JAMAL TAN

82.01

MAKASSED MEDICAL SCHOOL

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AMERICAN UNIVERSITY OF BEIRUT
FACULTY OF ENGINEERING AND ARCHITECTURE
DEPARTMENT OF ARCHITECTURE COURSE A 130
FINAL PROJECT PROGRAM AND REFERENCES

NAME: JAMAL TANNIR
CLASS: 1982
DATE: 21-1-1982

TITLE OF PROJECT: MAKASSED MEDICAL SCHOOL
LOCATION OF PROJECT: BEIRUT, LEBANON

1. TABLE OF CONTENTS.

2. INTRODUCTION.

2.1 PERSONAL OBJECTIVES FOR ATTEMPTING THIS PROJECT.

FROM THE VERY BEGINNING I WANTED MY FINAL PROJECT TO BE A REAL ONE. BECAUSE IT IS THE RIGHT TIME FOR US, AS ARCHITECTS, TO B-UILD WHAT WAS DESTROYED OR TO BUILD WHAT OUR COUNTRY REALLY N-EEDS. ALSO I WANTED MY PROJECT TO BE LOCATED IN THAT SPECIFIC AREA, BECAUSE IT HAS MANY PROJECTS WHICH COULD BE CHALLENGING TO US. AND THE MAKASSED'S MEDICAL SCHOOL IS ONE OF THEM.

THE SITE I HAVE CHOSEN HAS A PROMISING FUTURE TO DEVELOP AND BECOME A' MEDICAL CENTER".
THE BASES FOR THIS CENTER ARE:

-AN EXISTING HOSPITAL.
-AN EXISTING INFIRMARY SCHOOL.
-AN EMPTY PIECE OF LAND NEXT TO THEM (PROPOSED SITE).

THE MAKASSED ASSOSIATION KNEW THIS FACT. SO THEY RAISED A SUM OF MONEY TO BUILD THIS MEDICAL SCHOOL. AND BY DOING THIS WORK , MY CONDITIONS FOR DOING THE MEDICAL SCHOOL AS MY FINAL PROJ-ECT WOULD BE SATISFIED.

2.2 SCOPE OF PROJECT

2.2.1 OBJECTIVES.

THE MEDICAL SCHOOL IS DESTINED TO MEET A NUMBER OF OBJECTIVES:

- PRIMARILY TO GRADUATE DOCTORS WITH M.D. DEGREE.
- TO GRADUATE STUDENTS WITH M.S. BASIC SCIENCE.
- TO SERVE AS ACENTER FOR SPECIALIZED RESECRH IN MEDICINE AND TO PROVIDE IN-SERVICE MEDICAL TRANING.
- TO BE A MEDICAL-CULTURAL CENTER WHERE THE GENERAL PUBLIC CAN MEET AND PARTICIPATE IN CULTURAL ACTIVITIES.
- TO PROVIDE EDUCATION FOR STUDENTS FROM LEBANON AND FROM OTHER ARAB COUNTRIES.
- THUS, THE MEDICAL SCHOOL, HOPING TO BE ONE OF THE FIRST UNIVERSITY LEVEL INSTITUTIONS IN LEBANON, WILL HAVE A SPECIAL SIGNIFICANCE IN THE MEDICAL AND CULTURAL LIFE OF THE COUNTRY.

2.2.2 PROGRAM AND CURRICULUM STHUCTURE.

- TO BE ELIGIBLE FOR THE DEGREE OF DOCTOR OF MEDICINE A STUDENT MUST SATISFACTORILY COMPLETE THE CURRICULUM OF THE FACULTY OF MEDICINE.
- THE WHOLE PROGRAM IS COMPOSED OF:
  - -1) PREMED. STUDIES.
  - -2) MEDICAL STUDIES; -a) PRECLINICAL .
    -b) CLINICAL.

TYPE OF STUDIES	PLACE OF STUDY	No. OF YEARS
PREMED.	MEDICAL SCHOOL AND OTHER UNIVERSITIES(1)	2
PRECLINICAL	MEDICAL SCHOOL	2
CLINICAL	HOSPITAL	3

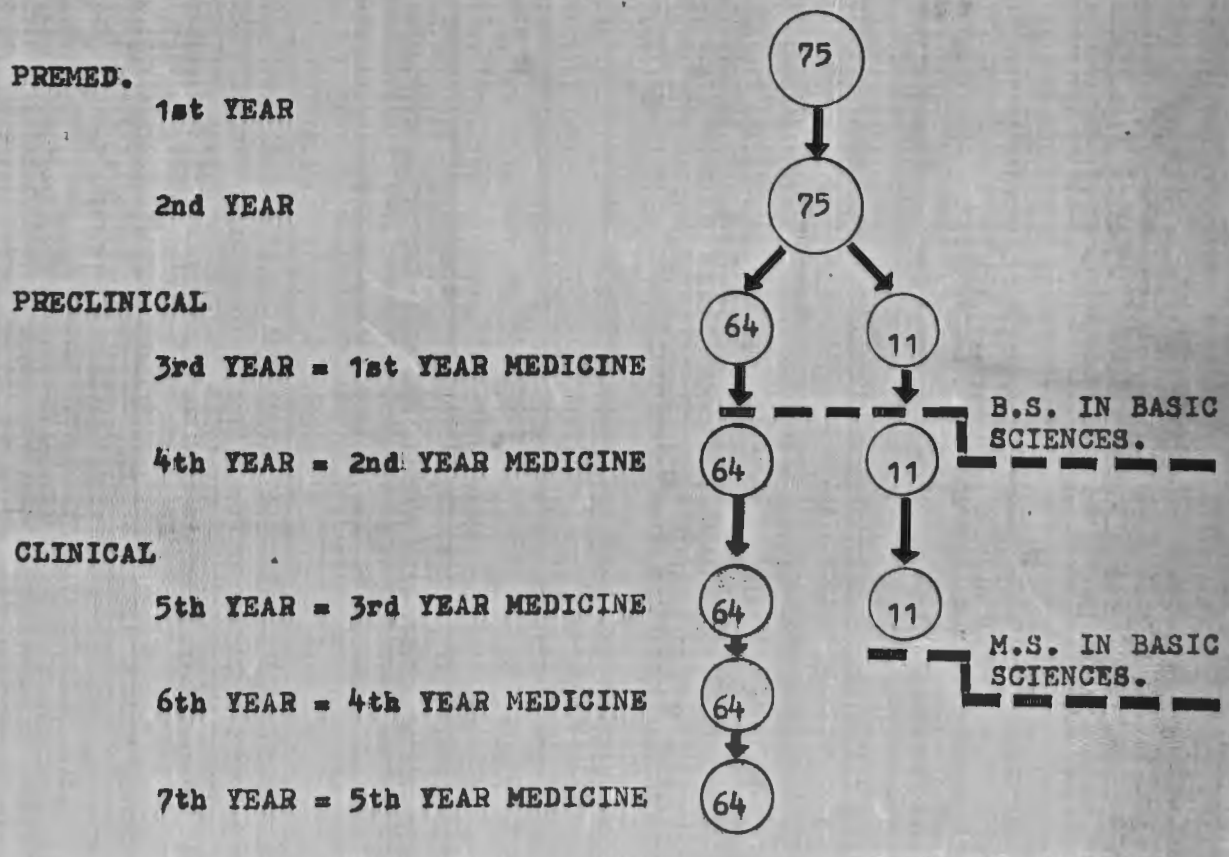
(1) THE FIRST AND SECOND YEAR PREMED. STUDENTS WILL TAKE THE COURCES LISTED BELOW AT OTHER UNIVERSITIES (PROBABLY AT A.U.B.):

- MATHEMATICS.
- ENGLISH LANGUAGE.
- ELECTIVES.

THE SCIENCE COURSES WILL BE CONDUCTED AT THE MAKASSED MEDICAL SCHOOL.

THE COURSES OF B.S. AND M.S. SCIENCES WILL ALSO BE GIVEN AT THE MEDICAL SCHOOL.

2.2.3 NUMBER OF STUDENTS.



- THE ENCIRULED NUMBERS, ARE THE MAXIMUM NUMBER OF STUDENTS THAT COULD BE IN THAT YEAR.

2.3 PURPOSE OF PROJECT.

2.3.1 ARCHITECTURAL GOALS.

ALTHOUGH THE MEDICAL SCHOOL HAS ITS FUNCTION DIFFERENT FROM THE FUNCTION OF THE TWO ALREADY EXITING BUILDINGS, BUT ITS EXPRESSION IS GOING TO MATCH THE EXPRESSION OF THE OTHER TWO BUILDINGS. BECAUSE ALL OF THESE BUILDINGS MUST HAVE SOME SORT OF UNITY BETWEEN THEM.

2.3.2 SOCIAL GOALS.

THE MEDICAL SCHOOL IS HOPING TO MEET THE NEED OF LEBANON FOR DOCTORS; AND AT THE SAME TIME, TO INCREASE THE NUMBER OF EDUCATED PERSONS SO THAT THEY WILL HELP IN RAISING THE SOCIAL ENVIRONMENT THEY ARE WITH IN. AND THIS IN TURN WILL HELP IN RAISING THE SOCIAL LEVEL IN LEBANON AS A WHOLE.

2.3.3 ECONOMICAL GOALS.

THE OWNER OF THIS PROJECT IS A CHARITY ASSOCIATION. IT RECEIVES A LIMITED BUDGET AS DONATIONS FOR SUCH PROJECTS.

3. SPACE REQUIREMENTS

3.1 ADMINSTRATION.

SPACE NAME	NET Sqm.	GROSS Sqm.
ADMINSTRATION LOBBY + RECEPTIONIST.	45	
PUBLIC INFORMATION AND PUBLICATIONS.	20	
DEANS OFFICE.	40	
(2)ASSISTANTS DEAN'S OFFICE .	40	
SECRETARIES OFFICES.	50	
CONFERENCE ROOM.	50	
WAITING ROOM.	40	
RECORDS.	27	
REGISTRAR AND ALUMNI.	27	
POSTGRADUATE OFFICE.	27	
PERSONNEL DEPT. + SECRETARY.	45	
PURCHASING DEPT. + SECRETARY.	45	
LOUNGE.	40	
STORAGE.	9	
TOILETS.	20	
TOTAL NET	525	
+ 40 %	210	
ADMINSTRATION GROSS.		735

3.2 LIBRARY.

SPACE NAME	NET Sqm.	GROSS Sqm.
PUBLIC SERVICES.		
LOBBY AND RECEPTION (SECURITY).	40	
CHARGING, RESERVE, CATALOGUE, AND INFORMATION.	40	
MAIN READING AREA.	550	
BOOK STACK AREA.	900	
PERIODICALS AREA.	110	
SLIDES AND MOVIE ROOM.	40	
AUDIOVISUAL ROOM.	35	
AUDIOVISUAL STORAGE.	20	
PUBLIC TOILETS.	25	
WORK AREA.		
CHIEF LIBRARIAN OFFICE.	18	
ASSISTANT LIBRARIAN OFFICE.	12	
SECRETARIES ROOM.	12	
ACQUISITION DEPT.	54	
CATALOGUING DEPT.	46	
BINDING AND MENDING DEPT.	22	
RECEIVING AND MAILING ROOM.	45	
LOUNGE.	36	
STAFF TOILETS AND LOCKERS.	22	
HOUSE KEEPING.	22	
TOTAL NET	2049	
+ 10 %	205	
LIBRARY GROSS		2254

3.3 REFECTORY

SPACE NAME	NET Sqm.	GROSS Sqm.
STUDENTS CAF.	137	
STAFF CAF.	55	
BAKERY + COLD ROOM.	50	
DISH WASHING.	42	
MAIN KITCHEN.	173	
OFFICE.	12	
DRY STORE.	40	
COLD ROOMS (3).	42	
RECEPTION + LOBBY.	20	
TOILETS (STUDENTS).	15	
TOILETS (STAFF).	8	
TOILETS, LOCKERS (KITCHEN STAFF).	35	
GARBAGE ROOM+ CARBAGE COLD ROOM.	45	
BEVERAGE STORE AND BOTTLES.	12	
FREEZE ROOM.	9	
KITCHEN STAFF DINING AREA.	18	
TOTAL NET	713	
+ 10 %	71	
REFECTORY GROSS		784

3.4 ANIMAL QUARTERS.

SPACE NAME		NETSqm.	GROSS Sqm.
COLD BLOODED ANIMALS AND AQUARIUM.		18	
RABBITS, RATS, AND MICE.	animals rooms	120	
CATS.		32	
DOGS.		130	
LOBBY.		18	
OFFICE.		20	
CAGE STORAGE.		25	
FOOD STORAGE.		45	
LABORATORY.		25	
INCINERATOR.		20	
QUARANT ROOM.		15	
CAGE WASHING.		25	
STERILISATION.		15	
OPERATION THEATRE.		36	
RECOVERY		15	
TOILETS AND KEEPERS LOCKERS.		42	
TOTAL NET		601	
+ 20 %		120	
ANIMAL QUARTERS GROSS.			721

3.5 LECTURE ROOMS AND THEIR SUPPORTING FACILITIES.

SPACE NAME	NET Sqm.	GROSS Sqm.
120 SEATS LECTURE ROOM.	300	
(2)80 SEATS LECTURE ROOM.	380	
TOILETS AND JANITORS ROOMS.	25	
TOTAL NET	705	
+ 10 %	70	
LECTURE ROOMS GROSS.		775

3.6 AUDITORIUM.

SPACE NAME	NET Sqm.	GROSS Sqm.
SEATING AREA.	250	
STAGE.	150	
LOBBY.	80	
STAGE CRAFT.	40	
BAND ROOM.	50	
STORAGE ROOM.	40	
DRESSING ROOM.	35	
PROJECTION ROOM.	25	
TOILETS.	30	
TOTAL NET	700	
+ 15 %	105	
AUDITORIUM GROSS		805

3.7 MULTIDISCPLINE LABORATORIES AND ITS SUPPORTING FACILITIES.

SPACE NAME	NET Sqm.	GROSS Sqm.
(2) MULTIDISCPLINE LABS. (64 STUDENTS EACH) 316x2	632	
(2) "INTERLAB" EQUIPMENT ROOMS. 43x2	86	
DISSECTING ROOM (64 STUDENTS).	345	
EMBALMING ROOM.	52	
BODY STORE WITH AIR LOCK (CAVADER STORAGE).	78	
LOBBY.	25	
TOTAL NET	1218	
+ 15 %	182	
M.L. GROSS.		1400

3.8 DEPARTMENTAL OFFICES.

SPACE NAME	DEPT.	No. OF UNITS	AREA OF UNITS Sqm.	TOTAL AREA Sqm.
CHAIRMAN'S OFFICE	—	6	20	120
SECRETARY'S OFFICE	—	6	25	150
CONFERENCE ROOM	—	6	35	210
FACULTY'S OFFICES	BIO-CHEMISTRY	3	12.5	37.5
FACULTY'S OFFICES	PHARMACOLOGY	4	12.5	50
FACULTY'S OFFICES	PHYSIOLOGY	4	12.5	50
FACULTY'S OFFICES	ANATOMY	4	12.5	50
FACULTY'S OFFICES	MICRO-BIO.	2	12.5	25
FACULTY'S OFFICES	PATHOLOGY	3	12.5	37.5

TOTAL NET	730
+ 10 %	73
DEPARTMENTAL OFFICES GROSS.	803

3.9.1 DEPARTMENT OF PHYSIOLOGY.

SPACE NAME	NET Sqm.	GROSS Sqm.
4 OFFICES. 13x4	52	
2 SMALL LABS. 26x2	52	
CARDIOPULMONARY.	52	
ANIMAL AND SERGERY LAB.	52	
EXERCISE LAB.	52	
ATOMIC ABSOP. SPECTOMETRY LAB.	52	
AUTO-ANALISER LAB.	52	
NEURO PHYSIOLOGY LAB.	52	
RENAL LAB.	52	
COLD ROOM.	13	
ANIMAL ROOM.	13	
AUDIO-VISUAL STORAGE ROOM.	13	
AUDIOMET ROOM.	13	
TOILETS + JANITORS.	35	
TOTAL NET	555	
+ 20 %	111	
PHYSIOLOGY GROSS.		666

3.9.2 DEPARTMENT OF MICRO-BIOLOGY.

SPACE NAME	NET Sqm.	GROSS Sqm.
2 OFFICES 13x2	26	
4 LARGE MICRO BACTERIOLOGY LABS. 52x4	208	
2 SMALL MICRO BACTERIOLOGY LABS. 26x2	52	
MEDIA STORAGE AND STERILIZATION ROOM.	52	
MEDIA POURING ROOM.	13	
MEDIA PREPARE ROOM.	13	
INSTRUMENT ROOM.	52	
ANIMALS ROOM.	13	
COLD ROOM.	13	
TOILETS AND JANITORS.	35	
TOTAL NET	377	
+ 20 %	75	
MICRO-BIOLOGY GROSS.		452

