1		24	24		1	Electrical&elevator technicians' rm
Repair shop	1		24	24		1	Repair shop
Mediacal equipment repairshop	1		24	24		1	Mediacal equipment repairshop
							Staff changing rm
WC							WC

Table 6.14.4 General Services -

CHAPTER VII :

CHILDREN'S HOSPITAL IN URFA

7.1. The Reason of the Selection of Urfa

Until this chapter general criteria of children's hospital is analyzed, but now we are examining the criteria of Urfa.

According to the Health Ministry's documents, there are only five children's hospitals in Turkey (in Ankara, İzmir, İstanbul, Rize and Gaziantep). In addition there is one more private children's hospital in Manisa.

When the distribution of the children's population is examined, we observe that it increases in the south-east and east Anatolia. But the children's bed capacity does not increase at the same level in these regions.

The ratio of babies that is a very important at the general epidemiology of Turkey. The population of our country is mostly contains children and babies. However the improvement of the health condition of the children is not equal to the general improvement of the health condition. The protector health service is shared to the Mother & Child Health Care Head Office, and Basic Health Care Head Office by the Ministry of Health. Ten percent of the children borned in Turkey, can not live more than five years. The ratio of death for children who are smaller than five years old, according to the region is as follows.

Region	Ratio
West	74.7
South	97.9
Middle	100.8
North	70.0
East	117.1

The reason of the children's death is lack of nourished. So to improve the children's health condition, the basic health care service is not sufficient, it is also, the nourished and general site condition have to be improved. The consumption of the calorie is under the average of Turkey in East and South-East Anatolia. According to the region, the percentage of the lack of nourished is as follows.

Region	Age(Month)	Lack of Nourished
Middle	0-24	30.5
East&South East	0-36	31.1

As a result, it is obvious that there is an obligation of given more importance to the health of children in the east&south-east Anatolia. To see better, the bed capacity and their uses, in the regions have to be analyzed for this region. The next table includes the bed capacity of Urfa and the neighbors.

City	Bed Capacity	10.000 Person/Bed	Bed Usage
Adıyaman	310	6.9	36.3
Diyarbakır	1,805	24.0	52.0
Gaziantep	1,388	13.4	56.8
Mardin	285	5.6	33.5
Şanlıurfa	568	7.2	34.4
Average of Turkey	110,294	16.2	

This region needs a hospital. After the termination of the South-East Anatolia project, the migration is expected to Gaziantep, Diyarbakır and Siirt. In addition, Mardin and Urfa will be important centers. Especially in Urfa, there are a lot of place which has

been seperated for hospitals by the Ministry of Health. Therefore the Urfa Children's Hospital can be excepted as a regional hospital.

7.2. Site Criteria

The site that is suggested by the Ministry of Development, is in the outside of the city center. It is in the region which will develop. There is a lot of slope in the site. It is very near to the one of the main road of Urfa. There is no transport's problem.

Hospital is located parallel to the south-north direction. So, the south and north's facade of hospital is minimized. In addition to obtain more advantage from the slope the building is placed the site as a perpendicular to the slope lines.

At the entrance of the building, there is a car parking for 100 cars. The main entrance and outpatient entrance is taken from the same level. The emergence entrance is seperated and taken at the lower level. The service and mortuary entrance is another level.

7.3. General Relations of The Department

As we said before, there is a lot of slope in the site. So by using of this slope the entrances are taken from different levels. There are the main entrance and the outpatient department entrances in 588m, emergency entrance is in 584m, mortuary entrance in 576m, and service entrance in 572m.

There are outpatient department, administration, accounting offices and hemodialise center at the ground floor. At the first floor, there are outpatient department, administration, doctors' rooms and eating hall. At the first basement, there are laboratories, x-ray department and emergency.

It is supposed that the ground floor, first floor, and basement will be the more-public floor. The surgical inpatient department operating department, intensive care unit, pharmacy, and blood center are located at the second basement.

In the third and forth basement, the inpatient department, technical and general department are placed. Because of the slope, inpatient department continue at the fifth and sixth basement. All the basement illuminated naturally.

The hospital building has central ax which is parallel to the south and north direction all the activities are linked to this ax. The ax resembles to the medulla. By the aid of this ax hospital circulation is solved easily.

Total area of the hospital is 28750m2 with %70 circulation.

