A CENTER OF TRANSPORTATION FOR THE CITY OF ALGIERS

By Anatole Kopp

Submitted in Partial Fulfillment
Of the Requirements for the
Degree of Bachelor in Architecture

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May 12, 1941

Dean Walter R. MacCornack
Chairman of Thesis Committee
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Dear Sir:

I hereby submit this thesis report entitled, "A Center of Transportation for the City of Algiers" in partial fulfillment of the requirements for the degree of Bachelor in Architecture.

Yours truly,

Anatole Kopp

Signature redacted
ACKNOWLEDGMENT

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Department of Aeronautical Engineering

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Department of Naval Architecture

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Necessity of Having A Center of Transportation

Algiers actually ranks as second French port for the tonnage cleared and is a fast growing town, as far as the population and the political and business importance of Algiers is concerned. It is the principal landing point on the North African Mediterranean Coast, and, as such, is the key city to every point in North Africa and even in Central and Equatorial Africa. From Algiers you can reach Morocco and Tunisia by railroad and Central and Equatorial Africa, by plane. The planes employed are usually of the seaplane type because of the landing facilities offered by the Equatorial African lakes.

Algiers is about 40 hours from Paris (26 hours by boat from Marseille) and can be reached either by boat or by seaplane. It is the terminal point for the regular passenger line Alger to Marseille and Genoa, Italy to Alger. It is reached by seaplane from Marseille and from the Spanish coast.

The Actual Situation

Almost nothing has been done in Algiers, to meet the needs of the large number of passengers actually arriving in Algiers. The terminal pier is very primitive and without any provision for the passengers' comfort. The seaplane base is far from the railroad station. The railroad station itself is of a very old type and does not have even the minimum requirements we expect from a big
THE OPEN SEA

THE PASSENGER HARBOR

THE PASSENGER DOCK

THE UPPER LEVEL

THE LOWER LEVEL

THE RAMP

THE RAILROAD STATION
city's station. The bus station, connecting Algiers with the inland towns of Algeria, is in the middle of the city with no connections to the other means of transportation.

The only way of reaching the harbor, the railroad station and the seaplane base is a ramp (rampe Chasseloup-Laubat) connecting the upper level of the city (boulevard de la Republique) with the lower level, (the harbor and the station).

This ramp is used by the trucks, the private cars and the public means of transportation. The result is very congested traffic and a station and pier difficult to reach.

The Program

The program of this thesis will be:

a) The creation of a transportation center for the town of Algiers.

b) The regulation of the traffic to and from the transportation center.

c) The creation of agreeable surroundings, possible start for replanning of this part of the town.

The Transportation Center

The transportation center should include all the different facilities and services desirable in a modern terminal. It would serve passengers using train, bus, boat or plane, or going from one of those transports to another one. It would be divided into four functional parts:
This is what "Trafic regulation" means in Algier's harbor.

Private and public cars, trucks, pedestrians and trains, all one the same level, in the same street, without any attempt of regulation.

All of them (except for the train) use the same ramp, connecting the harbor with the town.
The Terminal Pier.
The Seaplane Base.
The Railroad Station.
The Bus Station.
The center should be provided with:
Easy approach and parking space.
Parking for taxis and public means of trans-
portation.
Entrance.
Waiting rooms, concessions, and information office.
Toilets.
Ticket selling space.
Easy circulation leading to: the trains.
    the boat.
    the seaplane.
    the bus.
Hotel and restaurant facilities.
Provision for passport, immigration and medical
examination.
Police and fire station.
Office space for services and companies.
Crew quarters.
Meteorological, telephone and telegraph equipment.

A more definite program is to be elaborated after a
careful study of what the requirements of this building
would be considering the number of passengers, the type of
traffic, the climate, etc.
DESCRIPTION OF THE CITY

Situation
Algiers is built on the west side of the bay of Algiers 36°46'N.3°04'E; On the slopes of the Sahel hills parallel to the coast and backing to Mount Buzeral (Fig.1). The highest spot of the town is the Casbah, 118 meters above the level of the sea. The town slopes from this point to the sea rather steeply and has a drop of about 60 ft. from the boulevard de la Republique to the sea and harbor level. (Fig.12)

