PLAINVIEW
MEDICAL
COMPLEX
LOUISVILLE, KENTUCKY
In the field of medicine exploration is a never ending process. As our world continues to evolve, so do we as human beings. The effect of this slow but constant rate of change subjects the human body to various forms of problems, all of which are in need of a solution. The general practitioner (family doctor) is the primary step in the diagnostic process. However, it is virtually impossible for the general medical doctor to encompass the total available knowledge of the entire medical profession. Therefore, specialists in medicine are of inordinate value. If the rate of medical problems there must be an unbroken chain between the general practitioner and the medical specialist. One such way of accomplishing this is to provide a physical environment that would house both components of the profession.
The major intent of this project is to incorporate the talents of the general medical doctor and six of the most frequently used medical specialists. The six medical specialists have been established through interviews conducted with several family doctors. The six most often used by a general practitioner is a Pediatric specialist, OB/Gyn specialist, Dermatology specialist, Ear, Nose and Throat specialist, Internal specialist and Surgical specialist. These specialist clinics are normally operated by one doctor, plus staff. However, the general medical clinic in this project will have on staff four doctors, plus staff. This clinic will act as the hub of the complex, but it is important that this office does not overshadow the six supporting clinics. This complex must function not only on the individual level of each clinic, but as a group of clinics. In addition to the seven doctors' offices the complex also is to house laboratory and x-ray facilities that is large enough to accommodate the patient flow of the seven offices. A pharmacy is also to be located within the complex as well as a cafeteria. The relationships of the various parts of the complex is of primary concern. The organizational system that will arrange the various components of this complex will play a vital role in the design process.

Beyond the primary task of organizing the various components is the desire to create a new and unique concept in housing these medical professionals. It is important to first recognize that medical facilities in the past have ignored the attitudes of the patients that are directly generated by the building atmosphere. The majority of the people that are in need of medical care are not happy about it and to place these people in an environment that is unconscious to their needs is a detriment to their mental outlook towards the healing process. This project is committed to creating an atmosphere that is conducive to the healing process. The overall complex must work to produce a positive attitude towards medical examination and treatment.
The scope of this program shall entail a concise organization of all user requirements; individually established by each particular user type. This information shall provide the building designer with the needed criteria to produce the proper solution for all interacting users of functioning within the complex.
The following have been helpful in providing information.

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The primary intent behind this project is to provide the public with a new concept in health care facilities. As complexities within the field of medicine tend to increase so does the need of interaction between the family practitioner and medical specialists. Essential considerations are needed to promote this interaction and they are as follows:

PUBLIC

- Provide a facility that houses the most frequently needed health care professionals.
- Locate the facility where it will be most convenient to those of the surrounding community.
- Provide an atmosphere that will most comfortably suit the needs of the public throughout the facility.

HEALTH CARE PROFESSIONALS

- Provide a facility that accommodates a convenient relationship between all health care professionals within the complex.

- Provide a facility that offers a system of spacious organization that best suits each individual health care professional.

OVERALL COMPLEX

- Provide an environmental system that is capable of producing and maintaining a clean healthy atmosphere throughout.
- Dictate building materials that are conducive of maintaining a clean healthy atmosphere.
- Provide a facility that cooperates with the climatic surroundings - utilize passive solar technology throughout the design of the complex.
The primary objective of the project is to produce an environment that is a part of the healing process. The building itself can be just as valuable as the qualifications of the doctor in providing better health care. The following information must be considered essential in the design process.

There must be a positive transition from the parking area into the building and to each individual doctor office. Important considerations are: distance from parking area to building; entry size (horizontal and vertical); entry space quality (color, texture, lighting, etc.); distance from entry to lobby.

Exterior quality must be of intrigue so as to release patient fears and pressures; this also creates desire to enter.

Interior quality must also be of intrigue; during waiting time this would help the patient to get his/her mind off of their present medical situation. Important considerations are vertical height; color of materials as well as textures; acoustical and environmental; locations of spaces.

There must be a continual response to nature inside and outside. A visual contact is important for all users.

The building organizational system must at all times consider total patient confidentiality. Doctors personal privacy from entry to exit must also be of prime importance.

