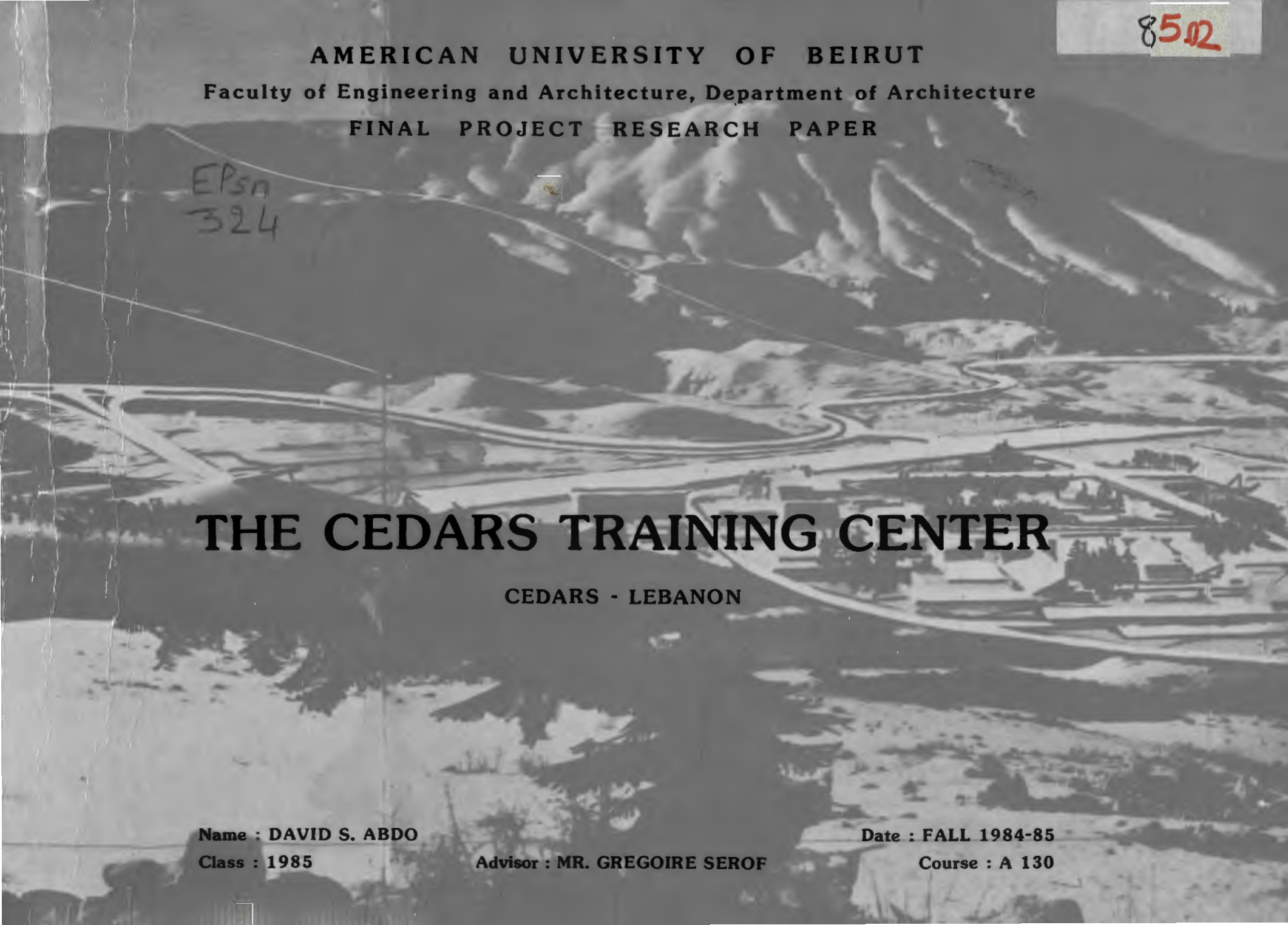
AMERICAN UNIVERSITY OF BEIRUT
Faculty of Engineering and Architecture, Department of Architecture

FINAL PROJECT RESEARCH PAPER



THE CEDARS TRAINING CENTER

CEDARS - LEBANON

Name : DAVID S. ABDO
Class : 1985
Advisor : MR. GREGOIRE SEROF

Date : FALL 1984-85
Course : A 130

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1
INTRODUCTION

THE CEDARS TRAINING CENTER

INTRODUCTION:

Although one can say that Lebanon's skiing resorts are numerous and promising, yet these resorts have been developed haphazardly and without any proper planning. As a result, the ski resorts we have in Lebanon are "Unbalanced".

Skiing in Lebanon has a long history, especially at the Cedars' mountains. Being the only country in the region with mountains covered with snow for a long period of time stretching beyond the winter season, Lebanon has great potentiality in playing a leading role in winter sports. Facilities in this field if not well planned and "balanced", may create drawbacks within the scope of social and economical domains.

What is meant by "balanced" in this particular field is the equilibrium that should be maintained between the permanent residents and the temporary visitors of the resort all year around.

The project proposed is a Center in the Cedars of Lebanon which will consist of the following: A Secondary School, a Hotel Management School, a Physical Education School, a Hotel, Sports and Living facilities for teachers and students. Having all the above mentioned facilities functioning all in parallel, will give great advantages to the project as a whole and will "balance" it as well. The idea of having the students run both the Hotel and the Sports Trainingship, under the teachers' supervision, will not only give them professional training, but will also offer the temporary visitors of the Center first class services in accommodation, food and sports training at minimal fees.

The idea of having this training Center situated in the Cedars will give its permanent residents a healthy and relaxed atmosphere far from the hectic life or poluted air of the city. Over and above such a Center will have many advantages to the local people living in the area: They will have opportunities to either be employed or be students at the Center, and they will benefit by the numerous visitors that this Center will attract.

Finally, a great advantage of this Center is that it will function all year round- Winter and Summer, and thus maintain the proposed "balance".

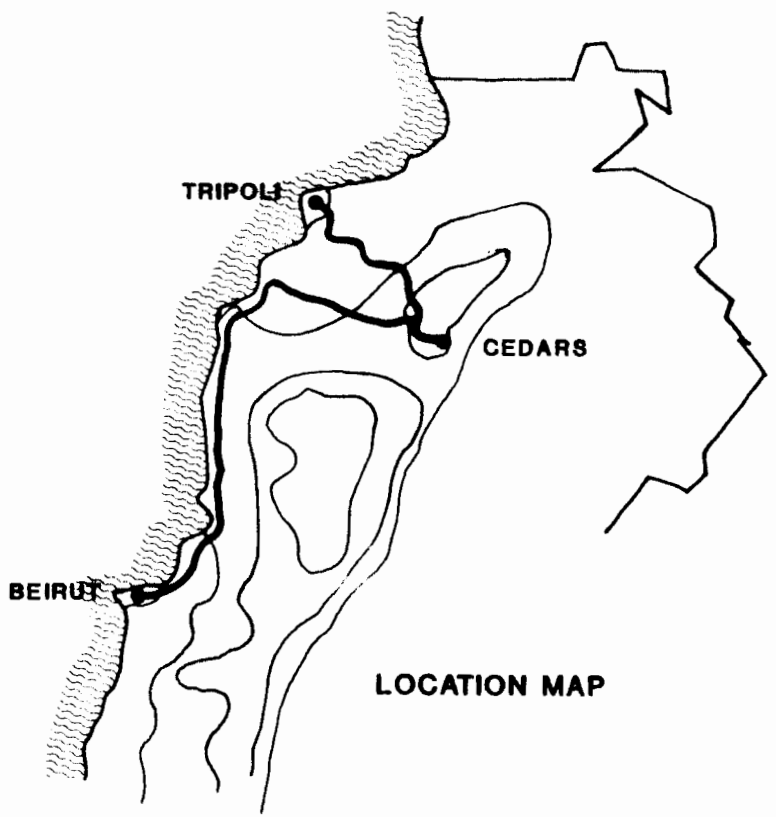
2
SITE ANALYSIS

SITE SELECTION:

In general all types of mountain landscape have scenic values, whether it be the distant views, the impression of infinite space, the geological formations, or the over all contrast to the surrounding landscape.

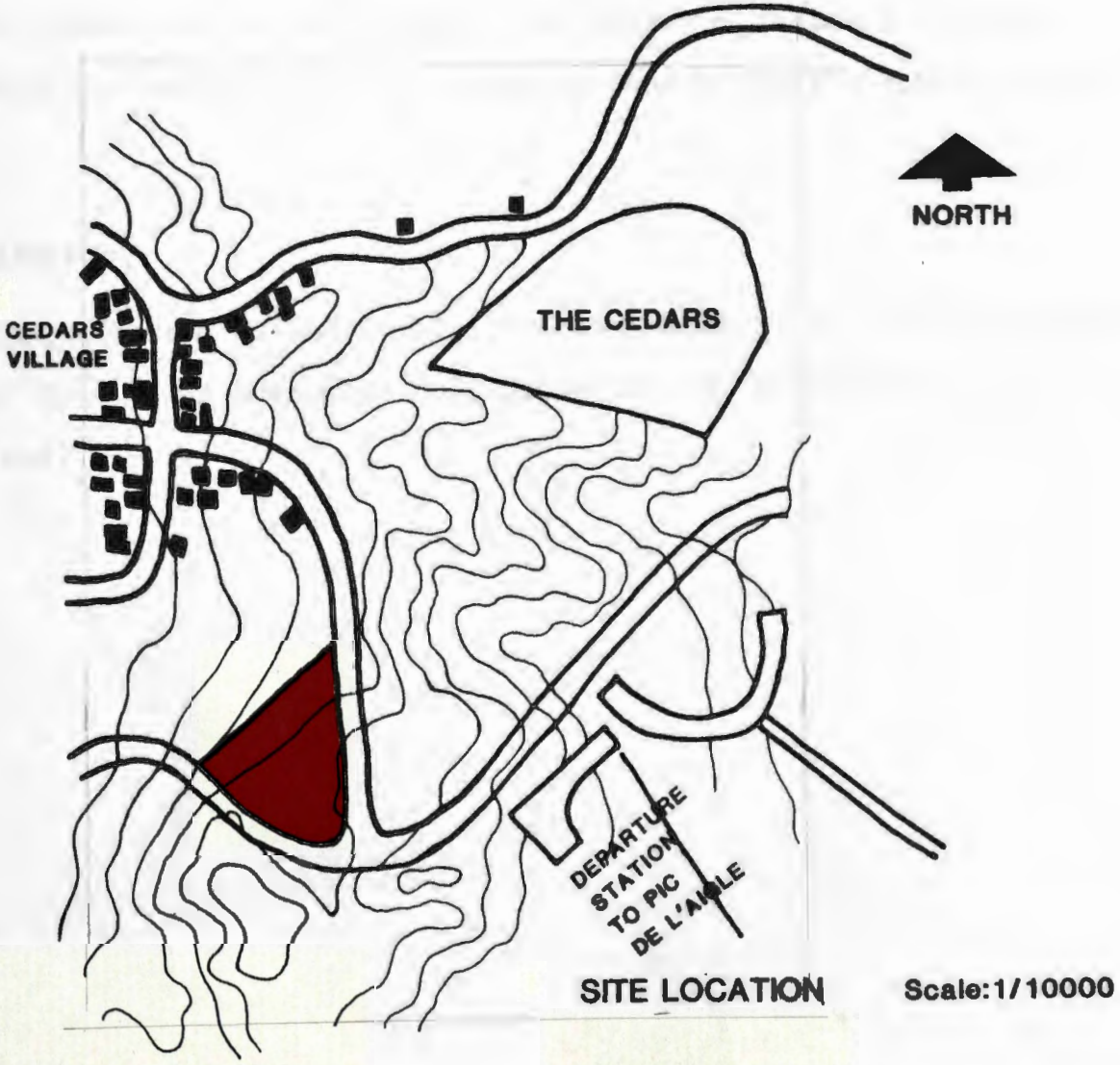
LOCATION:

The site which was chosen for this project is located in the Cedars Village (Mount Makmel), which is at 1906 meters altitude. The Cedars can be reached from Beirut and Tripoli by two roads: The Koura road and the Zghorta road. The distance from Beirut to the Cedars is approximately 125 Kms, while it is only 60 Kms from Tripoli.There is also a third road which is the Ainata road that connects the Cedars with the Bekaa Valley.



LOCATION MAP

As shown in the following diagram, the site chosen is bounded by the Cedars village from the North and West, the historical Cedars forest from the East, and the ski slopes, which climb up to the "Pic de L'aigle", from the South.



The distances between the proposed site and its surroundings, such as the village, the Cedars forest and the ski slopes, lie within a radius of not more than 500 m. This enables the residents of the Center to reach these places on foot.

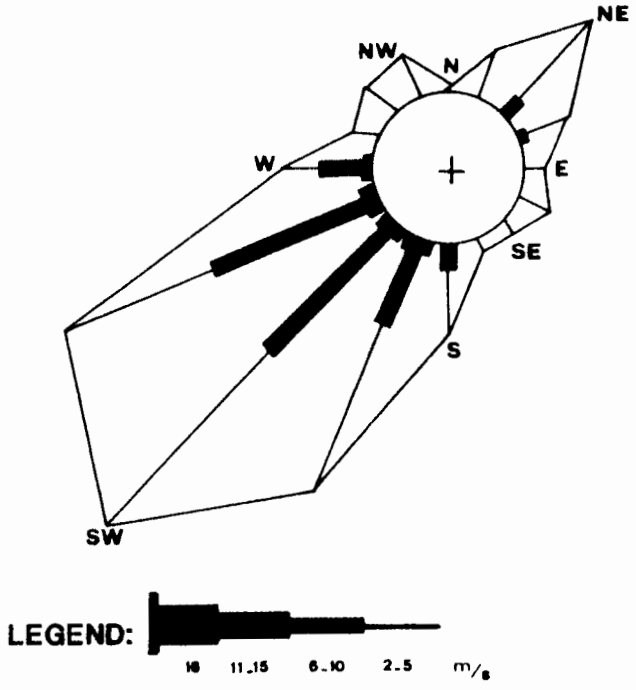
TOPOGRAPHY:

The slope of the site is almost flat, ranging from 5% to 15% in a North-West direction; This is an advantage to this project as several flat sports fields are required.

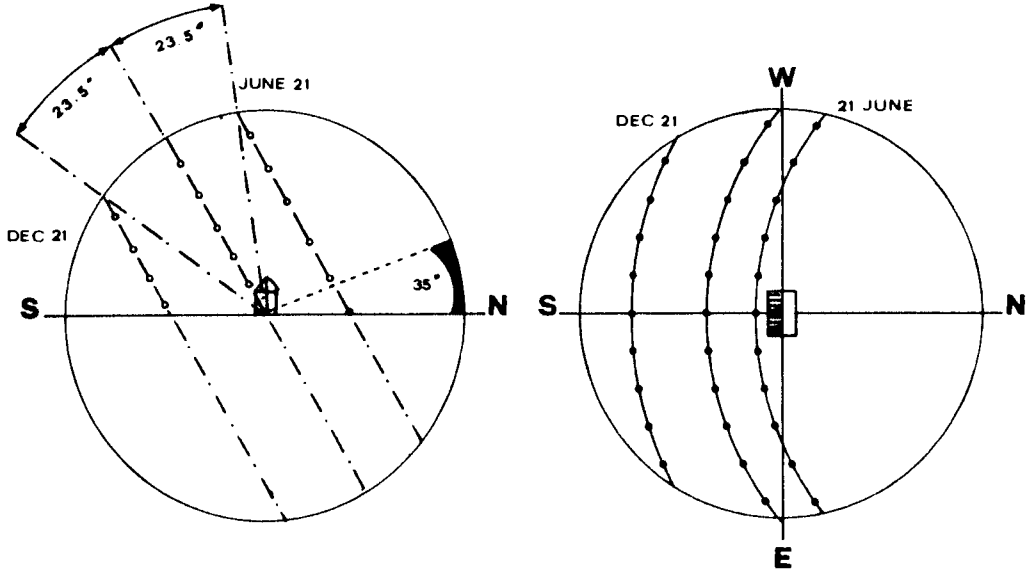
CLIMATE:

A) THE WIND: As the site is located on flat land, it has no natural protection from the wind; Wind drafts wipe off big amounts of snow, and deposit them in other places; such winds help in preventing heavy loads of snow to accumulate on roof tops.

The chart below shows the different speeds and direction of the wind all year round.



B) THE SUN: Although the region of the Cedars is hit by heavy storms, the duration of such storms are rather short, thus blue skies and sunshine follow immediately: The region receives 3200 hours of sunshine per year. The chart below is a diagram that shows the annual sun path of the Cedars Region.



VIEW FROM EAST PLAN VIEW

SUN PATH DIAGRAM

C) PRECIPITATION: The Cedars region receives an average of 970 mm of rain fall and snow per year, 650 mm of which is in snow form. The climatic chart on page 13 shows the quantity of precipitation at different times of the year. Snow falls for an average period of 49 days per year, and remains covering the ground for about 126 days.