Planning
When one looks at the map of the city (Fig.11) it is hard to see any planning as far as the layout of the streets is concerned. The high spot (the Casbah, where the natives live) is a conglomeration of buildings almost on top of one another and leaving between them narrow channels used only by pedestrians. The modern town has two main arteries, the boulevard de la Republique and the rue de la Liberte both leading to the Place du Government. From those two arteries streets go in every direction without rhyme nor reason. The harbor itself on the lower level has no direct connection with those two streets. It is also impossible by following the shore level to get to the main roads leading either to Tunis or to Oran and Morocco. The topography of the town is given on the military map included at the end of this thesis. (Fig.M)
Transportation Facilities

Actually the traffic coming from the pier, in order to get either to the city or to the main roads leading outside of the town, has to follow the Ramp Chasseloup-Loubat which is congested by all kinds of traffic (private and public). (Fig.3 & 4). The railroad station being on the same level as the harbor is difficult to reach and doesn’t have any good connection with the pier, being a separate building and being separated from the pier by seven railroad tracks, without underpass or any kind of provision for different traffic crossings. The actual seaplane base is in another part of the harbor, surrounded by docks and commercial buildings and is entirely separated from all the other means of transportation. Cargo boats, dock in the part of the harbor where this base is built so that the water is usually full of flotsam and jetsum, endangering the operation of the seaplanes. This base is nothing but an old fishing pier and two barracks and isn’t in any respect, a permanent structure. The bus station is behind the Hotel de Ville, separated from the rest of the transportation of Algiers. (Map N11)

Importance of the Harbor

Algiers ranks after Marseille for tonnage clearage and after Le Havre for the number of ships. It is in fact the second French port and its importance is increasing from year to year. Being in the beginning of the French conquest only another colonial town, it has become a real
CLOUD RING AND TRADE WINDS IN JUNE
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CLOUD RING AND TRADE WINDS IN DECEMBER
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European city with a population of over 300,000 inhabitants. Algiers imports coal, metal objects, cotton, automobiles. It exports wines, sheep skins, vegetables, breads and potatoes. The regular voyage to Marseille involves a trip of 497 knots that takes 26 hours so that Algiers is 48 hours away from Paris. The number of passengers taking the trip at least once a year has been steadily increasing. Government workers have three months leave of absence every year, usually spend this in the mother country. The same is true for military men and other officials. As far as the African travelling is concerned, Algiers is really the center of the communications in every direction. By rail you can reach any point on the shoreline as far as Casa Blanca on the one side and Tunis on the other side. The bus traffic takes you to any city of the interior and its scope has been increasing faster and faster every year.

Climate

The climate is what makes Algiers different from any other European city. The town is located on the limit of the trade wind zone (Fig.5 & 6) and is subject to their very unusual effects. In addition to trade winds there is a local wind called the "Sirocco". It is a south wind that blows intermittently for a period of 3-6-9 day or 12 days and dries up the country. The winter temperature is 50 to 54° and from 75 to 79°. It should be borne in mind that even though the temperature is not tropical the di-
In the tropical regions of the world, the wind blows in constant directions. One the sea, at the equator, is a dense region of clouds, known as cloud ring.

There is an appeal of air from colder part of the world, and the result is known as trade winds.

The types of traditional colonial architecture, illustrated here, take a good advantage of this situation and should be kept in mind for any construction in this part of the world.
rect sunlight is very hard to withstand. This explains partially the local architecture avoiding as much as possible having any direct sunlight in the rooms. (Fig. 7). In this particular problem the same care should be taken in order to prevent the large halls and galleries, usually found in transportation centers, from being exposed to the sun.

PROGRAM OF THIS RESEARCH

Considering that the city of Algiers is actually provided with the following means of transportation (Steamship Terminal, Railroad Station, Bus Station and the Seaplane Base) it will be attempted to find a more satisfactory relationship between them, grouping them together in a single building so as to permit passengers arriving by boat to reach the train easily or arriving by plane to reach any other means of transportation. It will be attempted also to give to this center of transportation easier approaches from the city of Algiers by suppressing the ramp or by improving it and by having it used by one kind of traffic only.

Why Algiers

Before going any further in this study it should be pointed out why Algiers has been chosen for the construction of the center of communication which will bring Africa closer to Europe. First, because all the different facilities of transportation are already existing in Algiers; second, because it is the shortest point to Europe; third,
because it is the traffic center of Africa (when one looks at the traffic map of Africa, one sees distinctly that all the traffic lines are converging toward Algiers); fourth, because Algiers offers the largest facilities as far as the harbor is concerned and fifth, because it is the largest and most important town.

