

**DESIGN OF A RAILWAY TERMINAL
FOR
BEIRUT**

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DESIGN OF A RAILWAY TERMINAL

F O R

B E I R U T

THESIS SUBMITTED BY

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I N

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FOREWARD

This is an attempt to design a railway terminal in Beirut connecting the H.B.T. and the D.H.P. lines. It includes mainly the architectural design of the passenger station and the directorate of the railway.

The station is to be built in the Eastern part of Beirut. The site will be limited by Nahr Beirut on the East and the end of the Nahr Avenue on the North.

I wish to thank my advisor, Professor Nicolas Manasseh for his help in the preparation of this thesis.

I wish to thank also my father and uncles who assisted me in giving me their advices, which are the result of a long period of experience, while serving the D.H.P. and the P.R. companies.

Finally, I ^{Want} ~~am willing~~ to thank the director of the Beirut Water Company, who has put into my hands all maps of the city of Beirut to the scale of 1/2000, which I could not find anywhere else.

CHOICE OF THE SUBJECT - IMPORTANCE OF RAILWAY

It was during the class of railway curves and earthwork of last year, when our teacher, Mr. Nicolas Manasseh, was discussing railway stations, that he suggested that subject for a thesis. I liked very much the idea. Other reasons, which I shall just mention made me execute that suggestion.

Owing to the fact that my father have passed fourty one years, working as a station master in the D.H.P. railway company, and that my two uncles worked both in the Palestine Railway, one for 20 years and the other for 12 years, I thought I could benefit from their experience to build up the general outline of a railway Terminal in Beirut. From these two sources I could have the British and the French systems.

Besides, having passed all my time in various stations in the country, I have a fair idea of how they should be and what they should contain. As I suffered personally from the present state of the stations I know their weak points which diminish their value, and I hope that by the present thesis, I will be serving the railway companies and the public. ??

Furthermore, the Lebanese Government has lately bought the H.B.T. line from the British Government and gave its concession to the D.H.P. Company. It is thus clear, that a railway terminal for Beirut, connecting the H.B.T. and the D.H.P. lines, is

of a great necessity.

Finally, the reason which encouraged me the most to choose that subject is my belief in the preponderance and increasing importance of a Railway connecting Europe and Africa and thus Cairo to Calais which has been a dream for so many years. This railway has a big effect on our country. This effect is more understood when we put in mind that the Lebanon is chiefly a country of tourism and of summer resorts. Thus it must attract the foreigners to pass their time in its lovely mountains. We must create many facilities to please them. (The railway is the most important of the facilities which they may enjoy. ~~_____?~~)

It is not only from this point of view that the Railway is important, but also because it adds to the improvement and development of the country through which it passes. It creates a country and soon becomes its soul. According to Edward Hungerford in his book, "The Modern Railroad", the Railway is the life itself of a country. He adds:

" The railroad is a monster. His feet are dipped into the navigable seas, and his many arms reach into the uplands. His fingers clutch the treasures of the hills - coal, iron, timber - all the wealth of the Mother Earth. His busy hands touch the broad prairies of corn, wheat, fruits - the yearly produce of the land. With ceaseless activity he brings the raw material that it may be made into the made. He centralizes industry. He fills the ships that sail the seas. He brings the remote town in quick touch

with the busy city He stimulates life. He makes life.

"His arms stretch through the towns and over the lands. His steel muscles reach across great rivers and deep valleys, his tireless hands have long since, burrowed their way through God's eternal hills. He is here, there, everywhere. His great life is part and parcel of the great life of the nation.

"He reaches an arm into an unknown country and it is known. Great tracts of lands that were untraversed become farms; hillsides yield up their mineral treasure; a busy town springs into life where there was no habitation of man a little time before, and the town becomes a city. Commerce is born. The railroad bids death and stagnation begone. It creates. It reaches forth with its life and life is born.

"The railroad is the life itself."

For all these reasons, I have chosen that good and worthy subject.

WHAT A MODERN RAILWAY TERMINAL SHOULD CONTAIN:MAIN BUILDING

I.- Ground Floor

Waiting rooms (men and women)

Booking office.

Baggage office

Station master's office

Traffic and movement office

Telephone exchange and public Telephone booths

Bar - Restaurant

(Public)

(Passengers)

Police and first aid

Toilet for men and women.

2.- Upper Floors - Directorate of the Railway

Engineering

Medical

Employment

Directorate

Controle

Accounts

Supplies

Mail

Toilet.

Tower for automatic controle of switches (Near the main building.)

