LOUISVILLE TRANSPORTATION CENTER

A PLACE OF TRANSITION:
CREATING AN URBAN CENTER
OF SOCIAL INTERACTION
LOUISVILLE TRANSPORTATION CENTER
A PLACE OF TRANSITION: CREATING AN URBAN CENTER OF SOCIAL INTERACTION

AN ARCHITECTURAL THESIS PROJECT
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THESIS DESIGN COMMITTEE

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c. 1997 JASON BRANSTETER

LOUISVILLE TRANSPORTATION CENTER
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TODAY THE LOUISVILLE AREA IS BLESSED WITH A TRANSPORTATION NETWORK THAT OFFERS QUICK, EASY ACCESS TO NEARLY EVERY MAJOR CITY IN THE NATION - WITH A CHOICE OF WAYS TO GET THERE. FREIGHT TRAVELS BY AIR, HIGHWAY, RAIL AND RIVER, AND LOUISVILLE OFFERS MULTIPLE WAYS TO TRANSFER FREIGHT FROM ONE MODE TO ANOTHER.

PASSENGERS CAN TRAVEL BY AIR, BUS, OR CAR BUT CAN TAKE ONLY NOSTALGIC RIDES BY RIVER OR RAIL. WHILE LOUISVILLE'S LAST REGULAR PASSENGER TRAIN DISAPPEARED IN THE 1970'S, THE KENTUCKY RAILWAY MUSEUM OFFERS OCCASIONAL STEAM-POWERED TRAIN EXCURSIONS.

LOUISVILLE'S STREETS AND HIGHWAYS WERE DESIGNED WITH DIRECT TRANSPORTATION IN MIND, AND THE PATTERN SERVES WELL TO THIS DAY. THE ROADS RADIATE FROM THE THREE HIGHWAY BRIDGES ACROSS THE OHIO RIVER, FANNING OUT THROUGH THE SUBURBS TO NEARBY TOWNS.

THE TIME HAS COME TO LINK THESE MODES OF TRANSPORTATION AND BRING THE RAIL TRAVEL WHICH WAS SO PROMINANT A CENTURY AGO. IT IS ALSO TIME TO INTRODUCE NEW MODES OF TRANSPORTATION TO LOUISVILLE IN ORDER TO FURTHER ECONOMIC AND URBAN GROWTH AND TO BETTER LINK THE CITY TO ITS DOWNTOWN AND SUBURBS.

THIS PROGRAM IS A PROPOSAL TO CREATE THIS LINK. THE PROJECT IS A TRANSPORTATION CENTER FOR THE LOUISVILLE METROPOLITAN AREA. THIS CENTER WILL BE A PLACE OF TRANSITION WHERE MANY DIFFERENT MODES OF TRANSPORTATION WILL CONVERGE CREATING AN URBAN CENTER OF SOCIAL INTERACTION. THE PROGRAM WILL ATTEMPT TO RENEW THE EXCITEMENT OF TRAVEL AND BRING THE PEOPLE BACK TO THE DOWNTOWN AREA.

THIS PROGRAM WILL OUTLINE THE DESIGN CONCEPTS AND CRITERIA WHICH WILL BE USED TO FORM THE TRANSPORTATION CENTER. IT WILL ALSO LAY OUT THE GUIDELINES WHICH WILL BE TAKEN IN ORDER TO PRODUCE A PIECE OF ARCHITECTURE THAT WILL BE FUNCTIONAL CORRECT, VISUALLY STIMULATING, AND PROPERLY STRUCTURED. THE ULTIMATE GOAL BEING THE CREATION OF A NEW AMENITY TO THE DOWNTOWN LOUISVILLE AREA.
THE LOUISVILLE TRANSPORTATION CENTER WILL BE A CENTER OF TRANSPORTATION FOR THE METROPOLITAN AREA OF LOUISVILLE, KY. THE PROJECT WILL BE A PLACE OF TRANSITION, A PLACE WHERE COMMUTERS AND TRAVELERS CAN EXPERIENCE THE DRAMA OF MOVING FROM ONE MODE OF TRANSPORTATION TO ANOTHER IN A CELEBRATION OF THE OCCASION. THE PROJECT WILL REINTERPRET THE SUCCESSFUL TRANSPORTATION BUILDINGS OF THE GREAT VICTORIAN ENGINEERS AND ARCHITECTS IN AN ATTEMPT TO ONCE AGAIN CREATE A STRUCTURE THAT IS A TRUE CELEBRATION OF THE ROMANCE OF TRAVEL.

