montana state fairgrounds and exposition center



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RON R. BIBLER

THESIS

JUNE 1980

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Perception and Architecture

by

Ron R. Bibler

a thesis submitted in partial fulfillment

of the requirements for the degree

of

BACHELOR OF ARCHITECTURE

Approved:

Thesis Advisor and Department Head

Dean, College of Arts and Architecture

Montana State University

Bozeman, Montana

June, 1980

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Ron R. Bibler June 7, 1980

INTRODUCTION

Having lived in Great Falls, Montana since childhood, I developed a sense of community pride in the area. When the time came to select a thesis project I had no difficulty in choosing my hometown as a site for a study. I wanted to do something that could greatly benefit the town and the people, and at the same time, provide a field of study for myself. Hospitals, schools, a cultural center and museums were considered. In the end, I decided no factor other than the State Fairgrounds has such an enormous potential for benefiting the city and its people.

Academically, I felt that thesis should be the buffer between the real world and the experimental design laboratory. For this reason I attempted to make my thesis as realistic as possible. City and County officials were contacted as well as local architects previously involved in the design of the Fairground facilities. I sought and found a fair consultant who provided valuable insight into the planning, programming and design aspects of fairgrounds master planning. The fair management and their personnel were actively involved in creating realism for this thesis.

Architecturally, I feel troubled in the direction that most of today's acclaimed architecture is taking. Where is the consideration of man, I ask. Why are architects using buildings for themselves and not for its inhabitants? Humans, I feel, are losing control of their environment and their destiny. What can I do as an architect to put them back into control? Thesis was a means to explore these avenues. I do owe a great deal of unspoken and unknown debt to a professor who for the past five years has pushed me towards the search and encouraged me to continue to ask more questions.

What follows is my insight.

dedicated to my wife,

julie

... words can never express my gratitude for the

time, patience
help, persistence
respect, pride
and love

you gave me in helping me to achieve my goals ...

thesis statement

" The psychology of perception and the application of its implications to design offer a more humanistic approach to the solutions of architectural problems. "

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planning methodology

PLANNING OBJECTIVES AND METHODOLOGY

The planning objectives for this thesis project have been defined based on my personal studies as well as the input of Bill Chiesa, The State Fair Manager. The planning objectives are:

1. Develop a master plan for long range development that will better utilize the existing facilities.
2. Develop multi-purpose concepts for more diversified uses and increased year-round use of the fairgrounds.
3. Develop increased utilization of the State Fair park and incorporate it with the proposed West Bank Park of the Missouri River.
4. Improve vehicular and pedestrian accessibility and circulation of the complex.
5. Develop a Fairgrounds with a pleasing and well planned environment that will stir community pride.

To best meet these objectives, a methodology has been established. (see figures 1 & 2).

Figure 1 illustrates the first quarter methodology which consists of:

Inventory- The planning process began with a comprehensive inventory of the existing functions, facilities, site conditions, utilities, traffic and transportation characteristics, and the interrelationship of the fairgrounds with the surrounding community. In addition, a historical study was conducted of the fairgrounds as well as the community, to provide a background for study.

Analysis- Alternative improvements and redevelopment objectives were considered based upon the opportunities and constraints as defined by the inventory data. Also at this point programming of new facilities began.

Master Plan Development- A draft master plan was developed and presented to the thesis committee for comment. Following review, the final master plan was developed to be used as a guide for future development.

The second quarter methodology consisted of developing design guidelines as a means to future development of the facilities. At the same time, programs for the planning of the new structures was implemented. Research into perception followed, with the design development and its processes being based on the perception research. (figure 2)

In addition to Mr. Chiesa, the following also offered information pertainent to the design process and this thesis project:

City of Great Falls

City-County Planning Dept.

Transportation Planning Dept.

Parks and Recreation Dept.

