presenting! the all new! grand!

PERU CIRCUS CENTER

ARCHITECTURAL THESIS
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COLLEGE OF ARCHITECTURE & PLANNING
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abstract

The goal of this project is to design a facility to serve as a permanent home for the Peru Circus City Festival. The main function to be served is that of a circus arena with support facilities including dressing areas, a shop, and wardrobe room. Also included in the complex is a museum, ticket office, and offices for the Circus Festival Board, the Peru Chamber of Commerce, as well as a small fast-food restaurant.

It is important for the facility to be flexible enough to serve a number of varied functions so that it can be financially self-supporting. Other uses could include: exhibitions, basketball tourneys, or concerts.

The site extends from Peru's central business district at the east end, one and one-half blocks to a residential area at the west end. The project requires the closing of one block of a secondary street. The site is completely serviced by public utilities. The Peru Amtrack station is within three blocks.

Because of the historical significance of the Circus to Peru, it receives the full support of the community. Thus the Circus Center should also be a community center which will serve the people of Peru.
INTRODUCTION
Throughout the early and mid 1900's Peru Indiana was the winter quarters of some of the great circuses which were travelling the country at that time. The Sells-Floto, Hagenback-Wallace Circuses and Buffalo Bill's Wild West Shows were just a few that spent their off seasons in this Miami County area. On two sites just outside Peru some of these facilities can still be seen. The great circuses are gone now, but as a result of their return to Peru each year, many circus performers retired there. W.W. Wilno, the human cannonball, along with the late Carl Solt, and Tom and Betty Hodgini are among many circus people who made their home in Peru.

The annual circus festival had its beginning in the summer of 1958, when the Peru Chamber of Commerce organized a parade to celebrate this circus heritage. The first parade being a success, Circus City Festival Incorporated was organized the following year. Some circus acts were performed on the courthouse lawn in addition to the parade.

In 1960, a tent was rented, in which to put on a show. It cost $800 and the bleachers had to be borrowed from wherever they could be found. All the work was done by volunteers.

The summer of 1961 saw the cost of tent rental jump to $900. This made the Circus Festival Board decide to buy a new tent the following year. By 1966 the
circus had purchased their own bleachers. After six years of use, the tent was badly worn and the board began to look for a new and more permanent home for the circus. In 1967, they purchased a large building previously owned by Peru Lumber Company.

The first show in the new building was in 1968, before a roof had been put over the arena, which had formerly served as a lumber yard. It was also the last show to feature the Big Top Riders, a horse act. The concrete floor to be poured the following year would prohibit the only animal act from performing again.

In 1969, the roof was completed. A Lilly Foundation grant in 1973 provided heat and other improvements.

The past few years have seen the circus grow at an ever increasing rate. A one-hour special on network television in 1971 brought national recognition, and has been repeated numerous times. As the Circus continues to grow, the building purchased in 1967 becomes less adequate. Potential patrons of the circus must be turned away in greater numbers each year. The circus museum, a popular attraction, has also continued to grow and gain more exhibits. The present facility, in order to provide for the many functions of the circus would require constant renovation. The present seating capacity cannot be significantly increased economically. The present space for support facilities is also insufficient.
While the present structure has served well, it cannot keep up with the growth of the circus' ever-increasing needs.
growth

With each year the circus grows, in variety of acts presented, crowd attendance, and involvement of people. A new structure twice the size of the present facility would be immediately filled. The show is changed and expanded each year requiring different props and rigging connections. Thus, there is more equipment to be stored each year. Circus City Festival Inc. presently owns one bus for road shows, however, as these programs become more popular, it is conceivable that one or more vehicles will be necessary. The increasing popularity of these road shows have already made the circus more of a year round activity than a summer event. As more publicity is gained from these road shows the summer festival attracts more people. This spiral has been continuing for the last several years as attendance and demand for road shows have both continued to increase.

Circus City Festival Inc. is a non-profit organization. The circus is funded mainly through ticket sales. Other sources of income include; building rental, private and corporate donations, and grants. The road shows also provide income, as well as promoting the Circus. The high public support of the Circus by the residents of Peru allows most of the work to be done by volunteers.