The building system must use operable windows when at all possible. This maintains an interior to exterior relationship plus provides energy saving during certain times of the year.
----Both building design and building systems must be energy efficient. Use passive solar techniques throughout the complex and possibly supplement with active solar systems. Site orientation is of primary importance.
BUILDING TYPE ANALYSIS

HOSPITALS AND MEDICAL CLINICS

ANALYSIS

No. 1. Wayne State University Health Care Institute; Detroit Receiving Hospital; Detroit Medical Concourse; Detroit, Michigan Joint Venture - William Kessler and Associates, Zeidler Partnership, Inc. and Giffels Associates, Inc.

No. 2. Medical Office Building Plantation, Florida Donald Singer

No. 3. La Jolla Orthopedic Surgery Clinic Jain Mailkin
ANALYSIS NO. 1
Wayne State University Health Care
Institute; Detroit Receiving Hospital;
Detroit Medical Concourse;
Detroit, Michigan

SITE PLAN

TYPICAL PLAN
SPACE:

With circulation controlling the center portion of each cruciform plan the outcome is a large open space. This space is filled with natural light that produces a light and open quality. The central pedestrian core provides the users with a well organized transition from public space into private spaces. This building is definitely a mood lifter. All users function within a healing atmosphere.

CIRCULATION:

The major circulation paths surround the open court that is located within the center of the cruciform plan. Circulation paths then branch out from this pedestrian hub into each wing of the plan. Centrally located circulation acts as a buffer between each of the four wings. The organization of pedestrian movement within this building eliminates any flow through circulation.
STRUCTURE
The structural system is a series of square bays. It is important to note that the columns are concealed within the framework of the walls. This dictates the way in which the plan is laid out. Rooms are organized throughout the building by the structural system. The outer perimeter of each wing is used for patient rooms and the center of each wing is used for the mechanical functions of a hospital.

FORM
The exterior form is clear, clean and shiny a description that is typical of a hospital, but usually this description pertains to interiors. The building skin is 5 foot wide aluminum panels. The 5 foot dimension was selected by the architects to underlay the size of the buildings. The exterior expresses an image of sterility. The smooth surface and rounded corners provide a calm atmosphere during user approach and entry.
ANALYSIS NO. 2
Medical Office Building
Plantation, Florida
CIRCULATION:
AUTO: The parking area for this building is located at ground level directly below the 2nd floor. Auto entry and exit is at both ends of the building and in the center of the building. Parking is provided on both sides of the auto corridor. This parking concept protects the users from the hot Florida sun.

CIRCULATION:
PEDESTRIAN: Pedestrian circulation is organised identical to the auto circulation, with the exception of various entry and exit points. The pedestrian way is centrally located which provides access to the offices on both sides. Office orientation is not to the outside, but is to the pedestrian corridor.
SPACE:
The interior spaces are organized around the pedestrian way. This space allows the sun to penetrate at certain points along the corridor creating bright focal points. In a climate that is typically hot this building has found a cool solution to the problem of long walks from the car to the office itself.

STRUCTURE:
The structure is a concrete frame with concrete block infill on the first level. Concrete block bearing walls with lightweight steel joists is the structural system used on the second floor. This type of construction works well with the scheme of the overall complex. The lack of columns on the second floor allows for the open quality dictated by the pedestrian way concept.
ANALYSIS NO. 3
La Jolla Orthopedic Surgery
Clinic
CIRCULATION:

Pedestrian circulation is controlled by a centrally located nurse's station. Patients wait in a remote waiting area, then when called they report to the nurse's station and are directed to their examination and/or treatment room. Two entries separate public from private circulation. This circulation system insures controlled and organized movement.

SPACE:

The interior spaces are unique in both plan and dimension. The architect chose to expose the truss joint system to increase the height of the space by two feet. The increased height reduces the tight closed-in feeling that is customary in many clinics.
STRUCTURE:
The structural system plays an important role in this building. The structural system is load bearing walls with steel truss joists used to support the roof deck. This system is a playful concept. Due to the irregular shape of the plan the structural system varies in height. This adds to the unique quality of the building.