The over all snow heights in different areas can vary, due to the orientation, the exposure to the sun, and the direction of the prevailing wind. Other factors, such as the "Khamsine Wind" (hot wind blowing from the Libyan desert) affect the snow cover drastically.

The table below shows snow heights during the year.

Month	Snow Heights
December	100 cms
January	140 cms
February	170 cms
March	110 cms

D) HUMIDITY: Humidity varies from 52% average in August to 82% average in February. Humidity in the Cedars is well balanced: Dry in Summer, wet in Winter. This results in a wide comfort zone.

The following chart shows all climatic variations through the year.

CLIMATIC CHART

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR	
TEMPERATURE IN ^{O}C														
Average Minimum	-0.8	0.0	1.4	4.5	6.7	13.8	15.4	17.4	15.1	11.7	8.7	2.8	8.0	
Average Temperature	2.2	4.2	5.3	8.6	11.5	17.8	19.1	21.2	19.0	15.5	11.7	5.4	11.6	
Average Maximum	4.9	5.7	8.3	11.7	15.0	21.1	32.3	24.7	22.6	18.4	15.4	8.0	14.8	
Daily Change	5.7	5.7	5.9	7.2	8.3	7.3	6.9	7.3	7.5	8.7	6.7	5.2	5.8	
PRECIPITATION in mm	220	198	162	73	30	3	0.5	0.5	7	33	83	160	970	
RELATIVE HUMIDITY (%)	79	82	72	55	65	55	55	52	55	60	67	75	79	Winter
													57	Summer
NUMBER OF DAYS OF:														
Snow Fall	12	13	9	4	0.5					0.2	2.5	8	47	
Snow Covering Ground	29	27	26	14	2	0.5					4	18	115	
Frost	22	18	126	6	1						2	11	74	
Sunshine													3200	
Rain	16	14	13	7	3.5	0.4			1	4	8	12	13	Autumn
													42	Winter
													24	Spring

TRANSPORTATION:

The proposed site, being triangular in shape has two of its sides each adjacent to a main road. This promotes flexibility in locating the main and service entrances to the site.

Inside the complex, commuting is mainly on foot. Yet a limited number of cars belonging to selected residents and service vehicles may enter the premises. Parking for visitors will be available in spaces especially set-back from the site's periphery. These cars will be kept outside the center yet on the project's grounds. This arrangement will also facilitate the ploughing of the accummulated snow from these parking spaces as they are directly adjacent to the main road.

3
SPACE REQUIREMENTS

A. ADMINISTRATION

CENTRAL ADMINISTRATION — 1

T Y P E	No. OF UNITS	AREA / UNIT	TOTAL AREA M2
A. THE MANAGER'S OFFICE	1	20	20
B. THE SECRETARIES' OFFICE	1	30	30
C. BUSINESS OFFICE	3	25	75
D. CONFERENCE ROOM	1	20	20
E. TELE-COMMUNICATIONS OFFICE	1	30	30
F. PHYSICAL PLANT			
- Manager's Office	1	20	20
- Secretary's Office	1	16	16
- Business Office & Accounts	2	20	40
- Indoor Bldg. Division	1	38	38
- Outdoor Bldg. Division	1	38	38
- Workshop & Supplies	1	130	130
G. INFIRMARY	1	90	90
			550
H. CIRCULATION 30%			165
TOTAL AREA			715
PERCENTAGE OF TOTAL PROJECT AREA: 4.48%			

B. TOURISTIC

THE HOTEL			2
T Y P E	No. OF UNITS	AREA / UNIT	TOTAL AREA M2
PUBLIC AREAS			
A. THE LOBBY	1	100	100
B. THE RECEPTION DESK	1	30	30
C. THE RESTAURANT	1	100	100
D. THE BAR	1	30	30
PRIVATE AREAS			
A. THE GUEST ROOMS	27	27	725
SERVICE AREAS			
A. THE KITCHEN	1	100	100
B. THE LAUNDRY	1	50	50
C. THE LINEN'S ROOM	2	12	25
D. ROOM SERVICE UNITS	2	15	30
E. TECHNICAL ROOM	1	50	50
F. GARBAGE ROOM	1	20	20
			1260
G. CIRCULATION 30%			390
TOTAL AREA			1650
PERCENTAGE OF TOTAL PROJECT AREA 10.34%			

B.TOURISTIC

THE YOUTH INN			3
T Y P E	No. OF UNITS	AREA / UNIT	TOTAL AREA M2
A. THE COMMON ROOM	1	60	60
B. THE DINING ROOM	1	110	110
C. THE KITCHEN	1	40	40
D. THE LOBBY / FOYER	1	25	25
E. THE LOCKER ROOM	1	25	25
F. THE BUNK ROOMS	8	62	500
G. THE TOILETS	3	25	75
H. THE HOUSE PARENT APARTMENT	1	60	60
I. THE LAUNDRY	1	25	25
			920
J. CIRCULATION 30%			280
TOTAL AREA			1200
PERCENTAGE OF TOTAL PROJECT AREA: 7.52%			

C. EDUCATIONAL

THE STUDENTS DORMS I — 4

TYPE	No. OF UNITS	AREA / UNIT	TOTAL AREA M2
A. THE LOBBY	1	30	30
B. THE COMMON ROOM	1	180	180
C. THE DINING ROOM	1	200	200
D. THE KITCHEN	1	80	80
E. THE BEDROOM TYPE (i) 6 STUDENTS	20	46	920
TYPE (ii) 4 STUDENTS	12	33	396
F. THE TOILETS	32	10	320
G. THE HOUSE-MASTER APARTMENT	1	60	60
H. THE LAUNDRY	1	40	40
			2226
I. CIRCULATION 30%			674
TOTAL AREA			2900

PERCENTAGE OF TOTAL PROJECT AREA: 18.16%

C. EDUCATIONAL

THE STUDENTS DORMS II — 5

TYPE	No. OF UNITS	AREA / UNIT	TOTAL AREA M2
A. THE LOBBY	1	30	30
B. THE COMMON ROOM	1	60	60
C. THE DINING ROOM	1	100	100
D. THE KITCHEN	1	40	40
E. THE BEDROOMS	45	16	630
F. THE TOILETS	22	10	220
G. THE LAUNDRY	1	25	25
			1115
H. CIRCULATION 30%			385
TOTAL AREA			1500

PERCENTAGE OF TOTAL PROJECT AREA: 9.40%

C. EDUCATIONAL

THE FACULTY APARTMENTS — 6

TYPE	No. OF UNITS	AREA / UNIT	TOTAL AREA M2
A. ONE BEDROOM APARTMENT	15	27	405
B. TWO BEDROOM APARTMENT	10	58	580
C. THE LAUNDRY	2	20	40
D. THE STORAGE ROOMS	25	10	250
			1275
E. CIRCULATION 25%			325
TOTAL AREA			1600

PERCENTAGE OF TOTAL PROJECT AREA: 10.02%

C. EDUCATIONAL

THE SECONDARY SCHOOL — 7

TYPE	No. OF UNITS	AREA / UNIT	TOTAL AREA M2
A. THE PRINCIPAL'S OFFICE	1	24	24
B. THE SECRETARY'S OFFICE	1	24	24
C. THE LIBRARY	1	90	90
D. JANITOR ROOM	1	15	15
E. STORAGE ROOM	2	10	20
F. BOOKSHOP	1	15	15
G. THE CLASSROOMS	14	30	420
H. THE TEACHERS LOUNGE	1	40	40
I. THE TOILETS (STUDENTS / TEACHERS)			35
J. THE LABS	2	30	60
K. THE PROJECTION ROOM	1	40	40
			783
L. CIRCULATION 40%			317
TOTAL AREA			1100

PERCENTAGE OF TOTAL PROJECT AREA: 6.89%

C. EDUCATIONAL

THE GRADUATE SCHOOL — 8

TYPE	No. OF UNITS	AREA / UNIT	TOTAL AREA M2
A. THE PRINCIPAL'S OFFICE (HOTEL MANAGEMENT)	1	24	24
B. THE PRINCIPAL'S OFFICE (PHYSICAL EDUCATION)	1	24	24
C. THE SECRETARY'S OFFICE	1	24	24
D. BOOKSHOP	1	15	15
E. JANITORS ROOM	1	15	15
F. STORAGE ROOMS	2	10	20
G. THE LIBRARY	1	70	70
H. THE CLASSROOMS	6	30	180
I. THE TEACHERS LOUNGE	1	20	20
J. THE TOILETS (STUDENTS / TEACHERS)	1	30	30
K. THE PROJECTION ROOMS	2	40	80
			500
L. CIRCULATION 40%			200
TOTAL AREA			700
PERCENTAGE OF TOTAL PROJECT AREA: 4.38%			

D. SPORTS & LEISURE

THE CLUB — 9

TYPE	No. OF UNITS	AREA / UNIT	TOTAL AREA M2
A. THE INFORMATION	1	25	25
B. THE SWIMMING POOL & CHANGING ROOMS			1250
C. THE BODY BLDG	1	100	100
D. THE GYMNASIUM			900
E. CINEMA / THEATER	1	350	350
F. SHOPS:			
- Grocery	1	40	40
- Bookshop	1	20	20
- Sports Shop	1	40	40
- Cloths Shop (Unisex)	1	40	40
G. PUBLIC TOILETS	1	20	20
H. THE CAFETERIA / KITCHEN	1	280	280
			3065
I. CIRCULATION 50%			1535
TOTAL AREA			4600
PERCENTAGE OF TOTAL PROJECT AREA: 28.81%			

D. SPORTS & LEISURE

OUTDOOR ACTIVITIES — 10

TYPE	No. OF UNITS	AREA / UNIT	TOTAL AREA M2
A. SWIMMING POOL & TERRACE	1	1800	1800
B. BASKET BALL	1	600	600
C. VOLLEY BALL	1	600	600
D. TENNIS COURTS	2	500	1000
E. PARKING 30 CARS	30	27	810
FOR SNOW PLOW (30%)			240
TOTAL AREA FOR PARKING			1050

4
SPACE ANALYSIS

THE ADMINISTRATION:

A.	THE MANAGER'S OFFICE	20 M^2
B.	THE SECRETARIES' OFFICE	30 M^2
C.	THE BUSINESS OFFICE	75 M^2
D.	THE CONFERENCE ROOM	20 M^2
E.	THE TELECOMMUNICATIONS OFFICE	30 M^2
F.	THE PHYSICAL PLANT	
	- The Manager's Office	20 M^2
	- Secretary's Office	16 M^2
	- The Business Office & Accounts	40 M^2
	- Indoor Bldg. Division	38 M^2
	- Outdoor Bldg. Division	38 M^2
	- Workshop & Supplies	130 M^2
G.	THE INFIRMARY	90 M^2
		550 M^2
H.	CIRCULATION 30%	165 M^2
	TOTAL AREA	715 M^2

THE ADMINISTRATION:

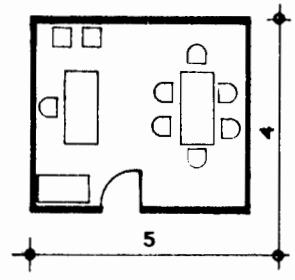
NEEDS:

The Central Administration is the headquarters of the whole complex. Here, all operations concerning the different parts of the complex are performed such as, financial matters, reservations, telecommunications and maintenance of the indoor and outdoor facilities. Besides being the point of reference to all the parts of the complex, it also serves as a link between these parts, and includes the Medical Clinic.

SPACE REQUIREMENT:

A. THE MANAGER'S OFFICE

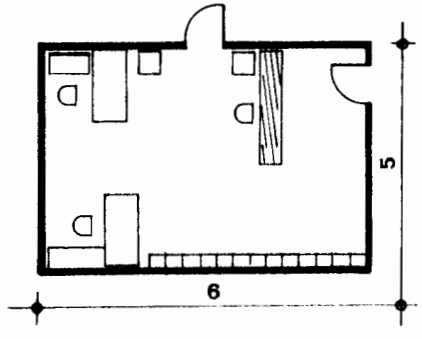
It is a room where the top man responsible for this complex works. This room should reveal a formal character. Apart from the desk and chair, a round table for meetings must be accounted for.



Area = 20 M^2

B. THE SECRETARIES' OFFICE

This office which is a place for typing, photocopying and filing, should have enough room for two secretaries and an office assistant. It should also be next to the Manager's Office.



Area = 30 M^2

C. THE BUSINESS OFFICE

It consists of 3 separate offices which deal with the financial aspects of all the center.

The money which is collected daily from the money making activities in the complex, is submitted to this office.

An office space for 4 employees , a cashier and a banker with a safe, must be provided.

Area = 75 M^2

D. THE CONFERENCE ROOM

This is a room where meetings will be held. It will contain a conference table that will seat 10 people.

Area = 20 M^2

E. THE TELECOMMUNICATIONS OFFICE

This office includes, a main operator for receiving and sending telephone calls, telexes and telegraphs, a switch board operator to transfer phone calls to different parts of the complex and telephone booths to make calls from.

Area = 30 M^2

F. THE PHYSICAL PLANT

- The Manager's Office: This is the office of the Director of the Physical Plant. It requires an Area of 20 M^2.

- Secretary's Office : This is the office of the Secretary to the Director of the Physical Plant, and the general secretary of the whole plant.
An Area of 16 M^2 is required.

- The Business Office and Accounts: This office strictly deals with the expenses and the Business work of the Physical Plant. Salaries are distributed at this place. Direct relation with the Head Business Office is expected.
An Area of 40 M^2 is required.

- Indoor (Bldg.) Division: This division deals with the installation and the maintenance of all items related to the buildings. It has a Head of Division and a team of workers. It should be linked with the workshop and the supplies department.

  - Head of Division: 16 M^2
  - Workers Room : 22 M^2

  An Area of 38 M^2

- Outdoor Division: This division deals with the installation and maintenance of all items related to the outdoor facilities, such as removal of snow, parking, ski lifts, all the play fields, landscaping, etc... . It has a Head of Division and a team of workers. A link to the workshop and the supplies department is important.

  - Head of Division: 16 M^2
  - Workers Room : 22 M^2

  An Area of 38 M^2

- Workshop and Supplies: This division deals with the maintenance of some of the equipment and other pieces of furniture and items.

  This division requires a Head of Division, a shop and a supplies store.

  - Head of Division: 20 M^2
  - Shop : 60 M^2
  - Supplies : 50 M^2

  An Area of 130 M^2

Total Physical Plant Area: 280 M^2

G. THE INFIRMARY

The infirmary is to serve the injured as well as sick people in the community of The Cedars.

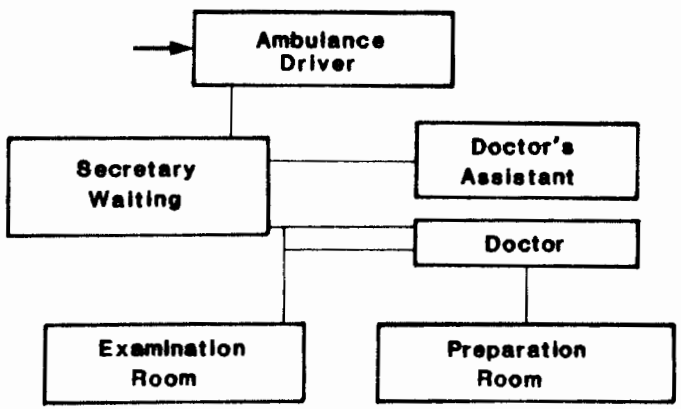
The infirmary is not a first aid office, but a full scale Orthopedic Treatment Center.

An office for the doctor, an office for the assistant and a waiting room, are required. The working spaces are:-

. The Examination Room: With two patient tables, and an X-Ray camera. The X-Ray corner of the room should have thick walls, to stop the transmission of the rays.

. The Preparation Room: This is where the medical casting takes place.

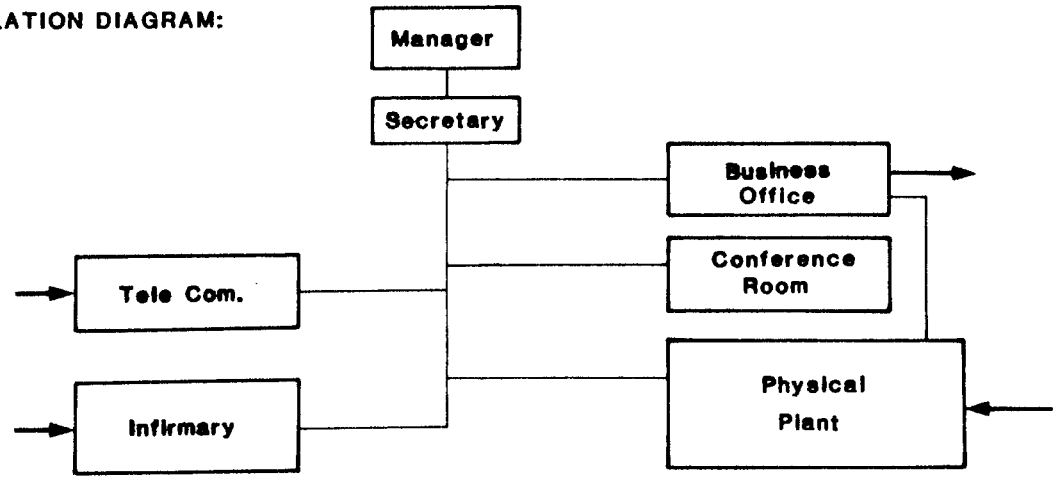
The ambulance parking space is for a very easy and quick access. A small office - bedroom is provided for the amubulance driver.