Davidson and Kuhr, Architects, Great Falls, Montana

Wirth Associates, Landscape Architects, Billings, Montana

Louis Merrill, Fair Consultant, Sacremento, California

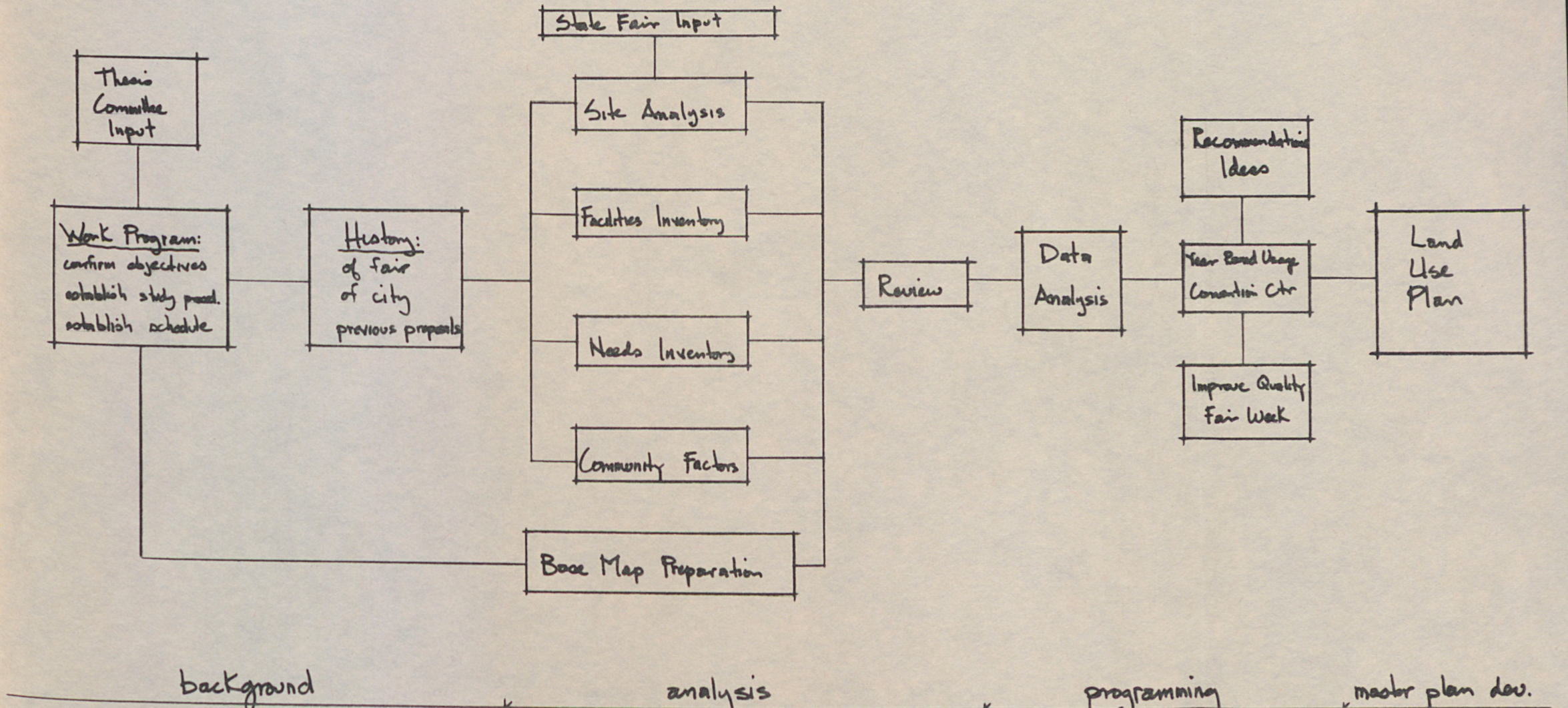

State Fair Input
Thesis Committee Input
Site Analysis
Facilities Inventory
Work Program: confirm objectives establish study proced. establish schedule
History: of fair of city previous proposals
Needs Inventory
Review
Data Analysis
Recommendations Ideas
Year Round Usage Convention Ctr
Land Use Plan
Community Factors
Improve Quality Fair Week
Base Map Preparation
background
analysis
programming
master plan dev.

FIGURE 1

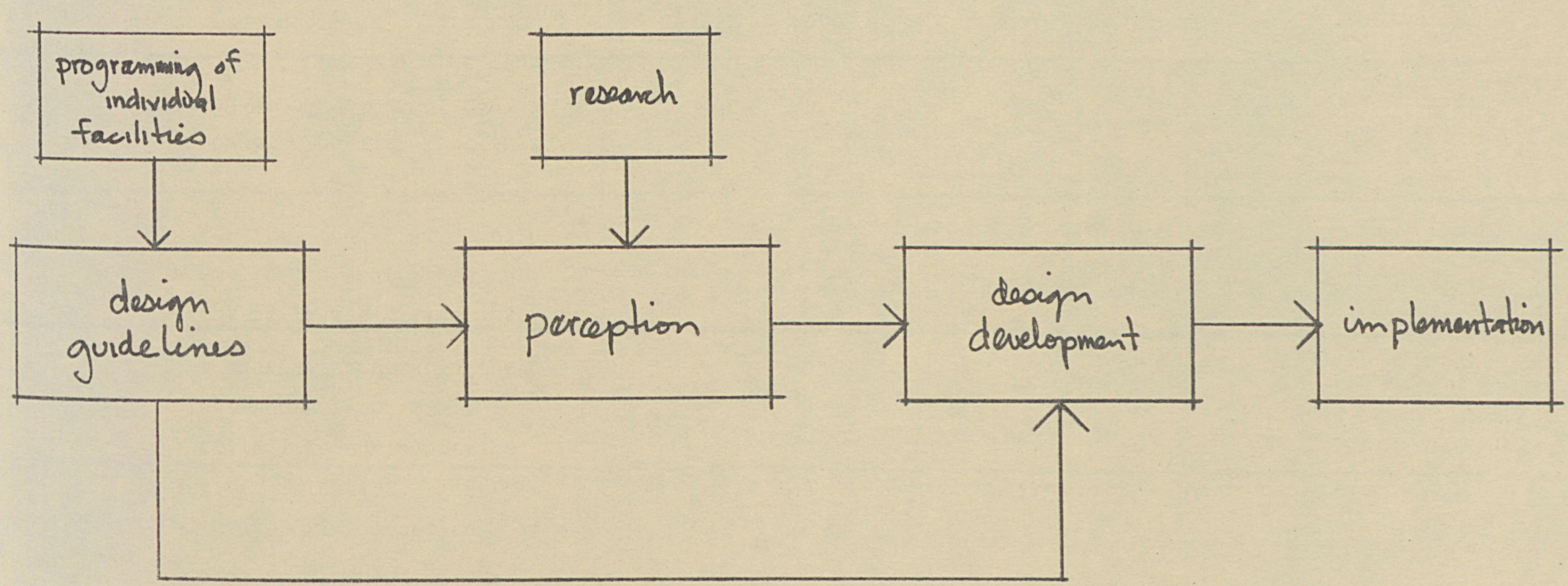

programming of individual facilities
research
design guidelines
perception
design development
implementation

FIGURE 2

background

GREAT FALLS: GENERAL

Great Falls (figure 3) is the second largest city in Montana and home of the largest military base in the state. The city is located in the northcentral area of the state and is landmarked by the junction of the Sun and Missouri Rivers.

The first white men to see the Great Falls of the Missouri were Captains Merriweather Lewis and William Clark who passed through the area on their great expidition during 1803 and 1804. In 1881, the land that is presently the city was surveyed by Paris Gibson. He, along with a group of men, then incorporated the Great Falls water, power, and townsite company. The city itself was incorporated in 1888.