FREIGHT HOUSE

It must be of a structural design of the mill bent type. It must contain the following divisions:

- In bound freight
- Out bound freight
- Transit freight
- Offices (3)
- Loading ramp.

WORKSHOP

It must also be of a structural design of the mill bent type and must also contain the following divisions :

- Turning tables.
- Rooms for employees and lockers.
- Office for workshop superintendent
- Secretaries
- Clinic - first aid.
- Toilet and showers.
- Inspection ramp.

white limestone, THE MAIN BUILDING

GENERAL REMARKS ON PASSENGER STATIONS.

"The railroad terminal is the city gate. Without, it rises in the superior arrogance of white granite, as an architectural something. It has broad portals, and through these portals a host of folk come and go. It is a busy place, of infinite variety of business".

while designing a passenger terminal, one must keep in mind the following general rules:

This building must easily be expanded in the coming days. This future expansion may be provided for, by adding more aisles to the building at the level of the ground floor. Besides, the floor assigned for the public are either asphalted or tiled in order to facilitate their washing. Timber construction must be avoided as much as possible in order to render the building more fireproof.

In the case of Beirut terminal, since in the upper floors there is the directorate of the railway, it is better to design it as a public building, in other words as the pattern of an office building. The width is in general 12 meters. These 12 meters will be taken by 2 sets of offices separated by a corridor. The outer walls are 40 cms. thick and are faced with

white limestone, in order to give more strength and a better effect. The inner walls are of sandstone 25 cms. thick plastered and oil painted to the height of 1.5 meters. Then they are dis-tempered to the top of the ceiling.

These remarks have been taken care of in the present design.

The entrance will be with a small porch and a small gate. The entrance will be with a small porch and a small gate. The entrance will be with a small porch and a small gate.

A police office is necessary. The police office is necessary. The police office is necessary. The police office is necessary.

It is clear and evident that a woman's walking room is of great importance. It is clear and evident that a woman's walking room is of great importance. It is clear and evident that a woman's walking room is of great importance.

THE GROUND FLOOR

In the ground floor there is a waiting room, high enough to provide for light and air. Its height has been chosen as seven meters, double the height of the other floors. Two exit doors, leading to the platforms, are on both sides of the booking office. This latter, has been divided into four parts with a window for each; two for the H.B.T. line and two for the D.H.F. line. Each set is subdivided into two parts: one for the third class and the other for the first and second classes.

The entrance contains *Three* 3-2 meters wide doors which are all opened in the time of train arrival or departure. Once the train is gone, only the middle one remains opened.

A police office is necessary. The police has to keep the safeguard of the building. The office has one door which opens directly on the hall and another one from the staircase. Thus the police has at his mercy the staircase and the passengers.

It is clear and evident that a women's waiting room is of great necessity. A lady, waiting for the train, might not be willing to sit with men. Thus she can retire into the ladies waiting room, where she can have full rest. In the innerpart, there is a washroom with toilet facilities. It is plain, that a woman in charge of that room must always be present there.

One important part in a passenger station is the restaurant, especially in a terminal like Beirut, This restaurant in the present design, has been divided into two parts. The first is for the passengers only. Those coming from Cairo and Palestine and going to Turkey or to Damascus and vice - versa, may stop at Beirut and have their lunch or dinner and continue their travel. They enter directly to the restaurant through a private door without having to pass either thru the main building or from outside the railway boundary.

The other part of the restaurant is at the mercy of the public. Those who are coming to wait for somebody arriving on the next train, or those of the neighbourhood can have their meal or their cup of tea, coffee or beer inside. Its door opens directly on the main waiting room.

As to the personnel of the station, there is the main office subdivided by glass partitions into offices for the station master, for the movement of the trains and for the exchange serving the whole building, In the back of the exchange office, and directly opening on the main waiting room, there are three public telephone booths, they are related to the civil telephone cable.

Finally in the ground floor, there is the luggage office. It has two accesses: one from the main waiting room and is inten-

THE UPPER FLOORS.

The Directorate of the Railway.

The president of a railway company is the focal point of the entire system. His main function is to supervise the activities of the various departments of the rail transport organization. These departments are numerous: "The activity of soliciting business, both freight and passenger, forms the traffic department, in many ways the most important of all; for from it comes nearly all the vast revenue needed for the maintenance of the organisa. The legal department looks after the railroad rights its franchises, its charters, the law fabric of its almost innumerable relations with the various railroad commissions, legislatures, city councils and town and country boards. If the road be really sizeable, it will organize into separate departments - the buying of its great quantities of supplies, the keeping of its intricate books, and the handling of its money. The business of building its lines and structures will need special talent for an engineering department. The department that will employ the great rank and file of the railroad's army of employees is the operating department called by some big roads the transportation department".