7.4. Application of The New Approach to The Urfa Children's Hospital

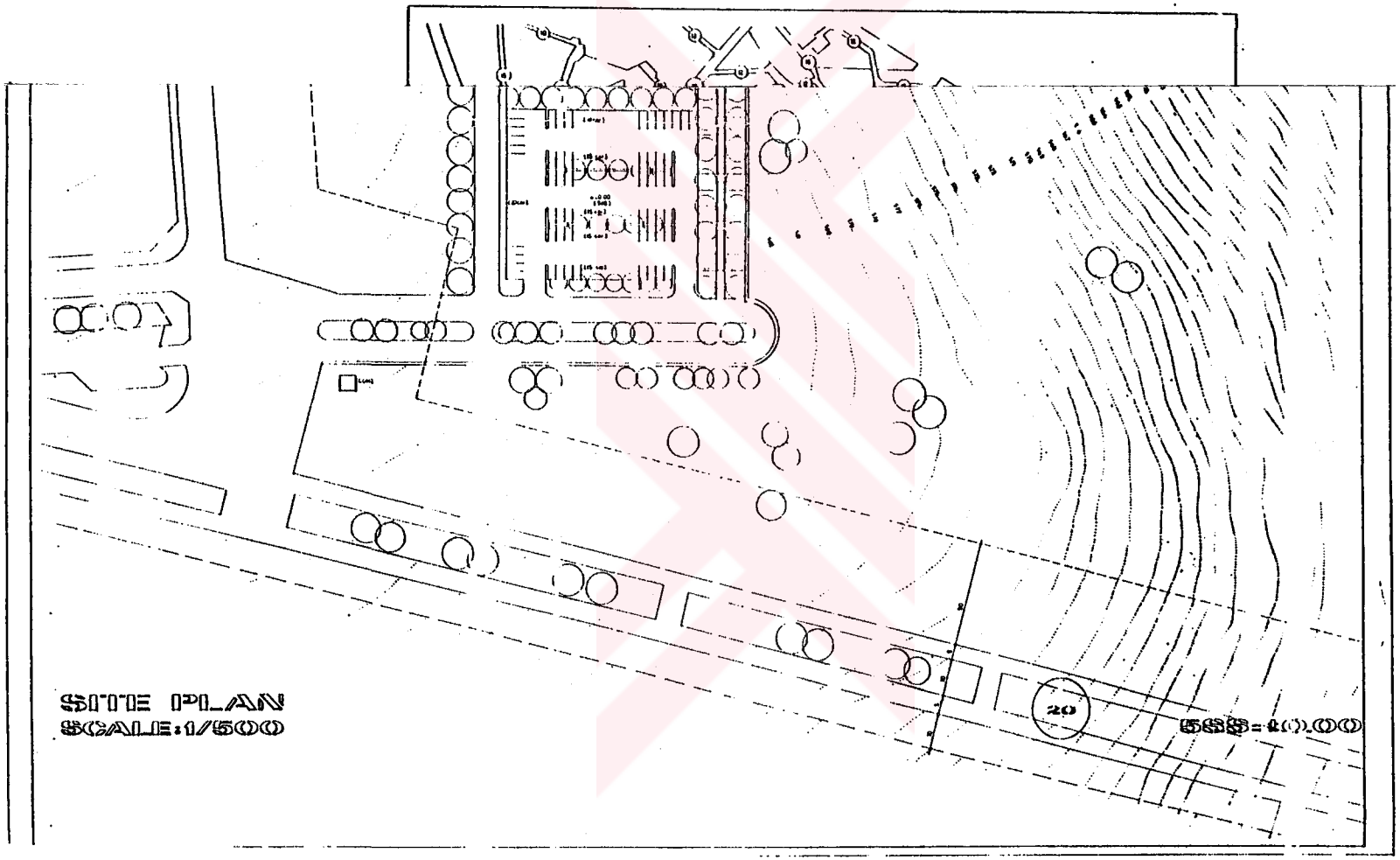
It is suggested that the increase and development of the outpatient and diagnostic department, however the decrease of the inpatient department in the master thesis.

In addition it is supposed that the main part of the inpatient department will be surgical inpatient unit. Therefore the Urfa Children's hospital is designed with a developed outpatient and diagnostic department according to the other 250 bed children's hospital.

To minimize the bad effect of the hospital's conditions under the children they have to be near to their family as well as possible. So the size of bed rooms is increased for attendant. In addition, the play room and education room is added because of the same reason. The children will continue their education in the hospital.

The inner play-garden is made for amusing the children who waits their examination in the outpatient. The size of the corridors and waiting areas are expanded

according to the children and their family. However, the development and flexibility of hospital is defended in the thesis, however these ideas aren't applicated in the project.


SITE PLAN
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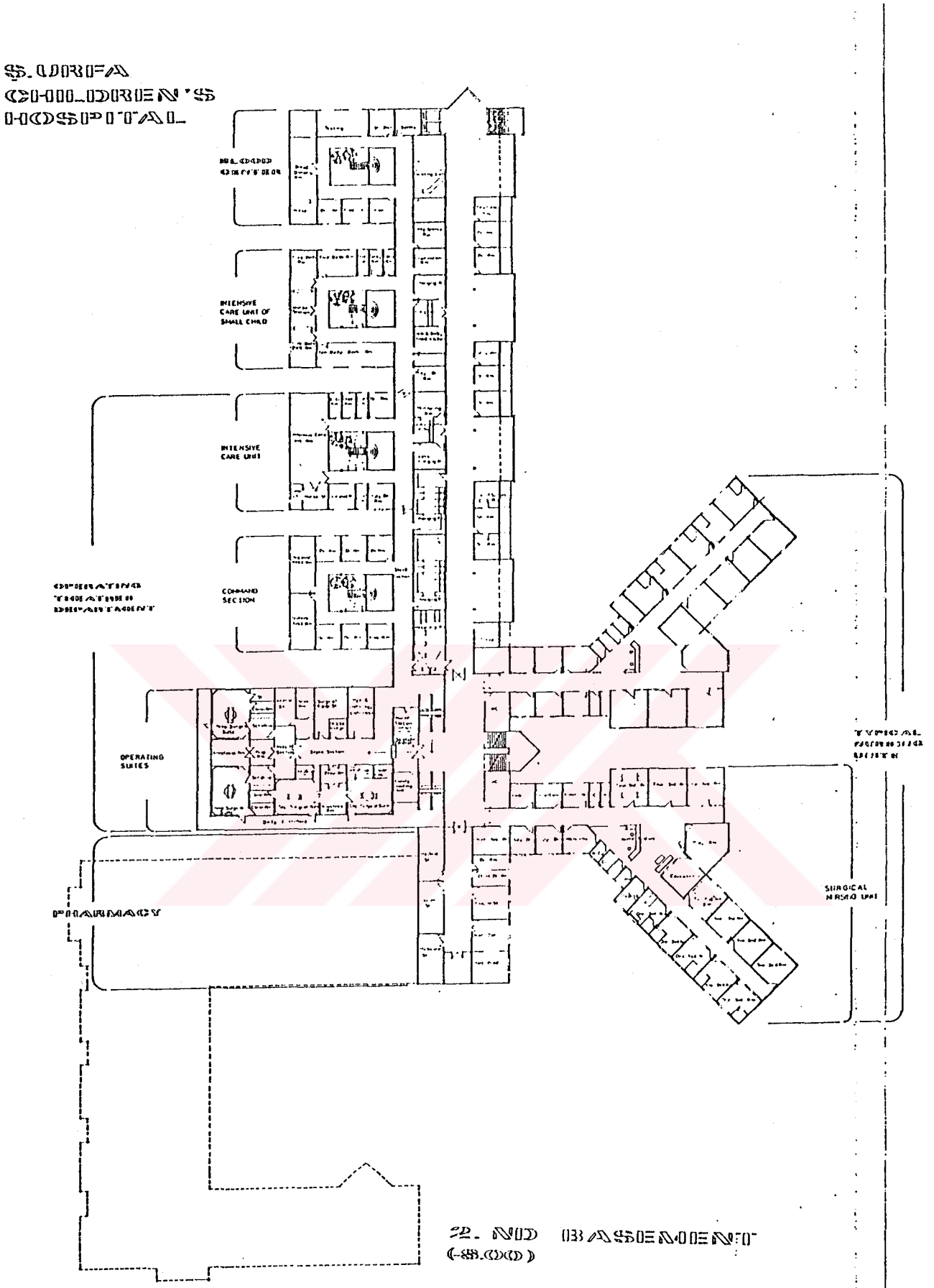