THE SCOPE OF THIS TRANSPORTATION FACILITY WILL INVOLVE THE INCORPORATION OF THE MANY DIFFERENT MEANS OF MASS TRANSPORTATION OF THE LOUISVILLE AREA. SOME OF WHICH CURRENTLY EXIST AND SOME WHICH ARE BEING PLANNED TO EXIST IN THE NEAR FUTURE. THESE MODES OF TRANSPORTATION ARE MASS TRANSPORT BY BUS, BY COMMUTER TRAIN, BY LONG DISTANCE TRAIN (AMTRAK), AND BY BOAT ON THE OHIO RIVER. THE LOUISVILLE TRANSPORTATION CENTER WILL BE THE PLACE WHERE THESE VARIOUS MODES OF TRANSPORTATION CONVERGE. AT THIS POINT, WHERE THE TRANSPORTATION MODES CONVERGE AND INTERCHANGE OCCURS, THE BASIS OF THIS PROJECT IS CREATED, AN URBAN CENTER OF SOCIAL INTERACTION, WHERE THE TRANSPORTATION MODES BECOME THE "CRITICAL COMPONENT." THIS PROJECT WILL BECOME AN AMENITY TO THE CITY OF LOUISVILLE, IT WILL BE AN ARCHITEC-
"RAILWAY TERMINI AND HOTELS ARE TO THE NINETEENTH CENTURY WHAT MONASTERIES AND CATHEDRALS WERE TO THE THIRTEENTH CENTURY. THEY ARE TRULY THE ONLY REAL REPRESENTATIVE BUILDING WE POSSESS. . . . OUR METROPOLITAN TERMINI HAVE BEEN LEADERS OF THE ART SPIRIT OF OUR TIME."

BUILDING NEWS, 1875

LARGE-SCALE TRAVEL IS A PHENOMENON OF THE NINETEENTH AND TWENTIETH CENTURIES. THE GREAT GLASS AND METAL TRAIN SHEDS (WHICH EMERGED IN ENGLAND IN THE 1840S) ARE ONE OF THE MOST SUCCESSFUL INVENTIONS OF A NEW BUILDING TYPE IN THE LAST 200 YEARS. THESE BUILDINGS ORDERED AND DIRECTED PASSENGERS TO THE TRAINS, PROTECTED THEM FROM THE WEATHER AND FACILITATED THE TRANSITION FROM PEDESTRIAN MOVEMENT TO RAIL TRAVEL. THESE BUILDINGS WERE A TRUE CELEBRATION OF THE ROMANCE OF TRAVEL.

WE HAIL THESE PRODUCTS OF THE GREAT VICTORIAN ENGINEERS AND ARCHITECTS WHOSE HEROIC DESIGNS AND MAGNIFICENTLY ENGINEERED STRUCTURAL SYSTEMS FABRICATED A NEW BUILDING TYPE FOR THE PUBLIC TO EXPERIENCE AND ENJOY. THESE TRAIN SHEDS HAVE BECOME SOME OF OUR MOST CHERISHED MONUMENTS, WHICH WE LOVE BECAUSE THEY GLORIFIED THE IDEA OF ARRIVAL AND DEPARTURE, INSPIRED A SENSE OF CELEBRATION AND OCCASION, CELEBRATED THE BRAVERY OF OUR ANCESTORS IN EMBRACING THE MA-

CHINE AGE, AND EVOLVED INTO URBAN CENTERS OF SOCIAL INTERACTION.

IT WOULD SEEM THAT IT WOULD BE HARD TO FORGET THE PROFOUND, IRREVERSIBLE AND REVOLUTIONARY CHANGES CAUSED BY MASS TRANSPORT AND THE GLORIOUS STRUCTURES ASSOCIATED WITH IT OR THE ASTONISHING EFFECTS IT HAD ON THE COMMUNITY AND THE URBAN FABRIC OF THE CITY. YET TODAY, WITH THE INVENTION OF THE AUTOMOBILE, MILLIONS OF PEOPLE HAVE TURNED THEIR BACKS ON MASS TRANSPORTATION AND HAVE TAKEN TO DAILY COMMUTING BY CAR. THE EFFECTS HAVE BEEN DEVASTATING. THE AUTOMOBILE DESTROYS OUR ECOSPHERE WITH ITS RELEASE OF NOXIOUS CHEMICALS AND TENDS TO FRAGMENT OUR LIVES AND CITIES. NO LONGER IS THE IDEA OF TRAVEL CELEBRATED AS AN OCCASION, INSTEAD WITH THE AUTOMOBILE, EVERY JOURNEY IS LOOKED UPON AS A FRAGMENTED TWENTY MINUTE DRIVE FROM ONE PLACE TO ANOTHER. OUR CITIES HAVE BECOME SO CONGESTED WITH THESE VEHICLES THAT TRAVEL HAS BECOME AN IMPOSSIBLE AND UNDESIRABLE CHORE. FURTHERMORE, TRAVEL BY AUTOMOBILE HAS EVOLVED INTO THE MOST UNSAFE AND ACCIDENT PRONE MODE OF TRANSPORTATION TODAY.

LOUISVILLE TRANSPORTATION CENTER
INTRODUCTION

Despite all the negative aspects associated with automobile travel, these millions of commuters still view this mode of transportation as the lesser of two evils. As well they should. The alternative mode of transportation, the mass transit systems of the late twentieth century, have turned travel into a degrading experience as passengers are processed like objects in a production line as they travel from place to place. In addition, the quality of the terminals associated with these mass transit systems that the passengers pass through is at best utilitarian, at worst, squalid. These transport systems are decaying as more and more people avoid, at all cost, the interaction with this mode of transportation.

