GRAPHIC ANALYSIS OF BUS, RAIL & AIRPORT FACILITIES.

SHOWS SPACE, SIZE, & RELATIONSHIP WITH PASSENGER ARRIVAL - DEPARTURE.
This matrix shows the space relationship within the FAA organization.

Here I made a matrix to compare the bus, rail & airport facilities to find common space relationships.
Since the multi-modal terminal contains buses, rail, airplanes, & cars, a study of the circulation systems was needed. Above is the trash overlays which I used to find any problem areas on the various circulation paths. On the following pages are copies of those overlays.
- Limousine, taxi, auto, service conflict
- Bus from passenger arrivals
- Leasing pedestrians

arrival

bus/telecommunication
entry

- Short-term Parking
- Long-term Parking
- Car Rental Parking
- Employee Parking

terminal

- Site (auto)

- Arrival

- Auto & Pedestrian
- Bus & Auto Arrival & Departure
- Service
- Taxi

- Constraint
Short-term Parking  
Long-term Parking  
Car rental Parking  
Employee Parking  
Pedestrian (Train)  
Ticketing  
Dispatch Office  
Terminal Manager  
Passenger Agent  
Waiting Room  
Baggage Handling Room  
Restrooms  
Departure  
Arrival

- pedestrian & auto
- pedestrian for leaving & arrival
- employee & leaving passengers
- parking for arrival by bus & departure of passengers

Train  
Pedestrian (Station)
entry departure

taxi & limousine

taxi - limousine

arrival & departure

terminal
An early schematic of a "frontal" concept.

Concept #3
Advantages:
- Easy expansion
- Security

An early schematic of a satellite concept

Disadvantages:

Concept #1
Satellite
An early schematic of a "finger" concept. The finger proved to be the best solution for MRA.
Separate buildings. This revealed that certain spaces would have to be duplicated.
PARKING & BUILDING COULD BE INTEGRATED

CENTRAL SPACE

VIEWING AREA ON ROOF

COLUMN SYSTEM TERRACED BACK
main lobby lit by skylight

use a calm system which 'lifts': building off ground
Use existing entrance & exit for exit only.

Expand parking.

Circulation study from US 20.

Use existing secondary road for new entrance.
Building form generated from existing site lines.

Scheme I has some problems with the baggage handling system.

The "finger" concourses are not well integrated with the rest of the terminal.

Mail & cargo facilities are inadequate in this design & better served at its present location.

Parking structure
Tried various 'finger' concept connections

Tried to use existing COIM. system.

2nd Floor

1st Floor

Ground Floor
Parking extends from parking structure to roof of terminal building.

Baggage claim areas are on intermediate levels between 1-2.

Variation of level 2.

Entrance ramp.
SECTION OF SCHEME I

[Circulation Study of Passenger Arrival]
Scheme II is an underground facility, with restaurant, waiting, and control tower above ground. Because of cost this concept was not selected.
This drawing & the ones on the next two pages were ideas with I thought of after scheme II.

Restaurant & Bar would be shared by all three areas, & located above the entrance road.

This drawing & the ones on the next two pages were ideas which I thought about after scheme II.
security
ferry
waiting
parking
weather service
tower
ENTRY
bag claim
ticketing
bar
bus drop
train
tower
ramp checkers
get tickets at gates
bag handling
bag claim
fast check
deploy
bus
waiting
ticketing
parking
security
find common areas
ticketing
emphasis on axes
SCHEME III

Emphasis was placed upon axis

Traffic around Pedestrian inside

1st F.R.A.
STUDY OF TRAFFIC SYSTEMS IN RELATION TO PARKING STRUCTURE & TERMINAL BUILDING
Since the weather bureau needed some green space & since I wanted airports to be 'fun,' I designed a garden so both passengers & employees could enjoy this space.
EARLY DEVELOPMENT OF SCHEME III

FAST FOOD LOCATED IN CENTER SO AIRPLANE, RAIL & BUS FACILITIES COULD SHARE THIS SPACE.