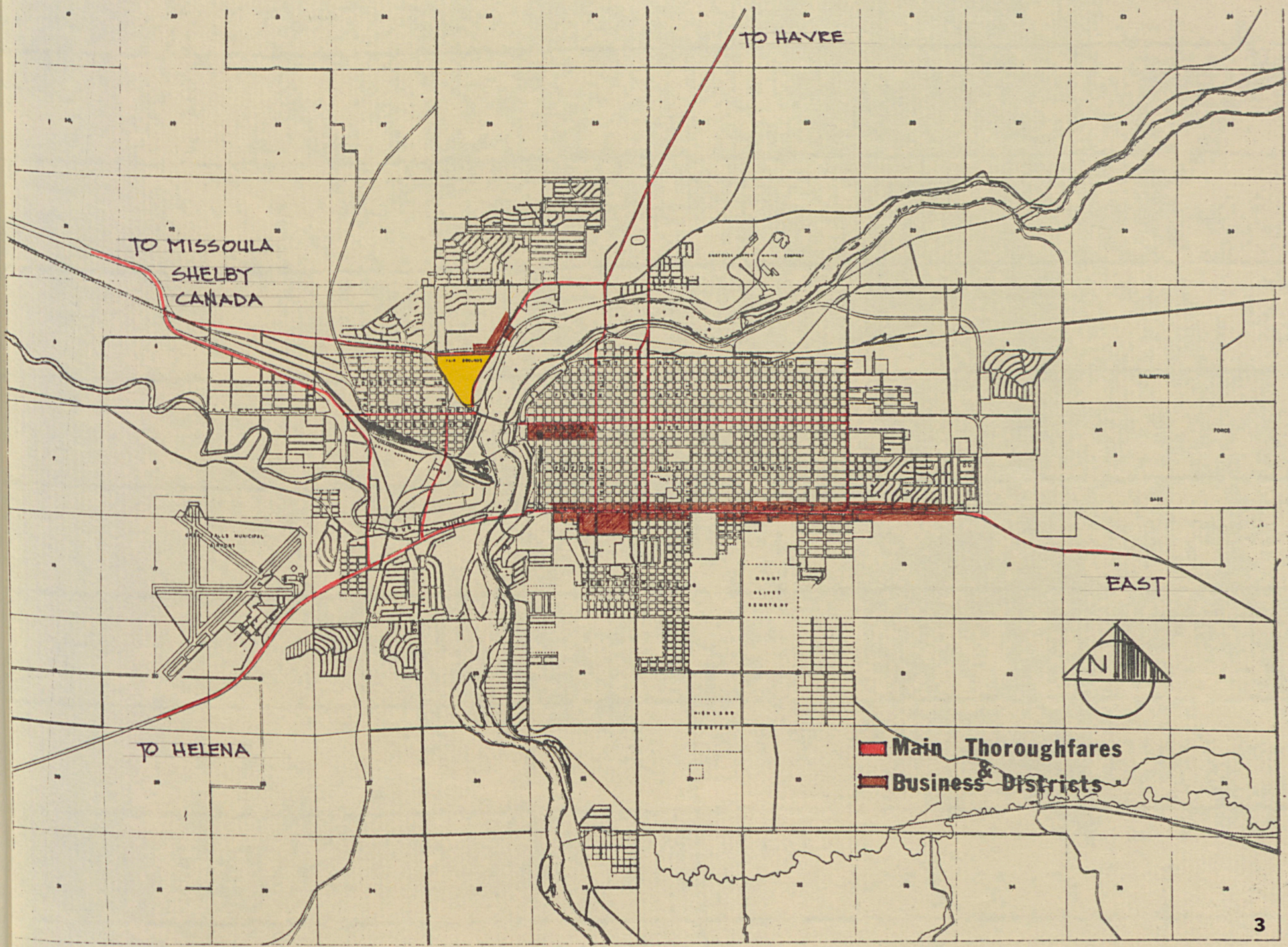
This townsite was located to the east of the Missouri River, and today the present CBD dates from that era. The town began to spread to the north as the Anaconda Company built a smelter in that area. With the coming of the railroad yards to the west of the river, Great Falls was divided by the Missouri River.

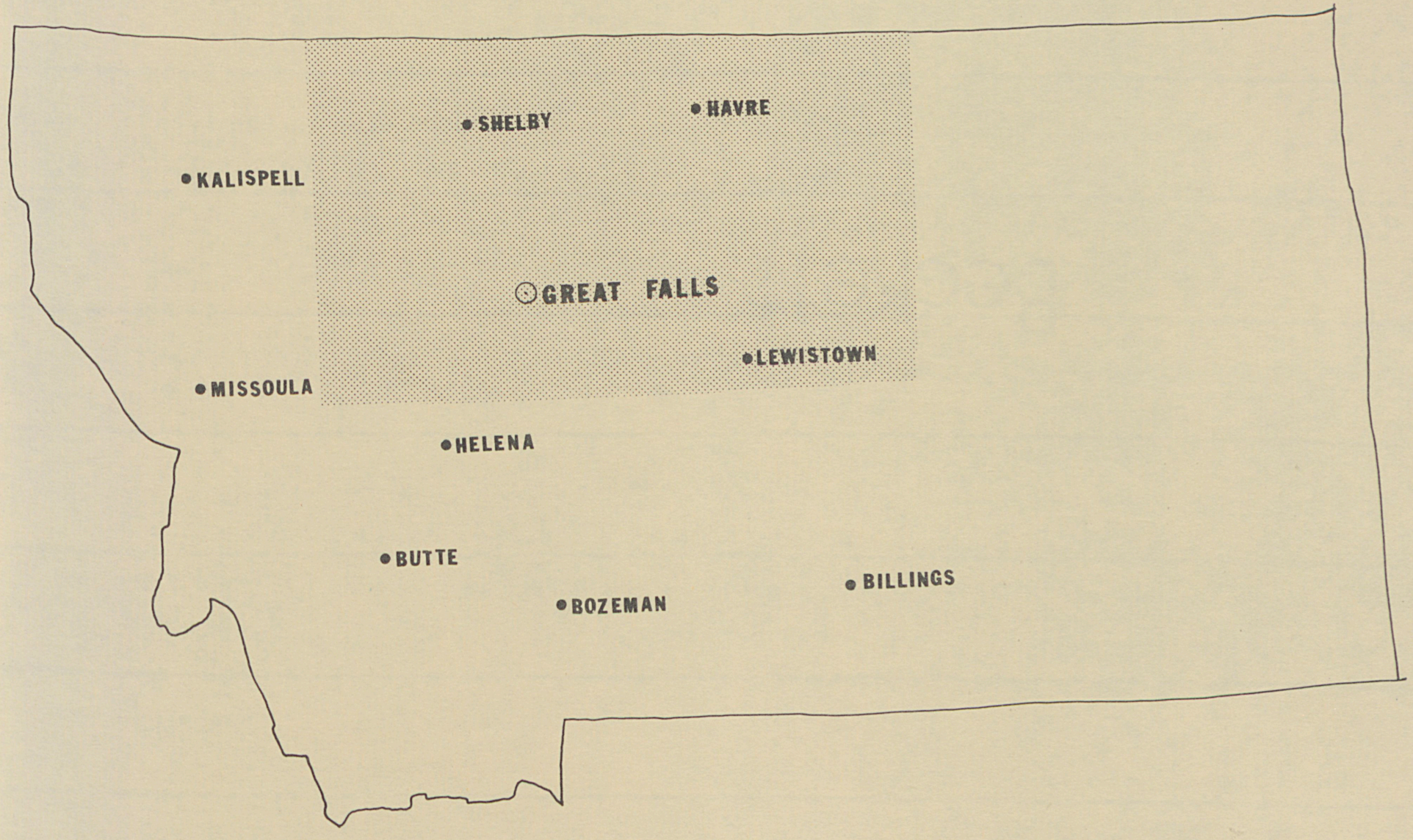
Early industry in the city included a silver and copper smelting factory, a meat packing plant and a flour mill. Great Falls has always been and is an agriculture orientated city. Fertile land surrounds the city and Great Falls is one of the three points outlining the "Golden Triangle". This area is rich in farmland for agriculture and livestock production. With its prime location, Great Falls became a major shipping terminal for grain and livestock. Its many elevators store and process wheat, barley and other grains for shipping to the West Coast or Chicago.