Study of the Actual Transportation Facilities
Schedules, Types of Boats and Flying Boats Used

Before making even a list of requirements a study of the actual conditions is necessary. Those conditions will be shortly outlined here. (Fig.8)

Steamship Terminal

The actual steamship terminal is used both for passenger transportation and for freight. It is built so as to accommodate two boats at the same time. It is a pier structure and is rather old and mainly constructed of wood. (Fig.12) No provision should be made, however, to accommodate more than two boats because three passenger boats only dock in the harbor each week. One of them comes from Marseille, France and docks twice a week, the other one comes from Genoa, Italy. The type of boats used are from 9,000 to 12,000 pounds. Each of these boats carry about 500 passengers, divided into four classes. The fourth class is used mainly by Arab seasonal workers going every year for a nine months stay to France. However the French policy toward the colonial people forbids any distinction between Arabs and Europeans so far as the use of the buildings is
GROUND CLEARANCE ADJACENT TO AIRPORTS

Ground clearance at sea level

Landing field 5' 12' 20' 40'
Bus 42' 64' 340'
Pole 250'
Building 455'

65'
concerned. The landing formalities are of two different kinds - the customs control and the passport control. The customs control is the same as in any other harbor. The passport control is very simplified because of the absence of any immigration law or visa requirements. It is, in fact, nothing but a police control. No medical examination is required, Algeria being just another department of France.

Seaplane Base

As said before, the seaplane base is non-existent as far as buildings are concerned. There is a daily schedule of planes between Marseille and Algiers and a two-week schedule between the Spanish Coast and Algiers. The type of plane used is 15 to 20 tons and has a tendency to become larger and larger. It is the usual type of plane where one enters by the side door.

Modern characteristics of a seaplane landing base are met by Algiers Harbor. (Except for the cleanliness of the water) These requirements are:

a) Surface of the landing area. The dimensions of the operating area should be a minimum of 3,000 and 4,000 feet long by 1,000 or 2,000 feet wide.

b) Shape. The largest dimension should be in the direction of the prevailing wind, which in this particular case, is west.

c) Depth. A minimum depth of 6 feet is considered
Depth cont.

sufficient. As far as the other requirements are concerned, passports and customs control would be the same as those listed for a steamship terminal.

**Railroad Station**

There are two distinct types of traffic cleared by the station of Algiers.

1) The regular long distance line, Casablanca–Tunis with a schedule of four trains per day in each direction.

2) The same line is used for suburban traffic with a schedule of one train every half hour.

A rather large number of tracks is necessary to handle the trade brought by the steamships.

**Bus Station**

The bus traffic in Algeria has been increasing in importance from day to day but has apparently reached a standstill as hardly a single new line has been opened in the last 4 years.

**PUBLIC MEANS OF TRANSPORTATION IN THE CITY**

The public means of transportation used in the city of Algiers are busses and trolley cars. Those should connect the center of transportation with the town. As trolley cars are progressively being replaced by busses, no provision should be made for them in the center of transportation. However, good approaches for busses and large
parking areas for taxi cabs should be provided.

As far as private parking is concerned, it should be remembered that private cars are few in Africa (if compared to the American standards) so that parking problems are by no means as acute as they are in this country.

THE CENTER OF TRANSPORTATION & RELATED BUSINESS

All around the harbor are offices of steamship companies, shipping companies, railroad company and airplane lines. All these offices are located on the Boulevard de la Republique and from locations one can see that an attempt was made to be as well connected as possible with the harbor. This means that if an office building could be included in the center of transportation, it would be:

1) Of greater convenience to the different companies.

2) A help in financing the project.

REQUIREMENTS OF THE CENTER OF TRANSPORTATION

The transportation center should provide the necessary facilities for the passengers using the boat, the train, the bus or the plane. It should have:

Easy approaches and parking space in good relationship with the town.
Large waiting rooms and ticket selling space.
Office space for the different companies using the center.
Easy circulation leading to the railroad station, the pier, the seaplane base and the bus station.
Hotel and restaurant facilities.
Provision for the customs and immigration examinations.
Post office, telephone and telegraph.
Police and fire stations.

These different elements could be planned either as single elements serving all four stations or could be divided in order to be reached more easily from each part of the building.

LIST OF THE REQUIREMENTS IN RELATION TO EACH TYPE OF TRANSPORT

It will be found that many of the requirements listed here below will be of double use. Waiting rooms could be used for steamship and railroad without necessitating having two of them. The same is true for baggage room, restaurant, etc. and any other facilities needed. However, in this list of requirements each room, even those having a double use, will be listed in connection with every kind of transportation. The explanation of the scheme that will follow this list of requirements will clarify all this.