LAYOUT DIAGRAM

- Ambulance Driver	16 M^2
- Secretary/Waiting	12 M^2
- Doctor's Assistant	14 M^2
- Doctor	14 M^2
- Examination Room	9 M^2
- Preparation Room	6 M^2
- Circulation	20 M^2
An Area of	90 M^2

THE CIRCULATION DIAGRAM:



SPACE ANALYSIS:

The Administration is responsible for the coordination of all the activities present in this complex. It also has many obligations towards the facilities present in this complex. This will require specialized departments inside this block that will deal with specific jobs such as buildings and grounds, maintenance, business affairs, supplies, infirmary,etc.. The proper relationships between the different departments as far as their layout is concerned will achieve better efficiency and success in their management and operations.

THE HOTEL :

PUBLIC AREAS :

A.	THE LOBBY	100 M^2
B.	THE RECEPTION DESK	30 M^2
C.	THE RESTAURANT	100 M^2
D.	THE BAR	30 M^2

PRIVATE AREAS :

A.	THE GUEST ROOMS	725 M^2

SERVICE AREAS :

A.	THE KITCHEN	100 M^2
B.	THE LAUNDRY	50 M^2
C.	LINEN ROOM	25 M^2
D.	ROOM SERVICE UNITS	30 M^2
E.	TECHNICAL ROOM	50 M^2
F.	GARBAGE ROOM	20 M^2
		1260 M^2
	CIRCULATION 30%	390 M^2
	TOTAL AREA	1650 M^2

THE HOTEL :

PUBLIC AREAS :

A.	THE LOBBY	100 M^2
B.	THE RECEPTION DESK	30 M^2
C.	THE RESTAURANT	100 M^2
D.	THE BAR	30 M^2

PRIVATE AREAS :

A.	THE GUEST ROOMS	725 M^2

SERVICE AREAS :

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E.	TECHNICAL ROOM	50 M^2
F.	GARBAGE ROOM	20 M^2
		1260 M^2
	CIRCULATION 30%	390 M^2
	TOTAL AREA	1650 M^2

PUBLIC SPACE :

A. THE LOBBY

The lobby is an essential and important space in a Hotel. In such remote Hotels, the guests usually congregate in the Hotel lobby in the evenings.

Since the lobby reflects the atmosphere of the Hotel; its furnishings, colours, finishing materials and lighting should be designed to create the proper ambiance of a ski resort Hotel.

In standard practice the size of the lobby is determined on the basis of two meters square per guest bed. A small shop selling magazines, chocolates, cigarettes etc... would be placed there.

Accordingly the lobby of this Hotel would be 50 x 20 = 100 sq.m. The lobby will benefit from a view of the ski slopes and the cedars forest. A big central fire place will create a cozy and warm atmosphere around it.

An Area of 100 M^2.

B. THE RECEPTION DESK

The reception desk is expected to be modest and simple and should include the following functions:-

- Reservation - Registration
- Mail and Keys
- Telephone Booths
- Cashier

The desk is located right in front of the main entrance door

An Area of 30 M^2.

C. THE RESTAURANT

The restaurant is an entity of the Hotel which could be used by the residents and daily visitors. The restaurant will have a French cuisine. It provides eating facilities for the: skiers - students - teachers - shoppers - hotel guests and some residents.

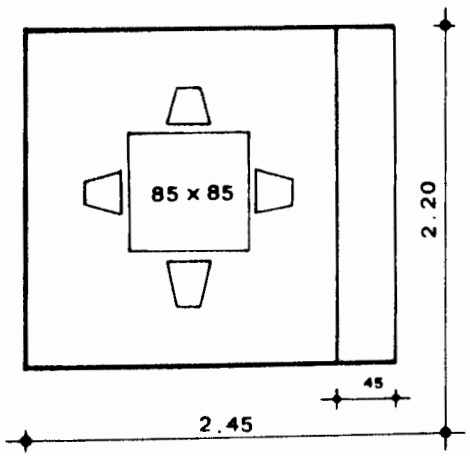
The space requirements are related to the following functions:-

- Volume of service
- Type of service
- Number of workers required
- Amount and size of equipment used.
- Type and period of storage.

THE DINING ROOM:

Several seating arrangements can be done, so as to accommodate the maximum number of people in the smallest area.

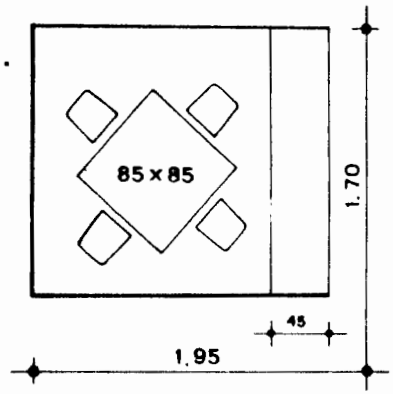
A.



The use of tables for four persons as a module will be a basis for an inorderly and concise layout. This arrangement will give an average of 1,35 meters square per person.

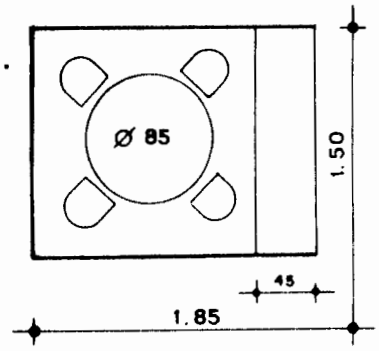
The following are additional more compact alternative layouts of a four person table arrangements:

B.



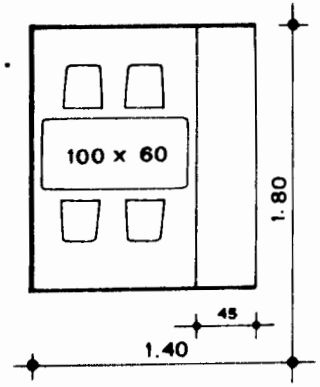
Area / Guest is 0.83 M^2

C.



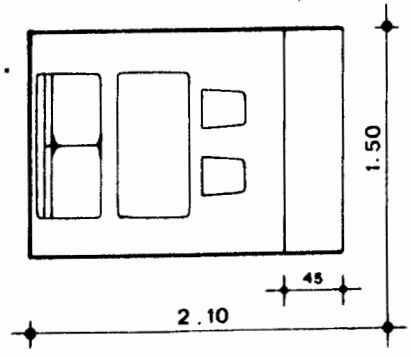
Area / Guest is 0.70 M^2

D.



Area / Guest is 0.63 M^2

E.



Area / Guest is 0.78 M^2

Rearranging of layout "E" by joining two tables together to form an 8 peron table will reduce the area of the unit by 16%. The area will thus be 0.65 M^2/person. One serving table is required for every 20 guests.

An Area of 100 M^2.

D. THE BAR

In such cold weather, a small cozy Bar having a fire place would be essential to warm up and relax its visitors.

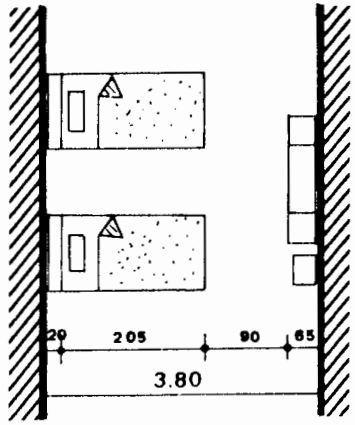
An Area of 30 M^2.

PRIVATE SPACE:

A. THE GUEST ROOMS

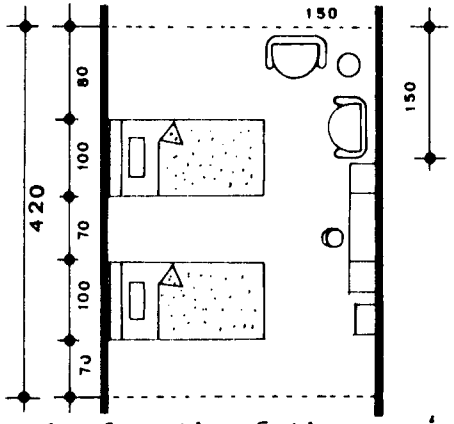
The orientation of the guest room is preferable to be exposed to the south so as to receive the maximum sun exposure during the day. All rooms shall have two beds of 205 x 100 cms separated in the middle by 70 cms wide central aisle. The two beds should be easily drawn together to form a double bed. In front of the bed is a 155 cms passageway which contains along the wall of the room a dresser with drawers and a luggage stand of 50 cms width with a mirror on the wall.

To the back of the bed is a head board of 20 cms depth.



From the above analysis, the width of the room will be approximately 380 cms. Considering the length of the room , it is recommended to have 70 cms between the first

bed and the bathroom wall. Also 80 cms are needed between the second bed and the external wall-window to allow a seating of 2 arm chairs and a small side table.

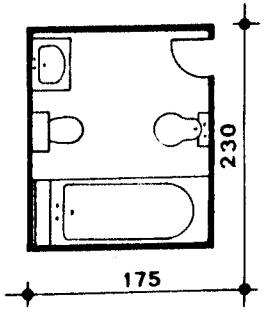


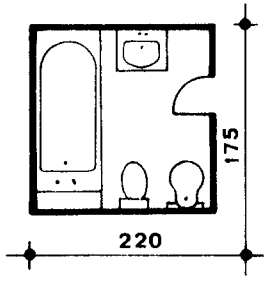
From the above analysis, the length of the room will be 420 cms.

- <u>The Bathroom</u>

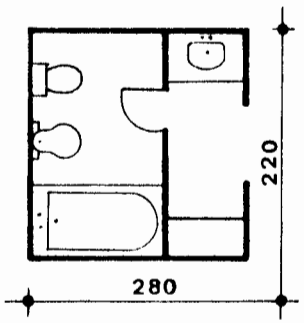
  It is required to have one bath tub, one W.C., one bidet and one lavatory.

  Some possible layouts:-

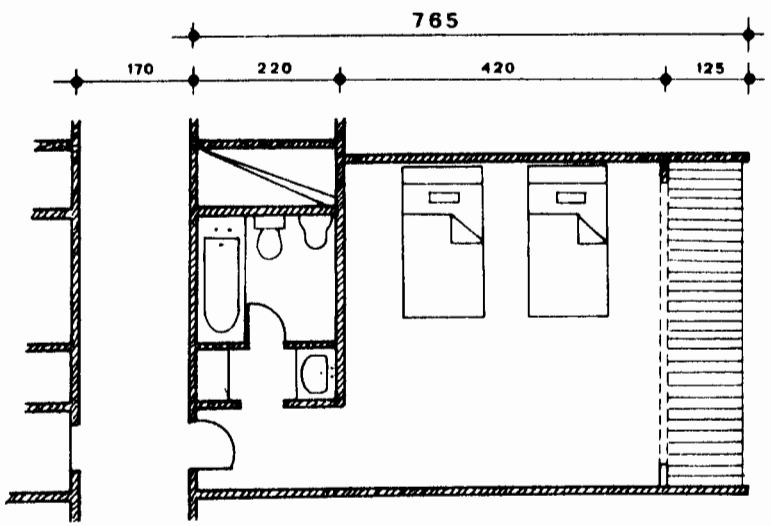




or a combination of bath/dressing room.



Therefore a typical hotel guest room which will contain a sleeping area, a bathroom, a dressing area and a balcony will occupy an area of 7.65 x 3.8 = 29 M2.



This will require a Total Area of the whole rooms to be 725 M2.

SERVICE AREAS:

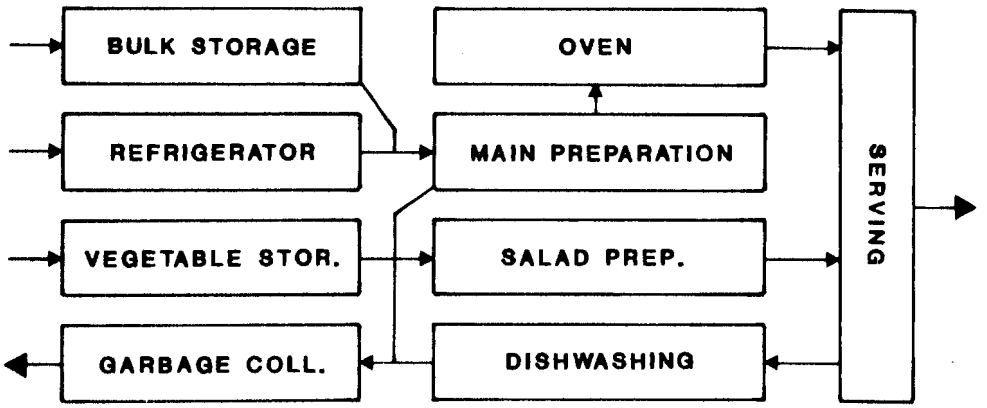
A. THE KITCHEN

The restaurant kitchen will consist of the following units:-

- Loading bay with a good vehicle access
- Bulk storage for dry and frozen food, vegetables, dairy products, meat, fish, wines, cereals, cleaning material.
- Day storage: Raw material of the day.
- Preparation Area: manual work
- Cooking area
- Pastry area
- Pot wash
- Dish wash
- Servery: Design for free circulation
- Control.

The Hotel management students will be having their training in cooking at the kitchen of this Hotel.

As a rule of thumb, the size of a restaurant kitchen is about 50% of the dining area. However due to student's training, additional storage and preparation areas to serve other kitchens in the complex, the total area of kitchen will be 100 M^2.



FLOW DIAGRAM

B. THE LAUNDRY

The laundry room will be equipped with washing machines, driers, sheet pressers, ironers, sorting shelfs and mending area.

An estimated area of 50 M^2 will be utilized for this function.

C. THE LINEN ROOM

All the linens of the Hotel would be placed in this room after being washed. This room will be shelved all around to take bed sheets, pillow cases, table cloths, napkins, towels...

An Area of 25 M^2.

D. ROOM SERVICE UNIT

The rooms have to be serviced daily. From standard practice it has been established that one person can handle 12 rooms daily. Two persons will therefore take care of the 25 rooms of the Hotel.

The size of the room unit will be 30 M^2.

An Area of 30 M^2

E. MECHANICAL ROOM

This room would be in the basement and will contain the boiler for domestic hot water, steam generators for central heating purposes, and pumps for water circulation.

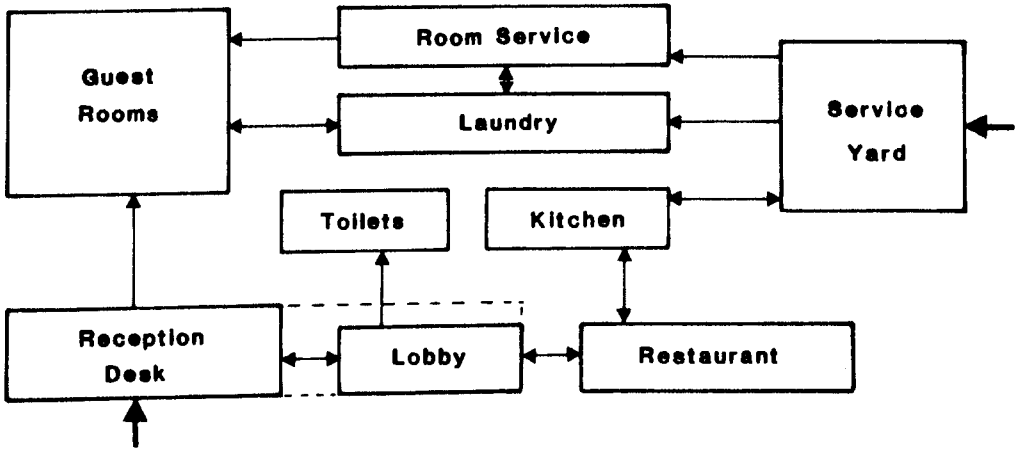
An Area of 50 M^2.

F. GARBAGE ROOM

In this room all the garbage of the Hotel will be stored in drums for collection. This room will also contain a trough for cleaning up the garbage drums after use.

An Area of 20 M^2.