Yet, there is still hope for the mass transit system and the this project will explore the ideals and theories of mass transportation and its structures in an attempt to rekindle the glorious celebration of occasion it once was. This projects goals are to reinterpret and rival the transportation buildings of the great Victorian engineers and architects in an attempt to once again create a structure that is a true celebration of the romance of travel. To design a transport building that reflects the ideals of ports and stations in the best senses of the words: efficient places where the drama of moving from one mode of transport to another is celebrated in a way that ennobles the experience. Places where rites of passage can be properly celebrated, to look at how thresholds between public transport and existing human settlements can be celebrated: how the two can enhance each other. To explore the concepts of ARRIVAL AND DEPARTURE - once some of the most exciting experiences in life - and investigate how these concepts were and can be incorporated into the design of a transportation center. Finally, the project will explore how mass transportation stations can influence the urban context. These stations can, and must, be part of the city, integrated into the cities urban context. All cities, all communities, no matter how dispersed, need these transport interchange buildings. They incorporate human transactions, movements of people, money and perceptions, that require architectural response. The final product culminating in an urban center of social interaction celebrating the romance of travel, becoming an amenity to the city. Mass transportation is still the most effective way of moving large numbers of people around the planet. It is time to once again celebrate this occasion and bring back the thrill of travel which was prevalent through the 1800s and early 1900s and has been slowly decaying through the decades.

AS SHOWN IN THE PREVIOUS DIAGRAM, THE CITY OF LOUISVILLE WILL MAKE UP ONE HALF OF THE TRANSPORTATION CENTER. THIS WILL BE COMPRISED OF A NUMBER OF DIFFERENT ORGANIZATIONS ALL OF WHICH WILL INFLUENCE THE PROJECT. TO BEGIN, THE EXISTING TRANSPORTATION MODES WILL BE INCORPORATED INTO THE ORGANIZATION OF THE FACILITY. THESE CONSIST OF:

TARC (THE TRANSIT AUTHORITY OF RIVER CITY)
TARC PROVIDES BUS SERVICE THROUGHOUT THE METROPOLITAN AREA ON BOTH SIDES OF THE RIVER. LINKING THE CITY OF LOUISVILLE TO ITS SUBURBS AND THE STATE OF INDIANA.

THE COMMUTER TRAIN SYSTEM
THIS IS CURRENTLY ON THE DESIGN TABLE BUT WILL BE INCLUDED INTO THE DESIGN OF THE TRANSIT CENTER IN ORDER TO MAKE IT EASY FOR THE CITY OF LOUISVILLE TO INCORPORATE THE TRAIN SYSTEM WHEN IT IS FINALLY DESIGNED AND PUT INTO USE.

LOUISVILLE'S AUTHENTIC STEAMBOATS, CONSISTING OF THE BELLE OF LOUISVILLE AND THE DELTA QUEEN.

THE AMTRAK CORPORATION PROVIDES TRAIN TRANSPORTATION TO THE 48 CONTINENTAL STATES AND PARTS OF CANADA. THE COMPANY ALREADY HAS PLANS TO EXTEND ITS TRANSPORTATION FACILITIES TO THE CITY OF LOUISVILLE AS SHOWN ON THE MAP. THIS FACILITY WILL BE THE PLACE THAT WILL HOUSE THIS EXPANSION.

AMTRAK HAS ALSO UNVEILED AMERICA'S FIRST HIGH SPEED TRAIN THAT WILL CARRY MILLIONS OF RAIL CUSTOMERS BETWEEN WASHINGTON AND BOSTON AT SPEEDS UP TO 150MPH STARTING IN THE FALL OF 1999. THIS INAUGURATION OF HIGH SPEED RAIL SERVICE WILL LEAD THE AMERICAN PASSENGER RAIL INDUSTRY INTO THE 21ST CENTURY. IT ALSO WILL PLAY A KEY ROLE IN AMTRAK'S STRATEGY TO EMERGE AS A SELF-SUFFICIENT, FINANCIALLY HEALTHY COMPANY. HIGH SPEED RAIL WILL BOOST RIDERSHIP AND REVENUE IN THE NORTHEAST AND SERVE AS A MODEL FOR THE DEVELOPMENT OF SIMILAR RAIL CORRIDORS. BY PROVIDING A FACILITY THAT CAN EASILY INCORPORATE THIS SYSTEM OF TRANSPORTATION THE CITY OF LOUISVILLE WILL STAND A GOOD CHANCE OF AMTRAK EXTENDING THE HIGH SPEED RAIL TO THE CITY. THIS WOULD BE A GREAT AMENITY TO THE CITY OF LOUISVILLE BECAUSE IT WILL CONNECT THE CITY TO OTHERS THROUGHOUT THE UNITED STATES BY FAST AND EFFICIENT TRAVEL.
DALLAS-BASED GREYHOUND LINES, INC. IS THE NATION'S LARGEST INTERCITY BUS COMPANY AND THE ONLY NATIONWIDE PROVIDER OF INTERCITY BUS TRANSPORTATION. THE COMPANY'S PRIMARY BUSINESS IS SCHEDULED PASSENGER SERVICE, BUT IT ALSO PROVIDES CHARTER BUS SERVICE, PACKAGE EXPRESS DELIVERY SERVICE, AND FOOD SERVICE AT CERTAIN TERMINALS.