Requirements for the Steamship Terminal

The terminal considered should be able to take care of two boats at the same time. It should provide the following facilities:

Easy approach by motor vehicle and for pedestrians.
Provision for taxis and public means of transportation.
Large entrance lobby.
Steamship Terminal Requirements cont.

Waiting room with toilets for men and women.
Baggage room.
Gangways to the boat.
Offices for consolidated steamship company, pier administration, customs officials.
Police station.
Large hall for customs inspection.
Immigration examination.
Freight storage area.
Mail receiving and sorting room.
Luncheonette.
Restaurant.
Kitchen and pantry.
Concessions for flowers, newsstand, cigars, Arabian handi-craft and souvenirs.
Garage for mail, freight and trucks.
Facilities for employees of the pier.
Equipment for handling the baggage and the freight.
Conveyors
Trucking lane
Railroad tracks for the freight

Requirements for the Air Terminal

The airport is divided into three functional divisions:
A. Landing area
B. Public usage
C. Services
Air Terminal Requirements cont.

A. Landing area:

Surface: 3,000 or 4,000 ft. x 1,000 or 2,000 ft.  
Largest dimension in the direction of the prevailing wind.  
Depth: minimum of 6 ft.  
Provision should be made for at least one rescue plane, entirely independent from the rest of the air base movement.

B. Public usages:

Ample approach and parking areas.  
Provision for taxis and public means of transportation. (Especially if one considers that this terminal is located in the city itself)  
Large waiting room.  
Baggage room. This room should be convenient to waiting rooms and incoming ground transit facilities and also accessible to the loading platform. Conveyor and storage space should be provided.  
Scales for weighing in passengers.  
Ticket selling space including the passengers' and baggage scales.  
Men and women's toilet rooms.  
Telephone and telegraph.  
Newsstand, cigarettes, flowers, etc.  
Information booth.
Public usages cont.

A restaurant overlooking the sea.
Passport and immigration inspection.
Customs inspection.

C. Services:

Control. Control room placed in such a way as to supervise the entire area is necessary.
Radio communication with planes will be installed.
Radio room.
Meteorological room. Should have outside space for meteorological instruments, in the open.
Office space. The following will need office space: air lines regularly using the airport; airport manager, superintendent of operations; their staff.
The passport, medical, police and customs inspections.
Mail. With public post office and all provisions for mail handling and delivery.
Pilots' accommodations. A commons room for professional pilots with lockers and showers should be provided. Quarters for rest and meals as well as for entertaining occasional guests.
Hangars. Shelter and repair facilities for the planes. Also a gang for bringing the planes from the sea to the hangars.
Emergency hospital and ambulance.
Services cont.

Gas and oil. Gas stations must be located at convenient points. Flexible pipes are usually used.

Police and fire station.

Railroad Station Requirements

Entrance hall with connecting waiting rooms and ticket selling space.

Toilets for men and women.

Baggage room.

Baggage checking room.

Concessions for newstands (cigars, etc.)

Telephone and telegraph concessions.

Post office for receiving and sorting mail.

Information office.

Office for railroad station manager.

Staff.

Conference room.

Offices for travel companies.

Police station.

First aid station.

Facilities for parking and public means of transportation.

Restaurant and Luncheonette.

Kitchen and pantry.

Facilities for shipping baggage to other transportation.

Easy approaches to steamship, bus and seaplane bases.
The Bus Station

A. Public part:
   Waiting room.
   Baggage room.
   Ticket selling space.
   Information.
   Luncheonette.
   Toilets for men and women.

B. Services:
   Bus platform.
   Repair facilities and small garage. (The main garage would not be a part of the building as it would take up too much space.)
   Filling station.
   Offices.

THE SCHEME

Approaches

As already said the actual approaches to the harbor and transportation facilities are impractical and congested and no proper relationship exists between those different communication facilities. It has been found that the old principle of going down to the harbor from the city was wrong, as it is hardly possible to design any kind of plan able to take care of the heavy traffic going up and down to the harbor as the drop is of 60 ft. The decision has been made to connect the center of transportation with the upper level of the city. That is, bringing the cars and
pedestrians from the upper level of the city (Boulevard de la Republique) right on top of the building, entering it from above by means of elevators and escalators. However, in order to differentiate the traffic, trucks used in connection with the freight will still be using a ramp. Not the Ramp Chaseloup-Laубat destroyed by the construction of the building but the ramp Magenta located farther from the building. This ramp would be improved in design and made easier for heavy traffic. The structure would be entirely supported on columns and come over the railroad tracks so that the passengers from the boat would have the choice of going down to the trains or up to the street.