THE CIRCULATION DIAGRAM



THE YOUTH INN

A.	THE COMMON ROOM	60 M2
B.	THE DINING ROOM	110 M2
C.	THE KITCHEN	40 M2
D.	THE LOBBY/FOYER	25 M2
E.	THE LOCKER ROOM	25 M2
F.	THE BUNK ROOMS	500 M2
G.	THE TOILETS	75 M2
H.	THE HOUSE PARENT APARTMENT	60 M2
I.	THE LAUNDRY	25 M2
		920 M2
	CIRCULATION 30%	280 M2
	TOTAL AREA	1200 M2

THE YOUTH INN

NEEDS:

The Youth Inn has living accommodation for visiting 50 boys and 50 girls. This Inn will be used by schools and other social organizations for snow classes in winter and other field and sports activities in summer.

SPACE REQUIREMENT:

The youth Inn will consist of the dormitories, dining hall and the living area:

A. THE COMMON ROOM:

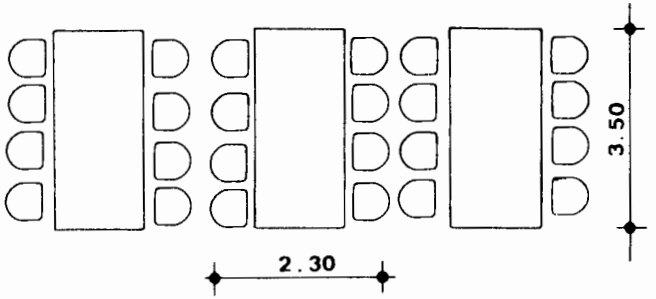
It is the most important central common space where most activities take place such as games, meetings, lectures, singing and dancing. From standard practice, it has been established that such a room requires about 1.35 M2 per person. Since this room should take 50 persons, its area would be 1.35 x 50 = 60 M2 .

An Area of 60 M2

B. THE DINING ROOM

The dining room and the common room can be combined for giving a big flexible space for recreation purposes.

Seating arrangements: Tables of 250 x 80 cms can seat 8 persons; as indicated in the adjoining diagram.



- A minimum of 1.10 M2 /person for the dining room is required.
- However if the dining room and the common room are combined, the minimal area per person will be 2 M2.

This will require an Area of 110 M2.

C. THE KITCHEN

It is located adjacent to the dining room and it should be large enough to handle group cooking (serving 100 persons at one time).

This kitchen does not have bulk storage nor basic food preparation (refer to write up on Hotel kitchen on page 48). It will receive the food already prepared from the main kitchen of the Hotel and have it only cooked.

The equipment required by such a kitchen to be able to serve 100 persons are:-

- 4 sinks
- 12 range burners
- 3 fridges
- 4 ovens

The kitchen should have direct outside access for food delivery and garbage disposal.

From standard practice it has been established that the size of such a cafeteria kitchen is about 1/3 the size of the dining room.

This will require an Area of 40 M2.

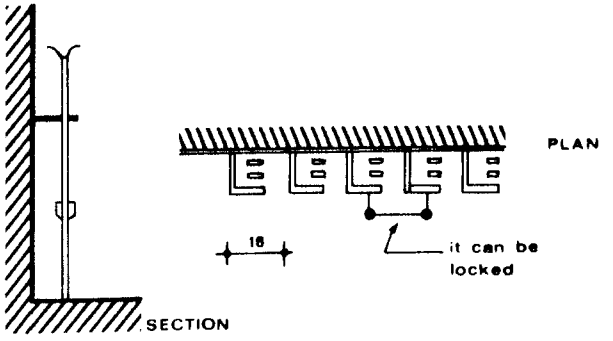
D. THE LOBBY/FOYER

An Area of 25 M2

E. THE LOCKER ROOM

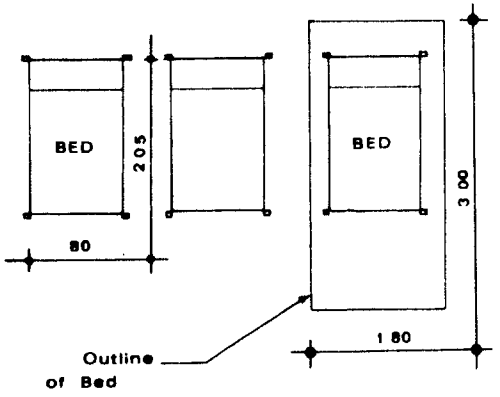
It is right next to the Lobby. It is the space where the youth place their skis and boots after skiing.

A Total Area of 25 M2



F. THE BUNK ROOMS

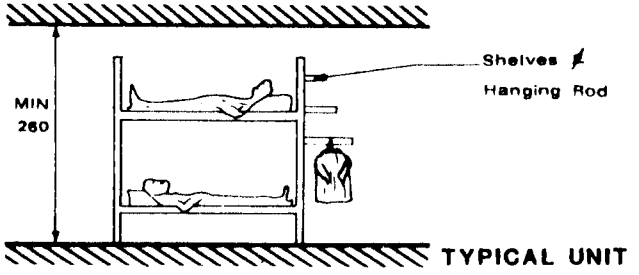
The bed should be designed in a way to be utilized for sleeping and hanging and storing the clothes. The adjoining diagram indicates a solution for such beds.

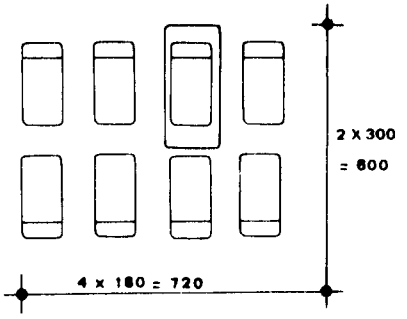


Area/Bunk Bed

is 5.40 M2

270 M2/Bed





A Typical Bunk Room for 16 Persons is a combination of 8 Bunk Units.

- If individual closets are needed, extra space should be provided in the Bunk Room.
- The blankets and matresses should be stored in closets.

Total Area of 6 Bunk Rooms will require an Area of 500 M2.

G. THE TOILETS

Fixture requirements for 50 Boys:

- 4 W.C.
- 5 Urinals
- 6 Wash Basins
- 6 Showers

Fixture requirements for 50 Girls:

- 6 W.C.
- 6 Wash Basins
- 6 Showers

Access to the toilets must be through a hall. The toilets should be located directly adjacent to the bunk rooms.

A Total Area of 75 M2 is required.

H. THE HOUSE PARENT APARTMENT

For control purposes the House Parent Apartment should be located next to the common room with a direct connection. A small office could be this connection. The Apartment should also overlook the Inn's entrance.

Space requirement for this Apartment is:-

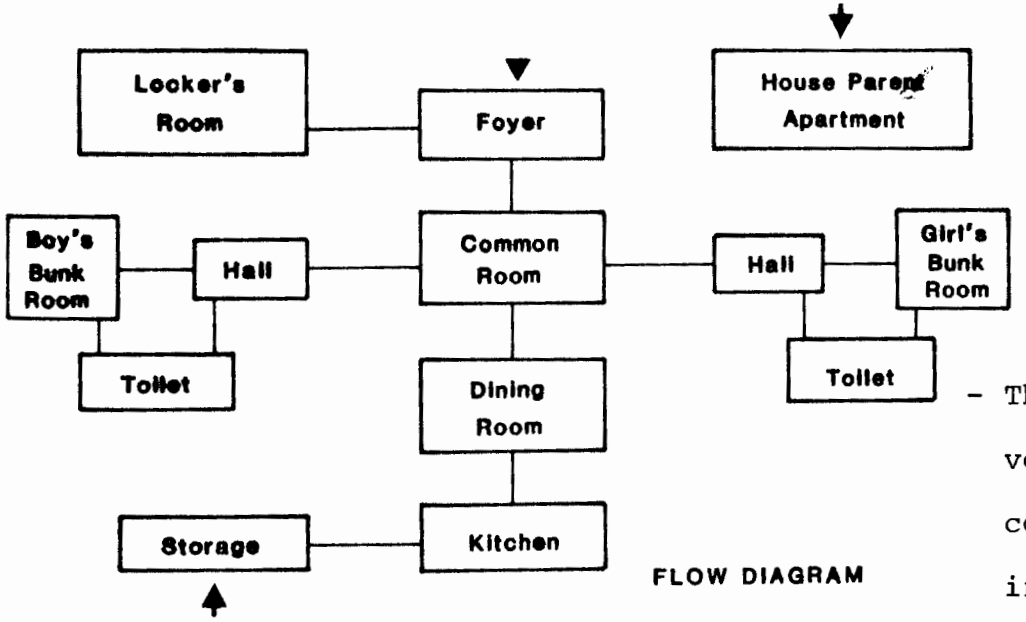
- Living Room 14 M2
- Kitchen/Dining 12 M2
- Bedroom 14 M2
- Bathroom 5 M2
- Office 10 M2

A Total Area of 60 M2

I. THE LAUNDRY

The Laundry will be equipped with washing machines, driers, sheet pressers, ironers, sorting shelves.

An estimated Are of 25 M2 will be utilized for this function.



FLOW DIAGRAM

SPACE ANALYSIS:

- The Youth Inn should be a very informal space, very flexible in its planning. Such flexibility could be achieved by placing removeable partitions in Bunk Rooms for different accommodation situations. Also the combination of the Dining/Common Room to achieve large space for occasional large receptions or parties.
- Safety and control must have priority in the planning.
- Separate outside entrances should be provided to the House Parent's Apartment.
- The Bunk Rooms must be very well ventilated,since their occupancy is very dense.

THE STUDENT'S DORMS:

GROUP I :

A.	THE LOBBY	30 M2
B.	THE COMMON ROOM	180 M2
C.	THE DINING ROOM	200 M2
D.	THE KITCHEN	80 M2
E.	BEDROOMS TYPE (i)	920 M2
	TYPE (ii)	396 M2
F.	THE TOILETS	320 M2
G.	THE HOUSE MASTER APARTMENT	60 M2
H.	THE LAUNDRY	40 M2
		2226 M2
	CIRCULATION 30%	674 M2
	TOTAL AREA	2900 M2

GROUP II :

A.	THE LOBBY	30 M2
B.	THE COMMON ROOM	60 M2
C.	THE DINING ROOM	100 M2
D.	THE KITCHEN	40 M2
E.	THE BEDROOMS	630 M2
F.	THE TOILETS	220 M2
G.	THE LAUNDRY	25 M2
		1115 M2
	CIRCULATION 30%	385 M2
	TOTAL AREA	1500 M2

THE STUDENT'S DORMS:

NEEDS:

The dormitories are divided according to age into two separate groups.

Group (I) : This Group is composed of 210 students, 105 girls and 105 boys. It has an age range from 12 to 18 years old. I.e. from the 1st secondary class to the 7th secondary class inclusive.

These students live in this dormitory for a period of 9 months. The students will live in more spacious accommodations than those provided for in the Youth Inn.

Two types of rooms are to be provided:-

- Rooms for 6 students
- Rooms for 4 students

Group (II): This Group is composed of 90 students, all above 18 years of age. They will be studying either Hotel management or sports trainership. They are to be divided into 60% males and 40% females. Similar to the 1st Group, these students will be boarding students who will live in the dorms for 9 successive months. Rooms accommodating 2 persons will be provided for this category of students.

SPACE REQUIREMENT:

GROUP I

A. THE LOBBY

The Lobby at the main entrance of the Dorms building could have a minimum area of 30 m2. Alternatively it could be joined to the reception hall to form a central area of 50 M2.

An Area of 30 M2.

B. THE COMMON ROOM

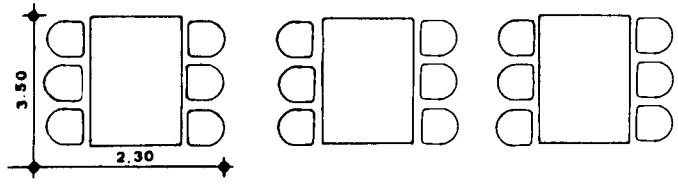
It is the most important central space where most activities take place. A fire place could be provided in this space to create a warm and cozy atmosphere. From the established standards the size of this Common Room is based on 0.85 m2/occupant.

An Area of 210 x 0.85 = 180 M2

C. THE DINING ROOM

The Dining Room and the common room can be combined for creating a large and flexible space for recreational activities.

The Dining Room could be furnished with tables of 250 x 80 cm which can seat 8 persons. The adjoining diagram indicates the approximate area occupied by such tables.



- A minimum of 1.10 M2/person for the Dining Room is required.
- If the Dining Room and the common room are combined, the minimal area/person become 2 M2.

This will require an Area of 200 M2.

D. THE KITCHEN

It is located adjacent to the dining room and it should be large enough to handle group cooking activities (serving 210 persons at one time).

This kitchen does not have bulk storage nor basic food preparation (refer to write up on Hotel kitchen on page 48). It will receive the food already prepared from the main kitchen of the Hotel and have it only cooked.

The equipment required by such a kitchen to be able to serve 210 persons are:-

- 7 sinks
- 16 range burners
- 4 fridges
- 4 ovens

The kitchen should have direct outside access for food delivery and garbage disposal.

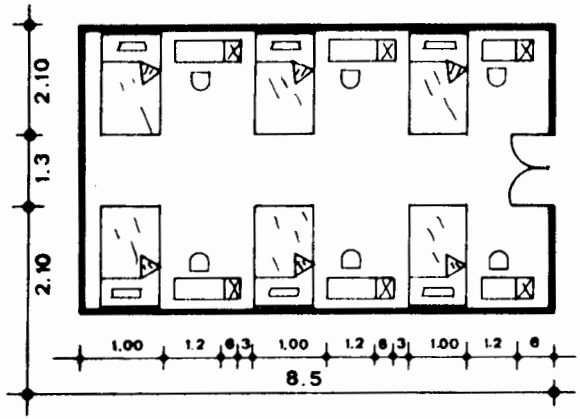
From standard practice it has been established that the size of such a kitchen is about 1/3 the size of the related dining room.

This will require an Area of 80 M2.

E. THE BEDROOMS

- Type (i) for 6 Students

This room is to accommodate 6 students who are in the 1st, 2nd, 3rd, and 4th secondary classes. 6 beds, 6 closets and 6 desks are to be provided per room. The adjoining diagram indicates a possible standard layout and size.



20 Rooms

An Area of (8.5 x 5.5) = 46 M2

46/4 = 8.0 for one student

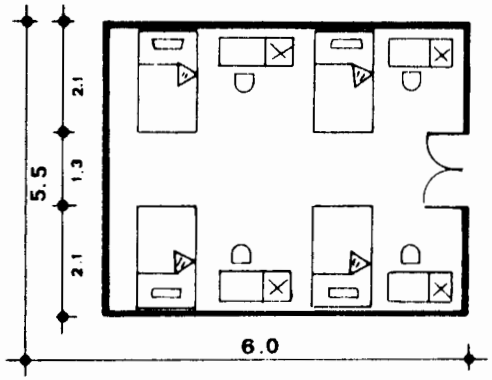
46 x 20 = 920 M2

A Total Area of 920 M2

- Type (ii) for 4 students

This room is to accommodate 4 students who are in the 5th, 6th, and 7th secondary classes. 4 beds, 4 closets and 4 desks are to be provided/room.

The adjoining diagram indicates a possible standard layout and size



12 Rooms

An Area of (6 x 5.5) = 33 M2

33/4 = 8.5 M2 for one student

33 x 12 = 396 M2

A Total Area of 396 M2

F. THE TOILETS

Each dormitory unit whether for 4 or 6 students will have its own bathroom which consists of the following fixtures:-

- 1 shower
- 2 lavatories
- 1 W.C.

These toilet units will be placed between the rooms

32 units will require a total Area of 320 M2.

G. THE HOUSE MASTER'S APARTMENT

To be located next to the common room for control purposes. The House Master's office to be located between his apartment and the common room, and should also overlook the building's entrance.

SPACE REQUIREMENT

1. Living room	12 M2
2. Kitchen/Dining	12 M2
3. Bedroom	14 M2
4. Bathroom	5 M2
5. Office	10 M2

This will require a Total Area of 60 M2.

H. THE LAUNDRY

The Laundry room will be equipped with coin operated washing machines and dryers. This room will be utilized only by the students residing in the building.

This will require an Area of 40 M2.

GROUP II

A. THE LOBBY

The Lobby at the main entrance of the dorms building could have a minimum area of 30 M2. Alternatively it could be joined to the recept hall to form a central area of 50 M2.

An Area of 30 M2.

B. THE COMMON ROOM

Same as in Group I above.

An Area of 60 M2.

C. THE DINING ROOM

Same as in Group I, but for 90 persons.

An Area of 100 M2.

