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ARCHITECTURAL DESIGN OF A SANATORIUM
IN ALEPPO, SYRIA.

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May 1951

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This thesis was submitted to the Civil Engineering Faculty in partial fulfillment of the requirements for the Degree of Bachelor of Science in Civil Engineering.

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*Recd 26/5/51
FRD*

Grateful acknowledgement is expressed for the assistance,
advice, and suggestions of Prof.K.Yeramian.

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INTRODUCTION

Recent years have witnessed the awakening to a new life in Syria. Large scale reforms were started following the improvement in the country's financial standing. Of these reforms Aleppo had the largest share. This city, through the initiative of an intelligent and sincere President of the Municipality, Mr. Majdeddine El-Jabri, who is also a Civil Engineer, had a lot of improvements, such as the removal of benzine pumping stations to the outskirts, the construction of two beautiful public parks, and wide asphalted streets, channelled for traffic, the removal of old cemeteries and the erection of large beautiful apartments in their place, the extention to Aleppo of the waters of the Euphrates river, etc..., all of which were carried out in accordance to modern ideas of Town Planning.

These reforms gave me the idea of a new modern Sanatorium for the city of Aleppo to replace its present old-fashioned one, as a subject of my thesis which follows hereafter:

CHAPTER ONE

DESIGN CONSIDERATIONS

The points that were taken into consideration in the design of this Sanatorium are of differing aspects and are listed herebelow:

1. The location of the Sanatorium was chosen at the outskirts of the city and not at a distant summer resort or mountain top as is often done. This was in accordance with new opinions and developments in the of Tuberculosis treatment. The weather of Aleppo is suitable for this purpose, being dry as compared to seashore places. I hereby quote in this connection a paragraph from a modern book called "Hospital Planning" by C. Butler and A. Erdman, which goes as follows:

"while the new school of thought believes that rest, fresh air, and good food are the keys to recovery, the traditional high altitude is no longer considered indispensable in the treatment of Tuberculosis. As a result many Sanatoria are being built in or near cities, where they are easily accessible to relatives and visiting Medical staff.

I have therefore chosen the outskirts of Aleppo as the location of the Sanatorium, and the position is shown on the Location Map accompanying this thesis. The advantages of this location are as follows:

(a) Cheap and easy transport during construction as well as maintenance period.

(b) Easier to engage good Doctors, Nurses, and Staff in a city than at a distant place.

(c) Much less number of Doctors, Nurses, Staff, and workers need to reside permanently in the Sanatorium, which reduces maintenance expenses considerably.

(d) Accessibility to relatives and friends of patients, which gives them a feeling that they are not foresaken, a psychological consideration that should not be ignored.

(e) Daily needs of the Sanatorium, such as food, are supplyable without transport delay or expenses.

(f) Existence of Tramway terminal only 500 meters away.

(g) The area surrounding the Sanatorium is not inhabited and hence no fear of contagion.

(h) The spot is quiet and free from traffic or factories' noises — an essential point in the choice of Sanatoria places.

(i) Absence of swamps, or dirty regions in the neighborhood.

2. The size of the Sanatorium was fixed as 161 beds which is about double the size of the present one. I believe this is justifiable for a large city like Aleppo, especially that Lebanon Sanatoria are too far away if not inaccessible.

3. The architectural design was made simple and should be so to harmonize with its function.

4 The structural design should be enduring and nice looking without incurring too much expense (since this is no center of a profitable trade), and I have therefore chosen pointed limestone for all the external walls, because this type of stone is abundant in Aleppo.

5. The Sanatorium should be modern and in accordance with the recent tendencies of treatment. For example provision should be made for lung operations at a larger scale than is practiced at present because such is the tendency of recent treatment. This is emphasized in the book referred to above.

I have therefore provided a suitable operation room with its accessories as well as a room for lamp treatment, by Ultra-violet rays or the like, as the new treatments may require.

Another item in the design along modern tendencies which was provided for was a space for sputum disposal incinerator, with an adjoining room for sputum technique, as modern treatment recommends the use of removable paper cups for drinking fitted into metal cups.

