PREPARATORY BOARDING SCHOOL IN HAIFA

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F O R W A R D

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P R E P A R A T O R Y B O A R D I N G

S C H O O L

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I N T R O D U C T I O N

During the past half century each succeeding year has witnessed the development of education. The relation of the school to the community has changed. Systems of education have progressed as a result of the careful study and investigation by those people engaged in education.

As a result of this progress and development of educational methods it was logical to assume that the modern school house would keep pace in its designing and planning . In addition to this development of the school building and its surroundings for educational purposes, there has been developed, particularly in the larger cities, a further use of the school house as the community center, (a good example of that would be the American University of Beirut) . This added use of the school building has increased the problems that are present in the design and planning of the school buildings. The site plan and outer appearance of the buildings should be considered .Beautiful gardens should be made here and there.

The problem, therefore,that confronts the architect who undertakes to provide school accommodations is perhapes more complex than any ather professional task he may be given.Architects engaged in this kind of work need to know the essentials of hygiens and sanitations. Ventilation and lighting must be carefully considered. The health of the students is of primordial importance in the planning of the school buildings.

All the above named factors have been duly considered in the pl planning and special effort has been made to fulfil the requirements

of a modern boarding preparatory school.

Youssef Shahin Sayegh.

Choice of the Problem

With the evolution of the countries of the Near East during the last quarter of century, education has assumed a great importance.

And yet strangely enough the district of Haifa, with which we are concerned, with a population of over 50,000 Arabs is very poor in educational facilities. Out of approximately 7,000 would be students, 3,000 only can be educated by the few schools that exist while the other 4,000 must either study abroad or stay without education.

This regrettable state of affairs should be remedied . It is the duty of the educated people and of civil engineers specially to convince the notables of the district of the necessity of taking the mather into considération and put into practice the necessary steps to satisfy the present demand for schools.

Statement of the Problem

Before starting planning the school I had to decide on many alternatives which stood ~~up~~ in my way . I had to know all requirements and specifications that would lead to the design of a modern preparatory boarding school. These requirements and specification I obtained from "School Architecture" by John J. Donovan, and from the Professor of education, Mr. Shahla.

Specifications and Requirements

I - Elementay School :-

1 - Seven Classes (Ist grade - 7th grade). Average age of Ist grade student is six years.

2 - Efficient number of students in each clars is 30 students. Therefore number of students in the elementary school wille be 7 x 30 = 210 . From investigation I found out that the seventh grade is made two divisions so that it can take up the many applicants to it. As a result I made the seventh grade in the elementary school two divisions, 24 students each. This will change the figure above to 6 x 30 + 2 x 24 = 228 students in the elementary school.

3 - Ratio of boarders to day students is as one to three. This makes 1/4 x 228 = 57 boarding students.

4 - Elemantary students should be separate from secondary students during recesses and should have a separate dining hall and a separate sleeping quartier.

II - Secondary School :-

1 - Four classes - two divisions each.

2 - Efficient number in each division is about 24 students. This makes a total of 24 x 8 = 192 students.

3 - The ratio of boarders to day students is an average of one to two. This makes 1/3 x 192 = 64 boarders.

The total capacity of the school will therefore be :- 228 + 192 = 420 students. 121 students out of these will be boarders and 299 day students.

According to these figures I planned the teaching building, the dormitory, and the dining hall .

Analysis of the Problem

Fondations :- One of the first important problems that is going to meet the engineer in constrcting any building is the foundations. The piece of land chosen for building the school I have planned lies somewhere betwen the foot of Mount Carmel and the sea shore. Most of the water flowing down the mountain soaks into the soil thus causing much underground water. In building such a big building as a school, something must be done to form a solid strong fondations.

I suggest the following requirements are necessary :-

I - Drain most of the underground water by using the well point method. This method requires the drilling of a number of vertical pipes all around the site chosen for the school. Then a horizantal pipe will connect all the vertical pipes to a motor which pumps out the underground water to any convenient place away from the site of the building. This punping of water must take place continuously and for sometime before beginning the digging of fondations. When the engineer in charge decides that it is time to start digging he will give necessary orders for that. It is essential that the pumping of water continues whilst the digging is in progress and until the completion of this work and the pouring of the concrete for the footings.

2 - If I were the engineer in charge and I thought that the soil was exceptionaly soggy I would further strengthen the foundation by putting a layer of sand of approximate thickness of 50 cms. in the

foundations before pouring on the concrete which forms the footings.

The Class Room :-

Generally the number of rows of seats across the room is not lese than five rows. Many favor the wider class room as the length of the room is thereby shortened, and it is easier for both teacher and pupils to hear and talk, and there is less eye strain to pupils occupaying rear seats in reading matter on the front black board.