DURING 1995, GREYHOUND OPERATED 244 MILLION MILES OF REGULARLY SCHEDULED SERVICE IN 48 CONTIGUOUS STATES AND THREE CANADIAN PROVINCES, TO MORE THAN 2,400 DESTINATIONS. GREYHOUND OPERATES TWO SUBSIDIARY BUS LINES - TEXAS, NEW MEXICO, AND OKLAHOMA COACHES, INC., SERVING THE SOUTHWEST; AND VERMONT TRANSIT CO., INC., SERVING THE NEW ENGLAND AREA.

THE AVERAGE BUS AGE IN GREYHOUND'S ACTIVE FLEET OF MORE THAN 2,000 BUSES IS 6.5 YEARS. A BUS WEIGHS FROM 38,000 TO 40,000 POUNDS AND HAS 43 TO 47 SEATS, DEPENDING ON MODEL.

THE GREYHOUND LINES ALREADY RUN OUT OF THE CITY OF LOUISVILLE CONNECTING IT TO 48 STATES AND CANADA. THE GREYHOUND COMPANY WILL MOVE ITS LINES TO THE LOUISVILLE TRANSPORTATION CENTER. IT IS ALSO VERY IMPORTANT TO NOTE THAT GREYHOUND AND AMTRAK WILL WORK AND FUNCTION AS A UNIT AS THEY DO IN MOST TERMINALS THROUGHOUT THE NATION.

SOME OTHER DESIGN OBJECTIVES WHICH WILL BE INTEGRATED INTO THE DESIGN ARE AS FOLLOWS:

1. THE INTERCHANGES THAT WILL OCCUR WITHIN THE COMPLEX WILL BE SERVICED BY MASS TRANSIT SYSTEMS.
2. THE APPROACHES FOR THE VARIOUS MODES OF TRANSPORTATION TO THE INTERCHANGE FACILITY WILL NOT CONFLICT WITH EACH OTHER OR CONFLICT WITH THE EXISTING TRANSPORTATION NETWORK.
3. THE NEW TRANSPORTATION CENTER WILL BE CAREFULLY INTEGRATED INTO THE EXISTING VEHICULAR TRAFFIC NETWORK, BEING CAREFUL NOT TO INTERRUPT ANY OF THE EXISTING HIGHWAYS WHICH MAKE UP SPAGHETTI JUNCTION.
4. THE CENTER OF THE TRANSITION FACILITY SHALL BE A LARGE PUBLIC CONCOURSE WHICH SHALL PROVIDE PEDESTRIAN ACCESS BETWEEN DIFFERENT MODES OF TRANSPORT.
5. PEDESTRIANS SHALL BE SAFELY SEPARATED FROM THE PATHS OF THE TRANSIT VEHICLES.
6. PEDESTRIAN AREAS SHALL BE PROTECTED FROM INCLEMENT WEATHER AND YET ALLOW ACCESS TO NATURE, PARTICULARLY THE WATERFRONT PARK DEVELOPMENT.
7. PEDESTRIAN CONNECTIONS FROM THE SITE TO DOWNTOWN, THE RIVERFRONT, AND RIVERFRONT PARK SHALL BE THOROUGHLY DESIGNED.
8. THE TRANSPORTATION FACILITY SHALL BE AN OPEN ENDED DESIGN TO ALLOW FOR EXPANSION IF THE NEED EVER OCCURS.
9. THE CENTER OF TRANSPORTATION DUE TO ITS LOCATION AT THE FOREFRONT OF THE CITY SHALL BECOME AN ICON OF THE CITY EASILY RECOGNIZED AS ONE ENTERS THE CITY FROM ACROSS THE RIVER.
THE SITE FOR THE LOUISVILLE TRANSPORTATION CENTER IS NEAR AN AREA IN LOUISVILLE KNOWN AS SPAGHETTI JUNCTION AND IN FRONT OF THE NEW GREAT LAWN WHICH IS PART OF THE WATERFRONT DEVELOPMENT TAKING PLACE IN LOUISVILLE. SPAGHETTI JUNCTION IS THE AREA WHERE HIGHWAYS 64, 65, AND 71 CONVERGE FORMING A MASSIVE INTERCHANGE OF VEHICULAR TRAFFIC. THE INTERSECTION OF THESE HIGHWAYS CREATE A GREAT CONCENTRATION OF VEHICULAR PATHWAYS WHICH INTEGRATE WITH EACH OTHER TO FORM A SPAGHETTI LIKE COLLAGE OF ROADS. EACH OF THESE HIGHWAYS ARE IMPORTANT IN THEIR OWN WAY IN THAT EACH LINKS LOUISVILLE TO OTHER CITIES. HIGHWAY 64 CONNECTS LOUISVILLE TO ST. LOUIS, HIGHWAY 65 CONNECTS LOUISVILLE TO INDIANAPOLIS AND NASHVILLE, AND HIGHWAY 71 CONNECTS LOUISVILLE TO CINCINNATI. THIS SITE IS AN AMENITY TO THE CITY IN THAT IT NOT ONLY FUNCTIONS TO PROVIDE GROWTH FOR THE CITY BUT IT ALSO BECOMES A CENTER OF TRANSITION.