The present population of Great Falls is in the 90 thousands. The trade area of Cascade County and northcentral Montana adds another 150,000 people to the population under consideration (figure 3a). The Malmstrom Air Force Base population changes as often as government regulations decree, and can range from four to eight thousand. A good deal of the economy of Great Falls is directly related to the economy of the Air Force base.

Great Falls is the county seat of Cascade County. All county offices are housed in Great Falls. The State Fairgrounds, while within the city limits, is the property of and under the jurisdiction of Cascade County.

Great Falls has a modern international airport that is served by three major airlines. There is a bus depot in the downtown area served by one bus line. Access to Great Falls from other areas in Montana is by way of US 87 from the northeast (Havre), on US 87/89 from the SSE and on Interstate 15 from the southwest and northwest (Helena, Canada).


TO HAVRE
TO MISSOULA
SHELBY
CANADA
EAST
N
TO HELENA
Main Thoroughfares
& Business Districts



GREAT FALLS & ITS TRADE AREA

HISTORY OF THE STATE FAIRGROUNDS

The earliest expressed interest in a Fairgrounds for Great Falls was evident on April 15, 1889. On this date, the city purchased some land on the west side of Great Falls and built a race track as well as some exhibition buildings. This complex was known as the North Montana Fair Association. Plans were made for a Fall, 1889 opening and in 1890 there were horse races, but it was not until August 15, 1891 that the first fair took place.

The Fairgrounds was located on very level ground--too level as it turned out. The fair ran every summer until 1911 when a five day rainstorm coincided with the fair. At that time, the Fairgrounds was abandoned. Plans were made in 1911 to move the site to Black Eagle on a site of 40 acres owned by the Great Falls Townsite Company. For some reason, this deal fell through and the North Montana Fair Association ceased to exist.

It was not until 1925 that public interest in a fair for Great Falls began again. Surveys were done in 1926 in an attempt to find a suitable site. During this time, the county acquired the present site as well as the livestock building on the premises. This 85 acre tract of land was purchased for $150.00 per acre. In later years, the Great Northern Railroad donated the rest of the land to the Fairgrounds bringing the total acreage of the Fairgrounds to 90 acres. A commission was established to pursue the feasibility of a Fairgrounds and in 1927 this commission reported to the Board of County Commissioners of Cascade County. It was recommended that the county build a Fairgrounds on the present site and start hosting a fair in 1928.

Construction began and through the efforts of various government work-relief programs, buildings and a racetrack were put up one by one. It was determined in late 1929 that a fair would not be held until 1931.

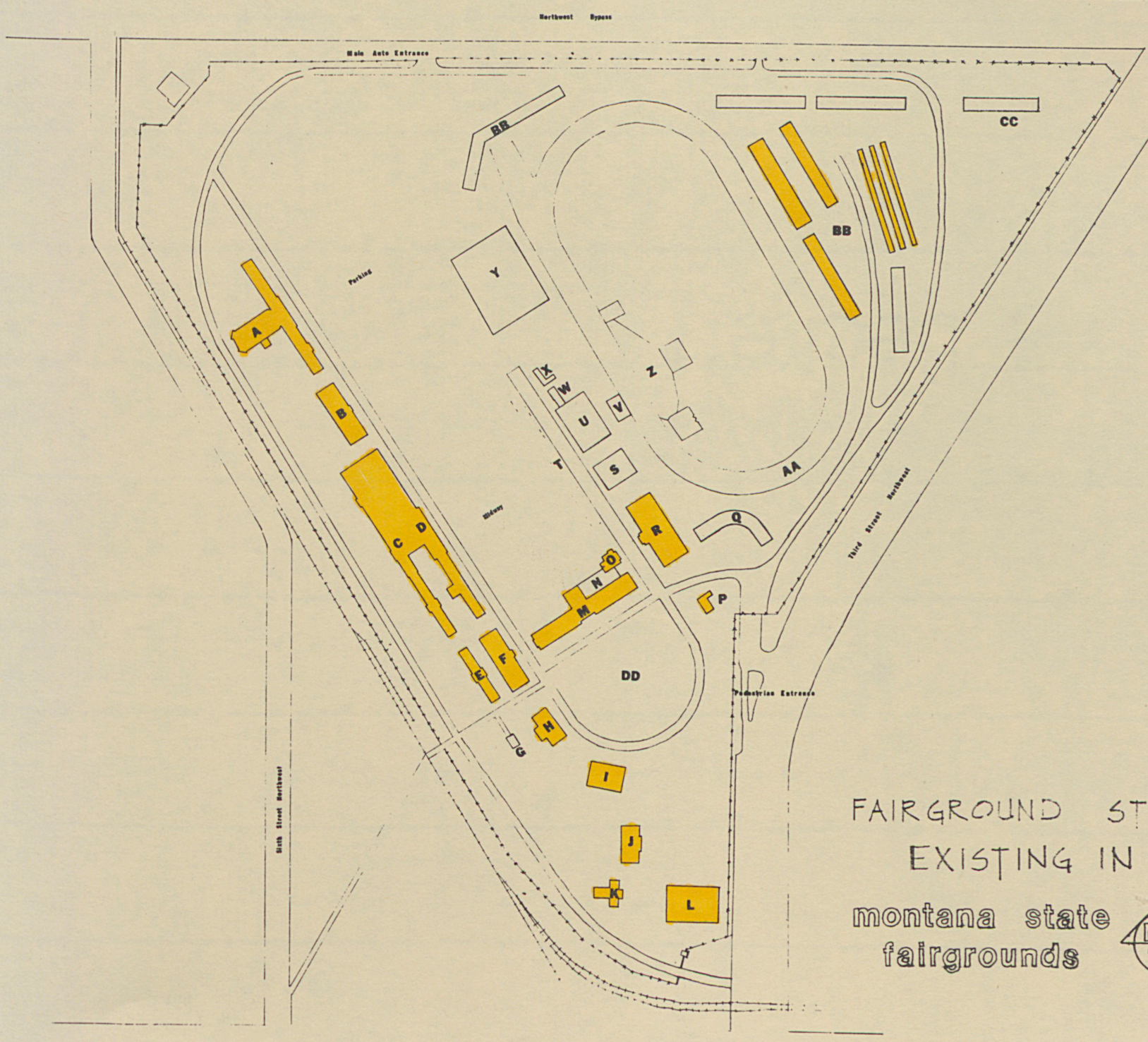
On August 24, 1931 the Fairgrounds opened to the public. In addition to the racetrack and grandstand, there were three horse barns, a hog barn, sheep barn, livestock building,