Figure7.2 Plan of the Ş. Urfa Children's Hospital

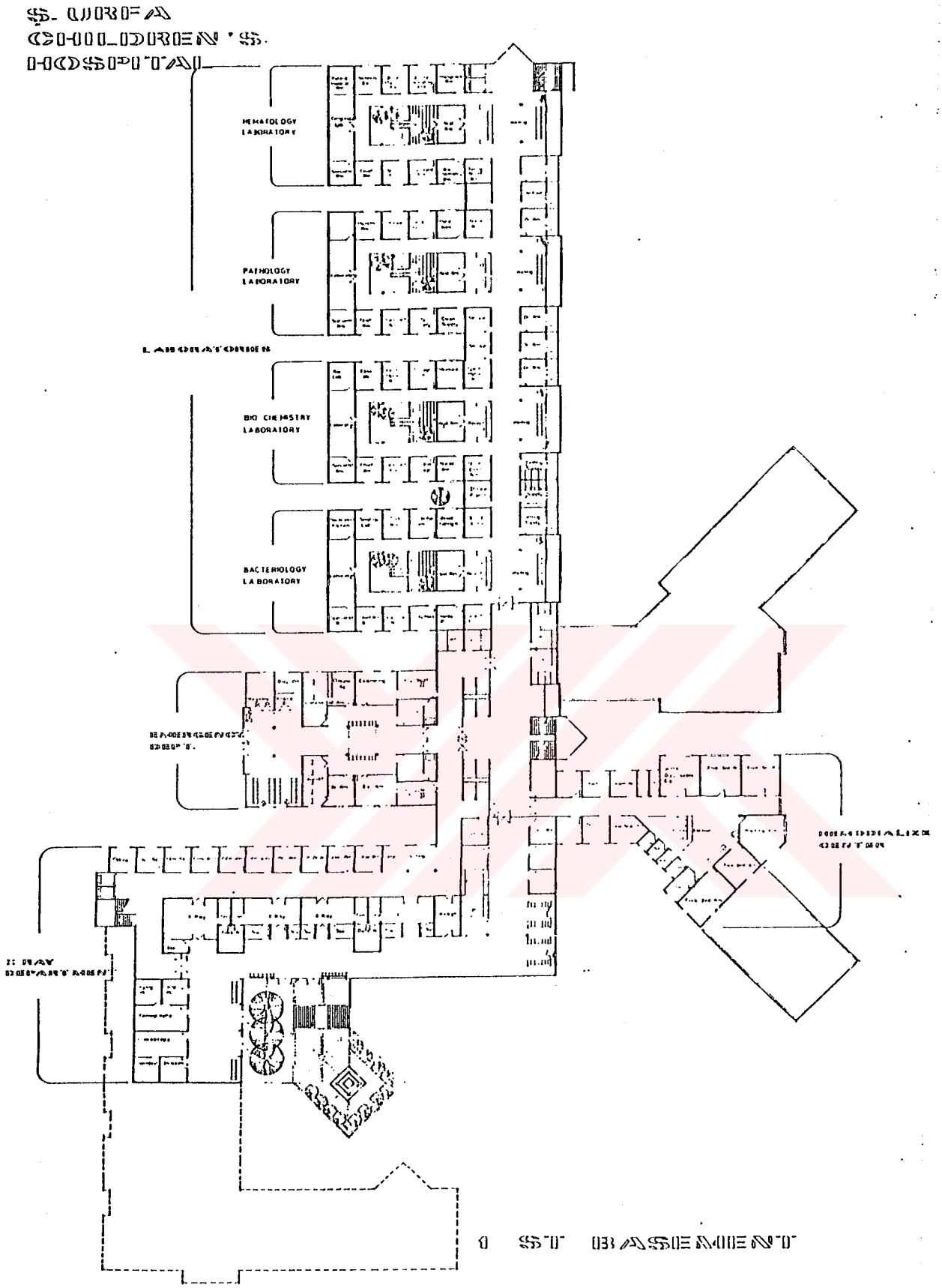

Figure7.3 Plan of the Ş. Urfa Children's Hospital

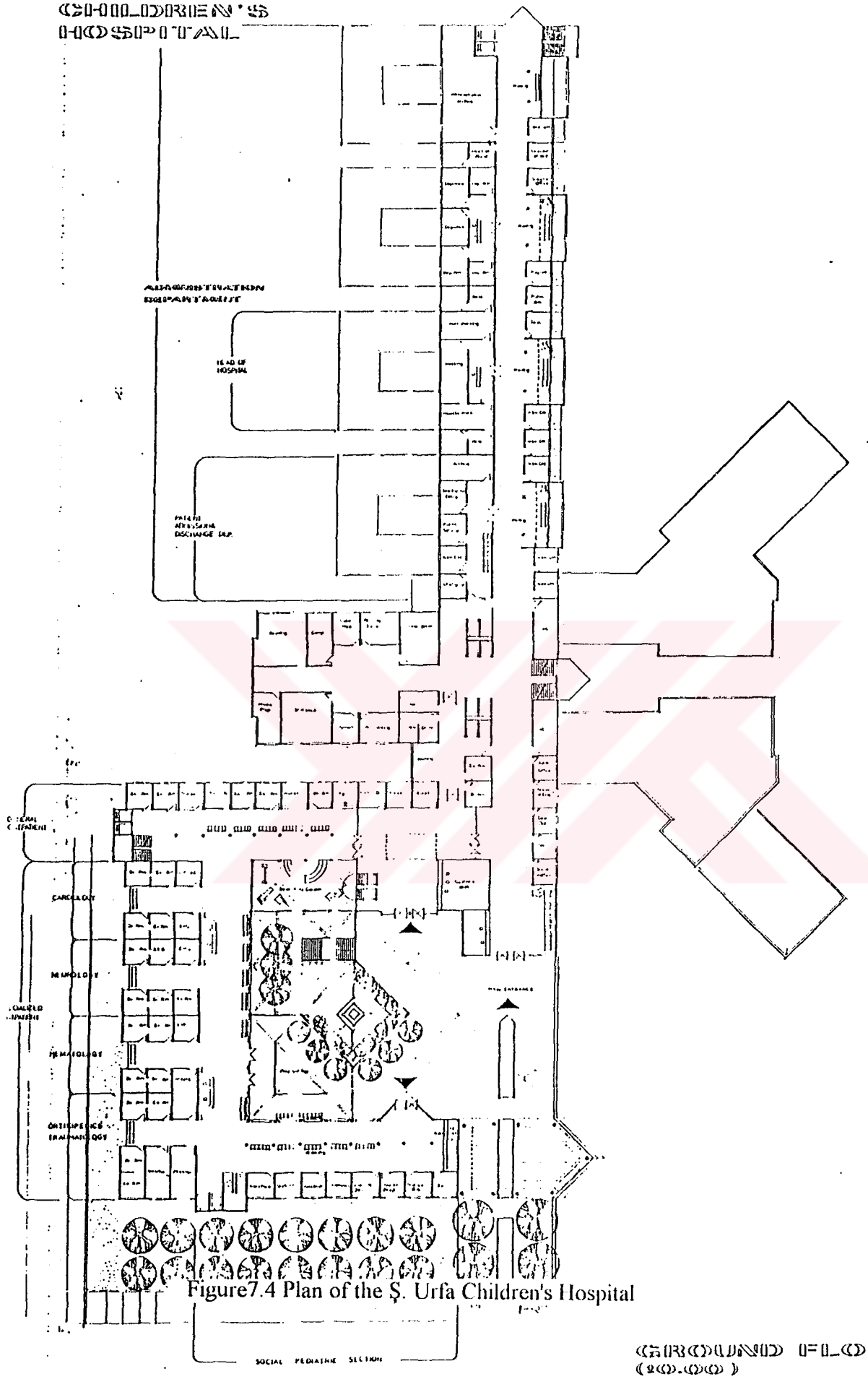

Figure7.4 Plan of the Ş. Urfa Children's Hospital

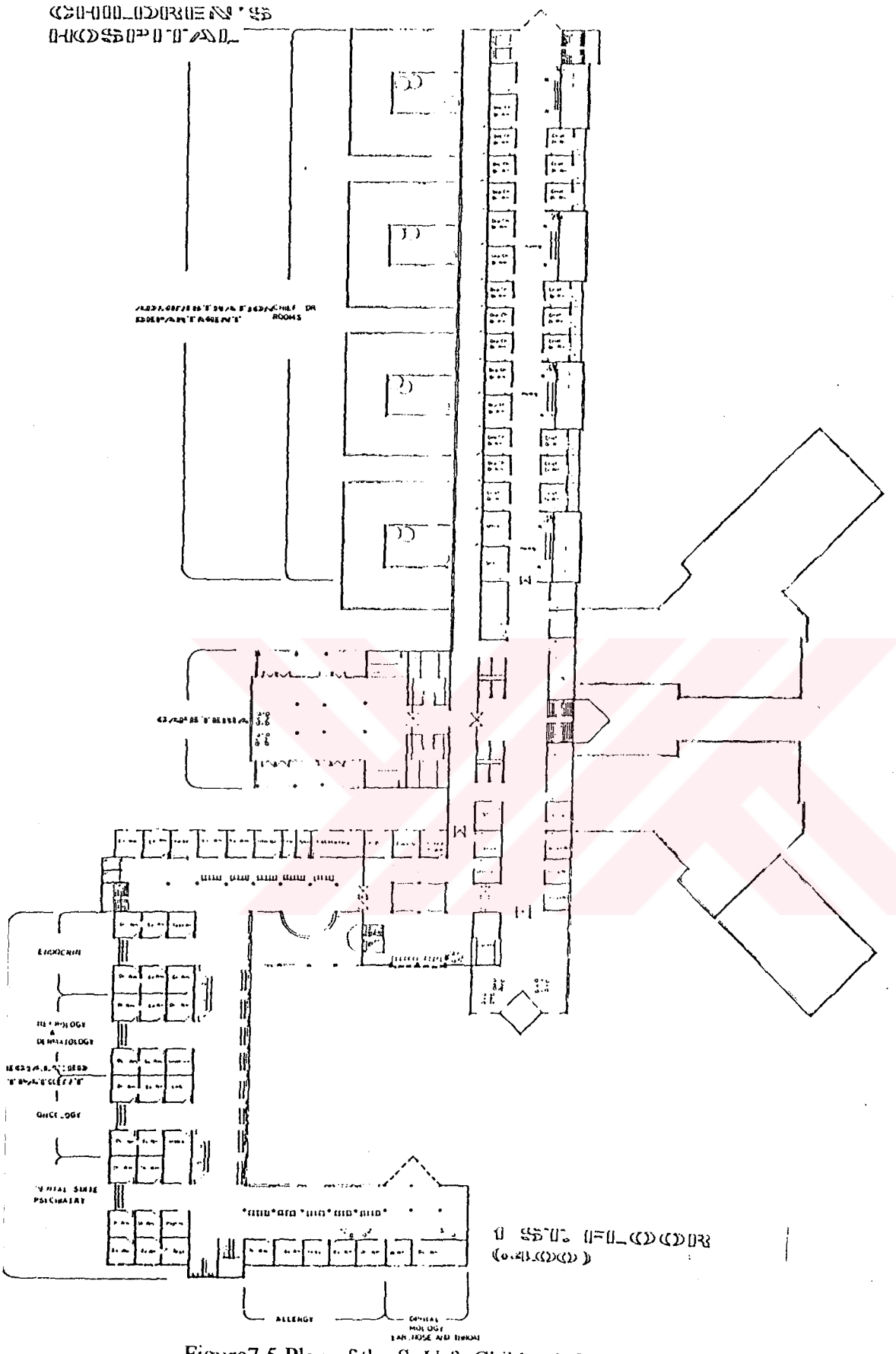

Figure7.5 Plan of the Ş. Urfa Children's Hospital

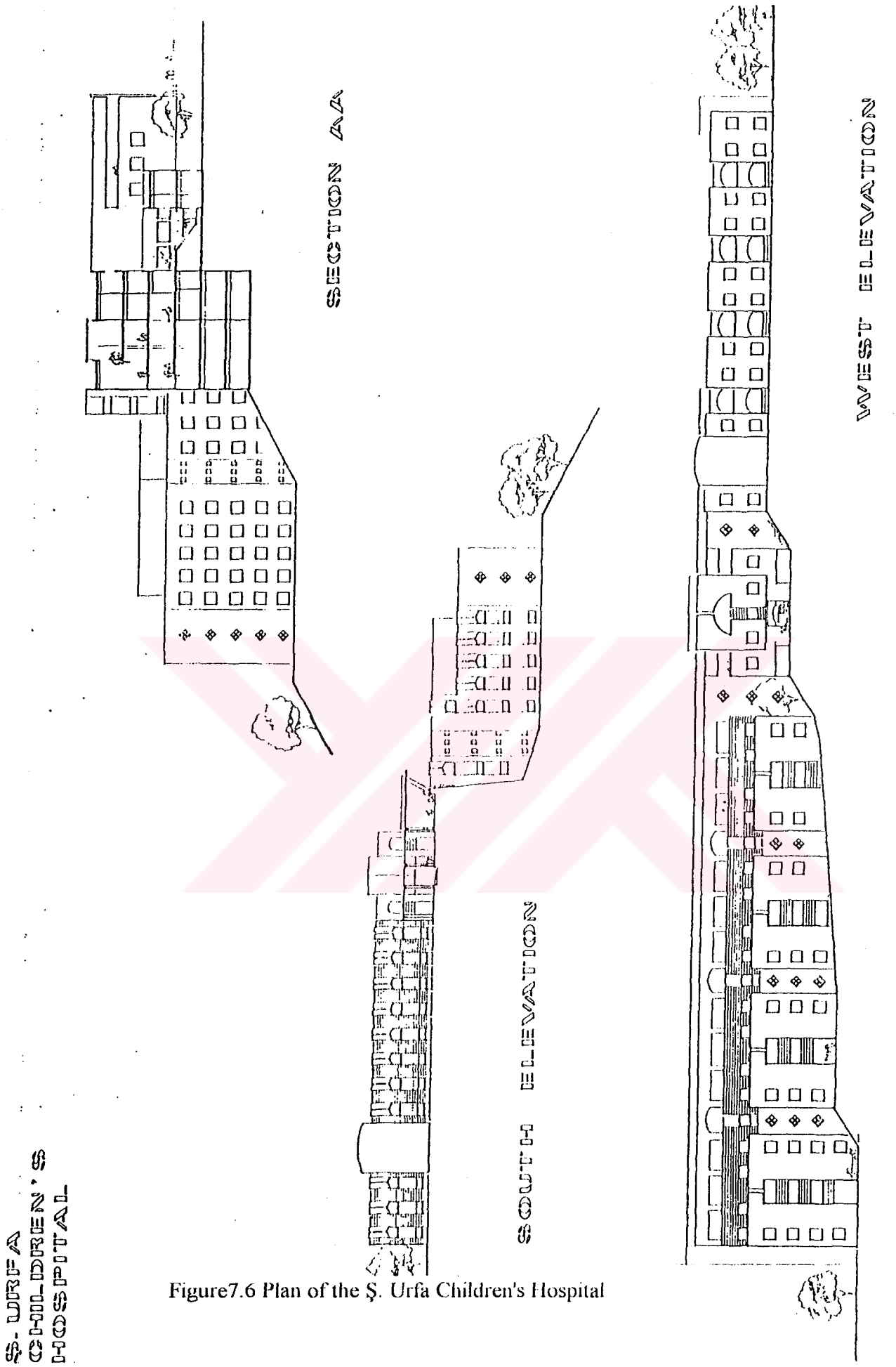

Figure7.6 Plan of the Ş. Urfa Children's Hospital

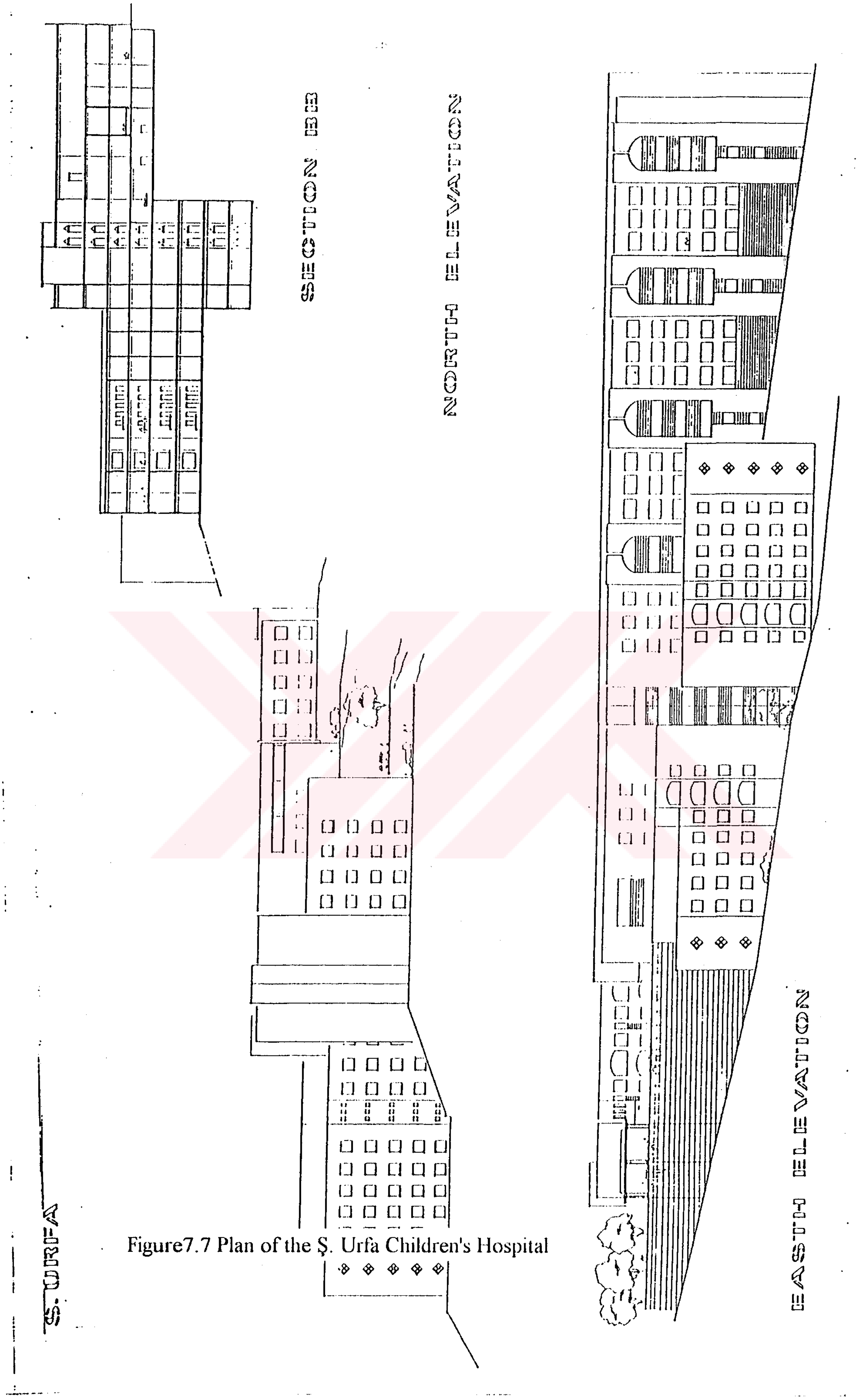

Figure7.7 Plan of the Ş. Urfa Children's Hospital