3.9.3 DEPARTMENT OF PATHOLOGY.

SPACE NAME	NET Sqm.	GROSS Sqm.
3 OFFICES 13x3	39	
7 LARGE LABS. 52x7	364	
4 SMALL LABS. 13x4	52	
COLD ROOM.	13	
ANIMAL ROOM.	13	
BALANCE ROOM.	13	
DARK ROOM.	13	
TOILETS AND JANITORS.	35	
TOTAL NET	542	
+ 20 %	108	
PATHOLOGY GROSS.		650

3.9.4 DEPARTMENT OF ANATOMY.

SPACE NAME	NET Sqm.	GROSS Sqm.
4 OFFICES 13x4	52	
3 LARGE RESEARCH LABS. 52x3	156	
6 SMALL RESEARCH LABS. 26x6	156	
ANIMAL ROOM.	13	
COLD ROOM.	13	
DARK ROOM.	13	
INSTRUMENT ROOM.	13	
DEMONSTRATION OFFICE.	26	
4 EQUIPMENT ROOMS. 13x4	52	
TOILETS + JANITORS.	35	
TOTAL NET	529	
+ 20 %	106	
ANATOMY GROSS.		635

3.9.5 DEPARTMENT OF PHARMACOLOGY.

SPACE NAME	NET Sqm.	GROSS Sqm.
4 OFFICES 13x4	52	
5 LARGE LABS. 52x5	260	
4 SMALL LABS. 26x4	104	
COLD ROOM.	13	
BALANCE ROOM.	13	
ANIMAL ROOM.	13	
SOLVENT ROOM.	13	
RADIOISOTOPE ROOM.	13	
INSTRUMENT ROOM.	13	
TIOLETS + JANITORS.	35	
TOTAL NET	529	
+ 20 %	106	
PHARMACOLOGY GROSS		635

3.9.6 DEPARTMENT OF BIO-CHEMISTRY.

SPACE NAME	NET Sqm.	GROSS Sqm.
3 OFFICES 13x3	39	
4 LARGE RESEARCH LABS. 52x4	208	
1 EXTRA LARGE RESEARCH LAB.	78	
1 SMALL RESEARCH LAB.	26	
COLD LAB.	26	
ANIMAL ROOM.	26	
DARK ROOM.	26	
BALANCE ROOM.	26	
DEPARTMENTAL SHOP.	26	
2 EQUIPMENT ROOMS 13x2	26	
TOILETS + JANITORS.	35	
TOTAL NETN	542	
+20 %	108	
BIO-CHEMISTRY GROSS.		650

3.10 STUDENT ACTIVITY FACILITIES.

SPACE NAME	NET Sqm.	GROSS Sqm.
LOUNGE AND TOILETS.	100	
STUDENTS' ACTIVITIES OFFICE.	20	
TOILETS AND LOCKERS FACILITIES.	100 (50 Sqm . EACH)	
BOOK STORE.	55	
TOTAL NET	275	
+ 10 %	27	
STUDENTS' ACTIVITY FACILITIES GROSS		302

3.11 SERVICE FACILITIES.

SPACE NAME	NET Sqm.	GROSS Sqm.
COMPUTER ROOM.	40	
TELEPHONE EQUIPMENT ROOM.	16	
POSTAL FACILITY.	90	
TOTAL NET	146	
+ 10 %	14	
SERVICE FACILITIES GROSS		160

3 RECAPITULATION OF REQUIRED SPACES.

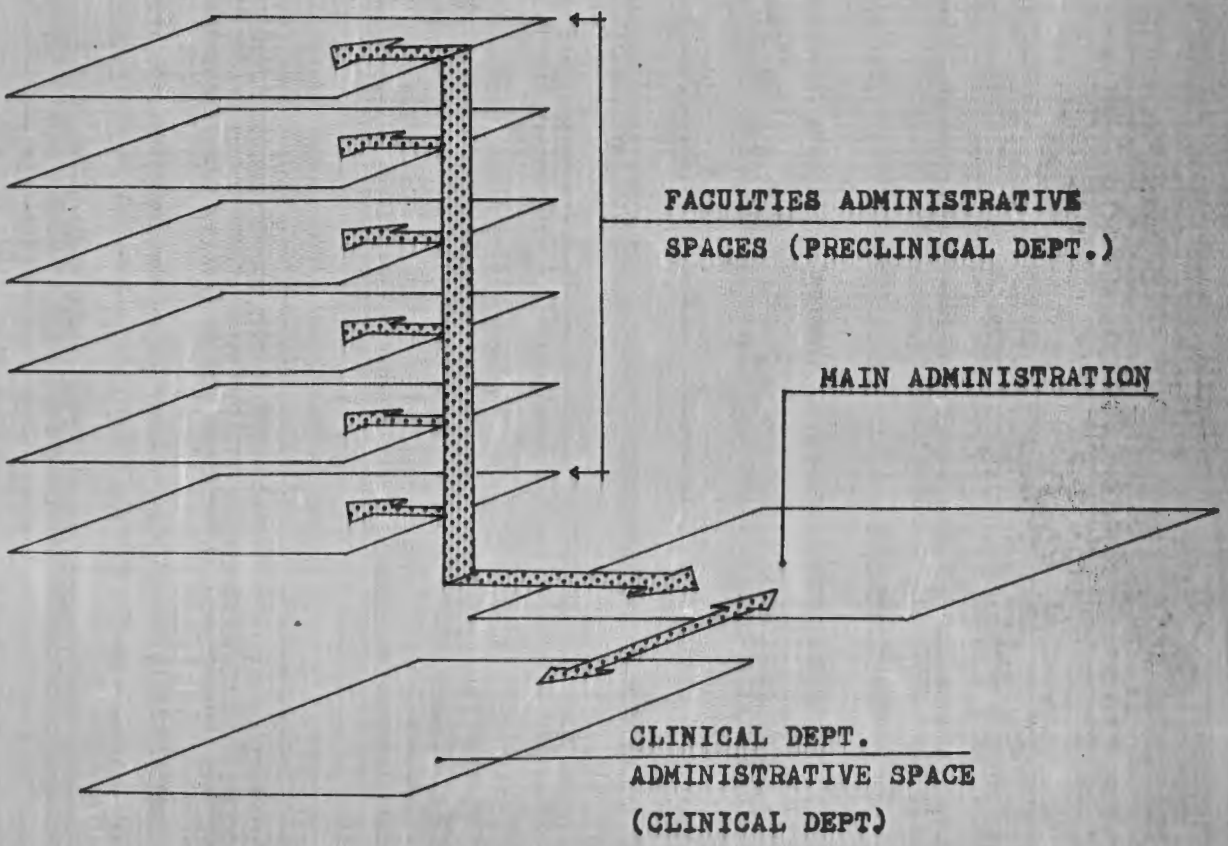
TYPE OF FACILITY			GROSS AREA Sqm.	TOTAL GROSS Sqm.
A - EDUCATIONAL AND COMMUNAL FACILITIES				
3.1	ADMINISTRATION.		735	
3.2	LIBRARY.		2254	
3.3	REFECTORY.		784	
3.4	ANIMAL QUARTERS.		721	
3.5	LECTURE ROOMS.		775	
3.6	AUDITORIUM.		805	
3.7	MULTIDISCIPLINARY LABORATORIES.		1400	
3.8	DEPARTMENTAL OFFICES.		803	
3.9	1- PHYSIOLOGY.	SIX DEPTS.	666	
	2- MICRO-BIOLOGY.		452	
	3- PATHOLOGY.		650	
	4- ANATOMY.		635	
	5- PHARMACOLOGY.		635	
	6- BIO-CHEMISTRY.		650	
3.10	STUDENT ACTIVITY FACILITY.		302	
3.11	SERVICE FACILITY.		160	
	TOTAL		12427	
B - COMMUNAL SERVICE FACILITIES			**AREA Sqm.**	
3.12	PARKING.		3250	
3.13	MECHANICAL PLANT.		350	
	TOTAL		3600	
				16027

4. SPACE ANALYSIS AND STANDARDS.

4.1 ADMINISTRATIVE SPACES.

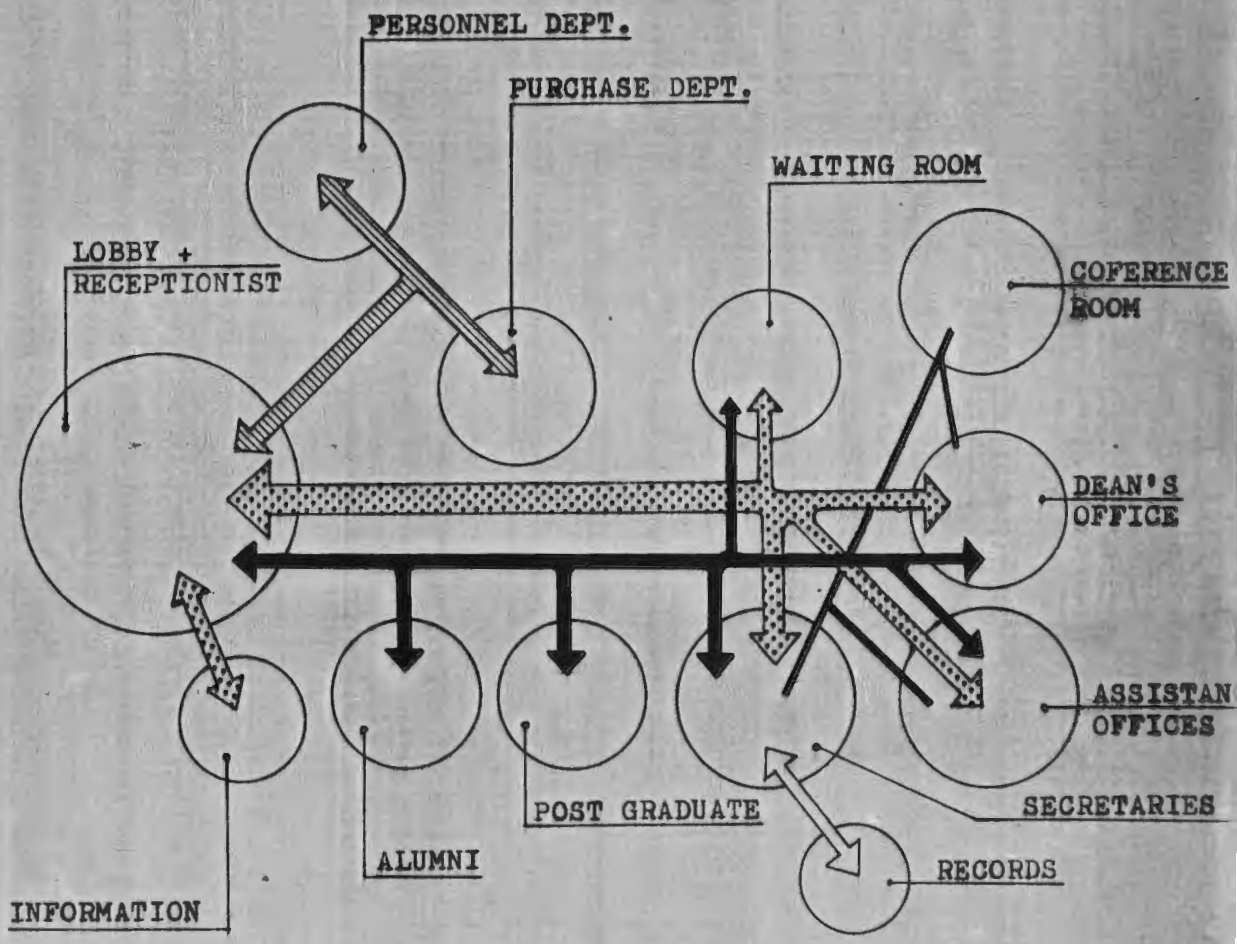
4.1.1 ADMINISTRATION

THE ADMINSTRATION OF EACH PRECLINICAL DEPT. WILL BE IN IT'S OWN DEPT. AND THE GENERAL ADMINSTRATIVE COMMITEE WILL HAVE IT'S OWN DEPT.

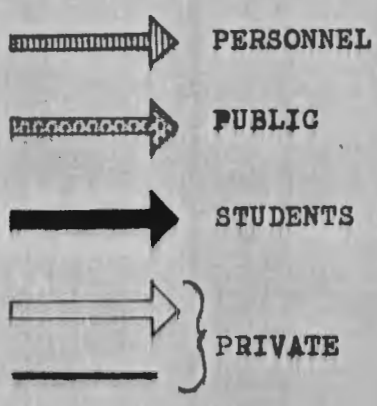


ADMINISTRATIVE SPACES RELATIOSHIPS.

THE DEAN OF THE MEDICAL SCHOOL IS RESPONSIBLE FOR THE FORMULATION AND EXECUTION OF POLICIES OF THE TEACHING PROGRM AND FOR THE GENERAL ADMINISTRATION OF THE BASIC SCIENCES, AND THE CLINICAL SCIENCES. BECAUSE OF THE MAGNITUDE AND THE COMPLEXITIES OF THESE PROGRAMS, THE DEAN WIIL REQUIRE ASSISTANCE FROM COMPETENT PERSONS IN THESE FIELDS.



SPACES RELATIONSHIPS IN MAIN ADMINISTRATION.



4.1.2 LOCATION

EACH ADMINISTRATIVE DEPT. WILL BE:

- EASILY ACCESSIBLE TO THE PUBLIC AND FACILITATE THE INTERNAL FUNCTIONING OF THE SCHOOL.
- PLACED IN A QUIET ZONE.

4.1.3 LIGHTING

NATURAL AND ARTIFICAL WILL BE SUFFICIENT FOR WORK NEEDS.

4.1.4 VENTILATION

EACH SPACE IS RECOMMENDED TO HAVE IT'S OWN A/C UNIT.

4.1.5 EQUIPMENT

BASIC FURNITURE REQUIRED INCLUDES:

- OFFICE DESKS.
- READING TABLES.
- BOOK SHELVES.
- METAL FILING CABINETS.
- REGULAR OFFICE CHAIRS.
- CUPBOARDS.
- TYPIST TABLES AND CHAIRS.
- LARGE TABLE FOR CONFERENCES.

4.2 LIBRARY.

I GENERAL CONSIDERATIONS.

4.2.1 FUNCTIONS:

IN NEW MEDICAL SCHOOLS, THE ROLE OF THE LIBRARY IS EXTREMELY IMPORTANT, AND ITS FUNCTIONS CAN BE RESUMED AS FOLLOWS:

- INFORMATION CENTER FOR INDIVIDUAL STUDIES.
- SOCIAL CENTER, AVAILABLE FOR USE BY GROUPS AT SPECIFIED TIMES FOR LECTURES, EXPOSITIONS, ETC.
- STORAGE AND CONSERVATION OF BOOKS, MICRO-FILMS.
- INSTRUCTIONAL SPACE TO TEACH STUDENTS HOW TO USE A LIBRARY AND TO TEACH COURSES IN LIBRARY SCIENCE.
- MOST IMPORTANT FUNCTION, ITS RESOURCES ARE QUICKLY AVAILABLE TO STUDENTS, RESEARCH WORKERS, FACULTY MEMBERS, HOSPITAL STAFF, AND PRACTICING PHYSICIANS.

4.2.2 CAPACITIES:

- BOOKS:- STACKS ARE GOING TO HOUSE 100,000 VOLUMES.
  - ALSO 1,600 PERIODICALS WILL BE AVIALABLE IN THE PERIODICALS AREA.

STUDENTS:

- AT ANY ONE TIME 25 % OF THE STUDENT ENROLMENT CAN ACCOMMODATED IN THE LIBRARY.