THIS SITE IS ALSO IN FRONT OF THE NEW WATERFRONT DEVELOPMENT PROJECT WHICH IS CURRENTLY UNDER CONSTRUCTION. THIS DEVELOPMENT IS AN ATTEMPT TO REUNITE LOUISVILLE TO ITS WATERFRONT IN A CELEBRATION OF FESTIVE ACTIVITIES, COMMERCIAL SHOPPING, AND BEAUTIFUL PARKWAYS. THE IMPORTANCE AND SUCCESS OF THIS DEVELOPMENT IS CRUCIAL TO LOUISVILLE AND ITS GROWTH AS A METROPOLITAN AREA.

THE SITE IS CURRENTLY WITHIN THE FLOOD PLAIN SUGGESTING THAT THE COMPLEX MUST BE BUILT UP TO AVOID THE POSSIBLE FLOODING WHICH MAY OCCUR.

THE SITE IS AT THE FOREFRONT OF THE CITY AND THE INTEGRATION OF THE TRANSPORTATION CENTER WILL CREATE AN ICON FOR THE CITY AS IT WILL BE THE FIRST STRUCTURE THAT WILL BE SEEN AS YOU ENTER LOUISVILLE FROM THE JOHN F. KENNEDY BRIDGE.
THERE ARE MANY PHYSICAL AND CULTURAL CONTEXTUAL ISSUES WHICH SURROUND, RELATE TO, AND INFLUENCE THE DESIGN PROJECT. THE FIRST PHYSICAL CONTEXTUAL ISSUE REVOLVES AROUND THE HIGHWAYS OF SPAGHETTI JUNCTION. THESE HIGHWAYS CREATE A GREAT CONVERGENCE OF VEHICULAR PATHWAYS WHICH INTEGRATE WITH EACH OTHER CREATE A SPAGHETTI LIKE COLLAGE OF ROADS. EACH OF THESE ROADS ARE IMPORTANT IN THEIR VERY OWN WAY AND CANNOT BE INFRINGED UPON. THEREFORE, THE TRANSPORTATION CENTER MUST ENCOMPASS THE PATHWAYS, INTEGRATING THE HIGHWAYS INTO THE DESIGN OF THE BUILDING AND TAKING EXTREME CAUTION NOT TO INTERFERE WITH THE TRAFFIC THAT THESE ROADS CARRY.

ANOTHER CONTEXTUAL ISSUE WHICH WILL INFLUENCE THE DESIGN OF THE TRANSPORTATION CENTER IS THE NEW WATERFRONT PARK DEVELOPMENT. THE CITY OF LOUISVILLE HAS COMMITTED TO A PLAN WHICH WILL RECLAIM ITS WATERFRONT CHANGING IT FROM A MOSTLY INDUSTRIAL AREA TO AN AREA FILLED WITH PARKS AND FESTIVE PLACES. THE GOAL IS TO LINK THE CITY TO ITS WATERFRONT AND ENCOURAGE INTERACTION BETWEEN THE WATERFRONT AND THE PEOPLE OF THE CITY. THE SITE, SPAGHETTI JUNCTION, IS DIRECTLY ADJACENT TO THIS WATERFRONT DEVELOPMENT. IT WILL BE IMPORTANT FOR THE DESIGN TO ENCOURAGE THE INTERACTION WITH THE WATERFRONT AND THE PARK. THE DESIGN SHOULD FURTHER ADDRESS THE PARK AND THE WATERFRONT AS AMENITIES TO THE CITY.

THE CITY OF LOUISVILLE AND ITS CULTURAL MUST ALSO BE ADDRESSED WITHIN THE DESIGN OF THE PROJECT. LOUISVILLE HAS ALWAYS BEEN A CITY OF TRANSPORTATION. THE CITY HAS GROWN AROUND THE OHIO RIVER WHICH SERVES AS A WATERWAY TO THE REST OF THE MIDWEST AND THE SPAGHETTI JUNCTION WHICH LINKS LOUISVILLE DIRECTLY TO A MULTITUDE OF OTHER CITIES BY HIGHWAY. THE PROJECT MUST RESPOND TO THIS CULTURAL INFLUENCE AND MUST FURTHER THIS IDEA OF TRANSPORTATION.