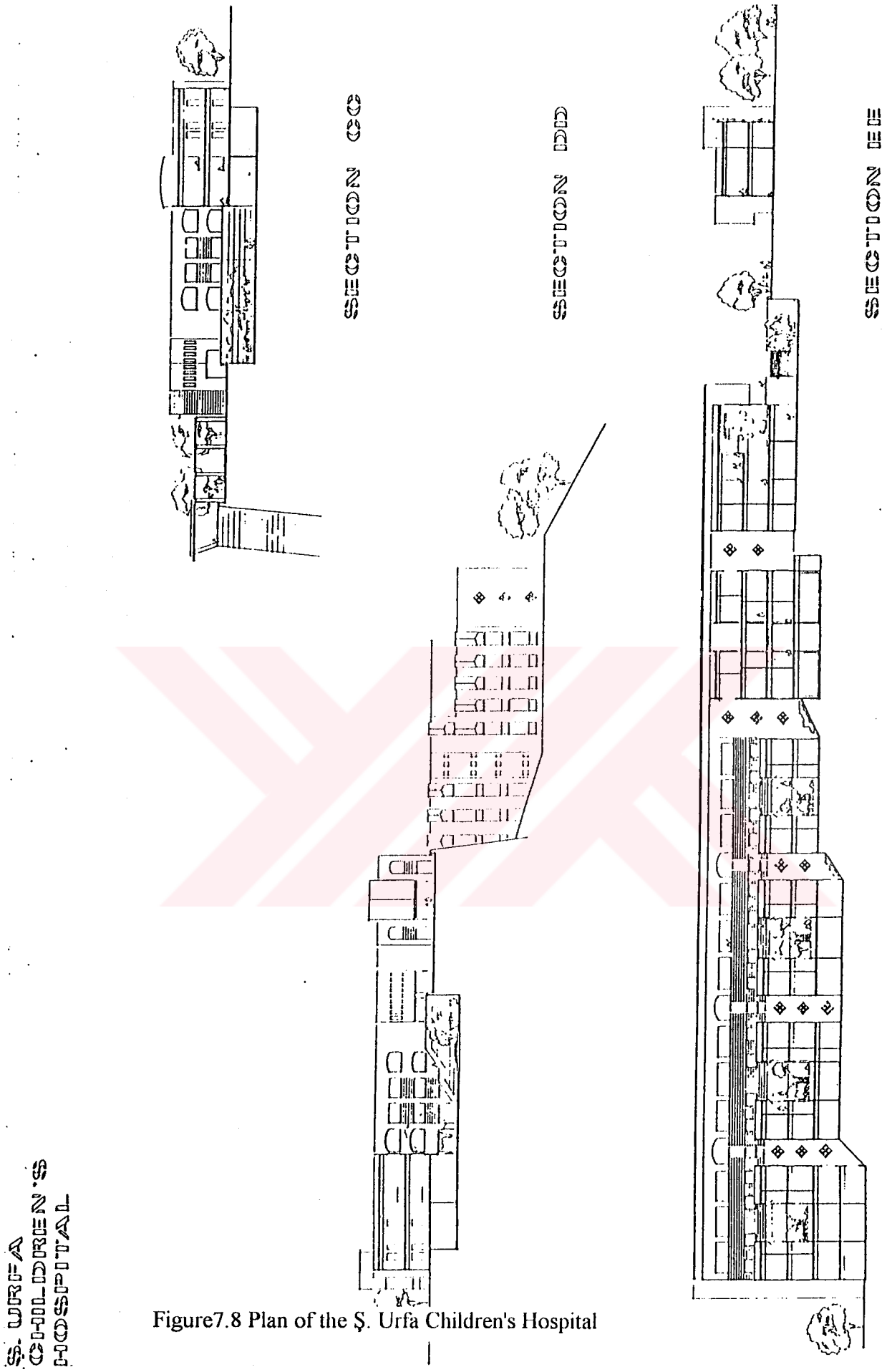

Figure7.8 Plan of the Ş. Urfa Children's Hospital

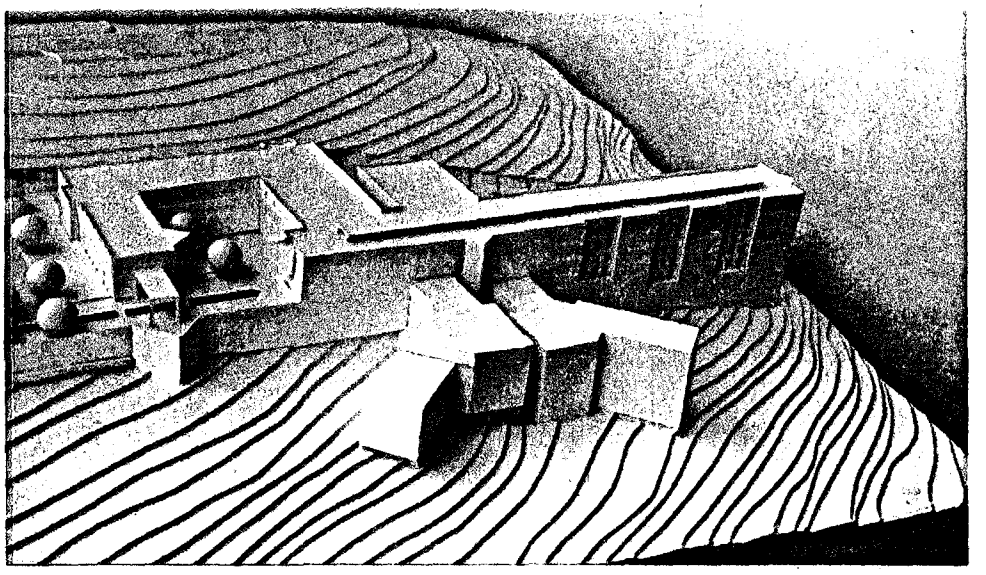

Figure7.9 Plan of the Ş. Urfa Children's Hospital

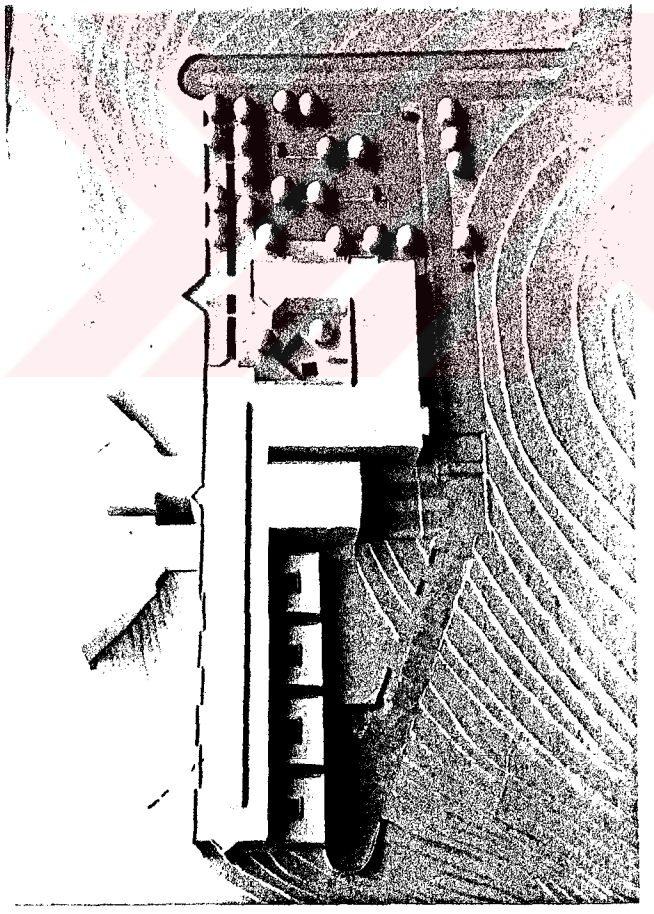

Figure7.10 Plan of the Ş. Urfa Children's Hospital

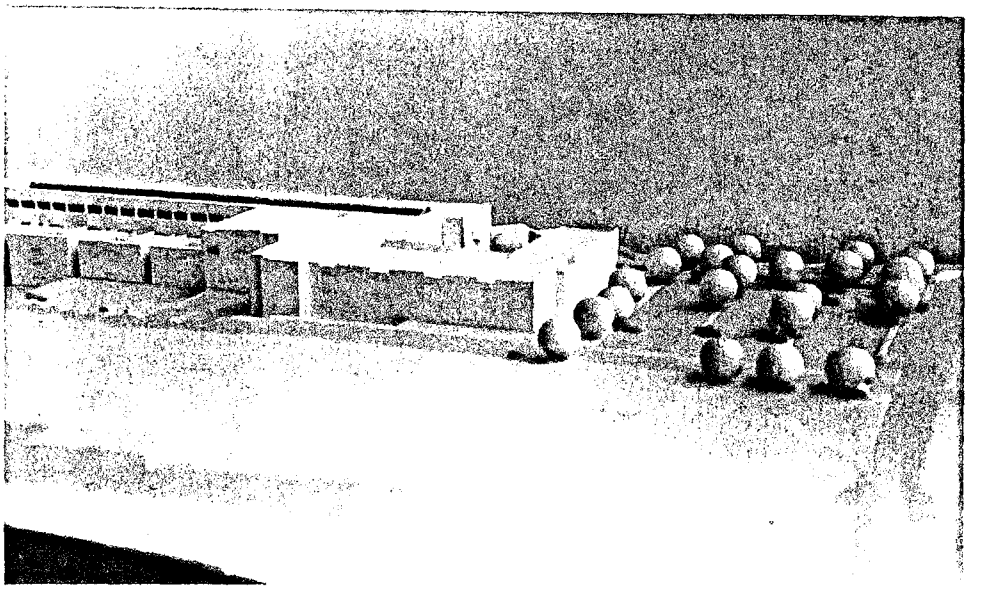

Figure7.11 Plan of the Ş. Urfa Children's Hospital

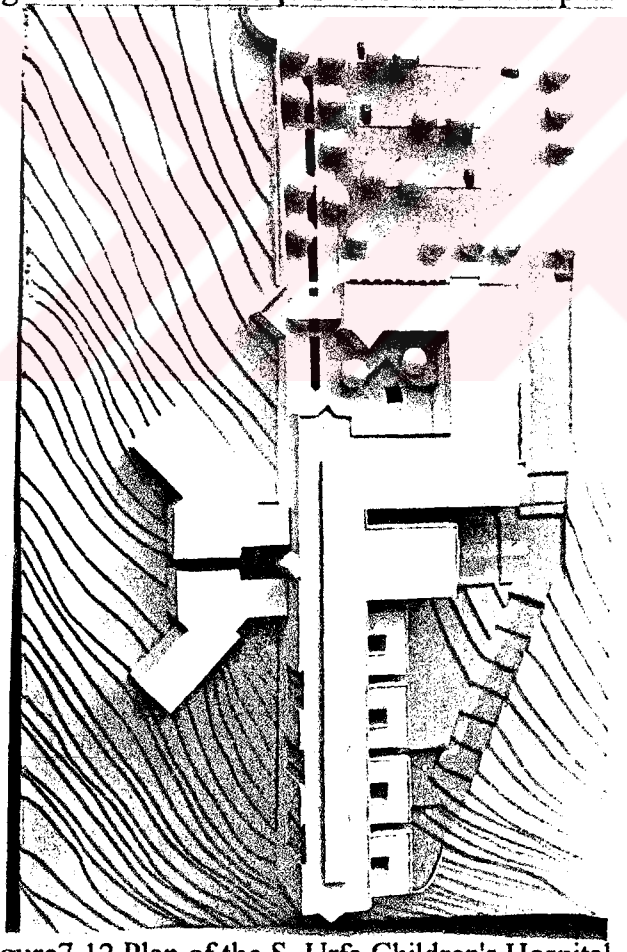

Figure7.12 Plan of the Ş. Urfa Children's Hospital

CHAPTER VIII:

CONCLUSION