D. THE KITCHEN

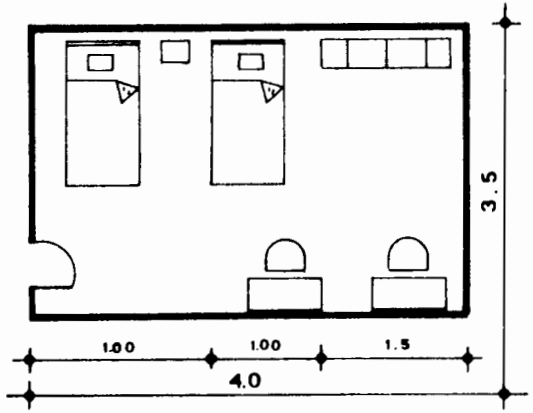
Same as in Group I but will be serving 90 persons.

An Area of 40 M2.

E. THE BEDROOMS

This category of students will be given semi private accommodation where each two students will share a room.

The adjoining diagram indicates a possible standard layout and size.



45 Rooms

An Area of (3.5x4)14 M2

14/2 = 7.0 M2 for one student

14 x 45 = 630 M2

A Total Area of 630 M2.

F. THE TOILETS

Each 2 bedroom will share an interconnecting toilet, which will consist of:

- 1 shower
- 2 Lavatories
- 1 W.C.

A Total Area of 22 x 10 = 220 M2.

G. THE LAUNDRY

Same as Laundry for dorm's Group I.

This will require an Area of 25 M2.

SPACE ANALYSIS:

- All the bedroom units should be planned to give their occupants comfort and privacy, to enhance a good studying and living atmosphere.
- Safety and control must have priority in the planning.

THE FACULTY APARTMENTS :

A.	ONE BEDROOM APARTMENT (15)	405 M2
B.	TWO BEDROOM APARTMENT (10)	580 M2
C.	THE LAUNDRY	40 M2
D.	STORAGE ROOMS	250 M2
		1275 M2
	CIRCULATION 25%	325 M2
	TOTAL AREA	1600 M2

THE FACULTY APARTMENTS :

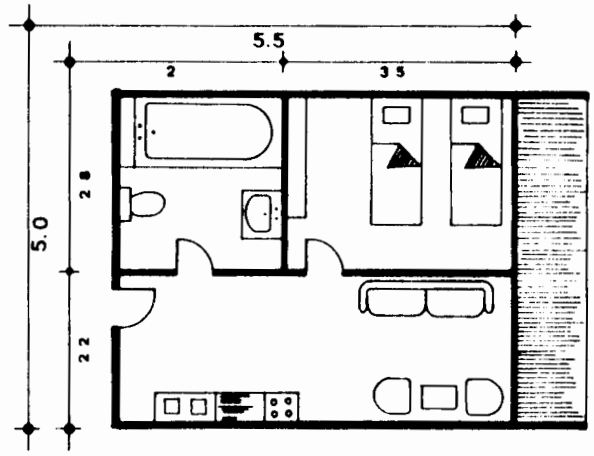
NEEDS :

The faculty apartments are expected to house 40 of the faculty and staff members who will be living on the complex's grounds. Two types of housing units will be provided. A one bedroom apartment and a two bedroom apartment. There will be (15) of the one bedroom apartment and (10) of the two bedroom apartment, a total number of 35 apartments that are expected to house all the 40 staff members.

SPACE REQUIREMENT :

A. THE ONE BEDROOM APARTMENT

The one bedroom apartment will consist of one separate bedroom containing 2 beds, 1 bathroom, living, dining, kitchen area and a balcony. The following diagram indicates a possible layout.

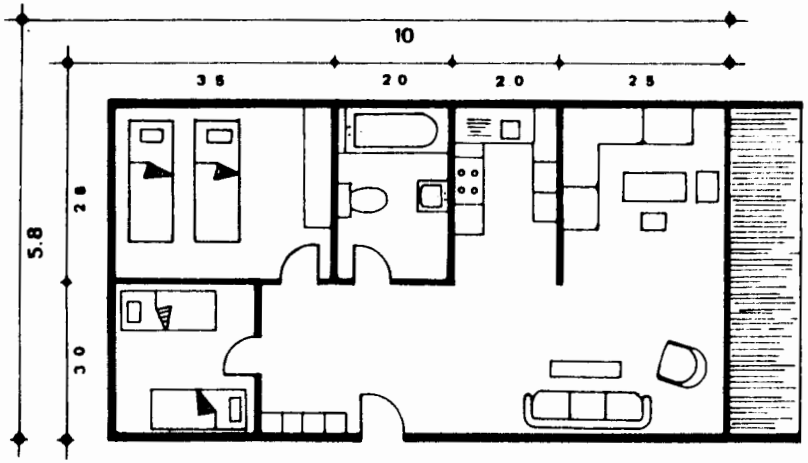


This will require an average area of 27 M2 per apartment.

A Total Area of 27 x 15 = 405 M2

B. THE TWO BEDROOM APARTMENT

The two bedroom apartment will consist of two separate bedrooms, 1 bathroom, a living/ dining area, a kitchen and a balcony. The following diagram indicates a possible layout.



This will require an average area of 58 M2 per apartment

A Total Area of 58 x 10 = 580 M2

C. THE LAUNDRY

This Laundry room is expected to be used by all the residents of this block. It will contain several washing machines and driers that are coin operated.

An Area of 40 M2.

D. STORAGE ROOMS

A storage room will be provided to each of the 25 apartments. Each will be 10 M2 in area. It will be usefull for putting away off-season items, and other miscellaneous storage.

A Total Area of 250 M2.

SPACE ANALYSIS :

This block is expected to house the faculty and staff who will be living permanently on the complex's grounds. These apartments should be designed in such a way to provide comfort and easy living to the residents. These apartments should be compact in size for the following benefits:-

1. Cheaper construction cost
2. More economical to furnish
3. Cheaper heating cost during the cold days.

THE SECONDARY SCHOOL:

A.	THE PRINCIPAL'S OFFICE	24 M2
	SECRETARY'S OFFICE	24 M2
B.	THE LIBRARY	90 M2
C.	JANITORS,STORAGE AND BOOKSHOP ROOMS	50 M2
D.	THE CLASSROOMS	420 M2
E.	THE TEACHER'S LOUNGE	40 M2
F.	THE TOILETS	35 M2
G.	THE LABS	60 M2
H.	THE PROJECTION ROOM	40 M2
		783 M2
	CIRCULATION 40%	317 M2
	TOTAL AREA	1100 M2

THE SECONDARY SCHOOL:

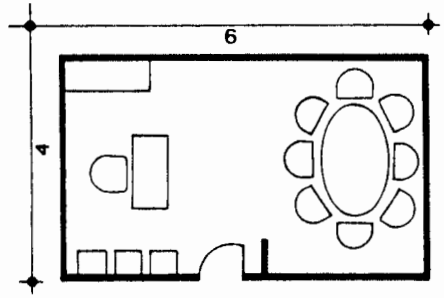
DESCRIPTION:

This school accommodates for students from the 1st Secondary to the 7th Secondary classes (BACC.II). Thus having 7 classes of two divisions each. The number of classrooms therefore, shall be 14. Each classroom can hold a number of students ranging from 15 to 20. Accordingly the estimated total number of students in the school will be about 225. From established standards for Secondary Schools of good reputation the number of teachers should be from 10-15% of the total number of students, thus the number of teachers in this school should be about 30.

SPACE REQUIREMENT:

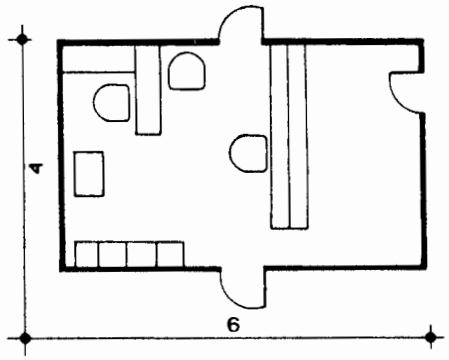
A. THE PRINCIPAL'S OFFICE

This room of approximately 4 x 6 meters in size should reveal a formal character. Apart from the principal's desk and chair, a conference table should also be placed so that teachers could have their academic meetings there.



An Area of 24 M2

Adjacent to the principal's office will be a room which accommodates for the secretary and an office boy. This room will be furnished with a desk, a typing desk, filing cabinets and a photocopying machine.

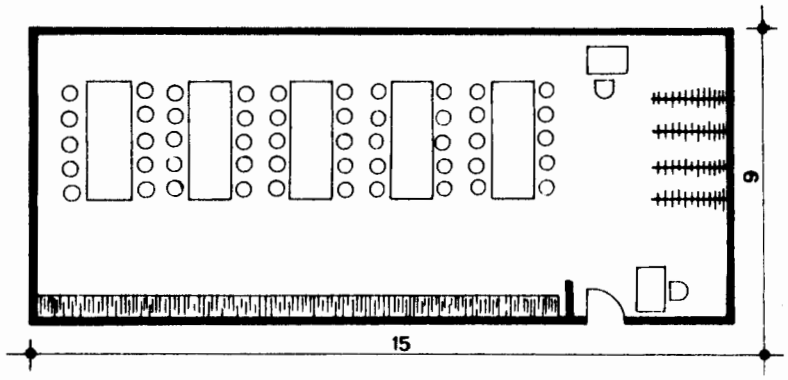


An Area of 24 M2.

B. THE LIBRARY

The Library should be able to hold about 50 students. A longitudinal shaped room having one of its long walls exposed to the exterior would provide better natural lighting to most of the study tables. The books placed on "Reserve" will be placed on shelves in an area next to the librarian for better control purposes. The other long wall which will be along the corridor will be covered with shelves holding all the reference books. The librarian has to be seated near the entry door for control.

The following sketch indicates size and a possible layout for such a room.



An Area of (6x15) = 90 M2

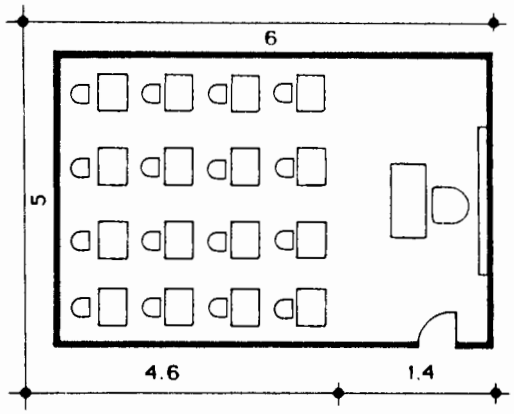
C. JANITORS, STORAGE AND BOOKSHOP ROOMS

These are spaces to store related material in . Each has an average area of about 15 M2.

Total Area = 50 M2

D. THE CLASSROOMS

Each classroom should be large enough to take from 15 to 20 students. This will require an area of about 30 M2 for each classroom . The adjoining layout indicates a possible solution for such a classroom.



Total Classrooms Area: 420 M2

E. THE TEACHER'S LOUNGE

This room should provide for three functions, namely (1) an area for confortable seating (2) a working area with table and chairs and (3) a refreshments corner for preparation of coffee, tea and cold drinks.

An area for such a room is estimated to be around 40 M2.

An Area of 40 M2.

F. THE TOILETS

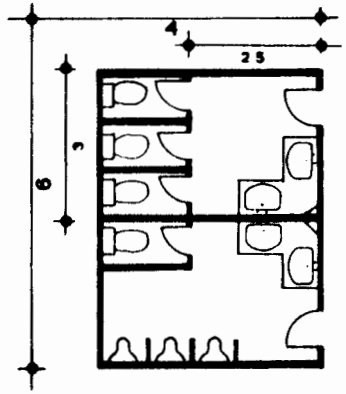
(i) Student's Toilets

Fixture requirements for 105 boys :-

- 1 W.C.
- 3 Urinals
- 3 Wash Basins

Fixture requirements for 105 girls:-

- 3 W.C.
- 3 Wash Basins

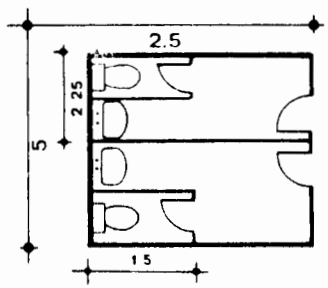


An Area of 24 M2

(ii) Teacher's Toilets

It would be better if the teacher's toilets are placed near the faculty lounge.

One W.C. and one wash basin are enough for each sex.

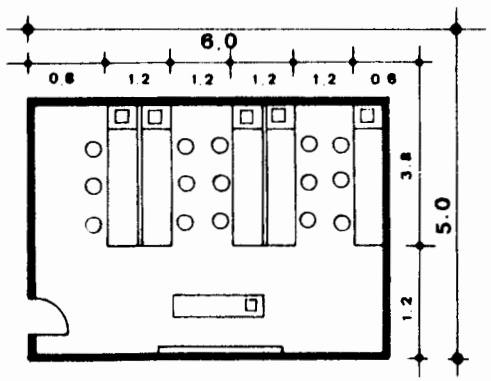


An Area of 12.5 M2

G. THE LABORATORIES

Two laboratories are required for this school. One for physics and chemistry, and one for biology.

An area of 30 M2 if required for each



Total Area: (2) x 30 M2 = 60 M2

H. PROJECTION ROOM

This room is utilized for movie or slide projections or certain subjects. The room can hold around 20 to 25 students. This room doesn't need natural lighting. There should be at least 2-3 meters clearance in front of the 1st row, and a space should also be left at the rear of the room to place the projectors. Proper mechanical ventilation will be required.

An Area of 40 M2.

I. CIRCULATION AREA

The circulation area in a school is usually higher than other building types. It is therefore estimated to be around 40% of the total net area.

SPACE ANALYSIS:

- This school will have most of its school days (Oct. - June) in a snow atmosphere. It is also a school attended only by boarding students. Therefore it must be located in a place close to the students' dorms and the cafeteria.

- Several entrances should be provided for this school so as to avoid congestion of students during the breaks.

- The circulation area in corridors and staircases is to be larger in area than what is normally required, because this area will be the utilized also as the breathing spaces for the students, before and after the class periods. Water fountains, vending machines are to be placed in these corridors.

THE GRADUATE SCHOOL :

A.	PRINCIPAL'S OFFICE (HOTEL MANAGEMENT)	24 M2
B.	PRINCIPAL'S OFFICE (PHYSICAL EDUCATION).....	24 M2
C.	SECRETARY'S OFFICE	24 M2
D.	BOOKSHOP , JANITORS ROOM, STORAGE	50 M2
E.	THE LIBRARY	70 M2
F.	THE CLASSROOMS	180 M2
G.	THE TEACHERS LOUNGE	20 M2
H.	THE TOILETS	30 M2
I.	PROJECTION ROOMS	80 M2
		500 M2
	CIRCULATION 40%	200 M2
	TOTAL	700 M2

THE GRADUATE SCHOOL FOR PHYSICAL EDUCATION, HOTEL MANAGEMENT.

NEEDS:

This graduate school is a continuation of studies for the students who have completed their secondary studies. It will have two majors only:-

1. Physical Education
2. Hotel Management

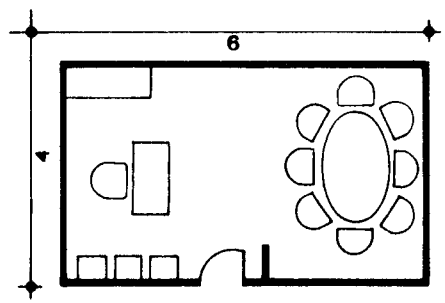
The time taken for both majors to finish their studies will be 3 years. There will be one class, consisting of 15 students, for each the three years.

This will require 3 classes for each major and 6 classes for both majors. This will bring up the total No. of students in the school to be 90 students.

SPACE REQUIREMENT :

A. THE PRINCIPAL'S OFFICE OF THE HOTEL MANAGEMENT DIVISION:

This room of approximately 4 x 6 meters in size should reveal a formal character. Apart from the principal's desk and chair, a conference table should also be placed so that teachers could have their academic meetings there.



An Area of 24 M2

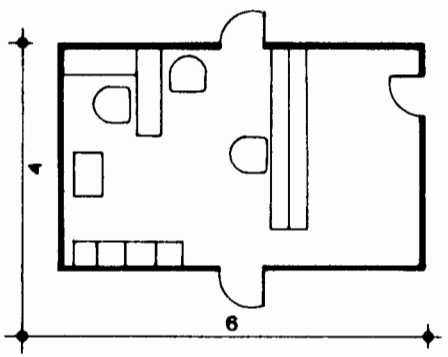
B. THE PRINCIPAL'S OFFICE OF THE PHYSICAL EDUCATION DIVISION:

Same as "A"

Area of 24 M2

C. SECRETARY'S OFFICE

This office is a common one for both principals. It should be both offices and should seat the secretary and an office boy who will be shared by both principals. This room will be furnished with a desk, a typing desk, filing cabinets, a photocopying machine.