Most local banks already support the Circus in some form, and would, I feel,
support a new facility if it were proven feasible to them.
The building currently being used as the Peru Circus Center, as mentioned before, is a renovation of a lumber yard. A roof was added to cover the outdoor storage area, providing a performing area of 60'x153' and seating 2200 people. The highest point in the ceiling gives a clearance of 60' above the floor.

The areas which formerly served as office space for the lumber company now house the space for the ticket office, souvenir shop, circus museum, and an office for the Circus City Festival Board of Directors. There is also office space provided for the Peru Chamber of Commerce.

Additional buildings house storage, dressing areas, wardrobe, clown rooms, tackroom, and a first aid area. The roof spans the entire arena with no columns in the performance area. The I-beam system which supports the roof is hard to make connections to in order to secure rigging.

The arena is surrounded by four solid brick construction walls, two stories in height, with the offices located on the south side. Another building borders on the north side.

An alley separates the arena building from the other support buildings located directly to the west. These buildings are of frame and heavy timber construction, and house the support facilities mentioned earlier.
All of these activities have outgrown the space provided for them. Storage has filled the attic spaces and lacks organization. Dressing areas are filled well over their capacity and contain no showers or toilet facilities. The same is true for the clown room. The wardrobe area and tackroom also lack the amount of space necessary for their respective functions.

All of these support areas are used only three to four months of the year, during circus practice and the festival itself. The remainder of the year they lie dormant, often serving as storage areas.

The arena, however, is used often during the year in order to derive more income for the Circus. Events which have taken place in the arena in the past include; a professional circus, auto show, antique show, and a rock concert. The C.C.F. board offices, the souvenir shop, and ticket office stay open all year also.

When the roof was installed in 1969, Pecskok, Jelliffe & Randall AIA, did a study on a renovation to the building. Most of the proposals were not carried out, however.
The Building types study consisted of examining the layout of traveling circuses as well as buildings erected as a permanent home for a circus, and modern arena structures.

From this was drawn ideas for basic organization of spaces, multiple building concept, and many of the specific needs of a circus.
FORPAUGH CIRCUS - 1881

DIAGRAM:
- Ladies Green Room
- Men's Green Room
- Seating
- Big Top
- Ring #1
- Ring #2
- Wild Animals
- Trained Animals
- Manager
- Press
- Main Entry
- Birds & Reptiles
- Menagerie Pavilion
W. W. COLE CIRCUS-1886

½ MILE TRACK

CIRCUS RING SURROUNDING SUPPORT POLE

SEATING
YOUNG BUFFALO BILL'S WILD WEST SHOW 1910

MAIN SHOW ARENA

CANOPY OVER SEATS ONLY

SUPPORT FACILITIES
RINGLING BROTHERS - BARNUM & BAILY CIRCUS 1936

BIG TOP

DRESSING TENT

HORSE TENT

PRIVATE SPACE

MENAGERIE TENT

AUDIENCE CIRCULATION

CIRCUS WAGONS

SIDE SHOW
P.T. BARNUM'S
"GREAT ROMAN HIPPODROME"

SEATING CAPACITY- 10,000

BRICK STRUCTURE WITH TENT ROOF
426' x 200' 28' ELEVATION

LOCATED IN NEW YORK - CALLED
FIRST MADISON SQUARE GARDEN

CONCRETE FLOORS - ASBESTOS
INCLINE FOR SEATING TO DECREASE
FIRE HAZARD

½ MILE TRACK IN ARENA

BRICK PERIMETER WALL

TENT ROOF

FOUNTAINS, FLOWERS
& STATUARY

TRACK

SEATING
FLOATING PALACE

OWNERS GILBERT R. "DOC" SPALDING

42' RING WITH MIRROR AT EACH END TO GIVE IMPRESSION OF MULTIPLE RINGS
LOWER SEATING 1400
BALCONY 500

BARGE PULLED BY TWO TOW BOATS WHICH SUPPLIED HEAT & GASLIGHT
TOURED OHIO, MISSISSIPPI & GULF STATES BURNED IN NEW ALBANY IN
COLISEUM - CHARLOTTE N.C. - A.G. ODELL & ASSOC.