4-H building and an auditorium. The governor of Montana came from Helena to dedicate the new $250,000. plant and opening day attendance was 29,163 persons. The fair ran for five days (total attendance being 126,143*) and began a tradition which still runs to this day.

Since the opening year the fair week has been increased to eight days with the total attendance being 161,030 (1978). The 1950 fair was a record setter lasting six days and attracting 201,803 visitors.*

Structures continued to be added and dismantled over the years. A sports arena housing two skating rinks with seating for 7,200 is the newest addition and work is currently underway to modernize the stock pavilion. The State Fair today is home to nine exhibition buildings, six agriculture related structures, an administration building and stalls for over 600 horses.

*Early attendance figures are questionable as often the same fairgoer was counted as he entered the grounds, parked his car and entered the afternoon grandstand and evening grandstand. With this method, the same person could be counted four times, for example. It was not until 1970 that fair attendance was taken only at the outside gates.



FAIRGROUND STRUCTURES
EXISTING IN 1937

montana state
fairgrounds

PREVIOUS PROPOSALS

This thesis project is not the first proposal offered to the State Fair Board in considering a new master plan for the Fairgrounds. Previously, in 1976, a plan was proposed by Page-Werner and Partners, architects, and was presented to the voters on the November ballot. This master plan included a 166,000 square foot main arena with seating for 11,000, a 20,000 square foot agriculture center, and a 26,800 square foot humanities and convention center. It was felt generally the main reason this proposal failed was because a proposal for a badly needed new gymnasium for Great Falls High School was also on the ballot. To pass both would have drastically increased the tax levy of each Cascade County resident and only the gymnasium passed. In 1962, voters rejected a plan to build a large arena similar to the Montana State University Fieldhouse by more than a 4 to 1 margin.

In 1977, another proposal was presented to the Fair Board. This time a private citizen offered a large tract of land to the county should they decide to move the Fairgrounds there. This land was located in Black Eagle to the north of the city and consisted of suitable acreage. A schematic plan was developed, but this plan failed primarily for political reasons, but also for economic ones. The present site would have had to be sold in order to move to the new site and this would have proved difficult. Other financial features of this proposal were very questionable.

In any event, any new proposal for the Fairgrounds or the development of a master plan would have to be approved by the Fair Board, the county commissioners, and then would be carefully scrutinized by the voters of Cascade County before its acceptance and implimentation.