An Area of 24 M2

D. JANITORS ROOM, STORAGE ROOM AND BOOKSHOPS

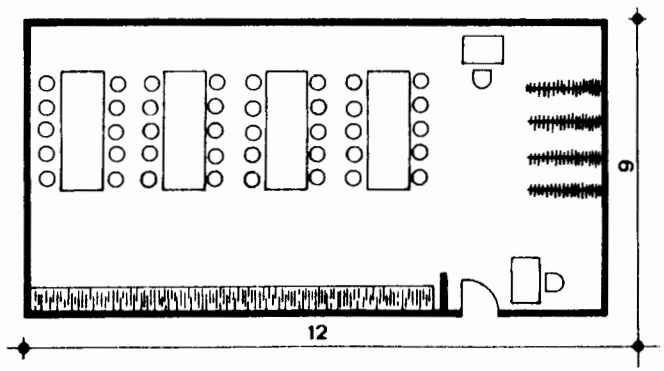
These are spaces to store related material in . They don't require any natural lighting. Each has an average area of about 15 M2.

Total Area = 50 M2

E. THE LIBRARY

The Library should be able to hold about 40 students. A longitudinal shaped room having one of its walls exposed to the exterior would provide better natural lighting to most of the study tables. The books placed on "Reserve" will be placed on shelves in an area next to the librarian for better control purposes. The other long wall which will be along the corridor will be covered with shelves holding all reference books. The librarian has to be seated near the entry door for control purposes.

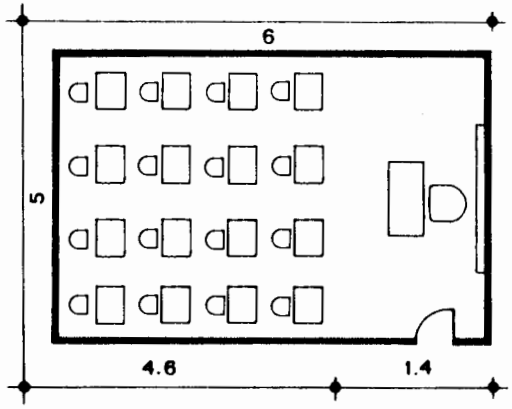
The following sketch indicates size and a possible layout for such a room.



An Area of 70 M2

F. THE CLASSROOMS

Each classroom should be large enough to take from 15 to 20 students. This will require an area of about 30 M2 for each classroom. The adjoining layout indicates a possible solution for such a classroom.



Total Area: 30 x 6 = 180 M2

G. THE TEACHER'S LOUNGE

This room should provide for three functions namely:

1. An area for confortable seating.
2. A working area with table and chairs.
3. A refreshments corner for coffee and tea preparation.

An Area for such a room is estimated to be around 20 M2

An Area of 20 M2 is required.

H. THE TOILETS

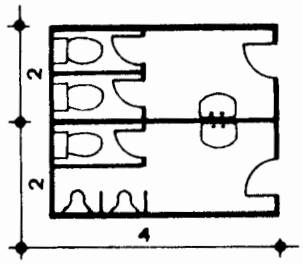
(i) Student's Toilets

Fixture requirements for 50 male students:

- 1 W.C.
- 2 Urinals
- 2 Wash Basins

Fixture requirements for 40 female students:

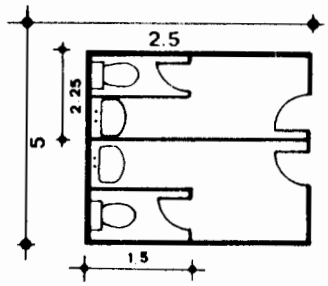
- 2 W.C.
- 2 Wash Basins



An Area of 16 M2

(ii) Teacher's Toilets

It would be better if the teacher's toilets are placed near the faculty lounge. One W.C. and one wash basin are enough for each sex.



An Area of 12.5 M2

I. PROJECTION ROOMS

These rooms are utilized for movie or slide projections, for the demonstration of certain subjects. These rooms can each hold around 20-25 students. They don't need natural lighting. There should be at least 2-3 meters clearance in front of the 1st row of seats. A space should also be left at the rear of the room to place the projectors. Proper mechanised ventilation will be required.

Total Area of 2 x 40 = 80 M2

J. CIRCULATION AREA

The circulation area in a school is higher than other building types. It is therefore estimated to be around 40% of the total net area

SPACE ANALYSIS:

- This school will have most of its school days (Oct. - June) in a snow atmosphere. It is also a school attended only by boarding students. Therefore it must be located in a place close to the students' dorms and the cafeteria.

- Several entrances should be provided for this school so as to avoid congestion of students during the breaks.

- The circulation area in corridors and staircases is to be larger in area than what is normally required because this area will be utilized also as the breathing spaces for the students, before and after the class periods. Water fountains, vending machines are to be placed in these corridors.

THE CLUB :

A.	THE INFORMATION AND MANAGEMENT OFFICE.....	25 M2
B.	THE SWIMMING POOL + CHANGING ROOMS 1250	M2
C.	THE BODY BUILDING ROOM	100 M2
D.	THE GYMNASIUM	900 M2
E.	THE AUDITORIUM	350 M2
F.	SHOPS:	
	Grocery	40 M2
	Bookshop	20 M2
	Sports Shop	40 M2
	Cloths Shop (Unisex)	40 M2
G.	PUBLIC TOILETS	20 M2
H.	THE CAFETERIA / KITCHEN	280 M2
		3065 M2
	CIRCULATION 50% 1535	M2
	TOTAL AREA 4600	M2

THE CLUB :

NEEDS:

This club is one of the most important buildings in the whole center. It is the focal point of all the different facilities and functions in the center. This club is for the use of all the people living on this center plus the guests that visit the center on daily basis.

The club offers all sorts of activities. Such as:-

1. An Indoor Swimming Pool, 25 meters long.
2. A Health Club / Body Building
3. A Gymnasium
4. A Cinema Hall for 220 persons
5. Shops
6. A Cafeteria

SPACE REQUIREMENT:

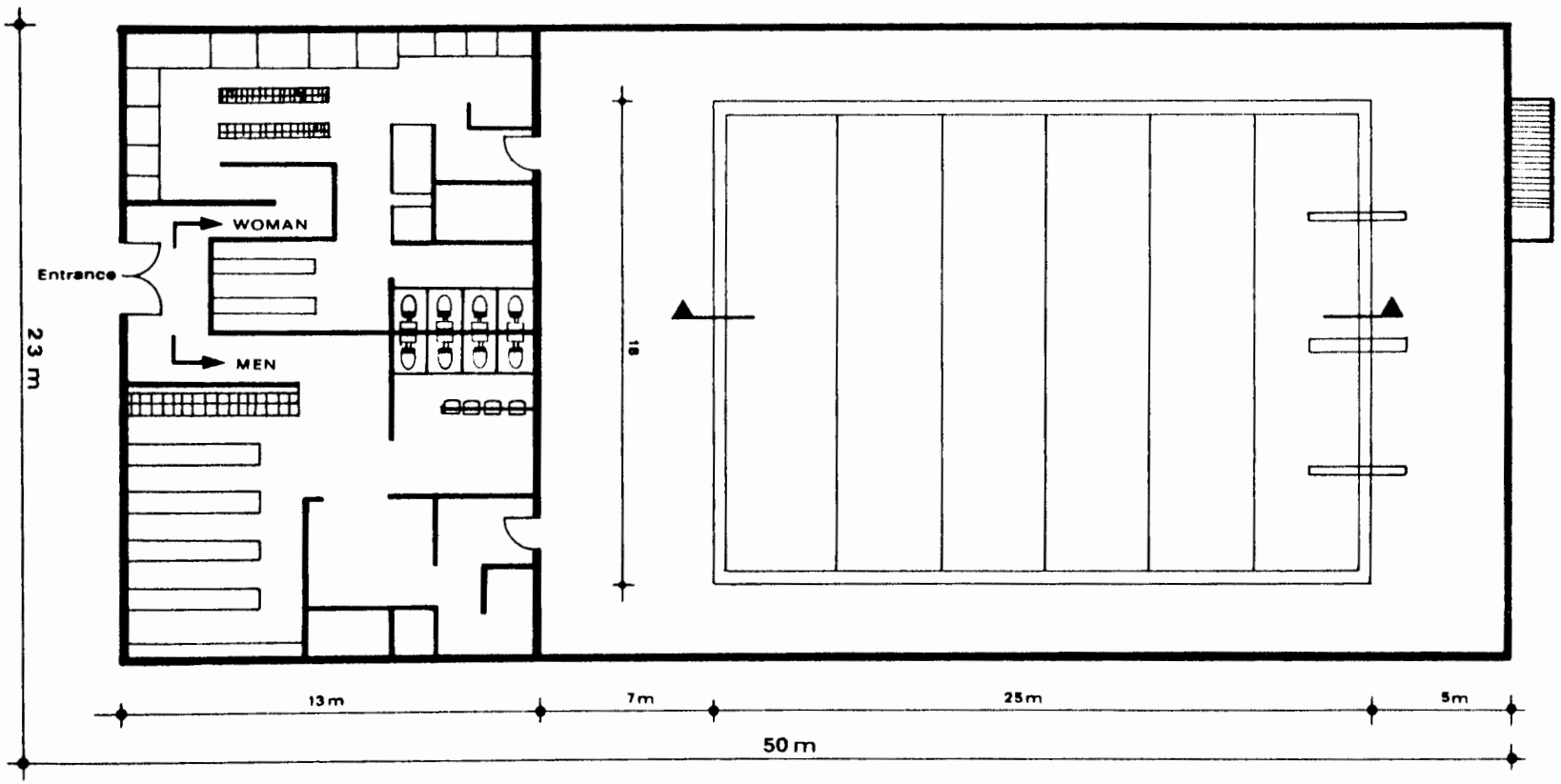
A. THE INFORMATION AND MANAGEMENT OFFICE

This office should be located very close to the entrance. This office is responsible to ensure proper functioning of the club. This responsibility will include maintenance of equipment, cleanliness of the premises, organize schedule for the different games and reservations for use of facilities etc...

It will also have an interphone system for music and paging people inside the club.

B. THE SWIMMING POOL / CHANGING ROOMS

This is a 25 meters long indoor swimming pool. Next to it are placed the changing rooms for both males and females.

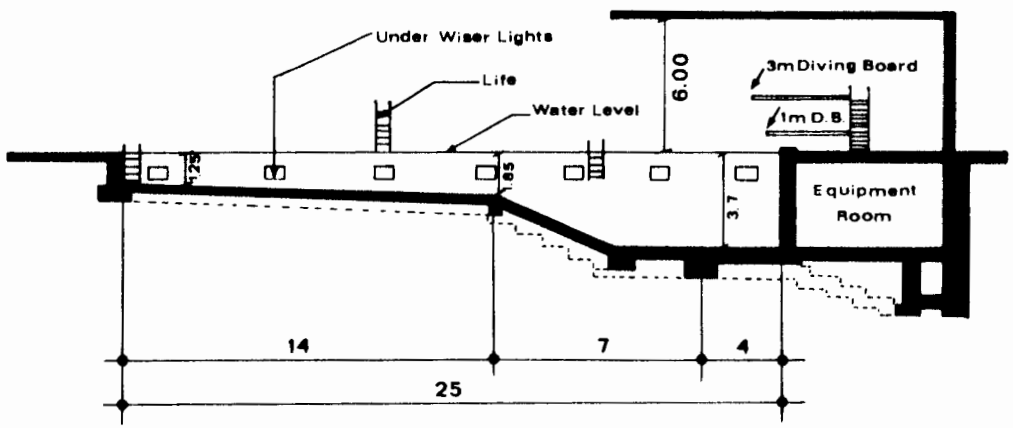


The dimensions of the swimming pool are 25 x 18 meters = 450 meters

Total Area around the pool is 400 M2

The changing rooms both males and females have an area of 300 M2.

The adjacent diagram indicates a typical section thru a swimming pool and the adjoining facilities.



A Total Area of 1250 M2.

C. THE BODY BUILDING

This would be an ordinary room furnished with body building equipments such as weights, publies, benches etc... This room will be used by both men and women at the same time. The floor of this room should be carpeted from wall to wall. Also mirrors should be placed on some of the walls.

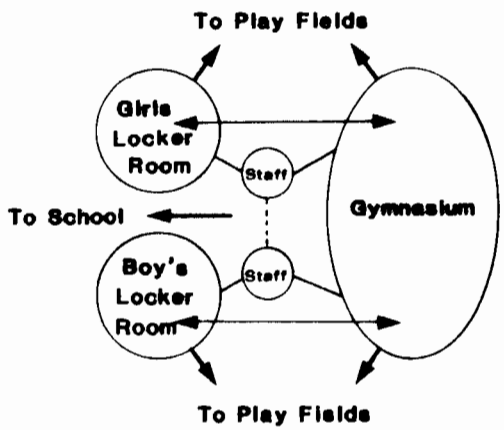
A Total Area of 100 M2.

D. THE GYMNASIUM

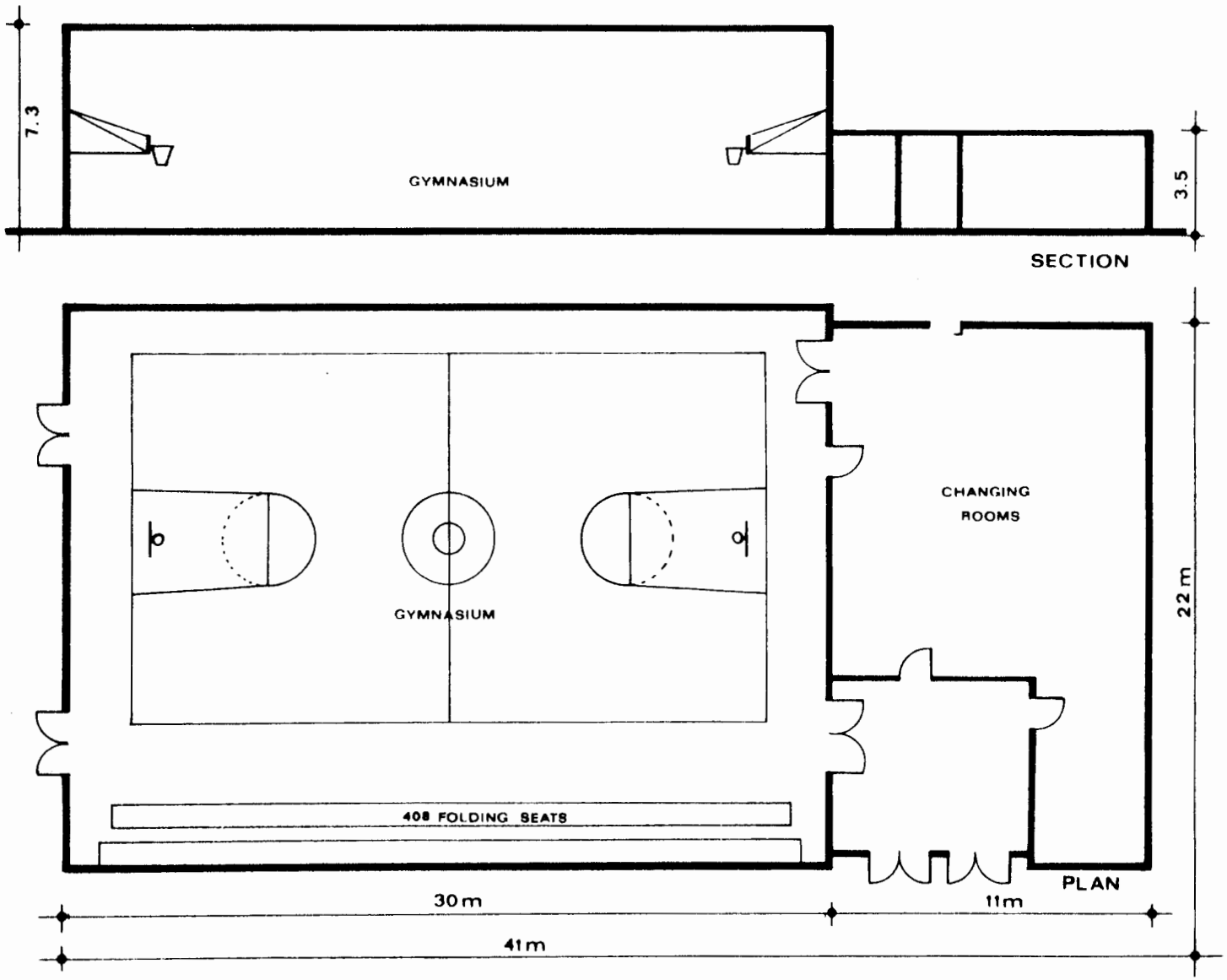
The basket ball court size in general dictates the dimensions of the Gymnasium plan. Collapsible or telescopic bleachers for spectator seating are also to be provided. The bleachers will be used only during tournement games. However on practice days the bleacher will be folded to occupy minimum space thus liberating more area for two games to be performed at the same time.

The floor finish of the Gymnasium should be of the stripped timber type. High windows will be required for lighting and ventilation. Low windows should not be used to avoid accidents from collision with large balls. Glass blocks walls could be utilized in certain areas.