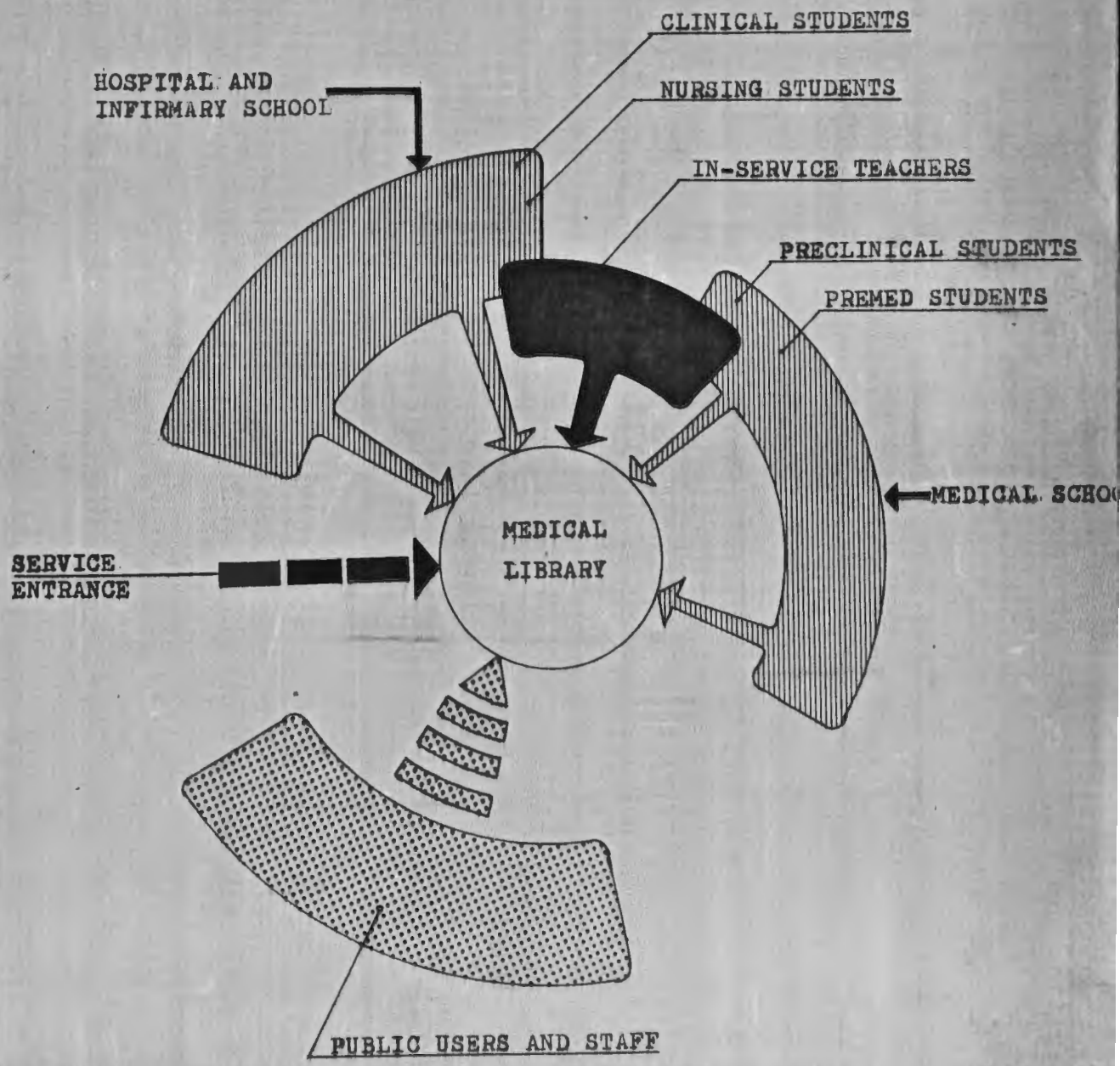
ESTIMATED No. OF STUDENTS (25 %)	125
STAFF No.	15
IN-SERVICE TEAHERS.	10
SPECIALIZED PUBLIC USERS	25
TOTAL	180

4.2.3 _LOCATION_

THE LIBRARY IS GOING TO BE LOCATED AT THE CENTER OF THE "MEDICAL CENTER" ACTIVITIES.

4.2.4 _ACCESSIBILITY_

IT IS GOING TO BE EASY ACCESSIBLE TO BOTH SCHOOLS (MEDICAL AND NURSING) AND TO PUBLIC USERS, AS WELL AS TO THE PRACTICING PHYSICIANS, AND FOR DELIVERY OF MATERIALS.



USERS OF THE MEDICAL LIBRARY

4.2.5 _FLOORS.

THE CONSTRUCTION OF FLOORS IS GOING TO BE DESIGNED SO THAT BOOKSHELVES COULD BE SUPPORTED IN A NUMBER OF DIFFERENT LOCATIONS. SUCH A DESIGN PERMITS FLEXIBILITY IN THE ARRANGEMENT OF BOOKSHELVES AND READING SPACES.
FLOORS WILL BE CAPABLE OF CARRYING THE HEAVY LOADS OF THE BOOK STACKS, WHICH WILL BE ABOUT 800 KG/M AND WITH COMPACT SHELVING ABOUT 1200 KG/M.

4.2.6 _VENTILATION.

AIR-CONDITIONING IS STRONGLY RECOMMENDED FOR THE LIBRARY. ITS USE ENSURE A CONSTANT ROOM TEMPERATURE (SUGGESTED AT 20.6 °C) AND RELATIVE HUMIDITY (SUGGESTED AT BETWEEN 45 % AND 55 %), WHICH MEANS COMFORTABLE WORK CONDITIONS AND AN ENVIRONMENT SUITABLE FOR BOOK PRESERVATION.

4.2.7 _LIGHTING._

IT IS RECOMMENDED THAT THE GLASS SURFACE OF THE LIBRARY BE KEPT AT A MINIMUM TO AVOID GLARE. IT IS PREFERABLE TO HAVE NATURAL LIGHT EMANATING FROM THE CEILING RATHER THAN FROM WALL AREAS IN ORDER TO REDUCE THE POWERFUL EFFECTS OF THE SUN'S RADIATION AND TO HAVE MORE WALL SPACE AVAILABLE FOR LIBRARY USE.
CONCERNING ARTIFICIAL LIGHTING, THE LEVEL OF ILLUMINATION IN THE STACK AND READING AREA WILL BE BETWEEN 320 AND 400 LUX.

4.2.8 _SOUND_CONTROL.

TO HELP CREATE A QUIET, PLEASANT LIBRARY ENVIRONMENT FLOORS AND CEILING WILL BE MADE OF SOUND ABSORBENT TILE.

4.2.9 _MATERIALS_

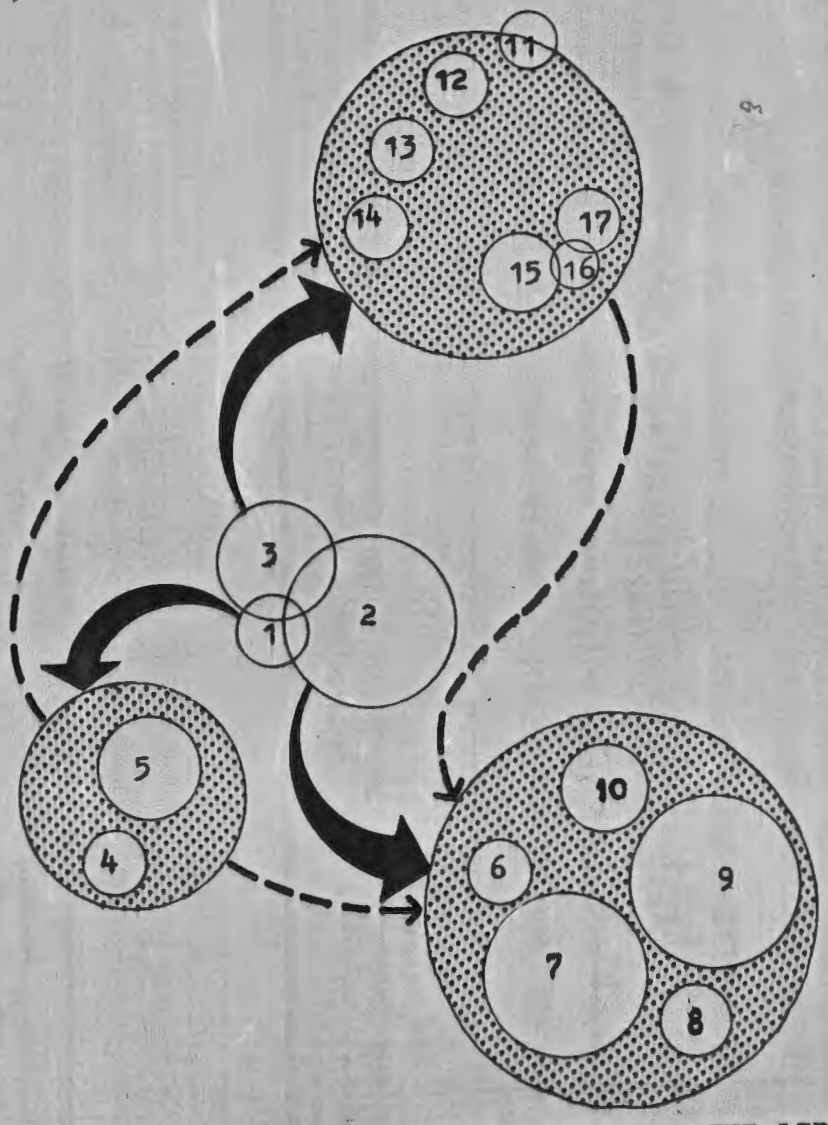
THE MATERIALS CHOSEN FOR WALL, FLOORS AND FURNITURE WILL HELP TO CONTROL THE PROBLEM OF LIGHT REFLECTION.
THE FOLLOWING MATERIALS ARE CHOSEN:

- MAHOGANY, WITH A LIGHT REFLECTION OF 8 % .
- DARK OAK OF 13 % .
- LIGHT OAK OF 32 % .

(IN ADDITION, THE ABOVE MATERIALS ARE SOUND ABSORBANT).

4.2.10 _FIRE_PRECAUTIONS_

FIRE DETECTION EQUIPMENT THAT IS TRIGGERED BY THE PRESENCE OF SMOKE IN THE AIR WILL BE USED.
FOR SAFETY PURPOSES IT IS IMPORTANT THAT THE DISTANCE BETWEEN STAIRWALLS WILL NOT EXCEED 25m.



SPACES RELATIONSHIPS IN THE LIBRARY

1. LOBBY.

2. READING & STACKS AREA.

3. BOOK SERVICES.

4- CONTROL.
5- LOBBY-EXHIBITION AREA.
6- CATALOGUE.
7- READING AREA.
8- PERIODICALS AREA.
9- STACKS.
10- AUDIO-VISUAL AREA.
11- MAILING & RECEIVING ROOM.
12- AQUISITION DEPT.
13- CATALOGUING DEPT.
14- BINDING & MENDING DEPT.
15-16-17- CHIEF LIBRARIAN, SEC. , ASSISTANT.

II READING ROOMS AND STACKS.

4.2.11 ORGANIZATION OF SPACE.

READING ROOM SPACE IS TO BE SUBDIVIDED INTO A NUMBER OF SECTIONS ACCORDING TO THE VARIOUS DISCIPLINES. THE AUDIO-VISUAL LIBRARY WILL BE ATTACHED TO THE AUDIO-VISUAL CENTER.
ENTRANCE AND CATALOGUE ARE NOISY AREAS AND, THUS, WILL BE SEPARATED BY PARTITIONS FROM THE READING ROOM WHERE QUIET IS DEMANDED. THE MAIN ENTRANCE SPACE CAN BE USED FOR EXHIBITIONS AND AS AN INFORMATION CENTER.

4.2.12 CATALOGUE AREA.

THE CATALOGUE WILL HAVE A CENTRAL LOCATION. IT WILL BE NEAR THE MAIN ENTRANCE AND NOT TOO FAR FROM THE STAFF AREA SO THAT THE STAFF MEMBERS CAN READILY GIVE HELP TO THE STUDENTS.

4.2.13 CONTROL DESK.

LOCATED IN THE PATH OF INCOMING AND OUT GOING TRAFFIC, IT IS TO SERVE AS A CHECK POINT.

4.2.14 STACKS.

THE STORAGE SPACE FOR BOOKS TOGETHER WITH THE READING AREA, WILL FORM AN INTEGRATED INTERNAL ENVIRONMENT.

III BOOK SERVICES.

4.2.15 FUNCTIONS.

FOR THE PROCESSING OF BOOKS FOR THE LIBRARY.

4.2.16 RECEIVING AND MAILING ROOM.

WORKING ZONE WHERE BOOKS ARE RECEIVED AND UNPACKED.
LOCATION: IT WILL HAVE ACCESS TO A SERVICE ROOM AND A COURT YARD FOR DELIVERY PURPOSES.

4.2.17 ACQUISITION DEPARTMENT.

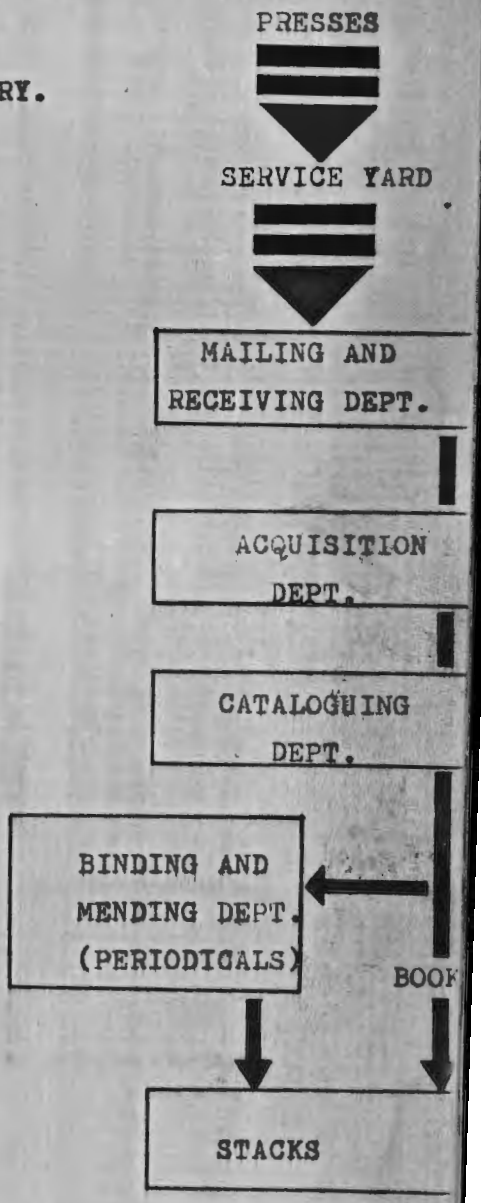
RECORDING OF BOOKS AND OTHER MATERIALS (NEWS PAPERS, PERIODICALS) RECEIVED.

4.2.18 CATALOGUING DEPARTMENT.

AREA WHERE BOOKS ARE CATALOGUED AND GIVEN CARDS BEFORE BEING SENT TO STACKS.

4.2.19 BINDING AND MENDING DEPARTMENT.

- FOR PRINTING STAFF PAPERS, BOOKS AND LIBRARY MATERIALS.
- BINDING BOOKS.



4.2.20 GENERAL LIBRARY EQUIPMENT:

- STACKS WITH DIMENSIONS OF 7'x3'
- NUMBER OF REQUIRED SECTIONS: 808 UNITS EACH WILL HOLD AN AV. OF 1 BOOKS: 808 x 125 = 101,000 VOLUMES IN TOTAL.

- CONTROL AND INFORMATION DESK.
- PERIODICAL STACK (2).
- NEWS PAPER RACK (2).
- STUDY CHAIR (180).
- LIBRARY TABLES.
  75 INDIVIDUAL TABLES.
  18 GROUP TABLES FOR 6 READERS.
- DISPLAY STAND FOR NEW BOOKS.

4.3 REFECTORY.

- IT MUST HAVE A CONNECTION NEAR ROAD FOR FOOD DELIVERY PURPOSES. THIS CONNECTION COULD BE USED AS FOOD STORAGE AND AS CARBAGE STORAGE.
- IT WILL BE ORIENTED IN SUCH A WAY AS TO PREVENT ODOURS FROM ENTERING INTO TEACHING AREAS.

4.3.1 GENERAL PRINCIPLES.

- IT WILL BE A SELF-SERVICE RESTAURANT. THE REFECTORY WILL BE ABLE TO SERVE ONE-HALF OF THE SCHOOL'S POPULATION AT ONE TIME SO THAT THE ENTIRE STUDENT BODY CAN BE FED AT TWO SERVINGS.

I DINNING HAL.

- IT WILL BE DIVIDED INTO TWO SEPARATE SPACES ONE FOR STUDENTS , AND THE OTHER FOR STAFF.

4.3.2 FUNCTIONS.

- TO SERVE THE ENTIRE STUDENT BODY AT BOTH LUNCH AND SUPPER.
- TO SERVE PROFESSORS AT LUNCH TIME.
- TO SERVE REFRESHMENTS THROUGH OUT THE DAY.