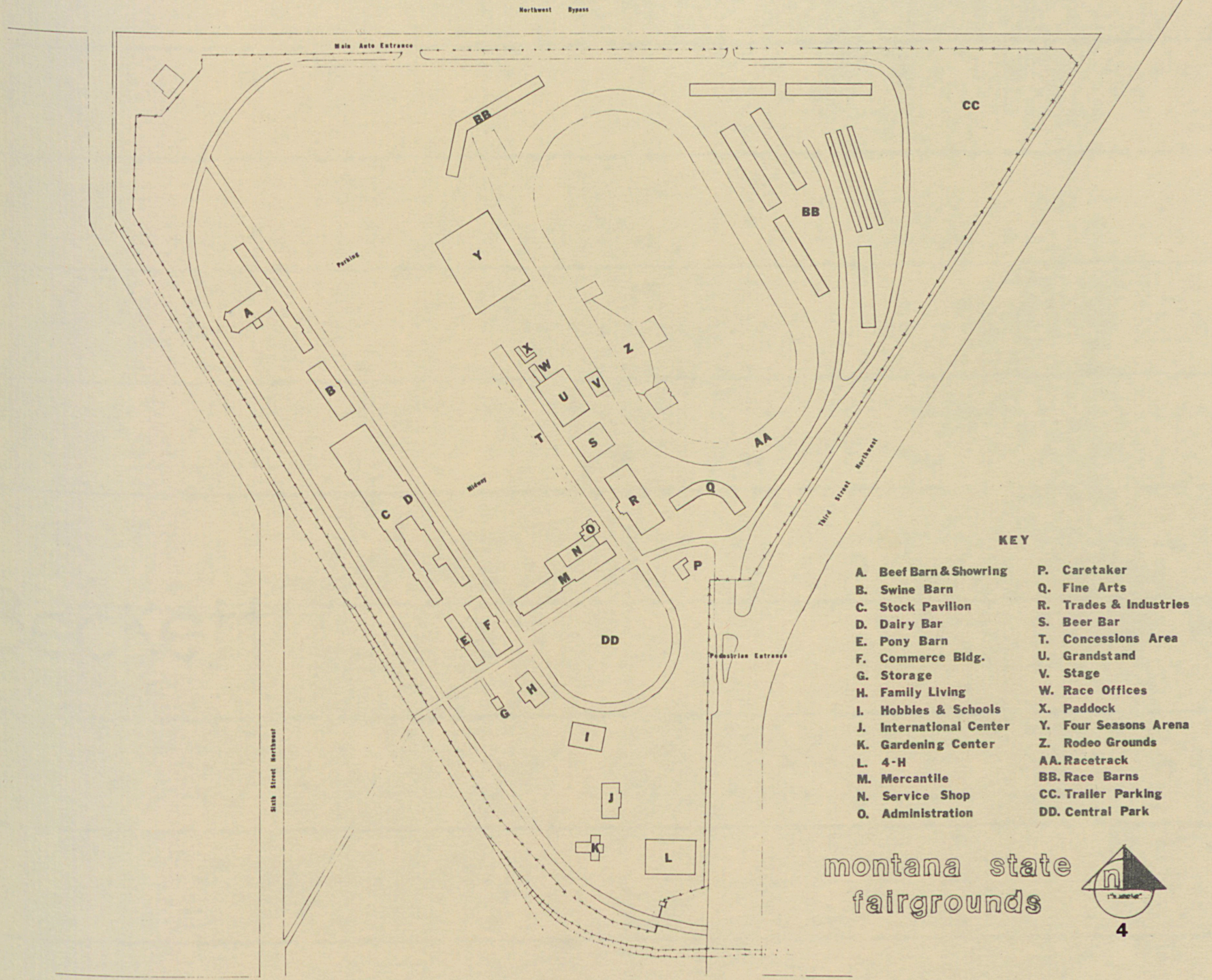
analysis

FUNCTIONS AND DEMANDS OF THE FAIRGROUNDS

The major function of the Fairgrounds (figure 4) each year is the State Fair. This event lasts eight days and includes a midway carnival, agricultural and educational exhibits, cultural and entertainment events including a rodeo and parimutual horse racing.

Outside of the fair week, the Fairgrounds hosts the spring horse racing, horse shows, car shows, a Boy Scout Jamboree, warehouse sales, and some musical concerts. There are various smaller community events also held here such a Y-Men's annual Christmas tree sales and political rallies.

With the construction of the new Four Seasons Arena, additional events will be held here. These include ice hockey, the Ice Capades, trade shows, winter rodeos, and winter concerts.



KEY

A. Beef Barn & Showring
B. Swine Barn
C. Stock Pavilion
D. Dairy Bar
E. Pony Barn
F. Commerce Bldg.
G. Storage
H. Family Living
I. Hobbies & Schools
J. International Center
K. Gardening Center
L. 4-H
M. Mercantile
N. Service Shop
O. Administration
P. Caretaker
Q. Fine Arts
R. Trades & Industries
S. Beer Bar
T. Concessions Area
U. Grandstand
V. Stage
W. Race Offices
X. Paddock
Y. Four Seasons Arena
Z. Rodeo Grounds
AA. Racetrack
BB. Race Barns
CC. Trailer Parking
DD. Central Park

montana state fairgrounds

EARLY ANALYSIS

The Fairgrounds of 1931 remains similar to that of today although there have been notable changes over the years--most notably the vehicular access.

The east gate was previously the main auto entrance as the greater part of the city was located on the east side of the Missouri River. Within a few years, the auto gate was moved to the south end of the Fairgrounds to encourage a stronger separation of parking and fair space. At this time, the Northwest Bypass did not exist (it was not built until the 1960's), and nearly all vehicular traffic came from the south on 3rd St. NW.

The road to the west (6th St. NW), formerly bordered the Fairgrounds along the entire perimeter to the 3rd St. NW intersection. This street was changed and rerouted as the by-pass was constructed.

The bituminous road that encloses the Fairgrounds was finished in 1937 and remains to this day. No new asphalt surfaces or roadways have ever been added. Parking generally has remained the same although parking was allowed in the south corner of the Fairgrounds and the south corner of the racetrack in the past.