The Gymnasium could be used as a multi-purpose hall when a large gathering is required.



The adjoining plan and section indicate a stand size of such a Gymnasium.

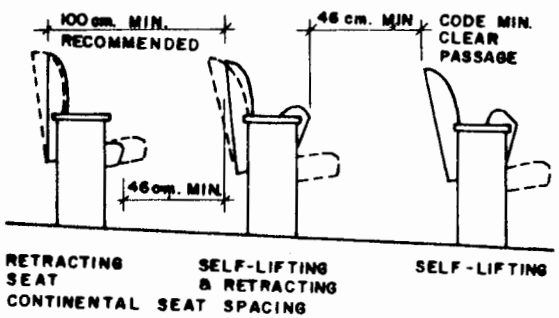


An Area of 900 M2.

E. THE AUDITORIUM

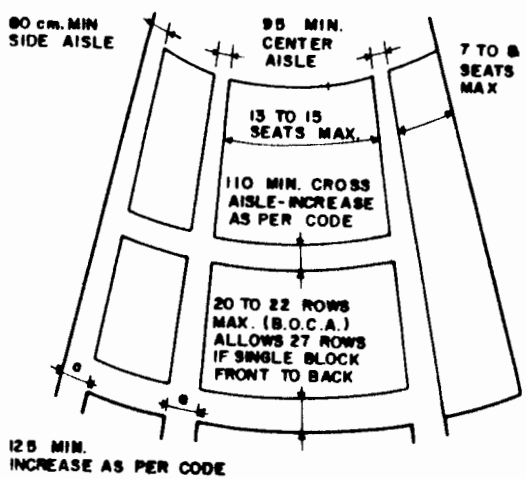
The community in this center, with all the available activities, still lacks a space for communal intertainment such as movies and theatrical or musical performance. The cinema/theatre hall will serve this purpose. For this center it is recommended to have a theater to hold about 220 spectators.

The area per seat is shown in the following diagram:

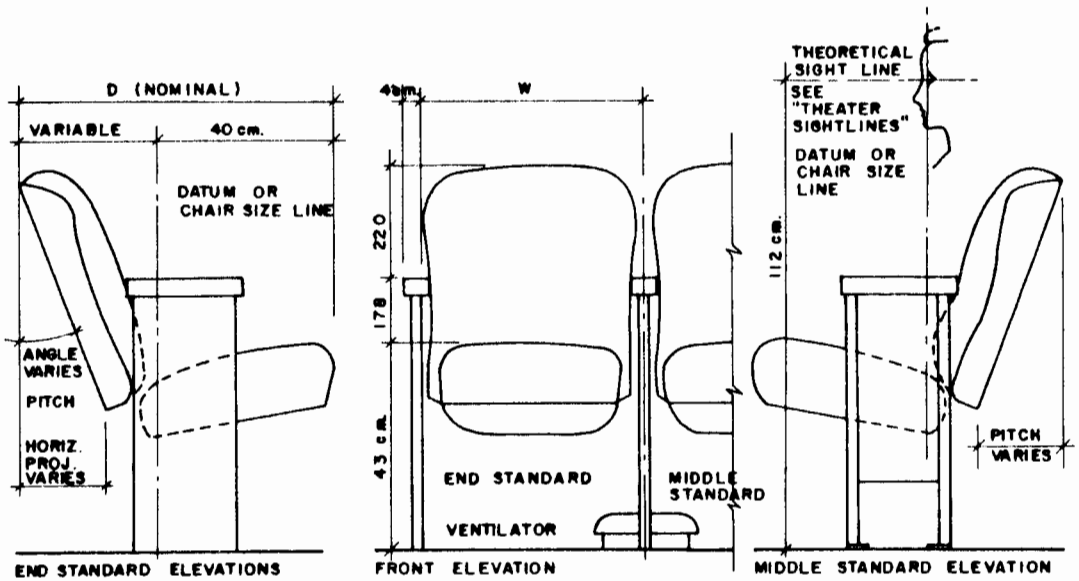


0.5 x 1M = 0.5 M2

220 persons = 0.5 x 220 = 110 M2

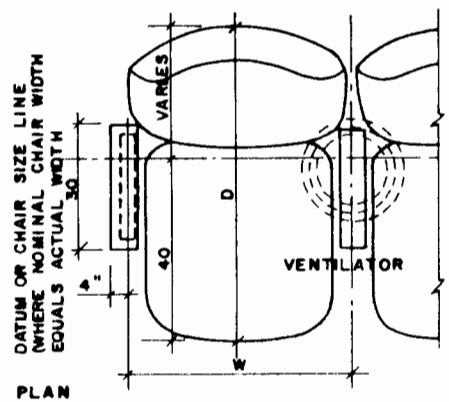


SEATS AND SEAT SPACING FOR THEATRES



AVAILABLE SIZES

W (cm.)	D (cm.)
46	68
48	69
51	70
53	71
56	72
58	73
61	74



TYPICAL SEAT DIMENSIONS

An Area of 180 M2

The projection booth in the central line of the space has an area of 4 M2.

LOBBY: The lobby requires an area of 0.4 M2 per person: 220x0.4 = 88 sq.m.

The lobby is used as a foyer, smoking hall and distribution area that will connect the entrance with the Auditorium and the Toilets.

THE TOILETS: The following are standard fixture requirements for a cinema for 220 persons:-

LADIES: 2 W.C.
2 Wash Basins

MEN : 2 W.C.
2 Urinals
2 Wash Basins

This will require an Area of 30 sq.m.

The box office is immediately facing the entrance. It will occupy an Area of 3 sq.m.

CONVERTIBILITY INTO A MULTIPURPOSE MEETING HALL:

To convert this cinema hall into a meeting hall, some chairs need to be removed to provide for a minimum required area for a stage. This area is usually 30% of the total area of the hall. A storage room should be provided in this building to hold the few removable seats plus other stage equipment and furniture. This would require a room of 35 sq.m.

The convertibility of the whole area is the main concern of the design. The cinema can work daily during the summer or at least during the weekends in winter.

The fire escape doors of the hall must be equipped with panic hard wear.

Since this Auditorium will be mainly used for movie shows, theatrical activities, graduation ceremonies and general assemblies, it is recommended to have the floor of this hall with the required slope for proper vision to all spectators.

A Total Area of 350 sq.m.

F. THE SHOPS

These shops are to serve the residents of the cedar's center, as well as the day-visitors or weekend vacationers.

In a small community as the one proposed, remote from commercial centers, such shops are highly desirable and could be economically feasible.

The type of shops will be:-

i. Grocery (a sort of a "Mini" super market)

ii. A Bookshop

iii. Sports articles shop

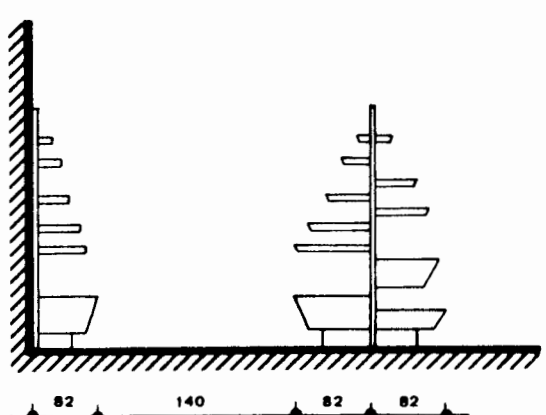
iv. Clothing shop (Unisex)

i. The Grocery

The grocery proposed is a self service store for food selling. The shop consists of rows of shelves that will hold the goods.

Articles	Shelves in Linear Meters
Canned Food	20
Wine, Beer & Spirits	6
Soft Drinks & Mineral Water	6
Fruits & Vegetables	8
Diary Products	3
Cold Cut Meats	12

The adjoining tables and diagrams indicate a possible standard arrangement for such a Grocery shop.



Circulation routes are generally of 130 - 160 cms wide.

An Area of 40 M2.

ii. The Bookshop

This bookshop will have the following items:

Space	Area M2
Newspapers Display	1
Magazines Display	4
Books Display	10
Cash Desk	2

- No service entrance is needed
- No storage is needed.

An Area of 20 M2.

iii. The Sports Shop

This sports shop will have the following items:-

Space	Area M2
Goods Display	35
Changing Booth	2
Cashier Desk	3
Total Area	40

The front part of the shop will exhibit articles such as skis, tennis rackets, all types of balls, bags, etc...

iv. Cloths Shop

This is Unisex shop.

It will have the same space requirements as in the sports shop.

An Area of 40 M2.

A TOTAL AREA OF ALL SHOPS 140 M2

G. PUBLIC TOILETS

These toilets should be located in a remote part of the "Mall" yet easily reached by proper directional signes.

An Area of 20 M2

H. THE CAFETERIA

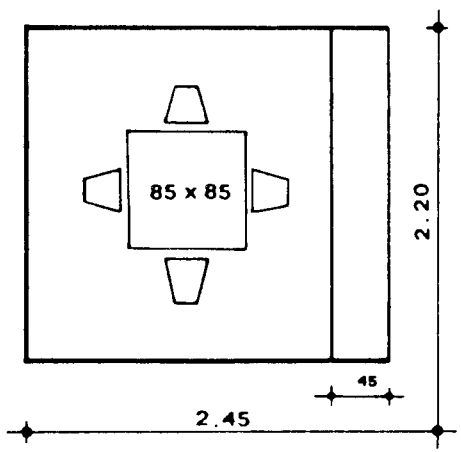
The cafeteria in this club is an entity of this club which could be used by the residents and daily visitors. This cafeteria is the self service type, where people buy their food from the counter, then sit and eat .

The space requirements of this cafeteria are related to the following functions:-

- Volume of service
- Type of service
- Number of workers required
- Amount and size of equipment used.
- Type and period of storage

Several seating arrangements can be done. So as to accommodate the maximum number of people in the smallest area.

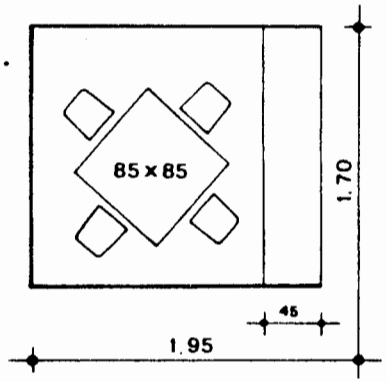
A.



The use of tables for four persons as a module will be a basis for an inorderly and concise layout. This arrangement will give an average of 1.35 meters square per person.

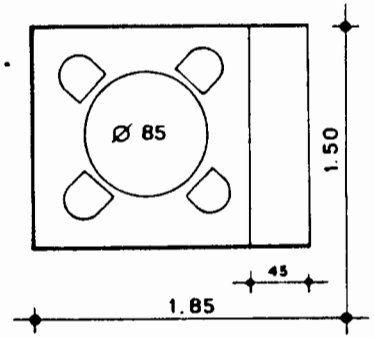
The following are additional more compact alternative layouts of a four person table arrangements:

B.



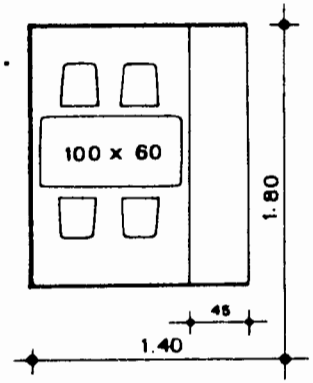
Area / Guest is 0.83 M^2

C.



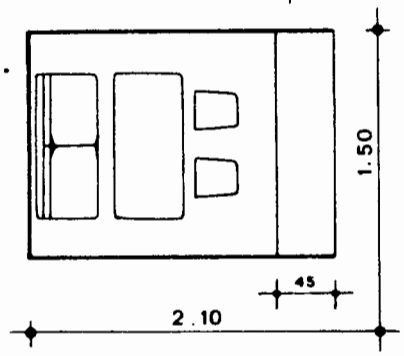
Area / Guest is 0.70 M^2

D.



Area / Guest is 0.63 M^2

E.



Area / Guest is 0.78 M^2

Rearranging of layout "E" by joining two tables together to form an 8 person table will reduce the area of the unit by 16%. The area will thus be 0.65 M2 / person.

An Area of 150 M2.

THE KITCHEN

The cafeteria's kitchen will consist of the following units:-

- Loading bay with a good vehicle access.
- Bulk storage for dry and frozen food, vegetables, dairy products, meat, fish, wines, cereals, cleaning material.
- Day storage: Raw material of the day
- Preparation area: manual work
- Cooking area
- Pastry area
- Pot wash
- Dish wash
- Servery (Design for free circulation)
- Control

The hotel management students will be having their training in cooking at the kitchen of this cafeteria.

As a rule of thumb, the size of a cafeteria kitchen is about 50% of the dining area. However due to student's training, additional storage and preparation areas to serve other kitchens in the complex

The Total Area of Kitchen will be 100 sq.m.

THE FAST FOOD SNACK BAR

The fast food sandwich snack bar is a counter with stools that will serve take-away food and drinks. Outside the snack bar is a sundeck to hold about 100 seated persons. The bar indoors will serve hot, cold and alcoholic beverages, plus sandwiches and salades.

All the preparations are done behind the bar counter, therefore, it is daily served from the cafeteria's kitchen.

An Area of 30 sq.m. (excluding the Sundeck)

TOTAL AREA OF CAFETERIA IS 280 SQ.M.

SPACE ANALYSIS:

This club, having so many activities and functions happening in it, is the most active spot in the center. It is the meeting place of all the residents and visitors. It contains sports activities, cultural activities, and social activities. This broad range of activities will require certain design criterias such as:-

- Open spaces
- A strong connection between inside and outside
- Attention must be paid to the overall scale and size of this building in relation to the other buildings present on this complex. This building, having functions in it which require big areas, and large spans from the inside, has the tendency in appearing and becoming large in size from the outside, and in the overall mass, thus becoming dominant in scale with respect to the other buildings present near it in this center.

  Great care should be taken in the design to avoid as much as possible this problem. This could be achieved by having some of the functions - that don't require natural facilities such as lighting - be under ground. Also by placing functions that are small in scale around bigger spaces, which are the swimming pool and the Gymnasium.

OUTDOOR ACTIVITIES:

These are:

A. SWIMMING POOL 1800 M2

B. BASKET BALL 600 M2

C. VOLLEY BALL 600 M2

D. TENNIS COURTS (2) 1000 M2

E. PARKING 1050 M2

OUTDOOR FACILITIES

The outdoor facilities of this center, apart from the parking areas, are mainly sports facilities that would be used after the winter season. During the winter season, one of the main sports in practice would be skiing for the residents of this center, one of the main ski lifts stations in the cedars is situated right across the street from the center. Accessibility to it would be by either crossing the street walking, or on ski if the road is covered with snow.