4.3.3 CHARACTERISTICS.

- SURFACE: 125 STUDENTS x 1.1 Sqm./ STUDENT = 137 Sqm.
  50 STAFF x 1.1 Sqm./ STAFF = 55 Sqm.
  TOTAL : 137 Sqm. + 55 Sqm. = 192 Sqm.

4.3.4 LIGHTING.

- THE SURFACE OF OPENING WINDOWS WILL BE ABOUT 55 % OF THE TOTAL SURFACE AREA.

4.3.5 VENTILATION.

- TO ASSURE GOOD VENTILATION, MECHANICAL MEANS SHOULD BE EMPLOUED IN THE DINING AREA.

II CAFETERIA SERVICE.

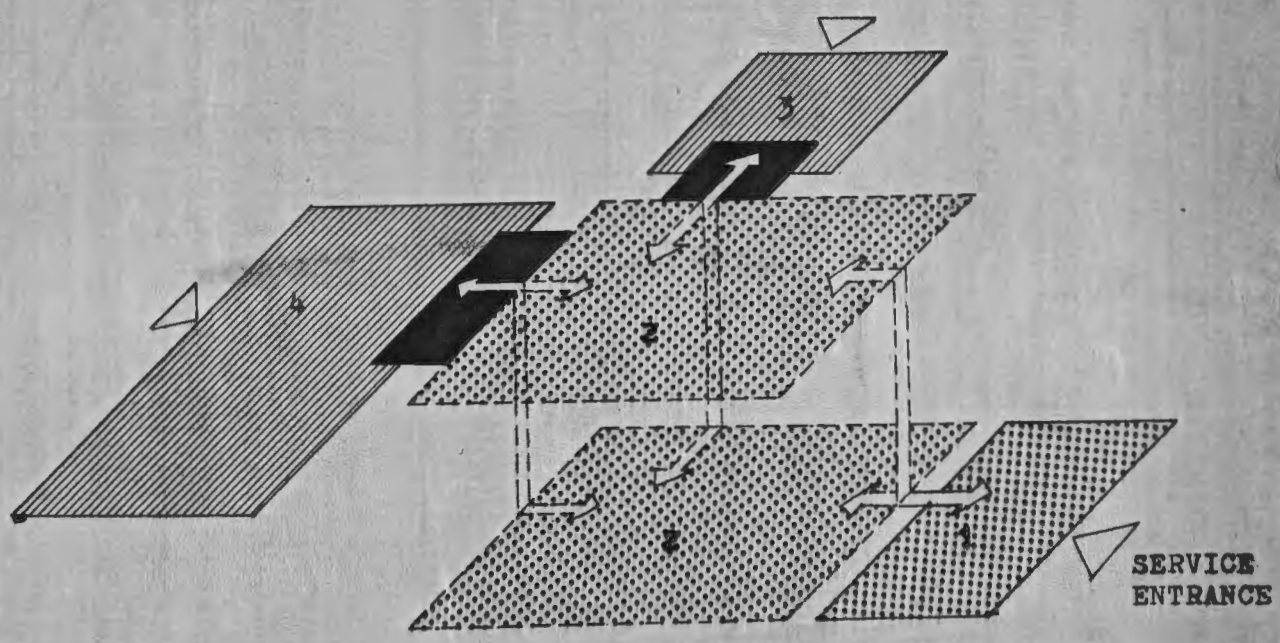
EACH DINING HALL WILL HAVE ONE.

4.3.6 LOCATION.

- IT IS THE SPACE BETWEEN THE DINING ROOM AND THE KITCHEN WHERE FOOD IS SERVED AND PLATES ARE RETURNED.

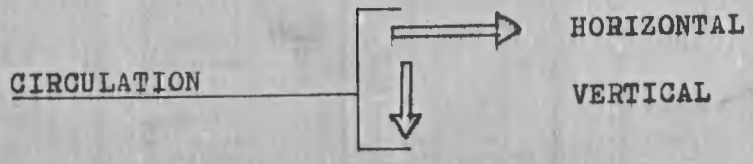
4.3.7 EQUIPMENT.

- COUNTER FOR SERVING FOOD AND DRINKS.



SPACES RELATIONSHIPS IN A REFECTORY AND THEIR POSSIBLE LOCATION.

1- RECEPTION, STORAGE, GARBAGE STORAGE.
2- MAIN KITCHEN, KITCHEN STAFF DINNING AREA.
3- STAFF CAF.
4- STUDENTS CAF.



III KITCHEN AREA.

4.3.8 FUNCTIONS.

- PREPARATION OF FOOD.

4.3.9 LIGHTING.

- THE SURFACE OF OPENING WINDOWS SHOULD REACH 30 % OF THE TOTAL SURFACE AREA.
- KITCHEN OPENING MUST BE PROTECTED FROM THE ENTRANCE OF INSECTS AND BUDS.

4.3.10 VENTILATION.

- MECHANICAL MEANS OF VENTILATION WILL BE PROVIDED SO THAT ODOURS CAN BE QUICKLY ELIMINATED AND BE PREVENTED FROM ENTERING THE DINING AREA.

4.3.11 FLOORS.

- FLOORS WILL BE GRANITE FOR ITS ANTI-ACIDIC QUALITIES.

4.3.12 EQUIPMENT.

-STOVE COMPRISING 5 DIFFERENT ELEMENTS.
- FRYING UNIT.
- COFFEE MAKER.
- MILK WARMER.
- STEAM TABLE (TO KEEP PREARED FOOD HOT).
- TABLE (NON HEATED FOR PREPARED FOOD).
- MIXER BLENDER.
- WORK TABLE.
- VAT FOR VEGETABLES.
- VAT FOR SCALING OPERATION.
- COLANDER.
- PEELING MASHING.

- SHELVES.
- PASTRY OVEN.
- WORK TABLES (FOR PASTRIES).
- DISH WASHER.
- TABLES.
- CABINETS FOR DISHES.
- DOUBLE SINK.
- SINK FOR WASHING UTENSILS.
- TABLE FOR CUTTING MEAT.

4.4 ANIMAL QUARTERS.

4.4.1 FUNCTION.

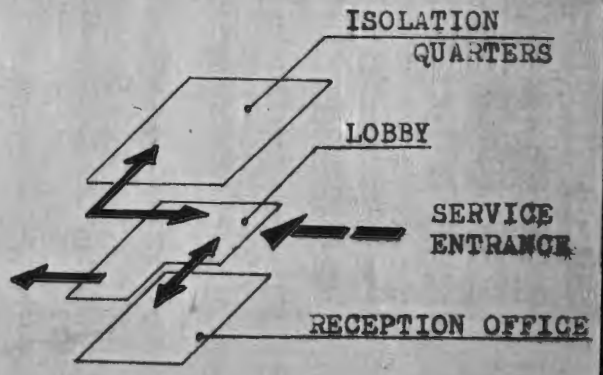
THE NEED OF ANIMALS IS TO MEET THE CONTROLLED CARE OF TEACHING AND RESEARCH REQUIREMENTS.

4.4.2 LOCATION.

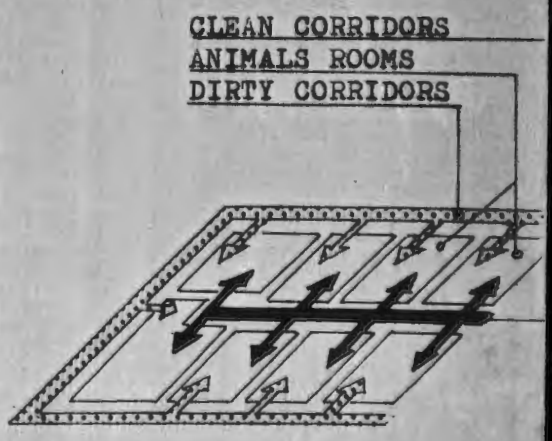
THE LOCATION OF ANIMAL QUARTERS, WHERE THEY HAVE DIRECT-CONNECTED OUTDOOR ANIMAL RUNS AND TRUCK UNLOADING FACILITIES CAN BE PROVIDED WITH COMPLETE SEPERATION FROM ANY OTHER FUNCTION HAS MANY ADVANTAGES. THIS LOCATION WILL PROBABLY BE ON GROUND FLOOR OR BASEMENT.

4.4.3 SPACES AND GENERAL CONSIDERATIONS:

- IN ANIMAL AREAS, PROVISION WILL BE MADE FOR THE RECEPTION, QUARANTINE, AND ISOLATION OF INCOMING ANIMALS NEAR THE ANIMAL ENTRANCE.
- ANIMAL ROOMS WILL BE ISOLATED FROM EACH OTHER WITH NO CONNECTING OPENNINGS AND ARRANGED TO SEPERATE CLEAN AND CONTAMINATED FUNCTIONS.



- A SERVICE CORRIDOR (DIRTY-CORRIDOR) MIGHT BE PROVIDED IN ADDITION TO THE MAIN ACCESS CORRIDOR(CLEAN-CORRIDOR) TO ALLOW THE REMOVAL OF SOLID BEDDING AND OTHER MATERIAL AT THE REAR OF CAGES RATHER THAN THROUGH THE MAIN CORRIDOR.
- BORROWED LIGHT IN CORRIDOR PARTITIONS AND BETWEEN ROOMS WILL BE AVOIDED SINCE LIGHT BOTHERS SOME ANIMALS.



- WINDOWS, IF USED, WILL BE PLACED AT LEAST 1.8 m. ABOVE THE FLOOR SO THAT ANIMAL CAGES CAN FIT BELOW THEM.
- EACH ROOM WILL HAVE A SINK AND SOAP DISPENSER.

4.4.4 COSTRUCTION:

THE CONSYRUCTION OF ANIMAL QUARTERS SHOULD BE FIRE RESISTANT, VERMIN AND INSECT-PROOF, AND ABOVE ALL EASY TO CLEAN.

4.4.5 WALLS

WALL SURFACES WILL BE SMOOTH, HARD, AND EASILY CLEANED, CERAMIC TILES ARE GOING TO BE USED.

4.4.6 FLOORS.

FLOORS MUST BE ABLE TO RESIST THE DISINTEGRATIVE ACTION OF THE ORGANIC SALTS AND ACIDS IN ANIMAL URINE. SO QUARRY TILE WITH ACID RESISTANT JOINTS OR, WELL COMPACTED AND TROWELED CONCRETE FLOORS, ARE GOING TO BE USED.

4.4.7 DOORS.

DOORS WILL BE 1.05 m. WIDE TO PERMIT EASY PASSAGE OF CAGE RACKS.

4.5 LECTURE ROOMS AND THEIR SUPPORTING FACILITIES.

4.5.1 FUNCTIONS.

- FOR LARGE STUDY GROUPS.
- FOR LECTURES AND PROJECTIONS.
- FOR INSTRUCTION IN A WIDE VARIETY OF SUBJECTS.

4.5.2 NUMBER AND USERS.

- ONE 120 SEATS LECTURE ROOMS AND TWO 80 SEATS LECTURE ROOMS, WILL BE AVAILABLE.
- THE LECTURE ROOMS WILL BE USED BY BASIC SCIENCE STUDENTS AND MAY BE BY THE CLINICAL STUDENTS.

4.5.3 FORM.

- AN OCTAGONAL OR SQUARE FORM IS RECOMMENDED WITH A HEIGHT OF 4m.
- THEY WILL BE A THEATRE-TYPE LECTURE ROOMS EQUIPED WITH FIXED SEATINGS.

4.5.4 LOCATION.

- ALL LECTURE ROOMS COULD BE GROUPED TOGETHER AND PLACED IN A QUIET ZONE, NEAR THE LIBRARY AREA OR IN A SEPARATE ZONE SAME AS IN "RUSH UNIVERSITY" WHERE THEY DONOT EVEN HAVE NATURAL LIGHTING. IN A.U.B. MEDICAL SCHOOL LECTURE ROOMS ARE DISTRIBUTED ALL THROUGH THE FLOORS.

4.5.5 LIGHTING.

- LIGHT FROM WINDOWS SHOULD COME FROM BEHIND THE STUDENT'S LEFT SHOULDER.
- IF POSSIBLE SKY LIGHTS WILL BE PROVIDED FOR THE LECTURE ROOMS.
- OPAQUE DRAPES WILL BE PROVIDED TO DARKEN ROOM.

- THE SURFACE OF OPENING WINDOWS WILL BE 50 % OF THE SURFACE OF THE ROOM.
- ELECTRIC LIGHT WILL BE UNIFORM, WITH A LEVEL OF ILLUMINATION OF NOT LESS THAN 90 LUX.
- BLACK BOARD AREA SHOULD HAVE ADDITIONAL LIGHTING DIRECTED TO THE BLACK BOARD ITSELF, NOT TOWARDS THE STUDENTS.

4.5.6 VENTILATION.

- GOOD VENTILATION CAN BE PROVIDED BY A COMBINATION OF TRADITIONAL (WINDOWS), AND OF MECHANICAL MEANS.

4.5.7 DOORS.

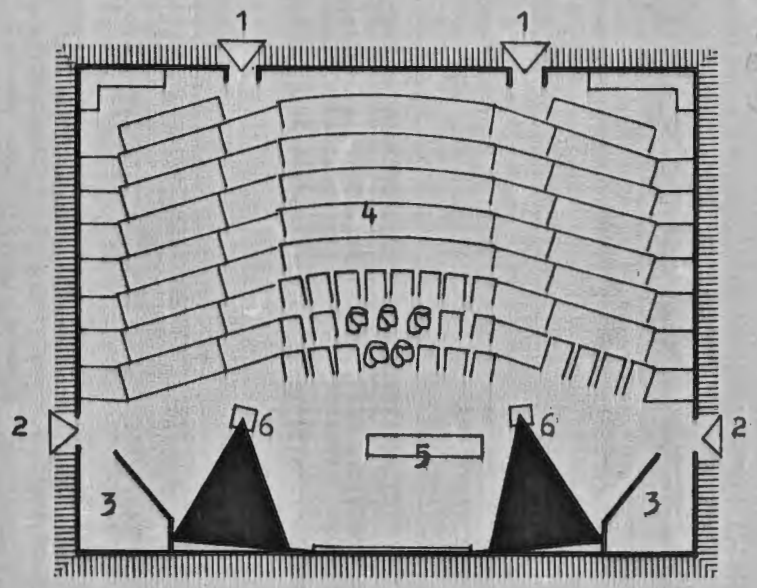
- STUDENTS ENTRANCE SHOULD BE RECESSED INWARD, SO THAT THEY DO NOT INTERFERE WITH CORRIDOR CIRCULATION, AND IT SHOULD BE AT THE BACK OF THE LECTURE ROOM. THE STAFF ENTRANCE WILL BE DIRECTLY ON THE PLATFORM.
- ALL DOORS SHOULD HAVE A VISUAL PANEL.

4.5.8 EQUIPMENT.

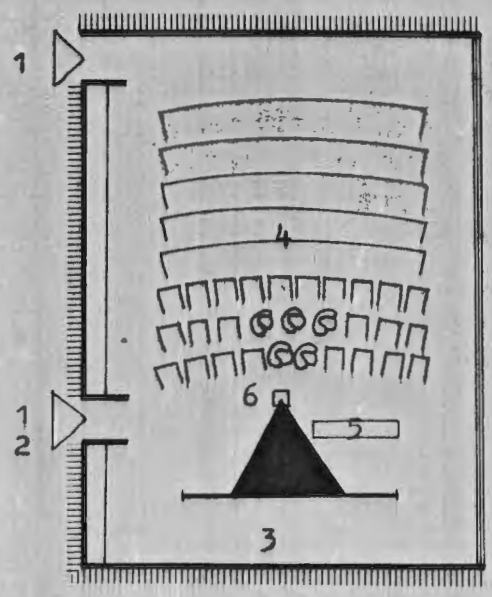
- A PLATFORM WITH A DEMONSTRATION TABLE.
- RETRACTABLE PROJECTION SCREEN.
- 120 OR 80 TABLET ARM CHAIRS.
- BLACK BOARD.
- PROJECTION STAND.
- SOUND AMPLIFICATION EQUIPMENT.

4.5.9 AUXILIARY SPACES.

- STORAGE ROOM FOR VISUAL-AIDS AND PORTABLE EQUIPMENT.
- TOILET ROOMS WILL BE CONVENIENT TO LECTURE ROOMS.



TYPICAL 120 STUDENTS LECTURE ROOM



TUPICAL 80 STUDENTS LECTURE ROOM

1- STUDENTS ENTRANCE.
2- STAFF ENTRANCE.
3- STORAGE ROOM.
4- SEATING AREA.
5- DEMONSTRATION TABLE.
6- MOVABLE PROJECTORS.