LOUISVILLE ALSO DISPLAYS WITHIN IT'S PEOPLE A STRONG SENSE OF PLACE - OF PRIDE IN THEIR NEIGHBORHOODS. THE NUMBERS TELL PART OF THE STORY. JEFFERSON COUNTY, KENTUCKY, HAS MORE THAN 90 INCORPORATED CITIES IN ADDITION TO LOUISVILLE. PLUS MANY MORE COMMUNITIES ON THE INDIANA SIDE OF THE RIVER. BUT MORE IMPORTANT THAN NUMBERS IS THE IDENTITY OF THESE AREAS; THE OFTEN DISTINCTIVE CULTURES AND WAYS OF LIFE.


IN ALL THE CITY DISPLAYS A SENSE OF SOUTHERN CULTURE AND HOSPITALITY IN A BIG CITY ENVIRONMENT.
### SERVICE AREAS

**MAIN CONCOURSE**
- 52,500 sq.ft.
- Handle 1/8 of peak capacity.
- Peak capacity = 12,000 people.
- \(1/8 \times 12,000 \times 35 \text{ sq. ft./person}\)

**GENERAL WAITING**
- 20,000 sq.ft.
- Handle 1/12 of peak capacity.
- \(1/12 \times 12,000 \times 20 \text{ sq. ft./person}\)

**GENERAL TICKET COUNTER**
- 600 sq.ft.

**INFORMATION DESK**
- 400 sq.ft.

**NEWSTAND**
- 400 sq.ft.

**TRAVEL AGENCY**
- 1000 sq.ft.

**PUBLIC RESTROOMS**
- 1800 sq.ft.
- 450 sq. ft. for men
- 450 sq. ft. for women
- At two locations

**RETAIL SPACE**
- Consisting of retail shops, concessions, coffee shops...
- 10,000 sq.ft.

**OFFICE SPACE**
- 8000 sq.ft.

### DINING AREA

**RESTAURANT**
- 3000 sq.ft.
- Seats 200 people at 15 sq.ft./person.

**LOUNGE/BAR**
- 2250 sq.ft.
- Seats 150 people at 15 sq.ft./person.

**KITCHEN**
- 1750 sq.ft.
- Service for 300 meals per hour.
- 200 x 5 sq. ft.
- Dishwashing = 300 sq. ft.
- Food storage = 450 sq. ft.
**SPACE SUMMARY**

**CITY BUS SERVICE (TARC)**

**WAITING**
HANDLE 1/3 OF TOTAL BUS CAPACITY.
1/3 x 8 BUSES x 50 PEOPLE PER BUS x 20 sq.ft./person.

**TICKETS**
ONE STATION FOR EVERY 30 PEOPLE IN WAITING AREA.
EACH STATION IS 36 sq.ft.
134 PEOPLE / 30 x 36 sq.ft.

**OFFICES**

**BAGGAGE**
ALLOW FOR 10 sq.ft./person.
HANDLE 1/3 OF TOTAL BUS CAPACITY.
1/3 x 2 BUSES x 50 PEOPLE PER BUS x 10 sq.ft./person.

**OFFICES**

**PLATFORMS/CANAPIES**
EACH BAY IS 65’ LONG AND 20’ WIDE.
PLATFORM IS 12’ WIDE.
2 BAYS x 2080 sq.ft.

**INTER-CITY BUS SERVICE (GREYHOUND)**

**WAITING**
HANDLE 1/3 OF TOTAL BUS CAPACITY.
1/3 x 2 BUSES x 50 PEOPLE PER BUS x 20 sq.ft./person.

**TICKETS**
ONE STATION FOR EVERY 30 PEOPLE IN WAITING AREA.
EACH STATION IS 36 sq.ft.
COMMUTER TRAIN

WAITING
HANDES 1/3 OF TOTAL TRAIN CAPACITY.
1/3 x 6 TRAINS x 120 PEOPLE PER TRAIN x 20 sq.ft./person.

TICKETS
ONE STATION FOR EVERY 30 PEOPLE
IN WAITING AREA.
EACH STATION IS 36 sq.ft.
240 PEOPLE / 30 x 36 sq.ft.

OFFICES

2000 sq.ft.

PLATFORMS
EACH PLATFORM IS 300' LONG.
WIDTH SHALL BE 10' FOR RAIL AND
15' FOR PLATFORM.
6 PLATFORMS x 300' x 25 sq.ft.

AMTRAK

WAITING
HANDES 1/3 OF TOTAL TRAIN CAPACITY.
1/3 x 2 TRAINS x 200 PEOPLE PER TRAIN x 20 sq.ft./person.

TICKETS
ONE STATION FOR EVERY 30 PEOPLE
IN WAITING AREA.
EACH STATION IS 36 sq.ft.
134 PEOPLE / 30 x 36 sq.ft.

BAGGAGE
HANDES 1/3 OF TOTAL TRAIN CAPACITY.
1/3 x 2 TRAINS x 200 PEOPLE PER TRAIN x 10 sq.ft./person.

OFFICES
1000 sq.ft.

PLATFORMS
EACH PLATFORM IS 700' LONG.
WIDTH SHALL BE 10' FOR RAIL AND
15' FOR PLATFORM.
2 PLATFORMS x 700' x 25 sq.ft.