Width of aisles

After determing upon the number of pupils and the size of the furniture, the width of the side, rear and inner aisles should be next considered. Window aisles are best 24 inches wide. Rear aisles vary from 30 inches to 36 inches and the inner aisles I8 inches . A space of 8 feet is to be taken between the front row of derks and the front wall where the teacher's table is placed. Whenever black boards are used at the side and rear of the room, and that is the general practice, it is well to allow not less than 32 inches for width of space between the wall and the back of the seats, and 3 feet for the wall aisles, as the latter is necessary for the free circulation of pupils.

American Specification of sizes

and Measurments of School Desks

Table of sizes and measurments of school desks			
Grades	I - II - III	IV - V - VI	VII
Distance Back to Back of Desks	2' - I"	2' - 5"	2' - 7"
Distance Across	I' - 6"	I' - 9"	2' - 0"
Size of Desk	I2"x I8"	I5" x 2I"	I6" x 24"
Height of Desk	2I" - 24"	23" - 28"	26" - 3I"
Area / person	I2.50 sq. in.	I4.50 sq. in.	I6 sq. in.

The Assembly Hall.

No modern school can be properly equipped without an assembly hall. This part of the school organization has proved its worth. It is a place where ideas are exchanged and where the theories of learning are turned into realities. In considering the assembly hall, the question of the kind of stage to be built is of first importance. With the progress of the modern school, the simple lecture plat form can no longer be considered sufficient. The modern high school assembly hall stage must have all the seentiels of a theater stage to provide the students with the appropriate environments for dramatic expressions

Seating Capacity

To determine seating capacity,an allowance of 6 I/2 square feet per seat is generally adopted for seats in straight rowws,and about 7 I/2 square feet for those in curved rows. These dimensions provide for aisles, are confined to fixed seats, and do not include the space for the stage. Assembly hall or theater chairs are made I9",20", 2I", or 22" wide. For a school assembly hall I will choose 20" or 50 cms.

Elementary School Arsembly Hall

Seating capacity in the assembly hall for elementary students should be four seventh of the enrollment, as the pupils of the lower grades are usually excused from the general regular cessions.

Secondary School Assembly Hall

It is absolutely necessary that assembly hall for secondary schools should be large enough to seat slightly more than the school eurollment, including the teaching staff, so as to provide for the future growth of the school. Any school is at a great

disadvantage if the entire school cannot be called together at the same time to hear an influential speaker or to discuss, as a student body , matters concerning the welfare of the school .

Capacity of Assembly Hall

Elementary School :-

4/7 of enrollment or 4/7 x 228 = I30

Secondary School :-

School enrollment = ...I92

Staff = ... I5

Total = ...337

The assembly hall is planned to a capacity of 355 students.

Height of Assembly Hall

The height of the assembly hall should be governed by the cubic space necessary to provide for proper ventilation . One hundred fifty cubic feet of space per seat is quite a good allowance.

Floor of Assembly Hall

Whenever the seating capacity of the main floor is greater than 500, the floor should be sloped or made saucer shaped, and the seats should be set on steps . The height of the stage is made about I20 cms. above the assembly hall floor . The capacity of the main floor of the assembly hall in this school I planned

is 264 students which is less than 500 . As a result the floor of the assembly hall is made horizantal .

The total capacity of the assembly hall for this school is 355 students. The floor takes up 264 . The remaining 9I students are seated in the gallery. The presence of a gallery in the assembly hall adds to the architecural beauty of the hall as will it reduces the area of the floor thus economizing on land and material. The gallery is ventilated from two windows placed on each side. For this reason I had to lower the ceiling of the two lavatories on the sides of the assembly hall to 250 cms. thus leaving about I65 cms. o space above to allow for the ventilation of the gallery. This is shown in cross section A - A of the teaching building.

In planning the teaching building, the dormitory, and the dining hall a special care was taken to avoid too much mixing of elementary students with secondary students. To begin with this separation between elementary and secondary students in the teaching building is arranged by having the elementary students occupy the left wing in the ground and first floor while the secondary students occupy the right wing in the ground and first floor. The administration is common for both elementary and secondary students. The study hall shown in the teaching building plan is to be used by the elementary boarding students during the study periods at night. The secondary students study hall is the library.

In the dormitory building this separation is arranged by having the elementary boarding students occupy the ground floor whilst the secondary boarding students occupy the first floor.

The dining hall plan gives a clear picture of this separation. There are two dining halls, one belonging to the elementary boarding students and the other to the secondary boarding students. The teaching staff dining hall is placed in between with two doors each openning to one of the two dining halls. The idea behind this is to have the teachers in charge supervise the students during their eating hours.