FORM:
The exterior as well as the interior is controlled by the changing geometric shapes of the plan. The result is an ever changing form from one side of the building to the next. This typically is uncommon of most clinical type buildings, thus the result is a new experience for the users.
BUILDING TYPE ANALYSIS - CONCLUSION

CIRCULATION: One common element that all three of the buildings shared was a circulation hub. A centrally located space that organizes the circulation system. This circulation hub acts as a transition from outside to inside, it also provides a buffer between private and public spaces, and helps to reduce user confusion.

SPACE: A common consistency in all of the buildings is the quality of the spaces. There is a positive commitment by the designers to create a new and unique atmosphere. Clinics and hospitals in the past had maintained a sterile attitude beyond that of the necessary need of a healing atmosphere. It is evident that this trend is changing.

STRUCTURE: There appears to be no one structural system that is the norm for medical type buildings. However, the unique design is the best atmosphere for the patients, because it takes their mind off of their medical situation. This idea dictates a diverse type of structural system that can provide the designer with unlimited possibilities.

FORM: Form also belongs to this new attitude of clinical design. The unique and light quality of shapes provide the users with a new dimension in a healing atmosphere.
BUILDING TYPE ANALYSIS RESEARCH SOURCES


Design As Therapeutic Diversion, Interiors, May, 1976, pp. 100-111.
SITE PLAN
SCALE: 1" = 100'-0"

DISTURBING SOUNDS FROM I-64

NOISE

TO I-64 & DOWNTOWN LOUISVILLE

LINN STATION ROAD

RESIDENTIAL

PLEASING SOUNDS

URBAN SOUNDS

50 - 300

TO RESIDENTIAL AREA

NORTH
RESIDENTIAL

BUILDING SIZE @
ONE LEVEL
(40,000 sq. ft.)

FOOTBALL FIELD

SITE SCALE

LINN STATION ROAD

SITE PLAN
SCALE: 1" = 100' 0"

NORTH
OVERALL COMPLEX

SPACE TYPE:
MECHANICAL, WORKSHOP, JANITORIAL AND STORAGE AREA-------------------1200
ENTRY AREA------------------- 800
ATRIUM---------------------6000

TOTAL NET SQUARE FOOTAGE----2800

CAFETERIA

SPACE TYPE:
FOOD PREP.------------------- 800
FOOD STORAGE (cold & dry)----- 400
SERVICE AREA------------------ 300
WASH AREA--------------------- 200
DINING AREA-------------------1200

TOTAL NET SQUARE FOOTAGE----2900

PHARMACY

SPACE TYPE:
WAITING AREA------------------150
RECEIVING, DISPATCH STATION-----60
PHARMACIST'S, TYPIST'S WORKCENTER------------------600
ADMINISTRATION AND CLERICAL AREA------------------400
BACK-UP STORAGE---------------- 800
GENERAL RETAIL AREA------------------1200

TOTAL NET SQUARE FOOTAGE----3610
### X-Ray

**Space Type:**
- Waiting Area: 400
- Reception and Clerical: 150
- X-Ray Rooms: 450
- General X-Ray Room: 400
- Records Area: 150
- Storage and Supply Area: 200

**Total Net Square Footage:** 1550

### General Medical Clinic

**Space Type:**
- Waiting Area: 1200
- Reception and Clerical Area: 500
- Patient Screening Area: 240
- Nurses Station: 320
- Examination-Treatment Rooms: 2304
- Doctor's Private Office: 1280
- Medical Staff Lounge: 480
- Storage for Medical Supplies and Equipment: 256
- Janitor's Closet: 32
- Cart Alcoves: 30

**Total Net Square Footage:** 6644
### GENERAL SURGICAL CLINIC

**SPACE TYPE:**
- Waiting Area: 400
- Reception and Clerical: 150
- Nurses Station: 200
- Examination-Treatment Rooms: 384
- Scrubbing and Gowning Area: 144
- Operating Room: 400
- Clean Utility Room: 144
- Soiled Utility Room: 144
- Doctors Private Office: 320
- Storage for Medical Supplies and Equipment: 256

**TOTAL NET SQUARE FOOTAGE:** 2542

### PEDIATRIC CLINIC

**SPACE TYPE:**
- Waiting Area: 400
- Reception and Clerical: 150
- Feeding Rooms: 72
- Nurses Station: 200
- Examination-Treatment Rooms: 576
- Doctors Private Office: 320
- Storage for Medical Supplies and Equipment: 256