CAPACITY 13,500
10,000 PERMANENT SEATS
2,500 PORTABLE SEATS

PARKING: 3600 CARS

PROGRAMMED FUNCTIONS:
ATHLETIC EVENTS
CIRCUSES
ICE SHOWS
RODEOS

CIRCULAR ROOF ALLOWS:
ECONOMICAL ROOF STRUCTURE
GREATEST SQ. FT./PERIMETER
MAXIMUM SEATING ON ALL SIDES OF ARENA

CIRCULATION DESIGNED TO EMPTY BUILDING
IN 4 MINUTES

SEATING ARRANGED IN STRAIGHT SECTIONS TO
ALLOW USE OF PRECAST BEAMS THROUGHOUT
NORTH CAROLINA STATE FAIR
LIVESTOCK JUDGING PAVILION

ARCHITECTS: MATHEW NOWIK & WM. HENRY DEITRICK

CAPACITY: 5500

STRUCTURE PROVIDES CLEAR SITE LINES - EQUAL CEILING HEIGHT OVER ALL SPECTATORS

"REVERSE DOME" GIVES MAXIMUM DAYLIGHT

TWO CONTINUOUS COMPRESSION ARCHES SUPPORT TENSION ROOF
PROGRAMMING
The proposed project, while serving mainly as a circus arena, must be able to house other functions in order to be a year round facility, as well being financially self-supporting. Other uses which have taken place in the present facility, or in which the Circus Board has shown an interest, consist of concerts, auto shows, art & craft shows, tennis, wrestling, and boxing. The space could also be used for basketball games and tourneys, or major professional circuses.

Major support facilities for the arena include:

1. Tackroom (shop for wood and metal work)
2. Dressing and make-up rooms
3. Wardrobe (design and fitting of costumes)
4. Clown room
5. First aid room

The third major portion of the complex would include a museum for the display of paintings, costumes, rigging, posters, photos, and models related to the Circus. Large scale exhibits include circus wagons, calliopes, and other special displays. The museum should also include an auditorium for showing movies and other multi-media presentations.

An office for ticket sales, souvenir shop, and a fast food restaurant would complete the public areas of this portion of the complex.

Semi-public office areas include offices for Circus City Festival Inc.,
the Peru Chamber of Commerce, and meeting rooms for these offices.

Parking for the Circus Center would be a master planning project in Peru's Central Business District and is not a part of this thesis. There are, however, a number of sites available for this purpose.
The client for this project is Circus City Festival Incorporated. The Circus Festival Board consists of four executive officers and fifteen board members.

EXECUTIVE OFFICERS
1. President
2. Vice-President
3. Secretary
4. Treasurer

BOARD POSITIONS
1. Circus V.P.
2. Assistant Circus V.P.
3. Building and Property V.P.
4. Asst. Building and Property V.P.
5. Equipment and Property V.P.
6. Festival V.P.
7. Asst. Festival V.P.
8. Concessions and Contracts V.P.
9. Publicity and Public Relations V.P.
10. Asst. Publicity and P.R. V.P.
11. Executive Secretary
12. Museum and Exhibits V.P.
13. Membership V.P.
14. Road Show V.P.
15. Ticket Sales V.P.

The purpose of the board is to organize all circus activities and oversee the operation of the building and equipment. All board members, as everyone involved with the operation of the Circus, are volunteers. The only exception is the head trainer, who is hired for the Circus season.

Jeffery Price, current Circus Festival Board president, has expressed these feelings about the Circus:

"People in this town really want the Circus to succeed, they back this enterprise with remarkable fervor...I see the Circus continually upgrading, improving, and expanding the actual property and facilities".

The Board desires more versatility in the facility for more general community use. They are also working toward the
hiring of a permanent trainer. As the Circus becomes more professional in its presentation each year, they envision a time when year round practice will take place.

Through the course of this project, I have talked with Kenneth Hasselkus, Museum and Exhibits V.P., Charles Wallick, former Building and Property V.P., and Tom Hodgini, one of the head trainers.