There is shown in the site plan two basket ball fields. This automatically separates the elementary students from the secondary students during recesses.

Other Remarks.

I - There is shown in the site plan a shed I5 x 30 meters made of a steel roof truss carried on columns and covered with zinc sheets. The idea of having this shed is to protect the students from the rain during recess hours. This is absolutly necessary as it prevents the students from crowding in the corridors of the teaching building.

2 - The are two stair cases in the teaching building that go to the first floor . It is not necessary to have both of these stair cases continue to the roof. The roof is not going to be used for any special pupose except for inspection incase of water soaks

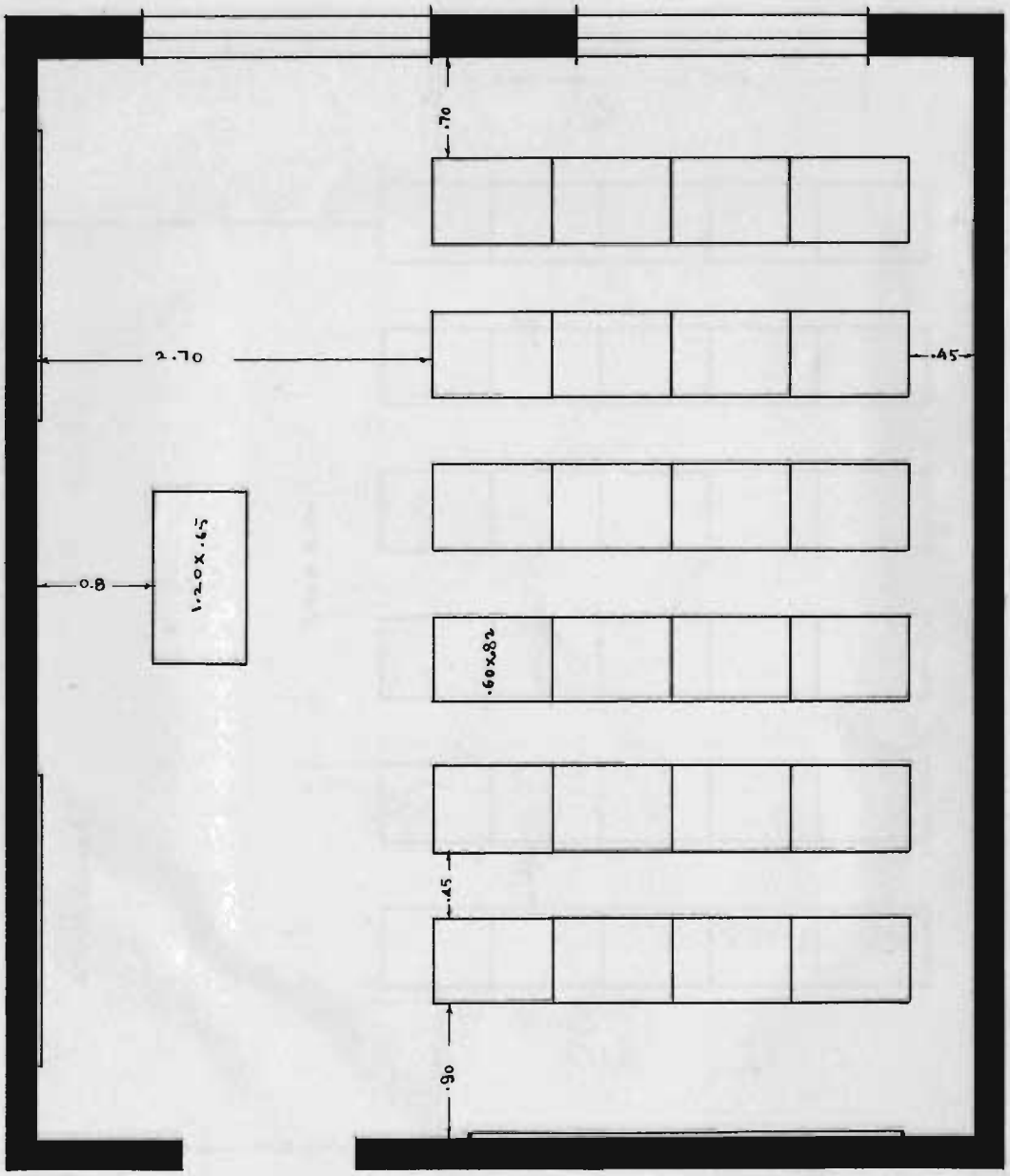
through the slab. One stair case will satisfy this purpose.