Louisville Transportation Center
SUPPORT FACILITIES

STATION MANAGER 600 sq.ft.
EMPLOYEE LOUNGE 600 sq.ft.
FACILITIES MANAGEMENT OFFICES 1000 sq.ft.
DISPATCHER'S OFFICE 600 sq.ft.
EMPLOYEE RESTROOMS 300 sq.ft.
MECHANICAL 1500 sq.ft.

TOTAL NET SQUARE FOOTAGE 228,654 sq.ft.

TOTAL GROSS SQUARE FOOTAGE 320,116 sq.ft.
EFFICIENCY RATIO 60% / 40%
228,654 x 1.4
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<td>MOVABLE EQUIPMENT</td>
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*ESTIMATED COST IS IN JANUARY 1996 DOLLARS
THE FIRST MAJOR SITE ANALYSIS I INVOLVED MYSELF IN WAS A STUDY IN TRAFFIC PATTERNS AROUND THE SITE. THIS INVOLVED MAPPING OUT THE CURRENT RAILROAD TRACKS, THE VEHICLE TRAFFIC PATTERNS, THE WAY IN WHICH TRAFFIC FLOWED ON THE STREETS AND A STUDY IN PEDESTRIAN TRAFFIC. THIS WAS A MAJOR STEP THAT SET THE PACE IN THE RIGHT DIRECTION. THE EFFICIENT FLOW OF TRAFFIC IS A MAJOR CONCERN IN ALL TRANSPORTATION CENTER DESIGN. THIS STUDY BEGAN TO SHOW WHERE TRAFFIC PATTERNS FOR THE NEW FACILITY SHOULD OCCUR. FROM THIS STUDY I COULD BEGIN TO LAYOUT THE TRAFFIC PATTERNS OF THE FACILITY AND DESIGN THESE PATTERNS SO THAT THERE WILL BE A MINIMUM IMPACT ON THE SURROUNDING URBAN ENVIRONMENT.
Two design concepts were presented for the midterm review. Although presenting two different designs is not an unusual process I felt it was necessary and fitting to the project. This is a thesis that studied the design of transportation centers and therefore I wanted to produce different designs that displayed some of the concepts that my research had shown me. It is important to note that although these are two different design options they both possess the same organizational concepts that were derived from the site studies. This is design option #1. This design was a direct response to the surrounding urban environment responding to both the urban street context and the traffic flow patterns. The hard edges along the street continue the already present street facades and the four towers of the design follow the present rhythm of the existing buildings. These towers are also important in that they respond to the important views surrounding the site. These towers would house the offices and by raising the offices in this vertical orientation, it gives wonderful views to the park and the river and to the downtown area.
THE DESIGN WAS DERIVED THROUGH SECTION WHICH YOU CAN SEE ON THE OPPOSITE PAGE. IN SECTION IT CAN BE SEEN THAT THE SOUTHERN EXPOSURE WILL BE USED TO CAPTURE THE ENERGY OF THE SUN. THE SECTION ALSO SHOWS THE RELATIONSHIPS OF THE SPACES AND THE TRAFFIC PATTERNS THAT WILL OCCUR WITHIN THE COMPLEX. ANOTHER PREVALENT ELEMENT IN THIS DESIGN IS THE ACCESS CORRIDORS. IT HAS ALREADY BEEN SAID THAT TRAFFIC FLOW THROUGHOUT THIS FACILITY WAS KEY IN THE DESIGN. IN ORDER FOR THIS TO BE A SUCCESSFUL BUILDING, PASSENGERS WILL HAVE TO BE ABLE TO MOVE BETWEEN THE TRANSPORTATION AREAS WITH EASE AND EFFICIENCY. THIS PROBLEM WAS SOLVED THROUGH THE USE OF THESE ACCESS CORRIDORS. THESE CORRIDORS ALLOWED THE EFFICIENT FLOW OF PASSENGERS FROM ONE FLOW OF TRANSPORTATION TO THE NEXT. THESE CORRIDORS ALSO BECAME VERY OPEN, ATRIUM SPACES WHICH WILL ENCOURAGE SOCIAL CONTACT AND COMMUNICATION.
This design was option #2. A lot of the same design principles which were used in the first design were incorporated into this design yet the appearance took on an entirely new form. In this design my goal was to be more free flowing and try to show movement and motion within the design form. I felt that since the complex is all about movement and the flowing of passengers the actual form of the building should begin to reflect this notion. The organization is still the same with the bus drop-off on the south side, the main concourse acting as a transfer area between the bus drop-off and the train shed.
Some of the more significant features of this design were the main concourse, the entrance tower, and the roof plane. The main concourse became a flowing form which represented the idea of movement very successfully. I was pleased with the dynamic form and felt that not only did it represent movement but it also responded to the nautical concept that was generated by the river. The entrance tower was designed to bring attention to the facility. This was going to be a very important addition to the city and the riverfront development and I felt that a gesture that captures the attention of the city was needed in order to generate the interest of the public. This tower also oriented the user to the main entrance. Finally the roof plane became an important element to the design. I wanted the roof plane to be dynamic and to also reflect the idea of movement. The curved roof became a very dynamic element to the design not only giving the form a dynamic feel but also a nautical feel which responded to the park and river.
SECTION
SCALE 1"=100'