However there were certain items which some modern Sanatoria are having that I have purposely omitted partly because local Doctors advised that they do not suit our country and people, and partly because in the foreign countries where these items are added there is a controversy in opinion regarding them. Among such items I name the following two:

(a) Provision of partition walls between adjacent beds, as some modern Sanatoria are doing — this I felt would have a bad psychological effect on Arab patients, namely that of loneliness and desertion, because Arab traditions recommend friendly acquaintance with one's neighbors. The hygienic advantages, according to local Doctors, are at present too shaky to stand against this harmful feeling of loneliness, and I have therefore omitted them. However if future developments in treatment necessitate them they can be placed. Concealed beams in the slabs below such possible partitions shall be provided to answer such possible future need.

(b) Provision of lavatories in rooms for the use of visiting Doctors — this item was omitted upon advice of local Doctors on the basis that such lavatories would be abused by the patients. The Doctors can wash in the Resident Doctor's room where a supply of antiseptic drugs will be provided.

6. The employees, workers, etc. of the Sanatorium should not come in touch with the patients. This point was taken care of by having no patients in the Ground Floor where the employees and workers perform their duties.

7. This Sanatorium will be receiving women patients who should be placed separate from men patients. I have therefore reserved the Third Floor for women alone. If this floor, containing 61 beds, is not sufficient a Fourth Floor can be added. For this purpose the structural design shall be made on the basis of four stories in addition to the Ground Floor.

8. Sanatoria should be provided with solariums for "sun" treatment. I have therefore provided balconies on the Eastern, Western, and Southern façades of the Sanatorium. The building would be erected such that these solariums would be due South to receive sun rays all thru the day.

9. The areas of windows or doors of each ward should be at least one tenth of the wards areas, for proper ventilation. This point has been taken care of.

CHAPTER TWO

INTERNAL AND EXTERNAL STRUCTURAL ELEMENTS

External Walls

All external walls shall be of pointed limestone, back-filled to a total thickness of 40 cms. by rubble stones and mortar. This would provide good insulation against cold and heat.

The only surface treatment to be applied is dressing of stones of external walls at the portions between windows, all around the building. These belts of dressed limestone will be surrounded by continuous windows' canopies and sills, 10 cms. high, all of dressed stone, extending all along the circumference of the building. I believe this will give a nice appearance due to surface contrast. In addition, the portions between windows will not fall in the same vertical plane as the rest of the wall, but will be receding 10 cms. towards the inside. I believe this will give a better appearance than a simple one-plane wall, without additional expenses.

The windows of the Southern Façade will need no canopies so far as protection from rainfall is concerned, due to the existence of the Solarium, but they shall have canopies like the rest of the windows for architectural purposes.

The shutters shall be of the sliding type imported from abroad, and the colour shall be light green.

Internal Walls

All internal walls shall be of hollow concrete blocks, 15 cms. thick with the exception of the stair-case rooms which shall be of limestone backfilled with concrete to a total thickness of 25 cms.

Miscellaneous Items

The floors shall be linked by 24 steps each 16.5

cms. high.

Slab thickness shall be 24 cms. to provide space for "Hourdi" blocks for insulation against cold and heat. This will serve as an acoustic treatment for noise of coughing.

Windows shall be 150 cms. in height, and those of the wards shall start at a height of 125 cms. from the ground in order not to expose some of the beds. They shall be made of Vita-glass, manufactured abroad, which possesses the quality of admitting Ultra-violet rays of the sun.

The corridors shall be from 2.4 to 2.8 meters in width to provide ample space for movements of beds, instruments tables, servants, etc...

The Solarium shall be 3,0 meters wide to allow enough space for the beds. It will be due South, and will be provided with removable glass partition walls for the cold and windy seasons. These partitions shall also be of the same Vita-Glass type for admitting Ultra-violet rays.

Passage space between rows of beds in the wards shall be 140 cms. to allow easy movements of beds, instruments tables, and nurses. Spaces between beds in the same row are varying, the minimum being 80 cms. at one side of the bed, which will still leave room enough for a large size Doctor to pass or give an injection.

CHAPTER THREE

GROUND FLOOR

The Ground Floor contains no beds, but is reserved for the various maintenance units of the Sanatorium.

The Management Unit which includes Director, Secretary, Cashier, and Accountants is located at the right wing near the main entrance. People entering the Sanatorium have a large room adjacent to the main gate to wait in and arrange for their business with the Management before they are given access to the other parts of the building. Visitors will use the main stairs — the elevator is reserved for the patients.