As one can see from the map (M11) the bus lines run only on the streets of the upper town level. Therefore the bus station will be on top of the building, directly connected with the main street, Boulevard de la Republique. Location - Map 12.

The building is located so as to have its entrance facing the square Aristide Briand, which will permit an easier handling of the traffic, quite important at that place.

Pier or Quai System for the Steamship Terminal

In the United States the pier system has been used almost in every large harbor throughout the country. The main reason for that is that due to the high price of the waterfront it is more economical to adopt piers as they give more docking space for boats on a smaller surface. In
LEVEL: A.

ENTRANCE AND

BUS STATION.

PASSENGER CIRCULATION.
if coming from the South, or by using an underpass if coming from the North. The same is true for outgoing cars. There is a taxi lane provided for taxis waiting for clients as well as a filling station.

As the bus station is also located on top of the building, a separate driveway has been arranged for busses so that the bus traffic doesn't interfere at any point with the private car traffic. The general scheme of the approaches for busses is the same as for private cars as is clearly illustrated in the accompanying drawing.

By constructing this traffic crossing one would not only make the approaches to the station easier but also improve the general circulation of this part of the town and create a main axis in the town from the big Opera to the station.

A parking area is provided in front of the building. It should be remembered, as already said, that private cars are few in North Africa.

Passenger Circulation

From the main hall, passengers have the choice of either going to the bus station or going down by means of elevators, ramps or stairs. Passengers arriving by bus, if going down to the train or the boat, have elevators and ramps easily accessible, or can go out and drive away.
LEVEL: A.

ENTRANCE AND
BUS STATION.

EMPLOYEES
AREA.
baggage and mail circulation. No crossing with passengers would then have occurred. It has been found, however, that it was better to give the passengers the possibility of crossing at that point as some confusion might occur on Level "B" as to what group of elevators to use in order to get to the street or to the bus.

Level "B" - General Circulation - (Figs. 16, 17, 18)

Passenger Circulation.

From the mail hall, passengers can proceed either to the railroad, the seaplane or their ship. Separate waiting rooms have been provided for the plane and the railroad. It has been found that there is no necessity to have a waiting room for the boat as passengers usually proceed directly to the steamship and then to their state-rooms. Small seating facilities have been provided, however, for people waiting for income passengers. A cafeteria, centrally located, and a cafe on the mezzanine floor overlooking the sea, are among the facilities the passengers can enjoy. On the mezzanine floor also they can find barber and beauty salon and shops of different kinds. A newsreel theatre has been placed close to the railroad station as it was felt that it is mostly the railroad passengers who would use that theatre. The steamship hall has been divided into two parts, the outgoing part for passengers using the part alongside the boat and the incoming passengers find behind that separation the customs inspectors and immigration authorities.
LEVEL "B"
GENERAL CIRCULATION

STEAMSHIP AREA
STEAMSHIP CIRCULAT.
RAILROAD AREA
RAILROAD CIRCULAT.
SEADROME AREA
SEADROME CIRCULAT.
GENERAL CIRCULATION
PUBLIC FACILITIES

SPACES LISTED ABOVE ARE PUBLIC SPACES - SERVICES, ADMINISTRATION ETC., ARE LEFT IN WHITE.
Baggage Circulation

Outgoing passengers:

Outgoing passengers by boat or train check their luggage in the baggage room indicated in red on the drawing. From there it is brought to the lower level of the sea wherefrom it reaches either the boat or the train. Outgoing passengers by plane check their luggage in the baggage room indicated in brown on drawing. With their baggage receipt where the weight of their luggage is indicated they can buy tickets in the adjoining ticket booth and pay the extra charge for luggage.

Incoming passengers:

Incoming passengers by boat find after the customs inspection the baggage room indicated in blue, number , where they can check their baggage if they intend to pursue their journey by train. From there it is brought to sea level and to the trains. Incoming passengers by plane come in the same way, have their luggage checked either for the train or the bus. Incoming railroad passengers find the same general baggage room already mentioned. As it will be further explained, there is a general baggage room on sea level which directs the baggage checked any place in the building to any other baggage room. On this same level one finds the general post office centralizing all the incoming and outgoing mail.