4.6 AUDITORIUM.

4.6.1 FUNCTIONS.

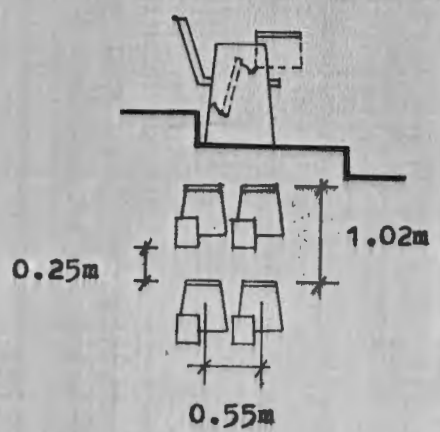
- COMMUNAL AND COMMUNITY MEETING PLACE.
- AVAILABLE AS AN EDUCATION SPACK, WHERE MORE THAN ONE CLASS IS ATTENDING THE SAME LECTURE.
- FOR A WIDE RANGE OF ACTIVITIES, CONCERTS, PLAYS, MOTION PICTURES, FORUMS AND OTHER KIND OF PRESENTATIONS.
- THE STAGE SERVES AN ESSENTIAL EDUCATIONAL FUNCTION FOR IT IS ON THE STAGE THAT STUDENTS LEARN TO APPEAR BEFORE LARGE GROUPS.

I SEATING AREA.

4.6.2 CAPACITY. 350 PERSON.

4.6.3 VENTILATION.
- A/C WILL BE USED TO ACHIEVE A COMFORTABLE ENVIRONMENT.
- OPENINGS IN THE ROOF TO SERVE AS OUTLETS FOR SMOKE, ARE PREFERRED.

4.6.4 LIGHTING.
- THE LIGHT COMMANDING POINTS WILL BE PLACED IN THE PROJECTION ROOM AND AT THE MAIN ENTRANCE.

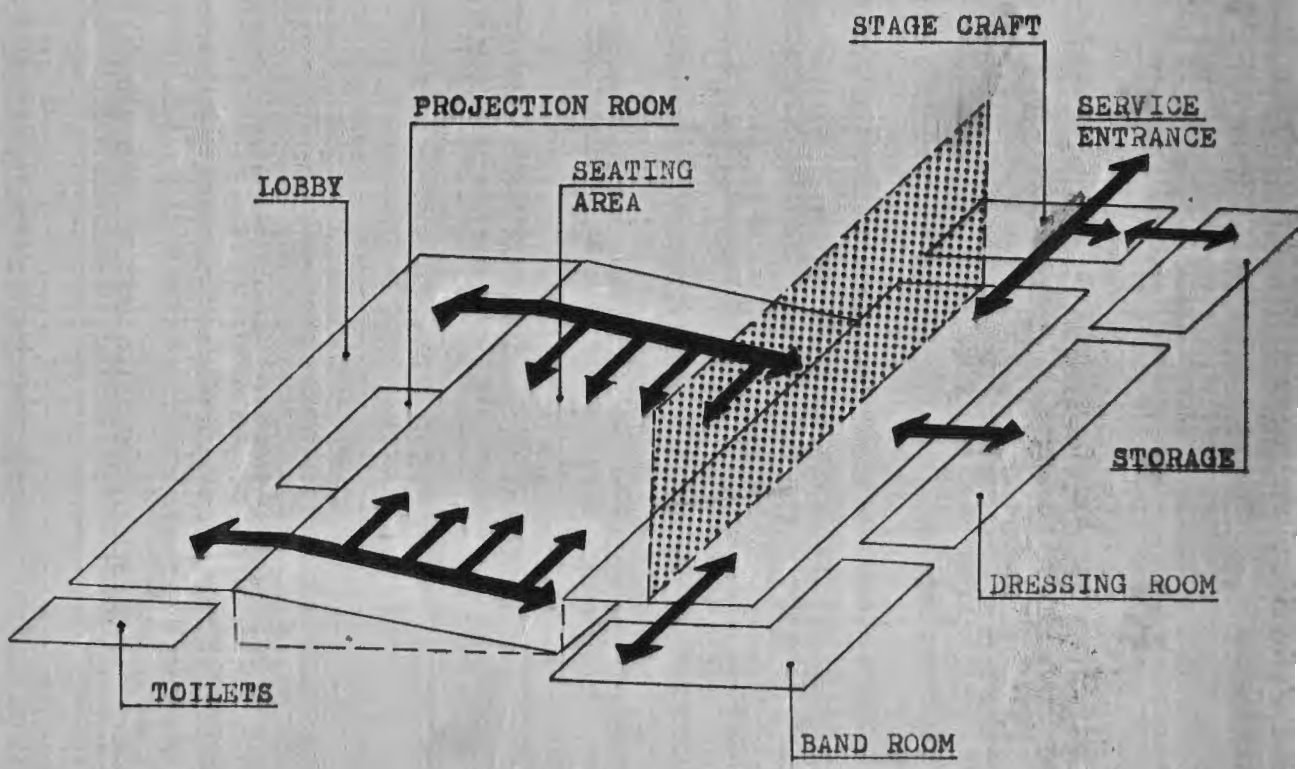


SEATS AND DROP TABLET ARM
WHICH IS GOING TO BE USED

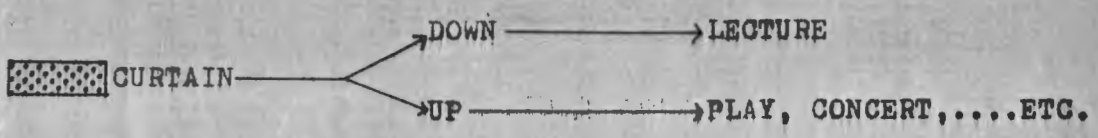
II STAGE.

4.6.5 TECHNICAL SPECIFICATIONS.

- THE STAGE PLATFORM WILL BE EXTENDED INFRONT OF THE MAIN CURTAIN TO PROVIDE A SPEAKING AREA, FOR ANY LECTURE.
- THERE WILL BE AN ADEQUATE NUMBER OF DOORS CONNECTING THE BACK OF THE STAGE WITH ADJOINING AREAS TO ENSURE QUICK CIRCULATION OF PERFORMANCE AND STAGE CREW.
- THERE WILL BE TWO BACK-STAGE EXITS WHICH OPEN OUTWARD, EACH OF THEM HAVING A WIDTH OF 1.05 m.



DIAGRAMATIC OF AN AUDITORIUM SHOWING SPACES RELATIONSHIPS AND CIRCULA[illegible] PATTERN



III LOBBY AREA.

4.6.6 GENERAL SPECIFICATIONS.

- IT WILL BE LOCATED IMMEDIATELY OUTSIDE THE SEATING AREA.
- IT CAN BE MERELY A COVERED AREA, WITHOUT EXTERNAL WALLS.

IV ADJOINING STAGE AREA.

4.6.7 STAGE CRAFT. (WORK AREA)

- IT WILL BE CONNECTED WITH OUTSIDE AREAS FOR THE DELIVERY OF MATERIALS. (ESPECIALLY FROM LABS.)

4.6.8 BAND ROOM.

4.6.9 FUNCTIONS.

- IT IS AN IMPORTANT AREA, HAVING AWIDE VARIETY OF EDUCATIONAL USES. SUCH AS FOR INSTRUCTION IN THE THEATRE, TELEVISION AND RADIO AND FOR THE RESEARCH OF PRODUCTIONS AND FOR A MEETING PLACE FOR CLUBS.
- FLOORS, WALL, AND CEILINING WILL BE COVERED WITH SOUND ABSORBANT MATERIAL.
- IT WILL CONTAIN A PLACE FOR MUSICAL EQUIPMENT STORAGE.

4.6.10 STORAGE ROOM.

- IT WILL HOUSE ALL THE TEACHING EQUIPMENTS (TABLES, CHAIRS, ETC) WHEN A PLAY OR A COCERT IS BEING PLAYED.

4.6.11 DRESSING ROOM.

- THE DRESSING ROOM SURFACE WILL BE SUB-DIVIDED INTO SMALLER SPACES FOR INDIVIDUAL USE AND IT IS TO BE EQUIPPED WITH CUPBOARDS AND MIRRORS.

4.6.12 PROJECTION ROOM.

4.6.13 FUNCTIONS.

- FOR PROJECTION OF FILMS.
- FOR RECORDING AND RECORDS AND TAPES.
- CONTROL OF ARTIFICIAL LIGHT AND SOUND SYSTEMS.

4.6.14 LOCATION.

- IT WILL BE COMPLETELY SEPARATED FROM THE SEATING ROOM.

4.6.15 VENTILATION.

- A TOTALLY SEPARATE VENTILATION SHOULD BE PROVIDED FOR THE PROJECTION AREA AND ALSO FOR THE PROJECTION MACHINE.

4.6.16 DOORS.

- THE USE OF FIRE DOORS IS SUGGESTED FOR THE PROJECTION ROOM.
- USE OF TWO DOORS, LOCATED AT OPPOSITE ENDS OF THE PROJECTION ROOM IS RECOMMENDED.

4.7 MULTIDISCIPLINARY LABORATORIES (M.L.), AND THEIR SUPPORTING FACILITIES.

I MULTIDISCIPLINARY LABORATORIES.

- WITH THE EXCEPTION OF GROSS ANATOMY, THE BASIC SCIENCES WILL BE TAUGHT IN M.L., WHERE STUDENTS WILL HAVE ASSIGNED WORKING SPACES.

4.7.1 USERS.

- THE 1st LABORATORY WILL BE USED BY 1st YEAR MEDICINE (BASIC SCINCES) STUDENTS.
- THE 2nd LABORATORY WILL BE USED BY 2nd YEAR MEDICINE STUDENTS.
- THE M.L. WILL BE DESIGNED TO ACCOMODATE 64 STUDENTS. AND EVERY 16 STUDENTS WILL HAVE THEIR OWN SPACE AND THEIR OWN TEACHER i.e. ONE BIG SPACE DIVIDED INTO 4 SMALLER SPACES BY MEANS OF PARTITIONS.

4.7.2 EQUIPMENT.

- EXCEPT FOR DISSECTING, THE STUDENT WILL DO ALL HIS LABORATORY WORK IN THIS ROOM; THEREFORE, BOTH SIT-DOWN COUNTERS, 75 cm HIGH , AND STAND-UP COUNTERS 90cm. HIGH, ARE REQUIRED IN ADDITION, MOVABLE TABLES 90 cm. HIGH ARE REQUIRED FOR ANIMAL WORK FOR PHYSIOLOGY.
- UTILITIES, STORAGE, AND SINKS WILL BE PROVIDED, CHALK BOARDS WILL BE VISIBLE FROM EACH STUDENT SPACE. BULLETIN BOARDS WILL BE LOCATED NEAR THE ENTRANCE.

4.7.3 SPACE ORGANIZATION.

- EACH STUDENT IS ASSIGNED A SPACE CONTAINING ABOUT 120 cm. OF STAND-UP COUNTER AND THE SAME LENGTH OF SIT-DOWN COUNTER OPPOSITE.

II CAVADER STORAGE.

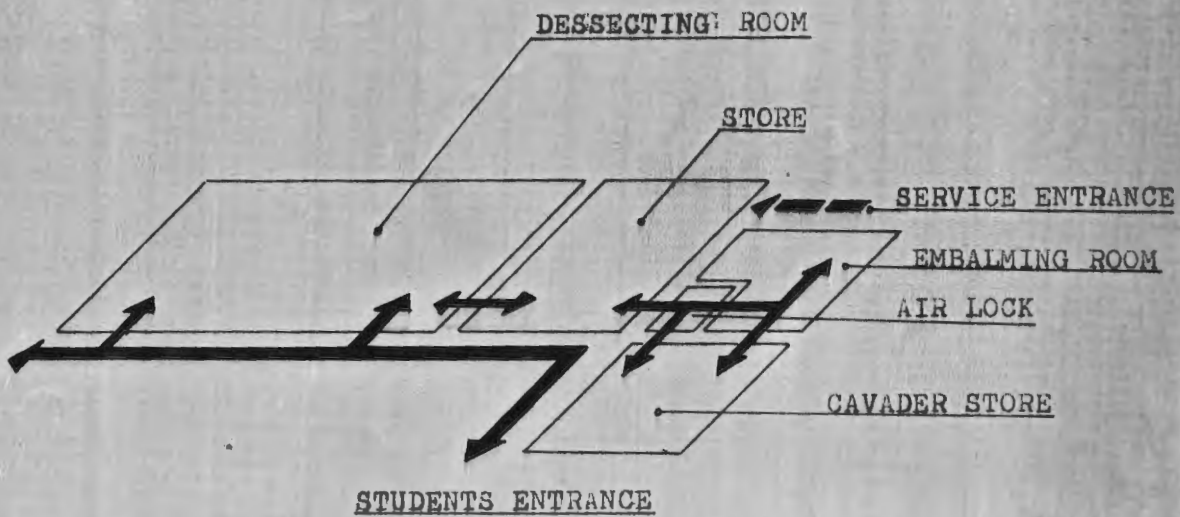
- THE UNIT SHOULD BE SO LOCATED AND DESIGNED THAT NO UNAUTHORIZED PERSONS MAY ENTER. ITS LOCATION RELATIVE TO THE DISSECTING ROOM SHOULD NOT REQUIRE TRANSPORTATION THROUGH ANY PUBLIC AREAS. IT SHOULD

BE LOCATED AT GRADE WITH A RECEIVING ENTRANCE ACCESSIBLE TO ALOW LOADING PLATFORM.

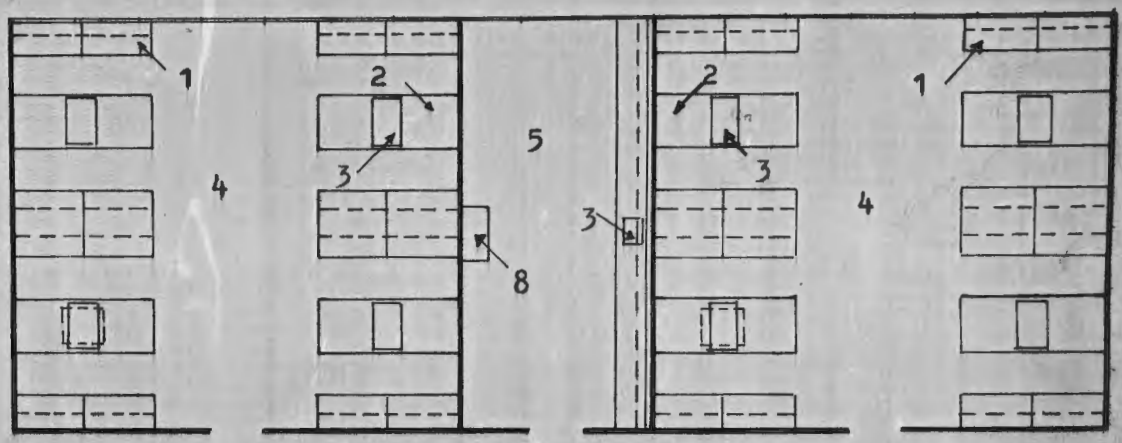
- THERE ARE SEVERAL METHODS OF STORING CAVADERS, AN EFFICIENT METHOD IS STORAGE ON INDIVIDUAL TRAY SHELVES ON BOTH SIDES OF A SERVICE AISLE. THIRTY FIVE TRAY POSITIONS ARE USUALLY REQUIRED.

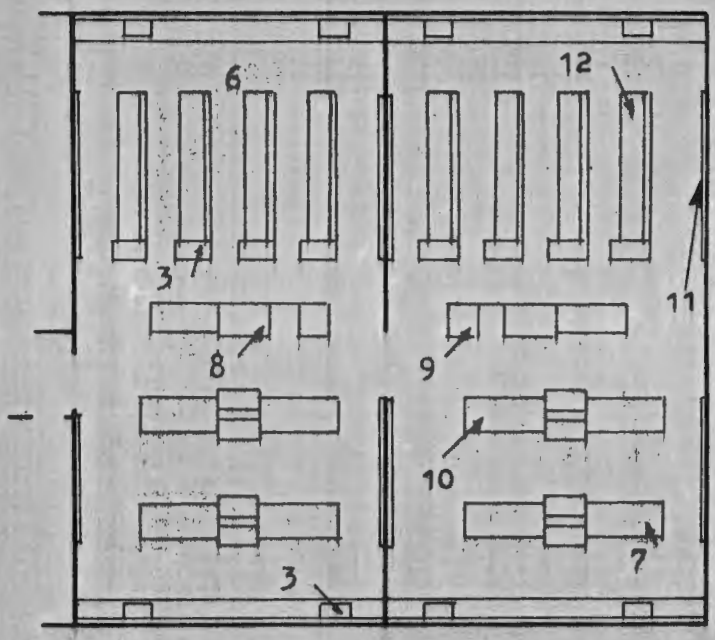
III EMBALMING ROOM.