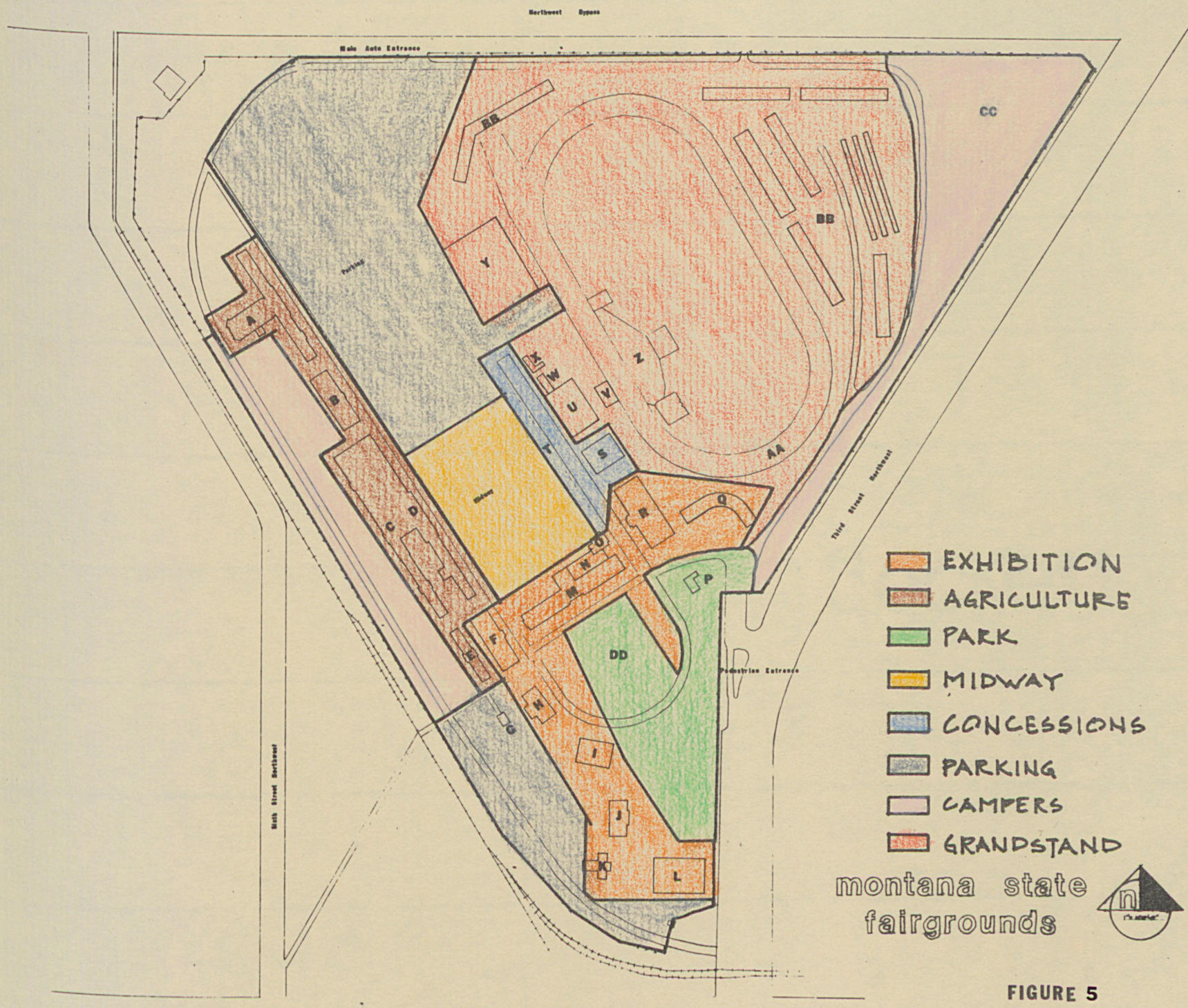
The Fairgrounds was built in 1931 to serve the 41,000 residents of Cascade County. Today, there are 120,000 residents in Cascade County alone and thousands more who utilize the Fairgrounds from Northern Montana.

ORGANIZATION

A look at figure 5 shows the fair's organization. Although buildings have been added and dismantled over the 48 years of the fair's existance, the organization remains generally the same and it is excellent. The addition of the ice building in 1979 may have changed this order, but at present no plans are in store to use the structure for exhibition purposes. There is a beautifully landscaped area in the northwest corner that is not used much except by trailer parking and another landscaped area to the south of the 4-H building that also is rarely used. These spaces could better serve the Fairgrounds if more clearly defined and put to a better use.

There is a lesson to be learned from organization of functions at fairgrounds. The more organized the site is, the better the chances are that the facility will be appreciated by the public. Case studies done by myself have found that in Worlds Fairs, those that were carefully planned and organized (Montreal 1967, and Osaka 1970), tended to be received with greater praise than those with ill-conceived plans (New York 1964).

A master plan developed for the State Fairgrounds should attempt to maintain the strong organization of the existing facilities.


Northwest Bypass
Main Auto Entrance
Parking
Water
Sixth Street Northwest
Third Street Northwest
Pedestrian Entrance
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DD
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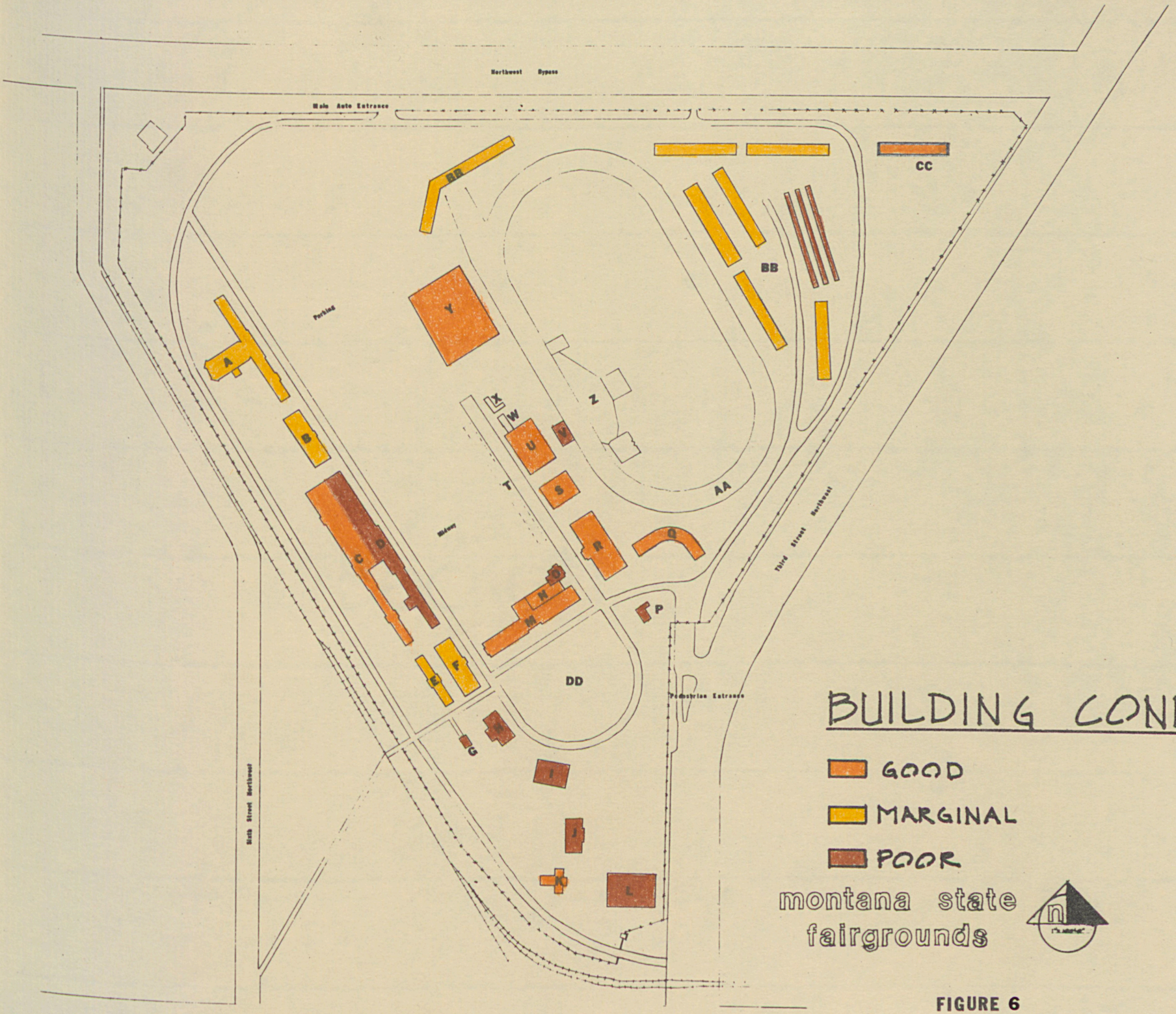
EXHIBITION
AGRICULTURE
PARK
MIDWAY
CONCESSIONS
PARKING
CAMPERS
GRANDSTAND
montana state
fairgrounds