3 - A basement consisting of a laundry room, ironing room, and a boilers room is to be built under the storage and the working staff rooms of the dining hall and kitchen.

4 - Frame structure construction with a rough cast plaster is to be used in the construction of the teaching building, dormitory building, and dining hall building.

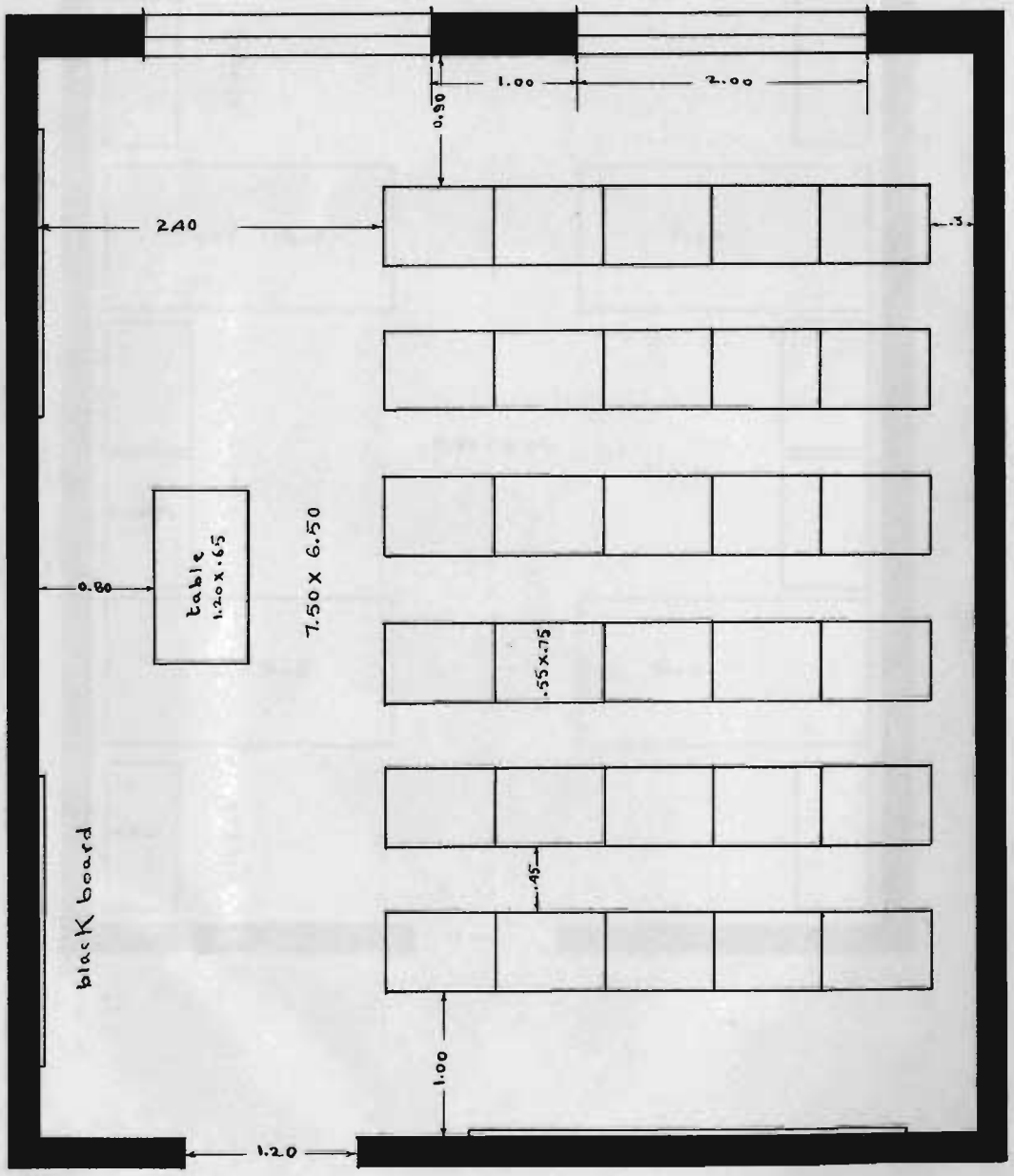
Arrangment of desks - Dimensions of rear, side and inner aisles for VII grade, I,II,III and IV Secondary. Capacity = 24 students.

Scale I : 50



Arrangment of desks - Dimensions of rear, side and inner aisles for I,II,III,IV,V and VI grades. Capacity = 30 students.

Scale I : 50



FOUR BEDS SLEEPING ROOM

Scale I : 50