- EMBALMING ROOM SHOULD PERMIT WORKING ON ALL SIDES OF THE EMBALMI TABLE AND HANDLING BY STRETCHER CART, PORTABLE LIFT, OR OTHER ME AN EMBALMING TABLE WITH BUILT-IN SINK AT ONE END IS GENERALLY RE IRED.



RELATIONSHIPS BETWEEN THE MENTIONED SPACES.





- TWO DIFFERENT LAYOUT FOR MULTIDISCIPLINAR LABORATORIES.

1- LOW BENCH.
2- HIGH BENCH.
3- SINK.
4- 16 STUDENT LABORATORY.
5- SPECIAL EQUIPMENT ROOM.
6- SIT-DOWN LABORATORY.
7- STAND-UP LABORATORY.
8- FUME HOOD.
9- FREE STANDING EQUIPMENT.
10- WORK BENCH.
11- CHALK BOARD AND SCREEN.
12- LAB. TABLE.

4.8 DEPARTMENTAL OFFICES.

EACH BASIC SCIENCE DEPARTMENT FACULTY MEMBER REQUIRES AN OFFICE SPACE FOR HIS DEPARTMENTAL ACTIVITIES AND LABORATORIES RESEARCH. THE HEAD OF EACH DEPARTMENT (CHAIRMAN) REQUIRES AN OFFICE, AND SPACE FOR A CONFERECENCE OF SEVERAL PERSONS LOCATED NEAR HIS RESEARCH LABORATORY AND ADJACENT TO A SECRETARY'S OFFICE. THE SECRETARY'S OFFICE WILL HANDLE THE SECRETARIAL WORK FOR THE ENTIRE DEPARTMENT.

4.8.1 FUNCTIONS:

A) FACULTY OFFICE.

- FOR RELAXATION.
- FOR PERSONAL RESEARCH.
- FOR EDUCATIONAL STUDIES (SUCH AS WRITING OF TEXT BOOKS, ETC..)

B) CONFERENCE SPACE.

- CONFERENCE ROOM FOR THE WHOLE FACULTYDEPT. AND ALSO FOR MEETINGS OF STUDENTS' GROUPS.
- LOUNGE FOR THE FACULTY DEPT.
- SHELVING FOR DEPARTMENTAL BOOKS AND PERIODICALS AND STORAGE SPACE FOR SLIDE PROJECTORS, AND OTHER VISUAL-AID EQUIPMENT .

4.8.2 VENTILATION.

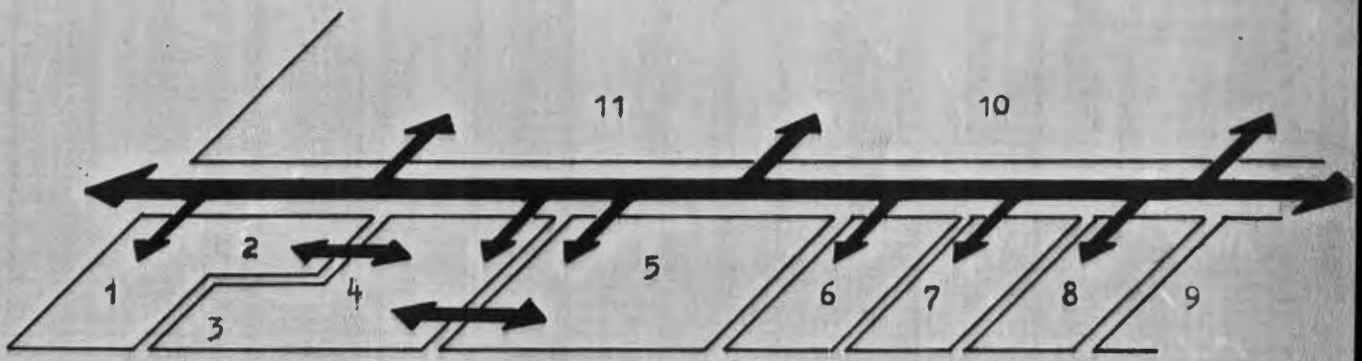
- STAFF OFFICES AND CONFERENCE ROOMS WILL HAVE AIR CONDITIONING BY MEANS OF INDIVIDUAL UNITS.

4.8.3 LIGHTING.

- IT WILL BE SUFFICIENT FOR WORK NEEDS. THE LEVEL OF ILLUMINATION WILL BE 90 LUX.

4.8.4 EQUIPMENT.

-: FOR FACULTY OFFICES.
- REGULAR OFFICE CHAIR.
- OFFICE DESK.
- BOOK CABINET.
- METAL FILING CABINET.



RELATIOSHIPS OF THE DEPARTMENTAL OFFICES.

1- SECRETARY'S OFFICE.
2- WAITING ROOM.
3- CHAIRMAN'S LAB.
4- CHAIRMAN'S OFFICE.
5- CONFERNECE ROOM.
6-7-8- FACULTYS' OFFICES.
9-10-11- DIFFERENT DEPARTMENTAL OFFICES.

4.9 THE SIX DEPARTMENTS AND THEIR SUPPORTING FACILITIES.

4.9.1 THE SIX DEPARTMENTS.

- THE PHYSIOLOGY, MICRO-BIOLOGY, PATHOLOGY, ANATOMY, PHARMACOLOGY, AND BIO-CHEMISTRY DEPARTMENTS ARE THE BASES FOR ANY MEDICAL SCHOOL. THESE DEPTS ARE GOING TO BE AVIALABLE. THE OTHER MEDICAL DEPARTMENTS, FOR EXAMPLE ANESTHESIOLOGY, DIAGNOSTIC RADIOLOGY, PEDIATRICS, ...AND SURGURY, ARE GOING TO BE AVAILABLE IN THE TEACHING HOSPITAL. BECAUSE THEY ARE RELATED DIRECTLY TO PATIENTS. AND IN OUR CASE THESE DEPARTMENTS ARE IN THE MAKASSED HOSPITAL.
- AT A.U.B. MEDICAL SCHOOL, AT FACULTE' DE MEDECINE DE MARSEILLE, AND AT ALMOST ALL THE MEDICAL SCHOOLS EACH ONE OF THESE DEPARTMENTS IS PUT IN A SEPERATE FLOOR ABOVE EACH OTHER, OR MAY BE AT THE SAME FLOOR BUT WITH A DEFINIT SPERATION. THE TRUTH IS PUTTING THE DEPARTMENTS ABOVE EACH OTHER REDUCES MANY PROBLEMS:

  1) PROBLEM OF ECONOMY:
     ALL DEPARTMENTS WILL SHARE THE MECHANICAL, ELECTRICAL, DRAINAGE .... INSTALLATIONS FROM THE SUPER -IMPOSED SHAFTS ALSO THE ANIMAL ROOMS AND COLD ROOMS WILL BENIFIT FROM THIS METHOD, AND THEY WILL BE NEXT TO ONE SERVICE ELEVATOR.
  2) PROBLEM OF CONTROL:
     EACH CHAIRMAN WILL BE RESPONSIBLE FOR HIS DEPARTMENT AND ITS NEEDS, BECAUSE EACH DEPARTMENT IS A COMPLETE UNIT BY ITSELF.

4.9.2 RESEARCH LABORATORIES.

- WILL BE PROVIDED FOR FACULTY MEMBERS, AND STUDENTS IN EACH DEPARTMENT.
- EQUIPMENT:

THE EQUIPMENT OF RESEARCH LABORATORIES WILL VARY WITH THE KIND OF ACTIVITY PERFORMED IN THEM. IT WILL BE POSSIBLE TO REARRANGE WORK COUNTERS, MICROSCOPE BENCHES, AND SINKS, AND TO VARY THE ZISE OF THE ROOM AS REQUIRED WITHOUT UNDUE LABOR, INCONVENIENCE, OR EXPENSE. THIS IS MOST EASILY ACCOMPLISHED IF ALL UTILITIES AND DUCTS ARE PROPERLY SIZED AND LOCATED TO MAKE THEM AVAILABLE TO ALL PARTS OF THE LABORATORY WING. THIS INCLUDES A SPACE NOT DESIGNED ORIGINALLY FOR LABORATORY USE.

COUNTER HEIGHTS WILL VARY-75 cm FOR SIT-DOWN WORK AND 90cms FOR STAND-UP WORK WILL BE USED. THE CHOICE OF A PENINSULA, OR ISLAND COUNTER IN LARGER LABORATORIES MAY VARY WITH THE RESEACH PROJECT. ISLAND COUNTERS CAN BE USED ON ALL SIDES, BUT ARE MORE EXPENSIVE TO INSTALL AND ALTER. PENINSULA COUNTERS ARE MORE FLEXIBLE WITH RESPECT TO AIR, VACCUM, GAS WATER, DRAINAGE, AND THE ELECTRICAL SERVICES REQUIRED.

AN ADDITIONAL SPACE ADJACENT TO THE LARGE LABORATORIES CAN BE DIVIDED TO PROVIDE AN OFFICE FOR AN INSTRUCTOR AND A SPECIAL INSTRUMENT OR STORAGE ROOM.

4.9.3 COLD ROOMS.

COLD ROOMS ARE REQUIRED IN THE LABORATORY WING OF EACH DEPARTMENT. THEY ARE REFRIGERATED ROOMS FOR SEVERAL WORKERS WHO DO PROCEDURES AT LOW TEMPERATURE.

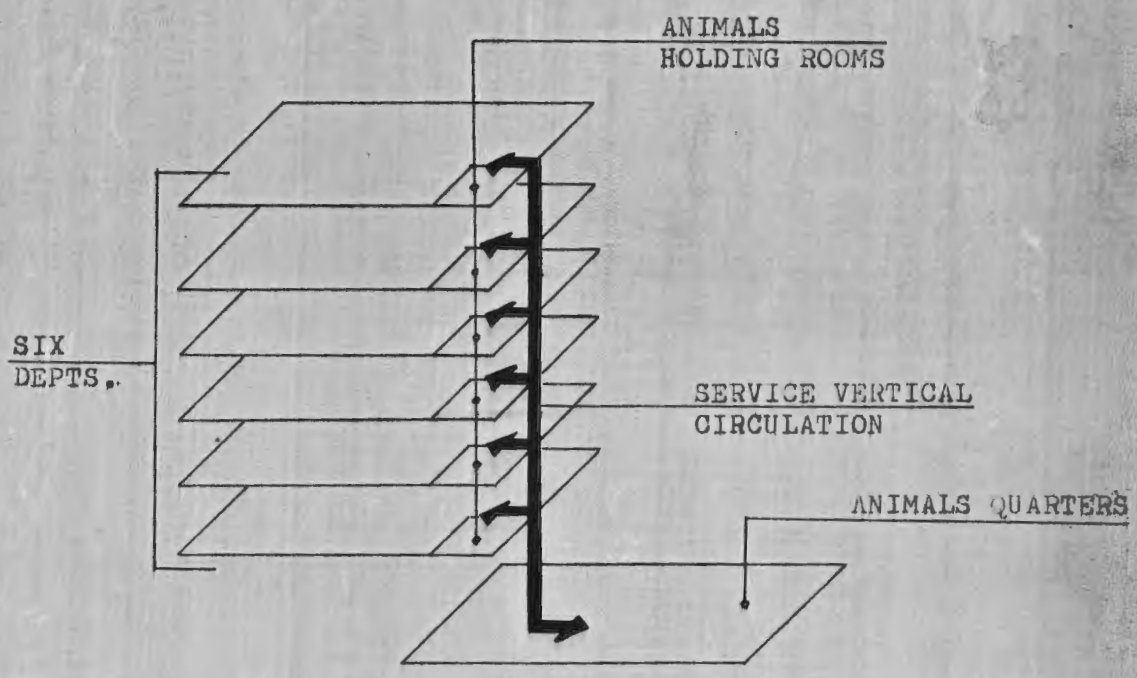
- EQUIPMENTS:

A COUNTER WITH SINK, UNDERCOUNTER CABINETS, AND SHELVING ARE USUAL EQUIPMENTS. ELECTRICAL AIR, AND VACCUM CONNECTIONS ARE REQUIRED. ALL SAFETY FEATURES SUCH AS SAFTY DOOR LATCHES AND WARNING LIGHTS WILL BE INSTALLED.

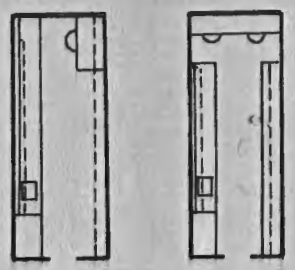
4.9.4 ANIMAL HOLDING ROOM.

- THE TERM "ANIMAL-HOLDING ROOM" IS USED TO DESGNATE AREAS WITH -IN A BASIC SCIENCE OR CLINICAL DEPARTMENT WHERE SMALL ANIMALS ARE HELD FOR A SHORT TIME. THESE HOLDING ROOMS, LOCATED TO AN ELEVATOR WHICH ALSO SERVES THE CENTRAL ANIMAL QUARTERS,ELEMINATE THE HAULING OF ANIMAL CAGES THROUGH PUBLIC CORRIDORS, AS IN TEL-AVIV MEDICAL SCHOOL.

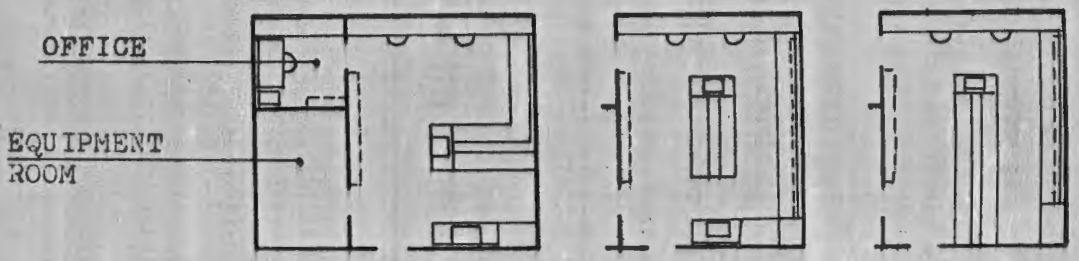
ANIMAL OPERATING AND RECOVERY ROOMS SHOULD BE LOCATED IN CENTRAL ANIMAL QUARTERS.



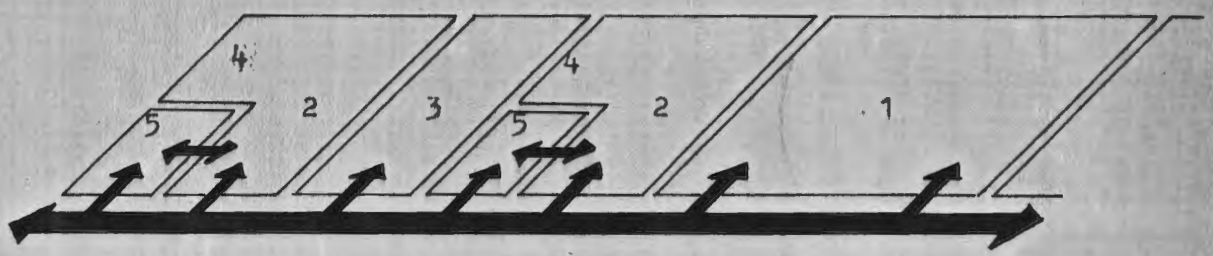
RELATION BETWEEN ANIMAL QUARTERS AND ANIMALS HOLDING ROOMS.



TYPICAL SMALL LABS. ARRANGEMENTS



TYPICAL LARGE LABS. ARRANGEMENTS



TYPICAL DEPARTMENTAL LAYOUT

1- EXTRA LARGE LAB.
2- LARGE LAB.
3- SMALL LAB.
4- OFFICE.
5- EQUIPMENT OR ANIMALS OR COLD OR BALANCE ROOMS.

4.10 STUDENT ACTIVITY FACILITIES.

4.10.1 LOUNGE.

FUNCTION:

- RELAXATION PLACE FOR STUDENTS.
- A PLACE WHERE SOME ACTIVITIES LIKE PINGPONG, BILLIARDS, AND CARD PLAYING WILL TAKE PLACE.
- A GATHERING PLACE FOR STUDENTS WHERE SOME SOCIAL ACTIVITIES CAN TAKE PLACE. (PARTIES, EXHIBITIONS.....)