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Possibly the most successful part of the project was the use of the computer model as a form of presentation media. By designing the project in a three-dimensional computer environment I was able to create interior and exterior images that realistically show the building. The realism created through these images give the potential user a good look at how the building would actually look upon completion. These images also help show the dynamic nature of the form and the careful use of structure as a design tool. This is important in that since the first train stations, structure has always played a major role in the design. These buildings were cutting edge technology and I tried to use these same concepts within the design of the transportation center.
Another presentation tool I used in the final presentation was a physical model. Although the use of a computer model and a physical model may seem repetitive, I thought that the two models complimented each other in many ways and each form of media had its certain strong points. By using both modeling forms the project could be better understood. I still believe in the power of the physical model, I think that it still shows the most and is able to give the best impression on how the building will really look. The model is a simple museum board and chip board combination.

WEST ELEVATION
SCALE 1"=100'
ALTHOUGH THE ORGANIZATION STAYED RELATIVELY THE SAME, SOME CHANGES WERE MADE TO THE FLOW PATTERNS OF THE PASSENGERS. THE MAIN BUS DROP-OFF AND PICK-UP NOW OCCURS UNDERNEATH THE TRAIN SHED. TWO LANES WERE MADE, ONE LANE IS FOR BUSES HEADED INTO THE CITY AND ONE LANE IS FOR BUSES HEADED OUT TO THE SUBURBS. FROM HERE THE PASSENGERS MOVE SOUTH INTO THE MAIN CONCOURSE AREA. THIS AREA IS THE LINK TO ALL MEANS OF TRANSPORTATION WITHIN THE BUILDING. THE PASSENGER CAN NOW CHOOSE TO MOVE UP TO THE TRAIN SHED LEVEL OR TO CONTINUE MOVING SOUTH WHERE THERE IS TAXI PICK-UPS AND HEADWATERS PARK.
ISOMETRIC VIEW OF FACILITY LAYOUT.
THE INTERIOR OF THE BUILDING BECAME A DYNAMIC INTERPRETATION OF STRUCTURE AND HOW STRUCTURE CAN BE USED TO SUGGEST A VERY HIGH TECH FORM OF ARCHITECTURE. I WENT TO GREAT LENGTHS TO ENSURE THAT THE STRUCTURE WITHIN THE BUILDING WOULD FASCINATE AND CAPTURE THE USERS INTEREST. FROM MY STUDIES OF EARLY 19TH CENTURY RAILROAD STATIONS I FOUND THAT STRUCTURE WAS A KEY FACTOR IN THE DESIGN FORM AND MY GOAL WAS TO REINTERPRET THIS IDEA INTO A MODERN DAY TRAIN STATION. ANOTHER ELEMENT OF THE INTERIOR WAS THE USE OF GLASS AND HIGHLY REFLECTIVE FINISHES. THIS WAS DONE TO ENSURE THAT THE SPACE WOULD NOT BECOME OVER BEARING ON THE INDIVIDUAL. NATURAL LIGHT WAS USED TO ITS UPMOST IMPORTANCE AND WITH THE COMBINATION OF LIGHT AND REFLECTIVE MATERIALS THE SPACE BECOMES ALIVE WITH ENERGY.
The exterior became a very dynamic and flowing form that responded to the surrounding environment and the function of the building. The soft curve of the main concourse area responds to the natural park side, while the strong linear southern side responds to the urban fabric of Louisville. Another connection that can be made to the form and the surroundings is the link between the river and the facility. The form takes on a nautical feel that helps express the idea of the river. This is important in that Louisville is desperately trying to win back its waterfront and a direct response from the surrounding buildings to the waterfront becomes a must.
ACKNOWLEDGMENTS
I would like to acknowledge the following people whose devotion to the field of architecture and the education of young architects have helped and inspired me throughout my education. Without their knowledge, wisdom, understanding, influence and sharing of experiences this architectural thesis would not be possible.

Carlos Causcelli
Dave Mackey
Rod Underwood
Sonny Palmer
Dan Woodfin
Alfredo Messier
James R. Hoch
Dana Wannamacker
Uwe Koehler
J. Robert Taylor
Michelle Mounayar

SPECIAL THANKS
First and foremost I want to thank my parents: Marv and Judy, my brother Ben, my sister Michelle, the rest of my immediate family and my girlfriend Sarah Brock for their love, support, and understanding. Knowing you were with me all the way made everything easier. I couldn’t have done it without you.

I would also like to thank my many friends and roommates who have shared the experience of college with me. We may be going our separate ways but the memories and experiences we shared will be with me for a life time. I hope to keep in touch with each one of you.

Finally, I would like to thank the Ball State University Architecture Class of 1997, who were not only my peers, but my friends. We have come to a turning point within our lives, but the ride has just begun. I wish you all good luck on the journey ahead.