As we said before, the president's office has the main function to supervise and to look after the work of these departments.

The president is assisted by the Board of Directors. In many cases they may dictate their will and he will have simply to execute it.

Directly after the president stands the general counsel. He is shrewd, diplomatic. "He has quick perception and action, the faith and loyalty of a friend. "He is very useful to the president. He advises him.

While the general attorney is the legal officer of the railroad. He makes the rules of the company and looks after its rights. He decides the differences between the general manager and the business men.

On the other hand the financial officer is the treasurer. It is he who receives its revenues and distributes them for supplies, wages, and taxes.

" Together with the general counsel, the general attorney, the treasurer, the comptroller, the purchasing agent and the store keeper, stand as the guardians of the railroad's strong box."

The general manager is the person in charge of the economical movement of trains and the maintenance of their property. He must have absolute firmness with his superintendents. "He can appoint and discharge ^{them as they can appoint and discharge} their trainmen, more quickly in fact. As to the superintendent he is the head of the transportation.

" If the general manager is king in modern railroad opera-

tion, the division superintendent is not less than a prince." This latter deals "in men" while the former deals in division superintendent, and right there is the main difference between the two.

The superintendent must see to it that his men get a square deal. If he does not see to it in the first instance, they will see to it in the last, and woe to him if such be the case. For the men who work on the steam railroad are well-paid, well-read, keenly sensitive as to their privileges and their rights. And from these men have come the division superintendents, as different each from the other as men can be grown. It is the general manager's chief duty to bring these very different men into harmonious action. That is absolutely essential to the successful operation of the railroad."

In the present design, every department of the above mentioned was given offices in the building. Besides, it seems to be necessary in a modern terminal such as Beirut, the presence of medical department. Once a week, the doctor of the Company takes the train and looks after the health of the employees in the remote stations situated far from cities.

Finally, a mail office is needed. All letters addressed to the company or sent by it are grouped and sent to their own destination through this mail office.

As what regards the building, the upper stories were appropriated to the directorate of the railway. As the waiting room has a double floor height, there can be built another story over the lower parts of the ground floor. Above all, the second floor is erected. These one and a half floors will be given to the personnel of the railway.

FREIGHT HOUSE & WORKSHOP

The intention of the author was to include a freight house and a workshop in the present design. Since the D.H.P. Company took the concession of running the H.B.T. line, then it seemed to be unnecessary to include them, because that company has already a freight house and a workshop.

Near the main building, it is of great importance to have a tower for the automatic operation of switches. It must be composed of two stories. The lower one must always be empty, because in it exist all the links of the different switches of the yard. The upper story must be composed of a single hall where all the handles of the switches converge. One employee, would operate the switches from his room, with the aid of a telephone to speak with the other departments of the stations.

and have provided that railway will probably be added to the country of Malacca savings of freight, retail savings of freight and transportation of passengers being taken care of by motor vehicles and by airplanes. Further down it will be possible to provide that the railway will continue not only to show good services, but also to retail services over long distances. The transportation of water conditions, while water and air services do not, the construction of their passenger stations is more than enough to provide the basis for a forecast of a building and operating figure in that department.

As to waterways, further developments will require more

C O N C L U S I O N

In spite of the development of the motor car and airplane transportation, the railway stays and will stay for long the best and safest mean of transportation. In his book, "The Modern Railway" I.B. Parvalsee says.

"Will further intensification of competition mean a lessening of the importance of railway service, and a corresponding increase in the significance of other phases of transportation ?

While only the future can supply a definite answer to this question, the steam railway seems destined for a longtime in the future, as in the past to remain the outstanding factor in commercial transport.

Some have predicted that railways would eventually be limited to the function of wholesale carriage of freight, retail carriage of freight and transportation of passengers being taken over by motor vehicles and by airplanes. Rather does it seem reasonable to assume that the railways will continue not only as wholesale carriers, but also as retail carriers over long distances. They operate **regardless** of weather conditions, while motor and air carriers do not. The renaissance of their passenger traffic in recent years supplies the basis for a fore-cast of a definite and continuing future in that department.

As to waterways, further developments may enable them

further to supplement the activities of the steam railways. Water transportation has certain definite limitations, imposed by nature, both as to climate and as to location.

It seems improbable, even with the developments attained or foreshadowed, that the air carrier can become a serious competitor of the railway in freight service. It will of course vie with the railway in that form of passenger transportation which aims at speed of movement over long distances".

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