LOCATION:

- IT COULD BE LOCATED NEAR THE CAFETERIA WHERE THE STUDENTS USING THE LOUNGE CAN SHARE THE CAFETERIAS' SERVICES.
- SINCE THE SITE IS IN A RESIDENTIAL AREA, AND THE VIEWS COULD ONLY BE SEEN FROM HIGH FLOORS, SO IT IS RECOMMENDED TO HAVE IT IN HIGH FLOORS.

EQUIPMENTS:

- A STORAGE CLOSET ADEQUATE FOR CARD TABLES, PHONOGRAPH RECORDS AND OTHER EQUIPMENT WILL BE PROVIDED BESIDE CHAIRS AND TABLES PUBLIC AND HOUSE TELEPHONES WILL BE AVAILABLE.

4.10.2 TOILETS AND LOCKERS FACILITIES.

- ALTHOUGH EACH DEPT. WILL HAVE ITS OWN TOILETS BUT CENTRAL TOILETS WILL BE PROVIDED.

LOCATION:

- LOCATION WILL BE CONVENIENT FOR STUDENTS' USE, MAY BE NEAR THE LOCKERS AREA AND SOME IN THE LOUNGE AREA.

EQUIPMENT:

- THE STANDARD USED IN THESE CALCULATIONS WAS 2 W.C. UNITS AND 2 SINKS FOR EVERY 30 STUDENTS, APPLYING THESE CALCULATIONS:
- 12 URINALS, 8 W.C. UNITS, AND 20 SINKS FOR MALES.
- 20 W.C. UNITS, 20 SINKS FOR FEMALES.
- EVERY ELEMENT WILL BE PROVIDED WITH AN INDIVIDUAL TRAP.

FLOORS:

- WILL BE COVERED WITH GRANITE TILES.

WALLS:

- WILL BE COVERED WITH CERAMIC TILES.

VENTILATION:

- SPECIAL MEASURES WILL BE TAKEN TO ENSURE GOOD VENTILATION.

4.10.3 LOCKERS

FUNCTION:

- TO STORE ROBES, BOOKS AND PERSONAL BELONGINGS OF STUDENTS.

LOCATION AND ACCESSIBILITY:

- THEY WILL BE LOCATED EITHER BY THE MAIN ENTRANCE OF THE SCHOOL OR BY THE TOILET AREA. THEY WILL BE LOCATED IN AN OPEN SPACE RATHER THAN IN A CLOSED ROOM TO AVOID CIRCULATION DIFFICULTIES, AND IT WILL BE EASILY ACCESSIBLE TO STUDENTS.

EQUIPMENT:

- THERE WILL BE ABOUT 300 LOCKERS EACH WITH DIMENSIONS OF 40x40x100cm.

4.10.4 ACTIVITIES OFFICE.

- A STUDENT ACTIVITIES OFFICE NEAR THE STUDENT LOUNGE MAY SERVE AS HEADQUARTERS FOR SUCH ACTIVITIES AS STUDENT ORGANIZATIONS , HONOR MEDICAL SOCIETIES, STUDENT PUBLICATIONS, AND STUDENT COUNCIL AND MAY BE THE CENTER OF INQUIRY REGARDING ATHLETIC RECREATIONAL ACTIVITIES.

4.10.5 BOOK-STORE.

- THE BOOK STORE, ALTHOUGH PRIMARILY FOR STUDENTS, WILL BE AVAILABLE TO ALL PERSONS USING THE BUILDING. IT'S LOCATION ON A MAIN FLOOR OF THE MEDICAL SCHOOL IS PREFERABLE.

4.11 SERVICE FACILITY.

4.11.1 COMPUTER ROOM.

- A COMPUTER ROOM WILL BE PROVIDED FOR THE MAIN COMPUTER, WHICH ITSELF WILL BE CONNECTED TO THE VARIOUS DEPARTMENT BY TERMINALS.

LOCATION:

THE COMPUTER ROOM IS PREFERABLY LOCATED ON A MAIN FLOOR, BUT IT ALSO COULD BE LOCATED IN A BASEMENT. IN BOTH CASES A GOOD COLD AIR SUPPLY SHOULD BE PROVIDED.

4.11.2 TELEPHONE FACILITY.

- PUBLIC TELEPHONE WILL BE PROVIDED IN THE MAIN FLOOR AND THE STUDENTS' LOUNGE.
- HOUSE TELEPHONES WILL BE PROVIDED IN ALL THE FLOORS.
- TELEPHONES EQUIPMENT ROOM WILL BE PROVIDED TOO.

4.11.3 POSTAL FACILITY.

- THE POST OFFICE WILL HANDLE THE DISTRIBUTION OF INNER OFFICE CORRESPONDENCE, ALSO THE DISTRIBUTION OF STUDENTS' MAIL.
- 500 MAIL BOXES 7cmx10cmx25cm EACH, WILL BE PROVIDED FOR STUDENTS.

3.12 PARKING.

- ACCORDING TO THE LEBANESE LAW, WE NEED ONE CAR FOR EVERY 100 Sqm. SO FOR 12427 Sqm. WE NEED 130 CARS. EACH CAR NEED 25 Sqm. INCLUDING CIRCULATION, SO PARKING AREA WILL BE:

$$25 \times 130 = 3250 \text{ Sqm.}$$

4. 13 MECHANICAL PLANT.

THE LOCATION OF THE MECHANICAL ROOM DEPENDS MOSTLY ON THE TYPE OF EQUIPMENT USED:

- IF IT IS AIR COOL IT WILL BE AT THE ROOF.
- IF IT IS WATER COOL IT COULD BE AT THE ROOF OR IN THE BASEMENT.

THE AREA OF THE MECHANICAL ROOM WILL BE 1.5 % OF THE TOTAL AREA BUT BECAUSE OF THE EXISTANCE OF CERTAIN FUNCTIONS SUCH AS: CAVADER STORE, COLD ROOMS,.....,ETC, ANOTHER 0.5 % IS ADDED AS A FACTOR OF SAFETY. SO THE AREA OF THE MECHANICAL ROOM WILL BE:

12427 x2 % = 250 Sqm. (4m HEIGHT)

BOILERS MECHANICAL ROOM WILL BE IN THE BASEMENT WITH AN AREA OF 60 Sqm.

EMERGENCY GENERATORS ROOM WILL BE IN THE BASEMENT ALSO WITH AN AREA OF 40 Sqm. (4m HEIGHT).

SO TOTAL MECHANICAL ROOMS AREA = 350 Sqm.

5. SITE DOCUMENTATION AND ANALYSIS.

5-1 ARCHITECTURAL CHARACTER AND HISTORY OF SITE AND SURROUNDINGS.

THE SITE IS IN BEIRUT, IT IS THE CURRENTLY EMPTY LOT SITUATED EXACTLY TO THE WEST OF THE MAKASSED HOSPITAL, THE LAND IS OWNED BY THE "MAKASSED ASSOCIATION" .

THE "MAKASSED ASSOCIATION" OWNS THE " ISLAMIC ORPHANAGE'S " LAND WHICH HAS ITS PLAYING GROUND ADJACENT TO THE NORTHEN SIDE OF THE SITE. ALSO THE SAME ASSOCIATION OWNS THE INFIRMARY SCHOOL AND HOSPITAL WHICH ARE ADJACENT TO THE EASTERN SIDE OF THE SITE. THE SOUTHERN SIDE IS BOUNDED TO A ROAD WHICH IS A MAJOR ONE IN "TARIK AL-JADIDEH". THE WESTERN SIDE IS BOUNDED TO A SECONDARY ROAD AT THE MOMENT, BUT IN THE FUTURE IT WILL BECOME A MAJOR ONE BECAUSE IT WILL CONNECT THE SITE WITH "CORNISH AL MAZZRAA' " (SEE THE PLAN)

AS THE NAME "TARIK AL-JADIDEH" (NEW AVENUE) INDICATES THE AREA STARTED TO FLORISH 25-30 YEARS AGO, WITH THE ESTABLISHMENT OF NEW ROADS AND THE MAKASSED HOSPITAL. THE INFIRMARY SCHOOL WAS BUILT IN 1972, AND IN THE NEXT FEW YEARS THE MEDICAL SCHOOL WILL BE BUILD.

SITE PL
SCALE 1

RESIDENTIAL.

MAKASSED PROPERTY.

BARBEER HOSPITAL.

PROPOSED SITE.

(1) KORNICH AL-MAZERAA

(2) KORNICH AL-MATTAR.

5.2 SOCIO-ECONOMICAL ENVIRONMENT AND DEVELOPMENT TENDENCIES.

THE SURROUDING AREA OF THE SITE IS CHARACTERIZED BY BEING:

- HIGHLY DENSED RESIDENTIAL AREA.
- NO MAJOR COMMERCIAL OR INDUSTRIAL FIRMS.
- INHABITED BY MIDDLE INCOME FAMILIES.
- BADLY DESIGNED, INTERMS OF URBAN PLANNING, AT THE TIME.

THE SURROUNDING AREA IS BECOMING MORE AND MORE DENSE, WHICH WILL LEAD TO TRAFFIC PROBLEMS AND UNHEALTHY RESIDENTIAL BUILDINGS.

88.57

A

SITE PLAN
SCALE 1/100

92.04

NORTH

HOSPITAL

97.03

INFIRMARY
SCHOOL

100.73

100.32

60m

B

ISLAMIC
ORPHANAGE

PROPOSED
SITE

15m

125m

2m MIN. SET BACK

104

108.87

12m

A

B

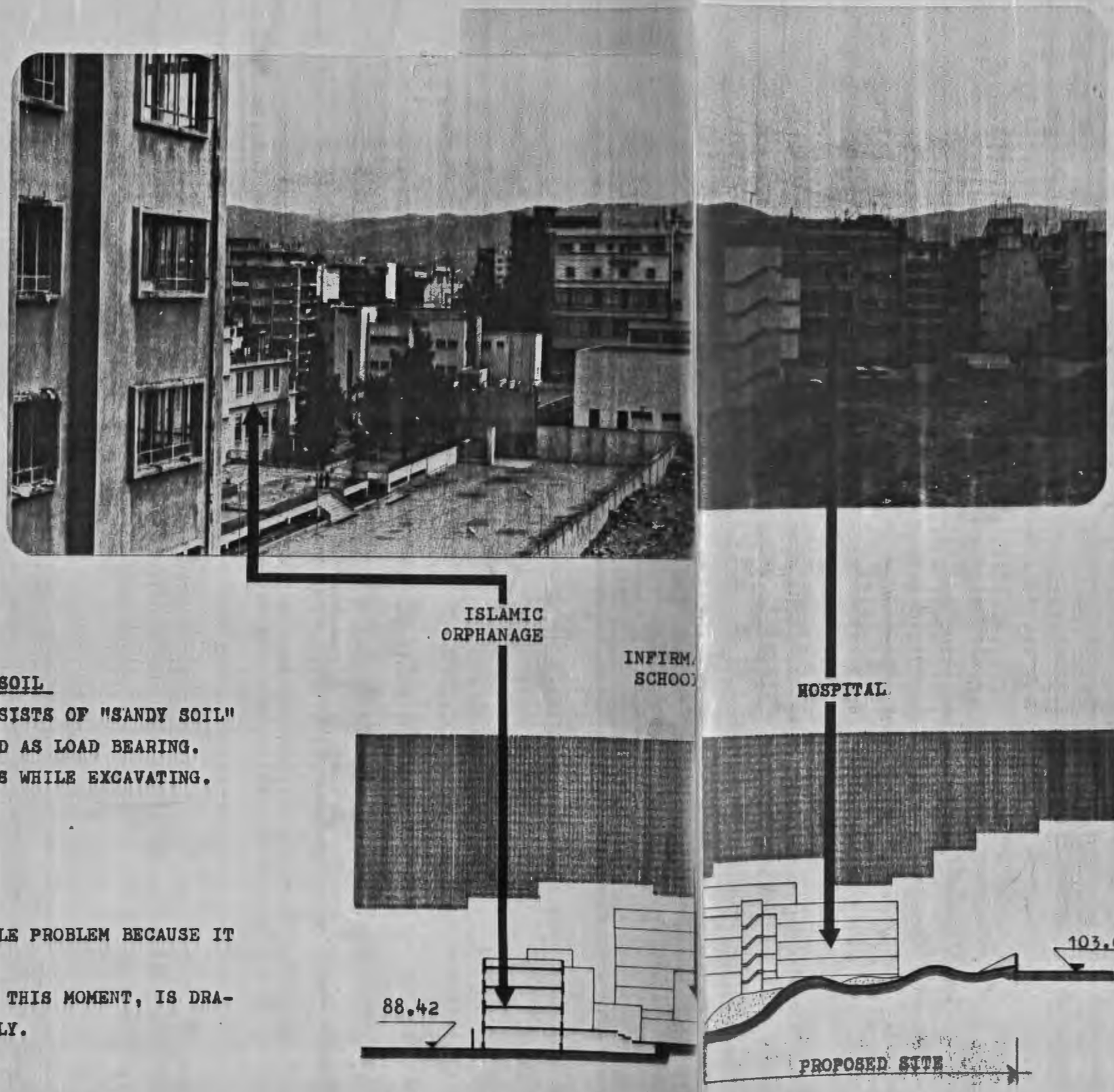
SITE PLAN
SCALE 1/1000

5.3 UTILITIES.

TRAFFIC PATTERN.

—·——·—SEWER SYSTEM.

- WATER WILL BE SUPPLIED FROM MUNICIPALITY OF BEIRUT.



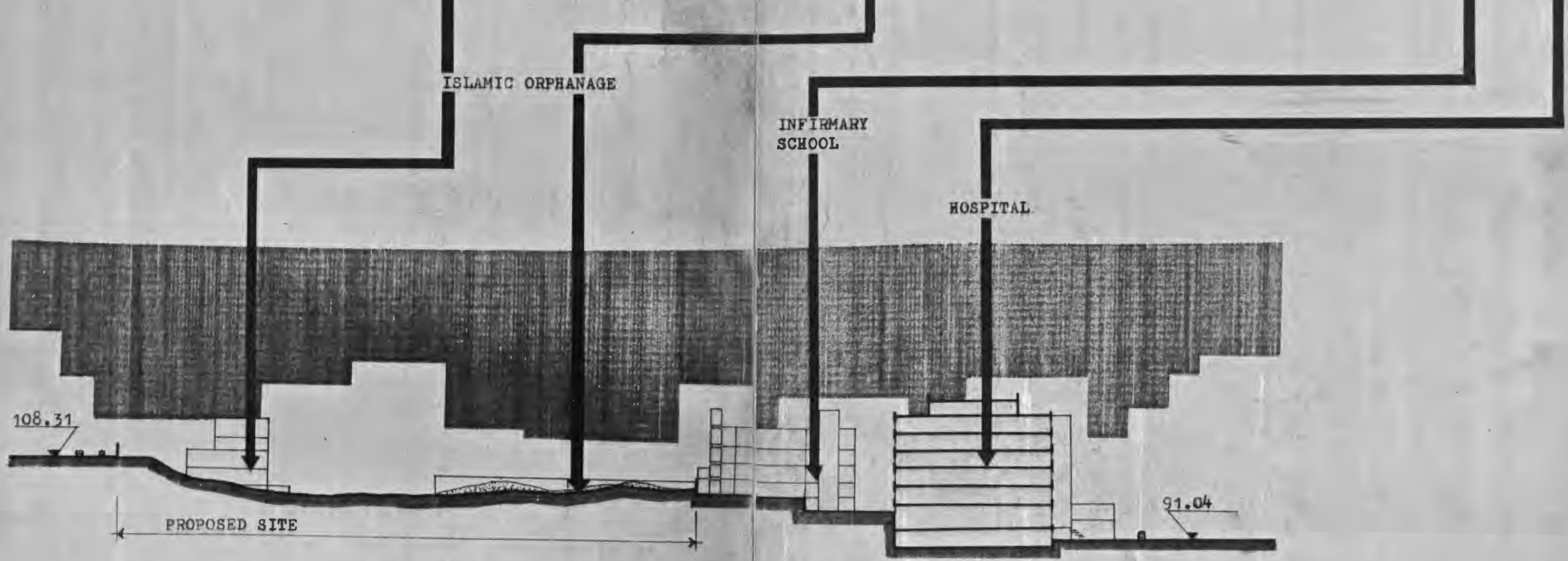
SECTION B-B
SCALE 1/1000

5.4 GEOLOGY AND SOIL

- THE SITE CONSISTS OF "SANDY SOIL" WHICH IS GOOD AS LOAD BEARING. BUT DANGEROUS WHILE EXCAVATING.