In this master thesis, there was general view of the Turkish Health Policy. The target of Health care of Turkey until now and future was examined. At this points, it was supposed that the being widespread of special hospitals, especially, one of the special hospital was examined. The children's hospital are insufficient in Turkey. In contrary, most of our population is made of children and young persons. The children hospitals in Ankara, İstanbul and İzmir, are very crowded. A lot of 100 bed hospitals are not used productive because of the insufficient and diagnostic department. So the raid of to the big center can not be stopped. A lot of beds are useless in the small cities and towns, however, there are no beds in the big cities. Therefore, it is supposed that the hospital which have limited bed capacity like 100 or 200 beds with a developed outpatient and diagnostic department.

In addition, it is supposed that the most of the inpatient unit are used by surgical patient. It is proposed that the other patient will be treated in their home. The doctors will go to the house of their patient. However this propose is far from the condition of Turkey. But the tenth of the world is in this direction. As a result in this master thesis, the developed outpatient and diagnostic department and minimized inpatient department is proposed.

Another point is the decreasing the bad effect of the hospital condition on the children. If the giving a treatment at home is impossible, the children has to be near to

their family, especially, their mother. So the condition of the attendant has to be improved so the patient bedrooms are enlarged and play room and education room are added.

This thesis also includes a new hospital program if it is assumed that the hospitals are designed by the architect who has no special knowledge about the hospital. The hospital program is given by the Ministry of Public Works is far from the giving a concept of hospital design. In the new program the relation of the space is explained in detail.

This new program is applicated in the Urfa Children's Hospital as possible as.

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