The people of Peru must be considered to be a client and principle users of the facility. With only a few exceptions, the Circus is put on by the people of Peru with no outside help. Most of the performers are young people of ages six through eighteen, all of whom live in the community, most inside the city.
The downtown site was chosen for several reasons. The Circus has always been held in or near the downtown area, the first organized performance was held on the courthouse lawn. The parade route passes through the downtown area. The present building is not along the parade route that has been used for the last several years. The new site is located at the terminal point of the presently used parade route and would serve as a good point for this to occur.

The activity generated by the Circus and by the other functions which would be held at the Circus Center would provide an increase in commerce to the downtown merchants. The new location of the Circus Center allows for the relocation of the street carnival to Miami Street. This would eliminate the annual traffic congestion on Broadway, where this attraction is usually located. Miami Street itself could be closed to traffic during the Circus Festival, transforming this area into a "mall" with its terminal at the Circus Center.

The original site chosen for the project was expanded to its present size in the design development stage. During a few crits with Norman Reuter the impact and scale of this project were discussed. It was at this time that I realized that a project of this scale deserved to be brought to its full potential. The
constraining site which I had been working with up to this point had been keeping me from doing this. Thus the site was expanded to the east all the way to Broadway and to the west to the alley between Miami and Cass streets. With this new site it was possible to give the project the space needed to fully complete the requirements set forth in the program.

The proposed site for the Circus Center consists of lots #19-27 and #36-44 fronting on Broadway and extending one and one-half blocks to the West between Canal and Second Streets. Use of this site calls for the closing of Miami Street between Canal and Second to become part of the site. A two story brick structure now stands on lot #42, this building would be removed, as well as those on lots #23-27 and #36-39, all of which are in poor to fair condition.

The site borders between residential areas to the west and the Peru Central Business District to the East. Across Canal Street to the South is the C&O switchyards. The Peru Amtrak depot is within three blocks of the site. To the North of the site along Miami Street is a light commercial area with the Fire Department two and one-half blocks in this direction. The site is completely serviced by city utilities.
PRESENT ORGANIZATION OF CIRCUS FESTIVAL MIDWAY

- booths
- rides

Problems: blocks traffic decentralized

PROPOSED ORIENTATION TO NEW SITE

- booths
- rides

Located off main routes
More condensed
Creates "Grand Entry" to C.C.
Connection to open space at fire station
Under the Uniform Building Code, the Circus Center is classified as a multi-use building. Each area of the building must be constructed according to the occupancy group it falls under. The following table lists the major spaces and the occupancy group for each one.

Table 5-B of the U.B.C. lists required separations in buildings of mixed occupancy.

<table>
<thead>
<tr>
<th>AREA</th>
<th>OCCUPANCY GROUP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arena</td>
<td>A-1</td>
</tr>
<tr>
<td>Tackroom and Shop</td>
<td>H-3</td>
</tr>
<tr>
<td>Wardrobe</td>
<td>B-2</td>
</tr>
<tr>
<td>Dressing Rooms</td>
<td>B-2</td>
</tr>
<tr>
<td>First Aid</td>
<td>B-2</td>
</tr>
<tr>
<td>Storage</td>
<td>B-2</td>
</tr>
<tr>
<td>Museum</td>
<td>B-2</td>
</tr>
<tr>
<td>Auditorium</td>
<td>A-3</td>
</tr>
<tr>
<td>Offices</td>
<td>B-2</td>
</tr>
</tbody>
</table>

### TABLE 5-B — REQUIRED SEPARATIONS IN BUILDINGS OF MIXED OCCUPANCY (in feet)

<table>
<thead>
<tr>
<th>GROUP</th>
<th>A-1</th>
<th>A-2</th>
<th>A-3</th>
<th>A-4</th>
<th>E</th>
<th>I</th>
<th>H-1</th>
<th>H-2</th>
<th>H-3</th>
<th>H-4</th>
<th>H-5</th>
<th>B-1</th>
<th>B-2</th>
<th>B-3</th>
<th>B-4</th>
<th>B-5</th>
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<th>N</th>
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<tbody>
<tr>
<td>1</td>
<td>N</td>
<td>Z</td>
<td>N</td>
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<tr>
<td>2</td>
<td>Z</td>
<td>N</td>
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</tr>
</tbody>
</table>