1st level

2nd level

CENTRALIZED TICKETING WAS RELOCATED & SERVICE CORE CENTRALIZED
DEVELOPMENT OF LOGO

PROGRESSION OF ASCENDING "THE IDEA OF FLIGHT CAN BE SEEN HERE"

BUILDING IS REDESIGNED IN ORDER TO PROVIDE PEOPLE IN THE RESTAURANT OF AIRPLANE ACTIVITIES.
ELEVATION STUDIES

SKYLIGHTS IN PARKING STRUCTURE

UTILIZE SPACE TRUSS STRUCTURE

CENTRAL SPACE W/ BANNERS, SHOPS ETC.
TYPICAL MODULE W/SPACE TRUSSES

STRUCTURAL SYSTEM FOR PARKING
Separation of various types of vehicular traffic

3-tiered parking structure

Trees reinforce entrance road

Control tower design
REVISITED SCHEME III

GARDEN SPACE

CIRCULATION CORE

2ND LEVEL

TRAIN

1ST LEVEL

BUS
Passenger flow down concourse

View looking down one of the finger concourses.
Study Model of Scheme III
Looking back on my process, I find in my early development a complexity in the design of the airport terminal that I did not anticipate. Gathering information on the three transportation systems consumed a large percentage of time in relation to the other work involved on the project. I did my site analysis, existing building study, building type analysis, visited other nearby airports, and did a research paper on airport terminal concepts. After doing this analysis, I felt a new terminal complex incorporating all three transportation terminals was appropriate.

Most airports today are long and linear terminals. In my first design I established a different approach, a condensed structure which tried not to duplicate facilities. Programmatic needs forced me to expand the building into a "cross plan", but still centralizing and sharing similar functions.

I made several observations when I visited O'Hara International Airport, such as long walking distances, disoriented passengers, sterile spaces, and non-aesthetically pleasing environments. It was these observations and the ones from my building types analysis (the idea of flight) which generated my final concept. Looking at my design development and final design, the sense of flight can be seen
in the building form which projects up and outward. I also used a centralized circulation core area with elevators and escalators to give the passengers a sense of orientation within the terminal. When the passengers arrive to the airport they will progressively be ascending and when leaving they will be descending, which further conveys the idea of flight. This creates the mood and involves the passengers before they ever enter the terminal.

I feel I have accomplished a good design solution for this airport and expressed my concepts and goals which were established in the beginning.
Fig. 11 Exploding passenger flow.
Fig. 14 Explaining baggages.
Fig. 15  Expanding cargo.
Fig. 11 Explaining passenger flow.
Fig. 18 Mail cargo.
Fig. 12 Domestic deplaning passenger flow.

"The architect, the airport and the Air Transport Industry", pp. 125-126.
"People Movers", pp. 132-133.
"Philadelphia International Airport", pp. 139-141.
"Newark Airport Redevelopment", pp. 142-144.
"All Kinds of Jobs", pp. 145-146.


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"Greater Pittsburgh International", pp. 140-141.
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"Philadelphia Phases into a Growth Pattern", pp. 141-143.
"Sea-tac, A Giant That Cares About People", pp. 144-149.
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"A Persian Airport Just for Fun", p. 152.


"Exhibit A: Completed Cincinnati Terminals Express Modular Concept", pp. 136-137.
"Newark: Where a Sophisticated Owner Mustered Talent from All Sources", pp. 136-141.
"Airport Terminal Development", pp. 145-146.


"Airports as Architecture", pp. 637-666.


"Skyport One", p. 65.
"New York International Airport", pp. 75-79.
"Central Heating and Refrigeration Plant", pp. 81-82.
"Umbrella for Unit Terminal", pp. 82-85.
"Gateway for Overseas Travelers", pp. 86-95.


"An Airport in One Third the Space", pp. 102–103.
"One Airport in Place of Four", pp. 104–107.
"Ups and Downs in air Terminals", pp. 112–113.
"Drive to Your Gate", pp. 114–115.


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Airport Capacity Criteria Used in Preparing the National Airport Plan, July 8, 1966, AC 150/5060-1A.

Airport Cargo Facilities, April 1964, AC 150/5360-2.

Airport Design Standards: Airports Served by Air Carriers - Bridges and Tunnels on Airports, April 19, 1971, AC 150/5335-3.


Planning and Design Considerations for Airport Terminal Building Development, October 5, 1976, AC 150/5360-7.


Planning the State Airport System, June 1972, AC 150/5050-3A.

Runway Length Requirements for Airport Design, April 1965, AC 150/5325-4.