**TOTAL NET SQUARE FOOTAGE:** 1974
OB/GYN CLINIC

SPACE TYPE:
WAITING AREA---------------------- 400
RECEPTION AND CLERICAL AREA------ 150
NURSES STATION------------------- 200
EXAMINATION-TREATMENT ROOMS------- 576
DOCTORS PRIVATE OFFICE------------ 320
STORAGE FOR MEDICAL SUPPLIES AND EQUIPMENT------------------- 256
TOTAL NET SQUARE FOOTAGE----------1974

DERMATOLOGY CLINIC

SPACE TYPE:
WAITING AREA---------------------- 400
RECEPTION AND CLERICAL AREA------ 150
NURSES STATION------------------- 200
EXAMINATION-TREATMENT ROOMS------- 575
DOCTORS PRIVATE OFFICE------------ 320
STORAGE FOR MEDICAL SUPPLIES AND EQUIPMENT------------------- 256
TOTAL NET SQUARE FOOTAGE----------1974

EAR, NOSE AND THROAT CLINIC

SPACE TYPE:
WAITING AREA---------------------- 400
RECEPTION AND CLERICAL AREA------ 150
NURSES STATION------------------- 200
EXAMINATION-TREATMENT ROOMS------- 576
DOCTORS PRIVATE OFFICE------------ 320
STORAGE FOR MEDICAL SUPPLIES AND EQUIPMENT------------------- 256
TOTAL NET SQUARE FOOTAGE----------1974

INTERNAL MEDICAL CLINIC

SPACE TYPE:
WAITING AREA---------------------- 400
RECEPTION AND CLERICAL AREA------ 150
NURSES STATION------------------- 200
EXAMINATION-TREATMENT ROOMS------- 576
DOCTORS PRIVATE OFFICE------------ 320
STORAGE FOR MEDICAL SUPPLIES AND EQUIPMENT------------------- 256
TOTAL NET SQUARE FOOTAGE----------1974
**OVERALL PROJECT**

**SPACE TOTALS:**

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<tr>
<th>Description</th>
<th>Square Footage</th>
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<tbody>
<tr>
<td>OVERALL COMPLEX</td>
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<tr>
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<tr>
<td>PEDIATRIC CLINIC</td>
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**OVERALL PROJECT NET SQUARE FOOTAGE** — 36,774

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<td>HVAC</td>
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<td>CIRCULATION</td>
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**OVERALL PROJECT GROSS SQUARE FOOTAGE** — 45,969
At both the public parking area and at the drop off area covered walkways act as a collecting system to enter the building. Once inside, the public circulation is organized around the perimeter of the atrium space where the clinic entrances are located. This isolates public entry and circulation from the staff entry and circulation, an important aspect of a medical complex.
The staff parking and entry points are isolated from public entry and parking. Staff entry is through a fire stair that is located between each of the clinics. It is important for the doctors to be able to enter or exit the clinics without the people in the waiting room knowing it.
Service access is located at the same place as staff entry. This isolates service activities from the public.
Clinic orientation is towards the atrium space. This space is full of vegetation and sunlight. The result is a light and playful space that is visually pleasing. This helps to relax patients waiting to see the doctor.
The 3 main elements are arranged to buffer the primary and secondary public entries from the cold winter winds. This is important to reduce heat loss in an area where the doors will be opened frequently. This also provides protection for the users during periods of blowing rain or snow.
The building is organized so that the glass wall of the atrium faces south. This maximizes solar penetration during the winter. The atrium is protected from the sun's rays in the summer by an overhang that shades the glass wall. This reduces heat gain during the air conditioning season.
During the winter months the HVAC system draws warm air from the atrium area, which acts as a greenhouse. This tempers the air and reduces the amount of fuel normally needed to bring the temperature up to the desired level. In the summer the atrium is vented to prevent heat build-up.
Throughout the clinic spaces the windows begin at 5'-0". This provides the patient in an examination/treatment room with enough privacy to feel comfortable to undress if needed. The window at this height gives the patient privacy without sacrificing the natural light and the open quality that is needed to reduce tension of nervous patient.