Note: For detailed requirements and exceptions see Section 503. The state of occupancy and the capacity of not more than nine persons. This shall not apply for agricultural buildings also see Appendix, Chapter 15.
<table>
<thead>
<tr>
<th>AREA</th>
<th>SQ. FT.</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARENA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bandstand</td>
<td>800</td>
<td>Arena should have 80'-90' clear height and large accessway. The structure should be able to handle point loads of rigging supports. It should be versatile.</td>
</tr>
<tr>
<td>Control Booth</td>
<td>500</td>
<td>The first aid room is for emergency care to performers in case of an accident.</td>
</tr>
<tr>
<td>Press Booth</td>
<td>500</td>
<td>There should be access to the street for transfer of an accident victim to the hospital by ambulance.</td>
</tr>
<tr>
<td>First Aid</td>
<td>800</td>
<td></td>
</tr>
<tr>
<td>Concessions</td>
<td>1,000</td>
<td></td>
</tr>
<tr>
<td>Storage</td>
<td>2,000</td>
<td></td>
</tr>
<tr>
<td>Staging Area</td>
<td>5,000</td>
<td></td>
</tr>
<tr>
<td>SUPPORT FACILITIES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tackroom</td>
<td>10,000</td>
<td>The tackroom is a work area for the fabrication and repair of rigging, and the restoration of circus wagons. It should provide for wood and metal working including welding.</td>
</tr>
<tr>
<td>Garage</td>
<td>800</td>
<td>The garage is for storage and maintenance of the bus(es) used for road shows.</td>
</tr>
<tr>
<td>Tool Storage</td>
<td>500</td>
<td>The dressing areas should be large enough to serve a peak load of 200 boys and girls. There should be lockers, showers, and a make-up area.</td>
</tr>
<tr>
<td>Dressing Rooms</td>
<td>5,000</td>
<td>The wardrobe room is for the design, fabrication, and fitting of costumes.</td>
</tr>
<tr>
<td>Wardrobe</td>
<td>1,500</td>
<td>Clown rooms are spaces for the clowns to change into costumes and apply make-up. They should be equipped with mirrors and lavatories, and have access to showers.</td>
</tr>
<tr>
<td>Clown Room</td>
<td>800</td>
<td></td>
</tr>
<tr>
<td>Band Practice Room</td>
<td>1,000</td>
<td></td>
</tr>
<tr>
<td>AREA</td>
<td>SQ. FT.</td>
<td>NOTES</td>
</tr>
<tr>
<td>-----------------------------</td>
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<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>MUSEUM AND OFFICES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exhibit Area</td>
<td>30,000</td>
<td>The museum will house the exhibits described earlier. The library is for</td>
</tr>
<tr>
<td>Auditorium</td>
<td>2,000</td>
<td>the purpose of collecting books on the Peru Circus as well as other circuses.</td>
</tr>
<tr>
<td>Library</td>
<td>2,200</td>
<td>There would also be a small reading area.</td>
</tr>
<tr>
<td>C.C.F. Board Office</td>
<td>500</td>
<td></td>
</tr>
<tr>
<td>CofC Office</td>
<td>500</td>
<td></td>
</tr>
<tr>
<td>Meeting Rooms</td>
<td>400</td>
<td>The offices should be out of the main traffic pattern, yet easily accessible</td>
</tr>
<tr>
<td>Ticket Office</td>
<td>400</td>
<td>to the public. They should be arranged so that other areas of the building may</td>
</tr>
<tr>
<td>Souvenir Shop</td>
<td>800</td>
<td>be secured while the offices remain open.</td>
</tr>
<tr>
<td>Fast-food Restaurant</td>
<td>5,000</td>
<td>The ticket office and souvenir shop should be easily accessible, almost unavoidable, to everyone entering the building.</td>
</tr>
<tr>
<td>Approximate total programmed</td>
<td>220,000</td>
<td></td>
</tr>
<tr>
<td>CHARACTERISTIC</td>
<td>SPACE</td>
<td>RELATION TO CURTAIN</td>
</tr>
<tr>
<td>------------------------</td>
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<tr>
<td>MUSEUM</td>
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<tr>
<td>LIBRARY</td>
<td></td>
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<tr>
<td>AUDITORIUM</td>
<td></td>
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<tr>
<td>STORAGE</td>
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<td>OFFICES</td>
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<tr>
<td>MEETING ROOMS</td>
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<tr>
<td>TICKET OFFICE</td>
<td></td>
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<tr>
<td>SOUVENIR SHOP</td>
<td></td>
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<tr>
<td>ARENA</td>
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<tr>
<td>BANDSTAND</td>
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<tr>
<td>CONTROL ROOM</td>
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<tr>
<td>PRESS BOOTH</td>
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<tr>
<td>CONCESSIONS</td>
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<td>STAGING AREA</td>
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<td>TACKROOM</td>
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<tr>
<td>DRESSING ROOMS</td>
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<td>CLOWN ROOMS</td>
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<td>FIRST AID</td>
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<tr>
<td>WARDROBE</td>
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<tr>
<td>REST ROOMS</td>
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</tbody>
</table>
DESIGN PROCESS
The schematic stage took place while I was still working with the smaller site. The arena was set at an angle so that it would fit within the confines of the site. The seating area was U-shaped so that support areas could be placed behind the main entrance to the arena.