5.5 HYDROLOGY

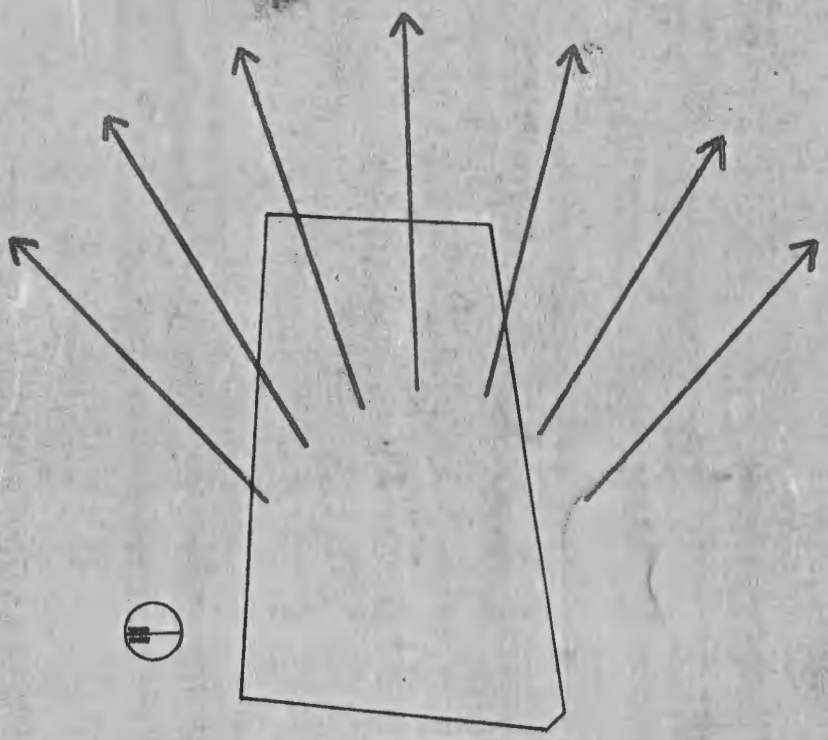
- NO WATER TABLE PROBLEM BECAUSE IT IS LOW.
- THE SITE, AT THIS MOMENT, IS DRAINED NATUEALLY.



SECTION A-A
SCALE 1/1000

5.6 TOPOGRAPHY.

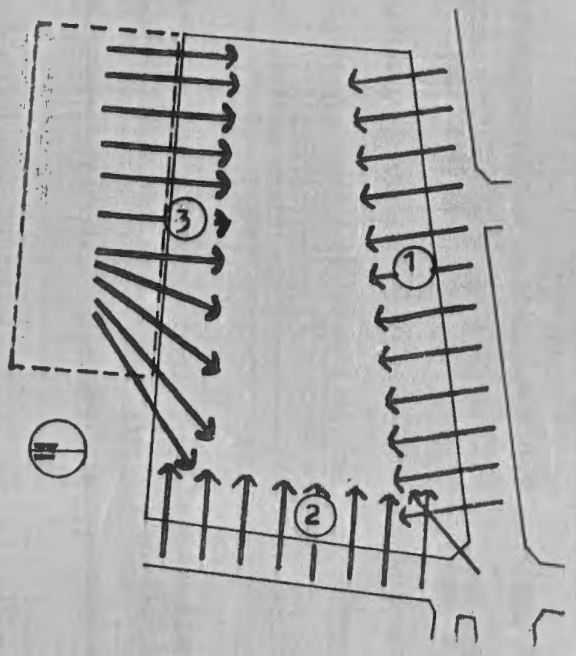
+ FOR INFORMATIONS ABOUT SLOPES, SEE SITE PLAN AND SECTIONS.



VIEW— DIRECTION MAP.

VIEWS THAT COULD BE SEEN.

5.7 ECOLOGY



NOISE-SOURCES MAP.

1- NOISE SOURCE DUE TO TRAFFIC, SPECIALLY IT IS A SLOPING ROAD.
2- NOISE SOURCE DUE TO TRAFFIC. (IN THE FUTURE)
3- NOISE SOURCE DUE TO THE ORPHANAGE PLAY GROUNDS. THE NOISE OCCURS DURING CERTAIN HOURS OF THE DAY.

5.8 CLIMATE

5.8.1 RAIN

SEASON	No. OF RAINY DAYS
WINTER	41
SPRING	17
SUMMER	0
AUTOMN	13
AV. / YEAR	72

- AV. RAIN 900 mm/ year.

5.8.2 HUMIDITY

SEASON'S AV.	PERCENTAGE
WINTER	65
SPRING	69
SUMMER	72
AUTOMN	66
AV./ YEAR	68

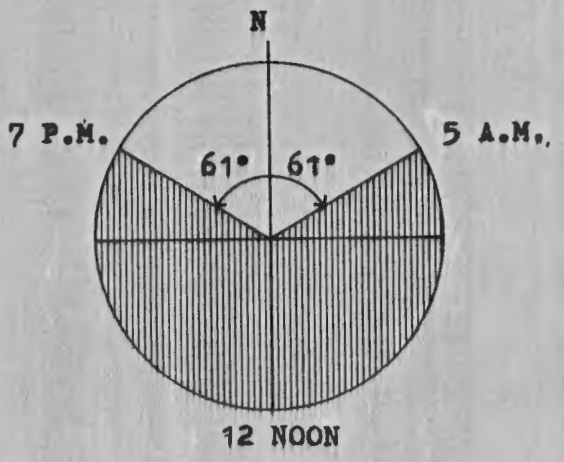
5.8.3 HOT AND COLD DAYS

DAYS / YEAR	No. OF DAYS	AV. TEMP. VARATION °C
HOT	49	32-21
VERY HOT	1.5	40-37
VERY COLD	0	—

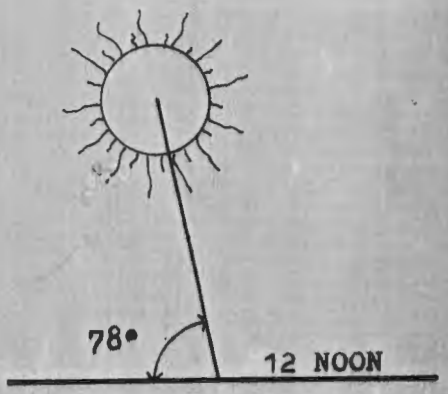
5.8.4 COMFORT CONDITIONS

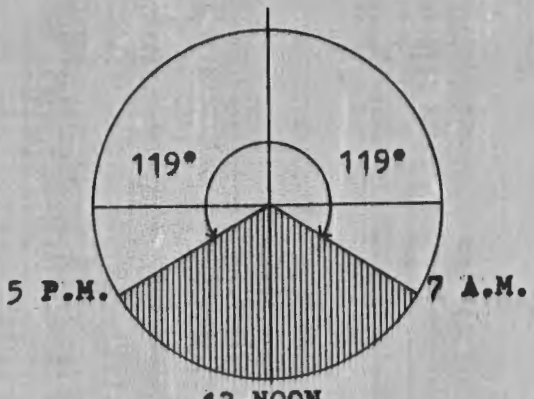
SEASON	TEMPERATURE	HUMIDITY
SUMMER	26	50 %
WINTER	21	50 %

SUN ANGLES

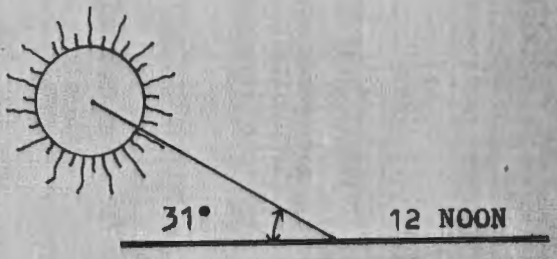


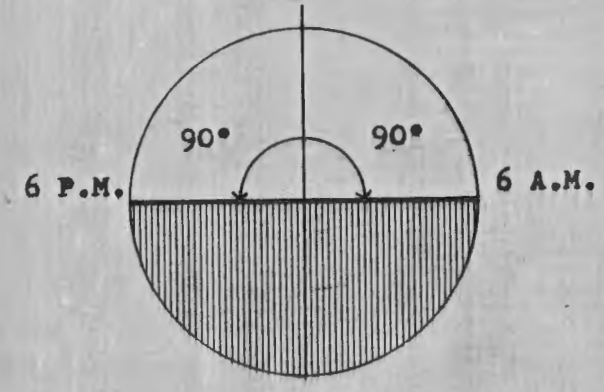
21 st JUNE





21 st DEC.

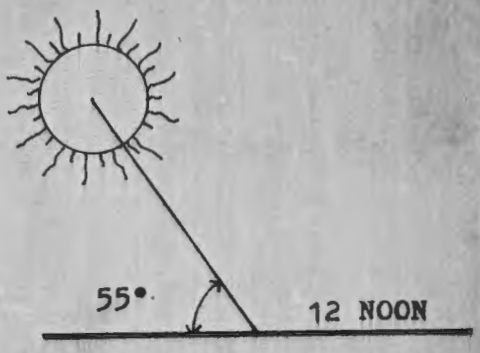




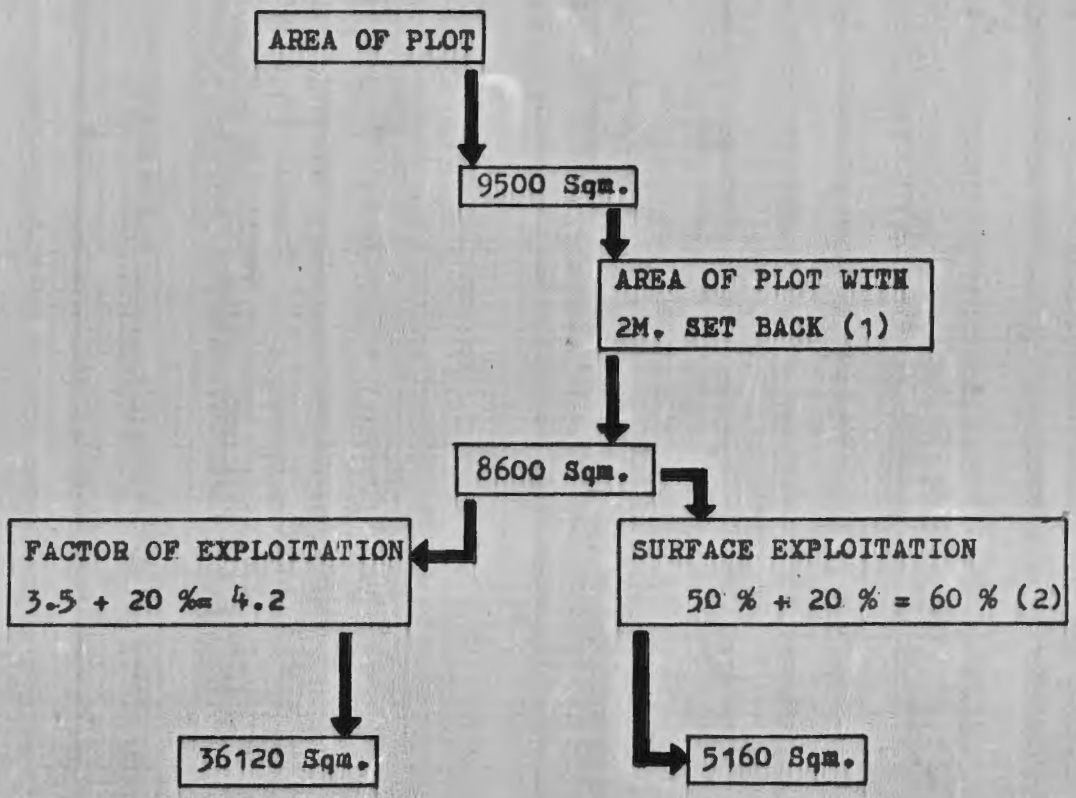
EQUINOX

21 st MAR.

21 st SEP.



5.9 FACTERS AFFECTING LAND USE.



- ALTITUDE OF SITE 10%.
- NO HEIGHT RESTRICTIONS (HEIGHT OF BLDG. = WIDTH OF STREET).
- NO MATERIAL RESTRICTIONS.

(1) SEE SITE PLAN.

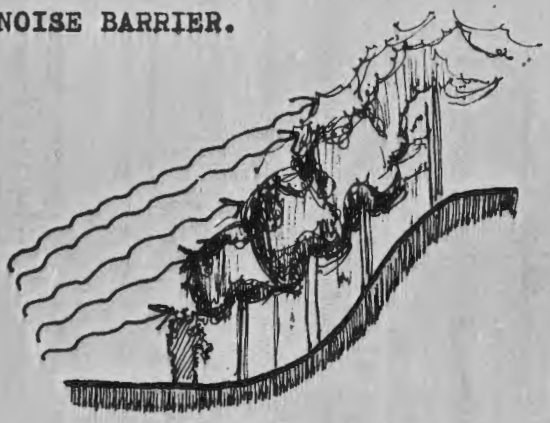
(2) 20 % IS ADDED BECAUSE THE SITE IS LOCATED ON TWO ROADS.

5.10 SUMMARY OF ANALYSIS.

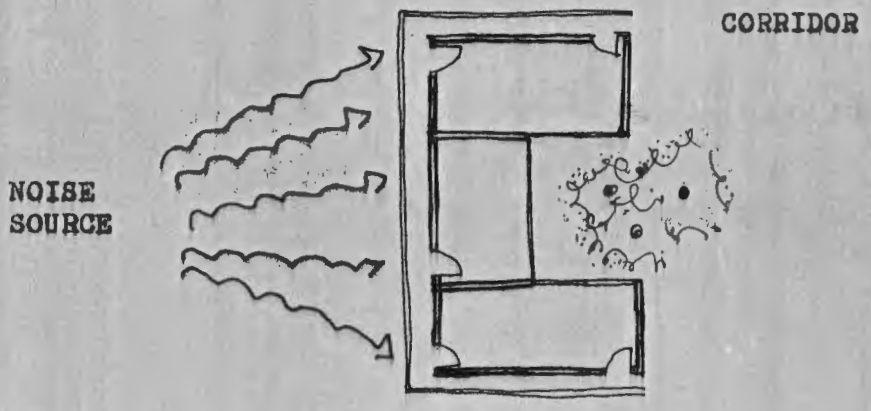
5.10.1 CERTAIN PRECAUTIONS SHOULD BE TAKEN DURING EXCAVATIONS, ESPECIALLY FOR ADJACENT BUILDINGS, BECAUSE OF THE SOIL.

5.10.2 NOISE CONTROL PRECAUTIONS WILL BE TAKEN, BECAUSE THERE ARE MANY NOISE SOURCES SURROUNDING THE SITE.

FOR EXAMPLE:
- USING PLANTS AS A NOISE BARRIER.



- USING MINOR FUNCTIONS FACING NOISE SOURCE, WHILE THE MAJOR ONE FACES ANOTHER THING.



5.10.3 THE THREE BUILDINGS, THE HOSPITAL, THE INFIRMARY SCHOOL AND THE UNDER DESIGN MEDICAL SCHOOL MUST HAVE A "TYING ELEMENT" BETWEEN THEM, BECAUSE THEY ARE LINKED TOGETHER ACADAMICALLY AND PHYSICALLY. THIS "TYING ELEMENT" MUST BE SEEN THROUGH COLOUR, OR PLANNING, OR CONTRAST..... ETC.

6. RESEARCH REFERENCE

INTERVIEWS WERE DONE WITH.

- AFIFI, ADEL. PROFESSOR IN HUMAN MORPHOLOGY DEPT. A.U.B.
- AL-KHALIDI, USAMA. PROFESSOR IN BIO-CHEMISTRY DEPT. A.U.B.
- BIKHAZI, ANWAR. ASSOCIATE PROFESSOR IN PHYSIOLOGY DEPT. A.U.B.
- JABBUR, KARIM. SENIOR RESEARCH ASSISTANT IN PHARMACOLOGY DEPT. A.U.B.
- MRS. LEILA MIRHIJ HANHAN. ACTING MEDICAL LIBRARIAN, AND CATALOGUE LIBRARIAN (MEDICAL) A.U.B. MEDICAL LIBRARY.
- MISS HILDA NASR. CATALOG LIBRARIAN (WESTERN). A.U.B. MEDICAL LIBRARY.
- SAKKAL, FATEH. PROFESSOR IN MECHANICAL ENGINEERING. A.U.B.

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