A central check room is also provided.
LEVEL "B"
GENERAL CIRCULATION

STEAMSHIP BAGAGE CIRC.
SEA PLANE BAGAGE
GENERAL AND RAILROAD BAGAGE ROOM
GENERAL CHECK ROOM
POST OFFICE WORKING SPACE

BAGAGE CIRCULATION AND MAIL.
LEVEL "B"
GENERAL CIRCULATION

- STEAMSHIP SERVICES
- RAILROAD SERVICES
- GENERAL SERVICES
  AND OFFICE SPACE.
- SEAPLANE SERVICES
- POST OFFICE

SERVICES AND EMPLOYÉS.
Services and Employees

The office building already mentioned in Level "A" has its first floor on Level "B". Apart from the office building one finds at that level office space for customs and immigration officials as well as for merchandise confiscated by the customs authorities. All this indicated in blue on drawing . Offices for the railroad employees are also to be found and office space for a seaplane building is also provided.

Level "C" - Baggage and Freight Handling. (Fig.19)

When the boat docks, the passengers proceed to the Level "B" by means of gangways and go directly to the customs office where their baggage is brought for verification. The problem was to bring those baggages to their proper place without interfering or crossing the passenger circulation. When the boat is unloaded, the personal baggage is first brought to the pier by means of conveyors. From there they reach the two baggage elevators leading to the customs office. While coming to the boat from the elevators, they cross a large space where the cargo can be stowed or loaded on trucks. One might think from looking at the drawings that the personal passenger baggage will interfere with the truck circulation as there is a truck lane between the boat and the elevator. This won't happen if one considers the timing of the process. As said before, personal baggage is unloaded first. This
LEVEL "C" BAGAGE CIRCULATION.

- FROM PLANE TO TRAIN
- FROM BUS TO TRAIN
- FROM BOAT TO TRAIN
- FROM GENERAL BAG. ROOM TO TRAIN
- FROM BOAT TO CUSTOM
- FREIGHT BY TRUCK
- FREIGHT BY TRUCK
doesn't take more than one hour. It is only when all the baggage has been brought to upper Level "B" that one begins to unload the cargo, and that the trucks come in. The cargo left from the preceding boat to dock three or four days before the one we are considering now has already been stowed or carried away by the trucks or by the train. Behind the elevator one finds the railroad tracks where part of the cargo may be loaded. Trucks proceed to Level "C", by the ramp already mentioned, and get to the building by means of an underpass under the railroad tracks. They can also reach the part of the building where mail is assembled to be sent to the upper level or the gas cars for the seaplanes.

Docking of the Boat

When one uses the quai system one finds out that the boats cannot dock themselves but have to be pulled by hydraulic cabstans. However these cabstans being on the boat no provision had to be made for this process on the harbor.

CONSTRUCTION

In order to support the buildings and the traffic of Level "A" an unusually strong structure had to be designed. This structure is composed of two entirely different parts. First: a heavy structure. Starting from Level "C" and rising until the floor of Level "A". This is the structure that will support the traffic, the parking, the bus station, etc. Second: another light struc-
ture is built independently of the first one and takes care of the different partitions of Levels "B" and "C".

The office building being the same from bottom to top has again its own separate structure which is the usual type employed in all office buildings.

In other words one finds:

a) Heavy structure supporting traffic and secondary structure.
b) Secondary structures.
c) Office building.

The structure is to be of reinforced concrete which is the material commonly used for modern construction in North Africa.

Floors are designed for about 250 lbs. per sq. ft. The floor system is to be entirely of reinforced concrete consisting of panels arranged on the grid flat-slab system. Floors of the office building are extended over the windows with the structure on the outside so as to protect from the sun and the reflected light.

MECHANICAL EQUIPMENT

The heating system for this building is to be located on the ground level under the newsreel theatre where it is made easily accessible to trucks.

A small refrigeration plant will serve the storage area of perishable goods.

Elevators are used for vertical circulation.
CONCLUSION

The design of a center of transportation, like the one here considered, incorporates the most complex system between different kinds of passengers, baggage, mail, and freight.

There is no example of a structure incorporating into a single building a steamship terminal and railroad, seaplane and bus facilities.

The existing buildings, as for example the "Gare Maritime due Havre" combine only ship and train and their railroad station is used only for boat passengers. Le Havre and Rotterdam piers still were of great help in solving this problem.

The main effect resulting from the transportation center for Algiers would be:
a) Improvement of the relationship between the different means of transportation.
b) Improvement of the traffic in a very congested place in the town.
c) Office space for the related types of business.
d) Facilities for handling the freight.

Note: The schemes presented with this report are by no means a final parti and are presented to give a rough idea of what the building is to be.
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