The space under the stands was to be used as display area for the museum. Offices and the souvenir shop were to be located at the eastern edge of the site.

By this time it had been decided to use a tent structure to enclose the facility. This type of structure gave the building a circus spirit as well as minimizing the interior structural elements. The entire complex was to be enclosed under a single membrane structure. This caused problems in finding a way for the cables to be anchored on the site when the building itself nearly filled the site.
It was during the design development phase that the site was expanded for the reasons stated earlier. At this time the arena and museum were separated further until they became two individual buildings. Early in this phase, the arena took on the traditional tent form while the museum building was a more free form structure. This approach for the museum did not work out well because it lacked order. The free form approach gave me no basis from which to establish order.

From here the museum building also took on the more traditional tent form with the functions at either end of this building being arranged in a semi-circular plan.

Separation of the two buildings created a plaza area between them. In order to keep this area open, no grade level connection was made between the buildings. The plaza would serve as the terminal point of the street carnival which now would be located on Miami Street. It would also define the main entry to the Circus Center.

Support facilities for the arena at first were located under the plaza space between the two buildings. These were moved to make up the lower level of the South portion of the museum building. Doing this made more efficient use of building space and eliminated the problem
of tension cables penetrating these spaces.

The structure of the arena combined the struts necessary to hold the cables with the seating structure. This allowed the cables to be brought to the arena perimeter, then straight down into the ground.

The same basic idea was used in the museum building's structure with the struts becoming smaller and lighter.
The final design was arrived at by adhering more strictly to the semi-circular plan at either end of the building. The truck ramp to the arena splits the building in two with the museum and office spaces on the north side and the tackroom and dressing areas and other support functions on the south side.

The arena has remained basically the same throughout design development. Two main masts in the performance area support the roof in the center. A space frame spanning between these two masts supports all rigging and equipment. A catwalk around the perimeter of the arena, separate from the spectator area, provides space for spotlights.

The bandstand is located at the West end of the arena on the upper level. On each side of the bandstand is the control booth—fore lighting, sound, etc., and the press booth. Both of these spaces have a good view of the entire arena. A walkway connects the control booth and press booth with the catwalk on the perimeter of the arena. A service elevator and stair connect these spaces to the grade level and lower level. These spaces are completely separate from the public circulation spaces.

At grade level is a viewing area from which the spectators can get a glimpse of the area's interior before taking their seat.
The upper level walkway to the museum is public circulation and provides a weather protected connection between the buildings without breaking up the plaza.
FINAL PRESENTATION
APPENDIX


Architectural Record, December, 1952.

Progressive Architecture, June, 1954.

Progressive Architecture, September, 1956.
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