The following is a list of the outdoor non winter sports facilities:-

A. Olympic Swimming Pool (One)

B. Basketball (One Court)

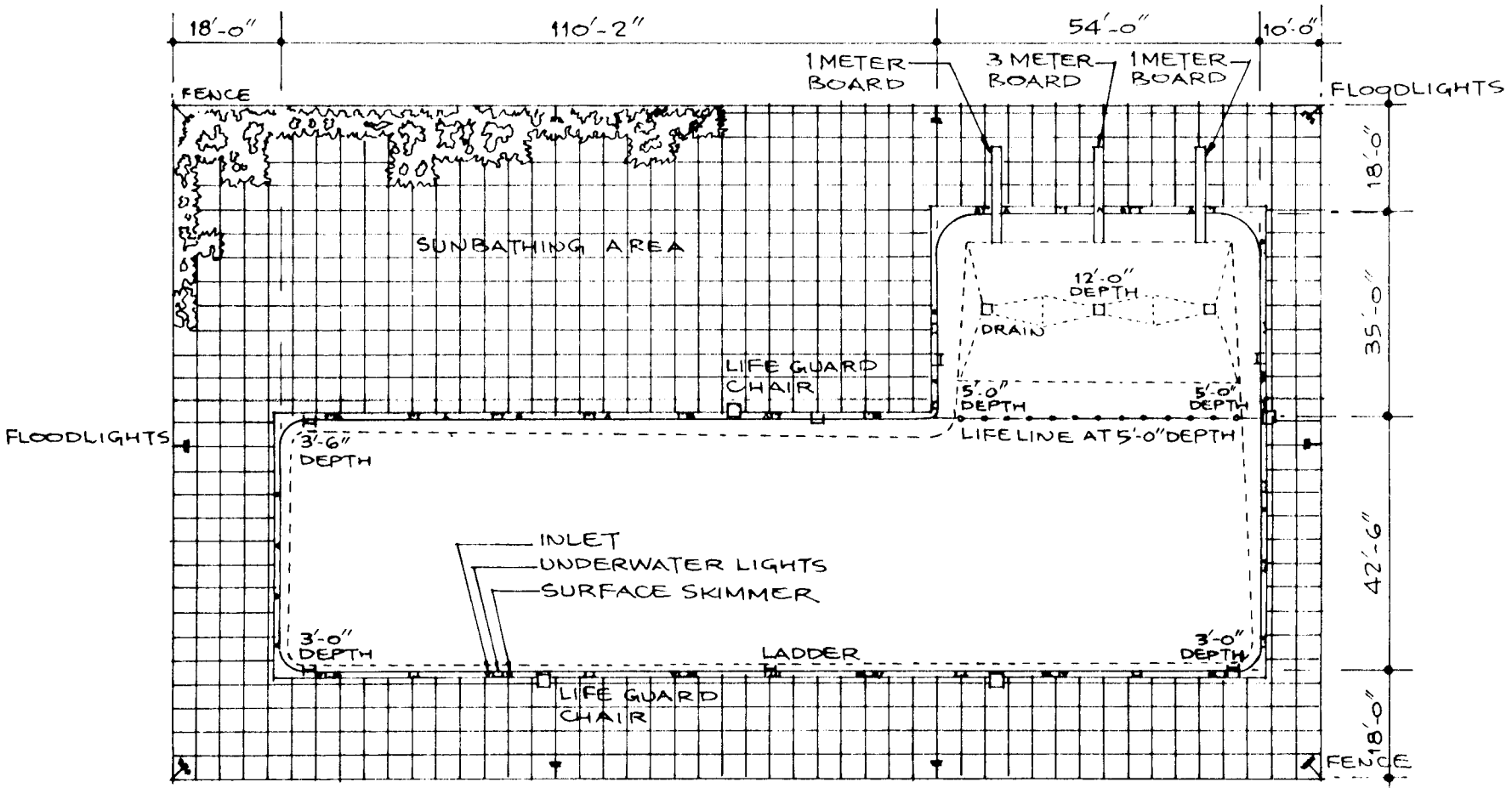
C. Volleyball (One Court)

D. Tennis Court (Two Courts)

A. THE SWIMMING POOL

This olympic size swimming pool is 50 meters long. It is designed for competition swimming, diving and water polo. In accordance with International standards the pool can accommodate 775 persons for normal bathing use. A sun bathing area around the pool is to be provided.

The following diagram will show an example of such a pool.


18'-0"
110'-2"
54'-0"
10'-0"
1 METER BOARD
3 METER BOARD
1 METER BOARD
FENCE
FLOODLIGHTS
SUNBATHING AREA
12'-0" DEPTH
DRAIN
LIFE GUARD CHAIR
5'-0" DEPTH
5'-0" DEPTH
LIFE LINE AT 5'-0" DEPTH
FLOODLIGHTS
3'-6" DEPTH
INLET
UNDERWATER LIGHTS
SURFACE SKIMMER
3'-0" DEPTH
LADDER
3'-0" DEPTH
LIFE GUARD CHAIR
18'-0"
35'-0"
42'-6"
18'-0"
FENCE

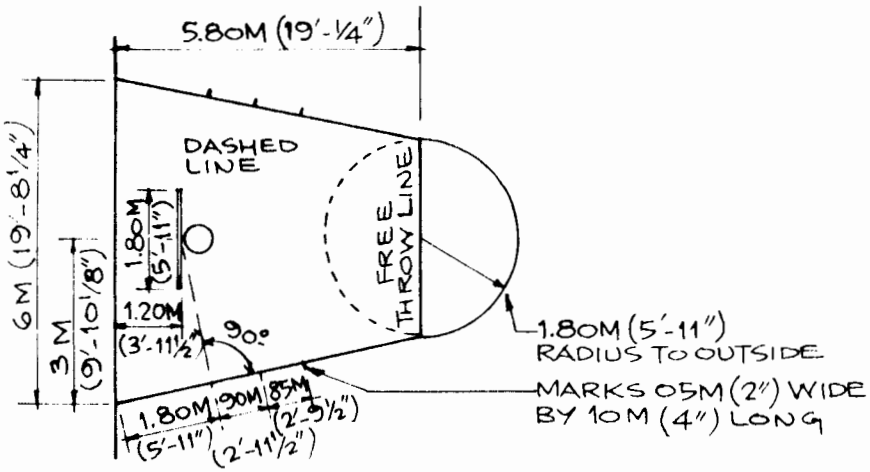
B. THE BASKETBALL COURT

The recommended area or ground space for the actual court is 448 M2. However this area will increase to 540 M2 to include clearance spaces around the court.

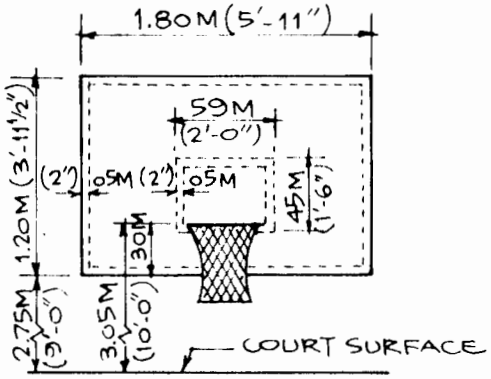
The dimensions of such a court are 14 x 26 meters, with an obstructed space of one to two meters all around the court.

North-South orientation of such a court is preferrable, along the longitudinal axis.

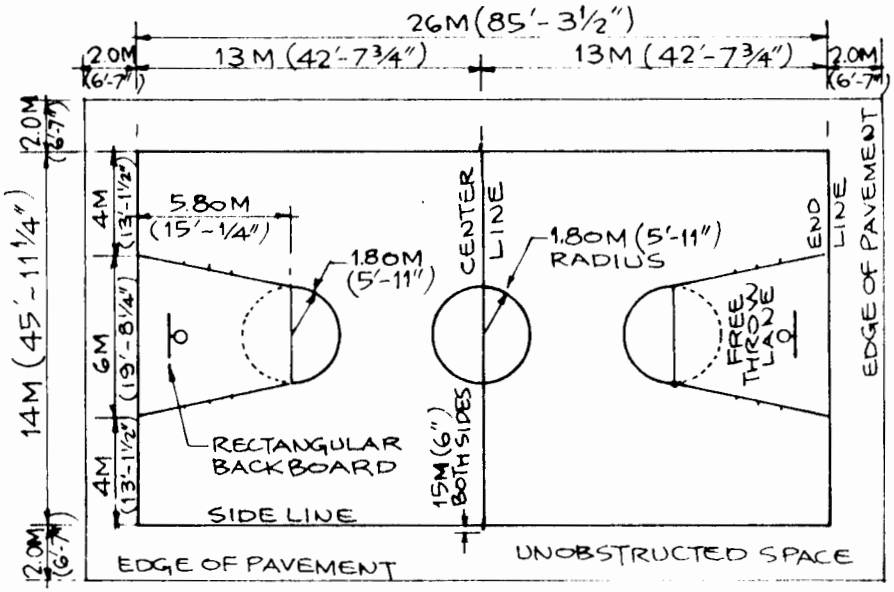
The following diagram will show an example similar to such a court, with its dimensions.



DETAIL - FREE THROW LANE



RECTANGULAR BACKBOARD



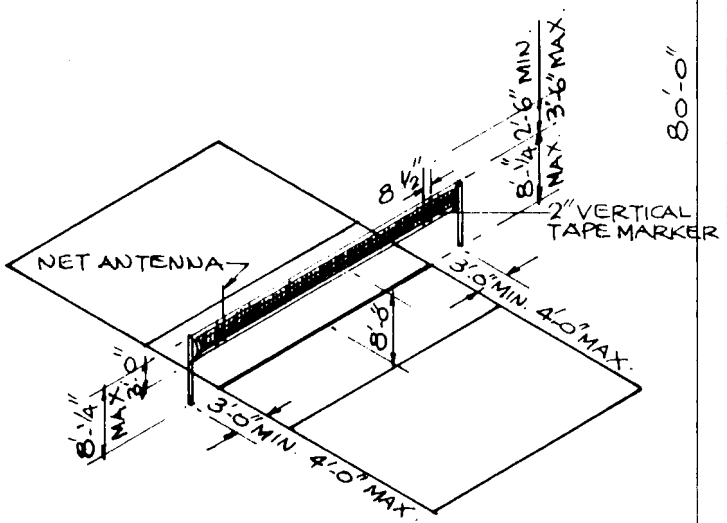
COURT LAYOUT

C. THE VOLLEYBALL COURT

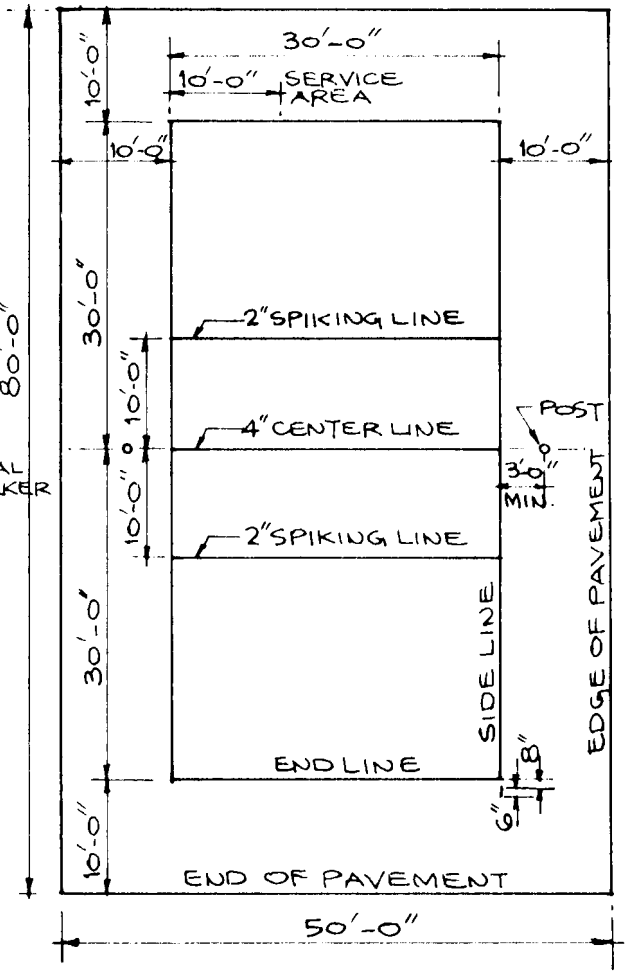
The recommended area or ground space for such a court is 400 M2. The size and dimensions of the playing court are 9.5 x 19 meters + 2 meter of unobstructed space on all sides.

The orientation for the long axis is to be along North South.

The following diagram will show an example of such a court.



ISOMETRIC SHOWING NET



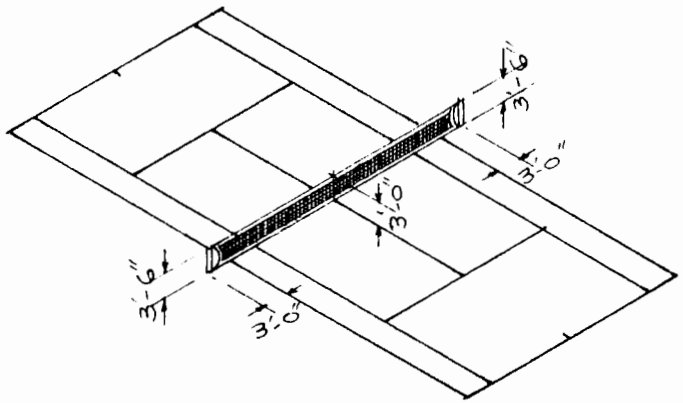
COURT LAYOUT

D. THE TENNIS COURT

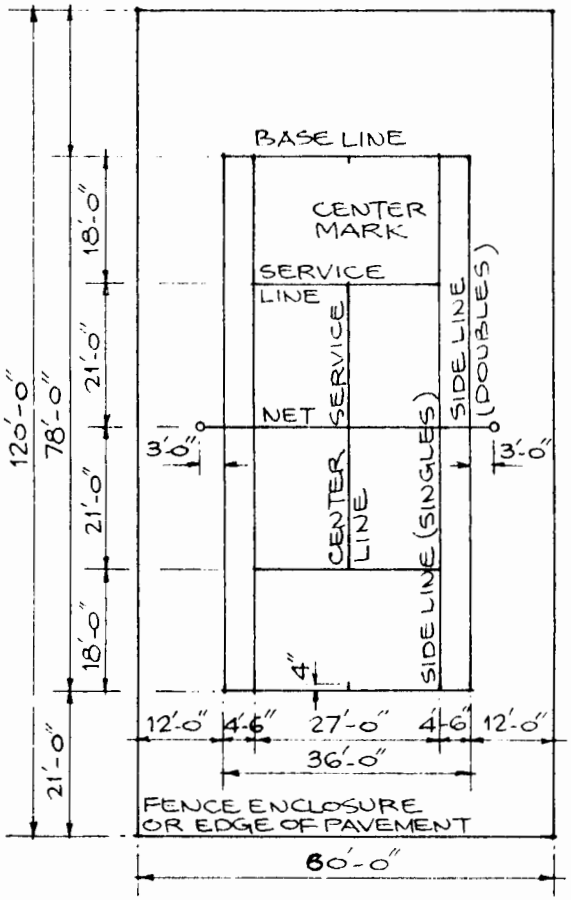
All measurements for court markings are to the outside of lines except for those involving the center service line which is equally divided between the right and left service courts . Fence enclosure, if provided, should be 3 meters high. The minimum distance between sides of parallel courts to be 4 meters. The recommended area of ground space is 674 M2. The dimensions of the playing court are 11 x 24 M2 plus at least 4 meters clearance on both sides or between courts in battery and 7 meters clearance on each end.

The orientation of the long axis of this court is to be along North-South direction.

The following diagram will show an example of such a court with its dimensions.



ISOMETRIC SHOWING NET



COURT LAYOUT

E. VEHICULAR PARKING

Attempts should be made to segregate all vehicular circulation from pedestrian circulation. Furthermore the visitor's car parking should be located near the entrance of the center, while the residential parking should be allowed into the center.

Designing for parking space in snow resorts should consider about 30% extra space above the normal standards. This additional space will allow for the ploughed snow piled up at the periphery of the parking area.

Vast and barren car parks are just as intrusive when they are empty as when they are crowded with cars. The situation is particularly bad in the summer, when there is no snow cover to soften the impression. A system of looproads between tree-covered islands, when possible, is visually more satisfying. Car Parks can be screened out of sight by the utilizing of topographical depressions, natural vegetation or other natural or man-made features.

5
PROJECT CONCEPT

ARCHITECTURAL DESIGN CONCEPT

The mountains of Lebanon were the cradle of traditional regional architecture up till the early years of the present century, when the notion disappeared, and international styles and ready to-use foreign structures started to be utilized haphazardly.

Now a days, building in the mountains have changed a lot due to the modern and advanced methods of construction, as well as the change in the social habits of the people of the area.

The project proposed should be designed according to the advanced technology in building construction, and to the new social habits of the inhabitants, yet respecting the old traditional charm of the Lebanese traditional architecture.

Finally, education, leisure and sports are three key functions that should be well expressed in the design of this project.

PLANNING DESIGN CONCEPT

In the general planning of this project it would be advantageous to concentrate the buildings in one part of the site. This arrangement will not only give this specific part a lively and warm atmosphere, but it will also make the communication between different buildings a lot easier.

The site has a gradual mild slope along an axis stretching from the South-Eastern corner towards the North-Western corner. The buildings will be oriented perpendicular to this axis for more economical constructive costs. The slope will be further emphasised by having taller buildings on the higher terrain and lower buildings on the lower terrain.

DESIGN CRITERIA FOR BUILDINGS IN SNOW AREAS

The following are some building design criteria to be considered in the design of this project:-

A. The atmosphere within a snow surrounding is created by the relationship between the buildings and the spaces between them. Great attention should be paid in designing the negative space between the buildings for it is as important as designing the buildings themselves.

B. Winds are a source of discomfort for the residents of this center , especially if the location of the center itself is not naturally sheltered. The position of the buildings should create sheltered areas. Greater comfort and lower fuel costs will result if the buildings are placed closely together.

C. The materials and colours for external and internal finishes of this project should be chosen to provide visual warm atmosphere for residents of this compound.

D. A safe measure in roof pitching is to pitch the roofs away from where pedestrians are expected to walk. Where this proves unsuitable, a pitched roof or a combination of sloping planes, should be surrounded by a narrow strip of landscaped area free of pedestrians. The problem can also be remedied by the use of snow rails at the lower part of the roof, and running parallel to the ridge.

E. As an ideal case,the bedrooms within the compound should face the sun and the view. Where this cannot be achieved such as in cases where the bedrooms are exposed to a central court, then this court should be exposed to the sun so that it can provide warmth to such rooms.

F. Melting snow often freeze while draining, which will result in clogging the drains. Therefore melting snow should drain through pipes in warm interior walls or on facades being exposed to the sun.

6
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REFERENCES:

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