As this Sanatorium is situated at the outskirts of the city only a small number of employees or workers need be residents and hence a few rooms were provided in this floor. The residing Doctors will be given a place on the roof which I shall call Fourth Floor in the coming discussion.

The food of resident Doctors and employees shall be prepared in a separate kitchen, and served in an adjacent Dining Room. The employees or workers have also a lounge, to use in spare time, adjacent to the Dining Room. The Doctors have their Lounge in the Fourth Floor.

The Ground Floor contains also rooms for laundry, ironing, linen storage, boiler for laundry, and a wood storage, all adjacent to each other for convenience. The outdoor space beside the laundry room will be used for drying the laundry. A part of it will be covered for use on rainy days.

The service unit for patients is situated in the part extending North to South and is cut off from the rest of the Ground Floor for hygienic considerations. This unit includes a large kitchen with an adjacent refrigeration room to store food,

a dishes washing room, and a special stair-case and elevator to serve the food. The pantry for food storage is placed at the extreme end of right wing, away from the patients' service unit, for hygienic reasons, as it will contain the food of patients as well as residents.

As Aleppo weather necessitates heating of the Sanatorium during winter, provision has been made in this floor for a central heating system and its accessories. This Unit is situated adjacent to the garage, to which it is connected by an inner door for convenience in supplying fuel to the boiler.

The mortuary is situated at a secluded corner also adjacent to the garage for convenience in transport of the deceased.

Rooms for sputum disposal thru noiseless machines are also in this floor away from the Service Units for hygienic reasons.

Each Unit is supplied with a toilet room at a convenient place.

The out-door space adjacent to the right wing is reserved as a garden for the patients to sit in or stroll.

CHAPTER FOUR

FIRST FLOOR

The right and left wings of this floor is reserved for wards of 6 or more beds each. In addition there is an isolation at each wing, with a private toilet, for grave cases.

The remaining part is reserved for the following:

(a) Operation Unit

This consists of an operation room that opens to the other rooms, which include the instruments sterilization room, the scrubbing room where the Doctor dresses for operation and scrubs his hands, and the preparation room where the patient is prepared for operation.

(b) Radioscopy Unit

This consists of a room for radioscopy, another for development, a third for preparation of patients, and a fourth as an office for keeping plates and records.

(c) Dental care room

(d) Laboratory room, where pharmaceutical products including blood and plasma are stored.

(e) Doctor's Office.

(f) Nurses Station and linen storage rooms.

In addition there is a waiting room for relatives and friends of patients undergoing operations, as well as toilet rooms for patients and another for Staff.

CHAPTER FIVE

SECOND AND THIRD FLOORS

The Second Floor will be exclusively used for patients. The wings are divided into wards, isolation rooms, and Nurses' Station exactly as in the First Floor.

The remaining part will be divided into 7 First Class 1-bed rooms and 6 Second Class 2-bed rooms. Each class has its own toilet rooms, and a glass partition separates the two classes.

CHAPTER SIX

FOURTH FLOOR

This floor is not exactly a Floor but a lounge and three rooms for the Resident Doctors. In case an additional floor is constructed in the future it will replace these rooms which will be placed on the new roof.

As it will be necessary to have three Resident Doctors for a Sanatorium of this size, according to the opinion of Dr. Philip Antippa, and as they should be as near as possible to the patients while remaining effectively isolated from them for hygienic as well as psychological and aesthetic reasons, I have thought of adding these rooms over the roof of the Sanatorium.

Each Doctor has his private room and bath in common with his neighbour. In addition there is a lounge for their common use and an open-air "veranda", protected by a porch, for use as a Dining Room in Summer, if they so desire.

CHAPTER SEVEN

CONCLUSION

This concludes a brief description of the main points that were taken into consideration in the design of this Sanatorium, as well as a description of the arrangement of its parts.

This Sanatorium may not be very modern and should not be so for a country like Syria with a limited financial standing, but it is in accordance with the requirements of recent developments in methods of treatment, with provision for further developments. It is within the budget limitations of Aleppo's share of Syria's expenditure on Public Health schemes, and I hope such a project will appear as an item on the program of future reforms.

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