FIGURE 5

INVENTORY

In order to establish a sound basis for the improvement and redevelopment of buildings and structures at the Fairgrounds, a building-by-building inventory and architectural analysis was conducted (figure 6). Each structure was inspected and analyzed as to suitability and physical condition. This analysis was organized into three "condition categories" for all the buildings on the Fairgrounds.

1. Good condition: Newer buildings or older buildings in sound structural condition. This category also includes structures that might be better utilized if renovated. No justification can be made for razing these facilities.
2. Marginal condition: At present, they are fair, but long range plans should be developed for these. Some can be renovated, others may have to be removed in the near future.
3. Poor Condition: These structures will be the first to go. Most are antiquated, others structurally unsound. There is no economic justification for keeping, renovating, or maintaining these facilities.


Northwest Bypass
Main Auto Entrance
Parking
Midway
Sixth Street Northwest
Third Street Northwest
Pedestrian Entrance
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BUILDING COND.
GOOD
MARGINAL
POOR
montana state
fairgrounds

FIGURE 6

Building	Sq. Footage	Function	Condition	Remarks
4-H	15,000	exhibition	poor	antiquated, structure problems
Family Living	5,000	exhibition	poor	antiquated
Gardening	3,588	exhibition	good	possibly utilize as park related building
International	5,000	exhibition	poor	antiquated
Hobbies/Schools	7,500	exhibition	poor	antiquated
Commerce	8,448	exhibition	marginal	at present, fair
Fine Arts	6,400	exhibition	good	has some architectural character
Trades & Inductries	16,000	exhibition	good	most versatile of all exhibition structures
Mercantile	15,000	exhibition	good	has architectural character, good focal point
Pony Barn	4,760	ag. display	marginal	at present, fair
Dairy Barn	20,400	ag. display	good	
Stock Pavilion	20,400	ag. display	poor	will be dismantled in fall 1980
Hog Barn	10,000	ag. display	marginal	needs work
Hereford Barn	21,582	ag. display	marginal	might be nice if renovated
Grandstand	seats 4,500	varied	good	concrete with steel roofing
Race Office	400	race	marginal	barren
Jockey's Bldg.	450	race	marginal	
Odds Board	450	race	poor	needs modernization
Judge's Stand	400	race	poor	poor visibility, barren

Building	Sq. Footage	Function	Condition	Remarks
Racetrack	½ mile oval	race	marginal	needs banks, landscaping
Hay Shed	1,350	storage	marginal	
Paddock Area	1,000	race	good	new
A Barn	12,870	race	poor	all barns are fire hazards
B Barn	8,316	race	marginal	
C Barn	8,316	race	good	
D Barn	12,150	race	marginal	
E Barn	6,966	race	marginal	
F Barn	9,612	race	marginal	
G Barn	4,590	race	poor	
H Barn	4,590	race	poor	
I Barn	4,680	race	marginal	
Administration	3,544	offices	poor	antiquated
Caretaker's House	1,152		poor	antiquated, small
Shop	5,800		good	new roof
First Aid	400		marginal	metal building
Beer Bar	3,600		good	metal building
Four Seasons Arena	45,000	multipurpose	good	new

In addition, the Fairgrounds provides parking, a midway, and trailer hookup facilities on its 90 acre complex. There is a bituminous surface roadway that encircles the Fairgrounds. It loops near the east gate and separates the heavily landscaped area from the general unlandscaped Fairgrounds. An eight foot cyclone fence runs around the perimeter of the property line.

VEHICULAR CIRCULATION

Figure 7 is self explanitory. It can be seen that the main automobile entrance is at the North gate. The Southeast gate is utilized by administrative personnel and fair officials. Also on the north border of the Fairgrounds is a gate used by horsemen and is guarded by security personnel. Service vehicles will use the east gate during the early morning hours, but it is closed during fair hours. Just before closing, three other gates are opened in an attempt to relieve congestion at the main north gate.

A pedestrian entrance is located near the east gate and the majority of this foot traffic utilizes 3rd St. NW for parking purposes. Pedestrians also enter at the main auto entrance and they either use the vacant lots and the Northwest Bypass for parking, or are nearby residents. A major problem is at the north automobile entrance where people who park along the bypass or on the vacant lot must cope with the 40 m.p.h. traffic while walking alongside or crossing the bypass. There is no well defined crosswalk.

Both the Northwest Bypass and 3rd St. NW are busy thoroughfares. The speed limit is 40 m.p.h. on both and is not lowered during fair week. The majority of the traffic occurs at the bypass and 3rd St. NW intersection (15,750 vehicles per day)[1], and 3rd St. is somewhat busier than the bypass (12,800 versus 8,670 vehicles per day). Sixth Street NW is used generally by residents of the area or persons travelling to the high school nearby and is lightly travelled (4,600 vehicles per day).

---

1. City-County Transportation Planning Department, Great Falls

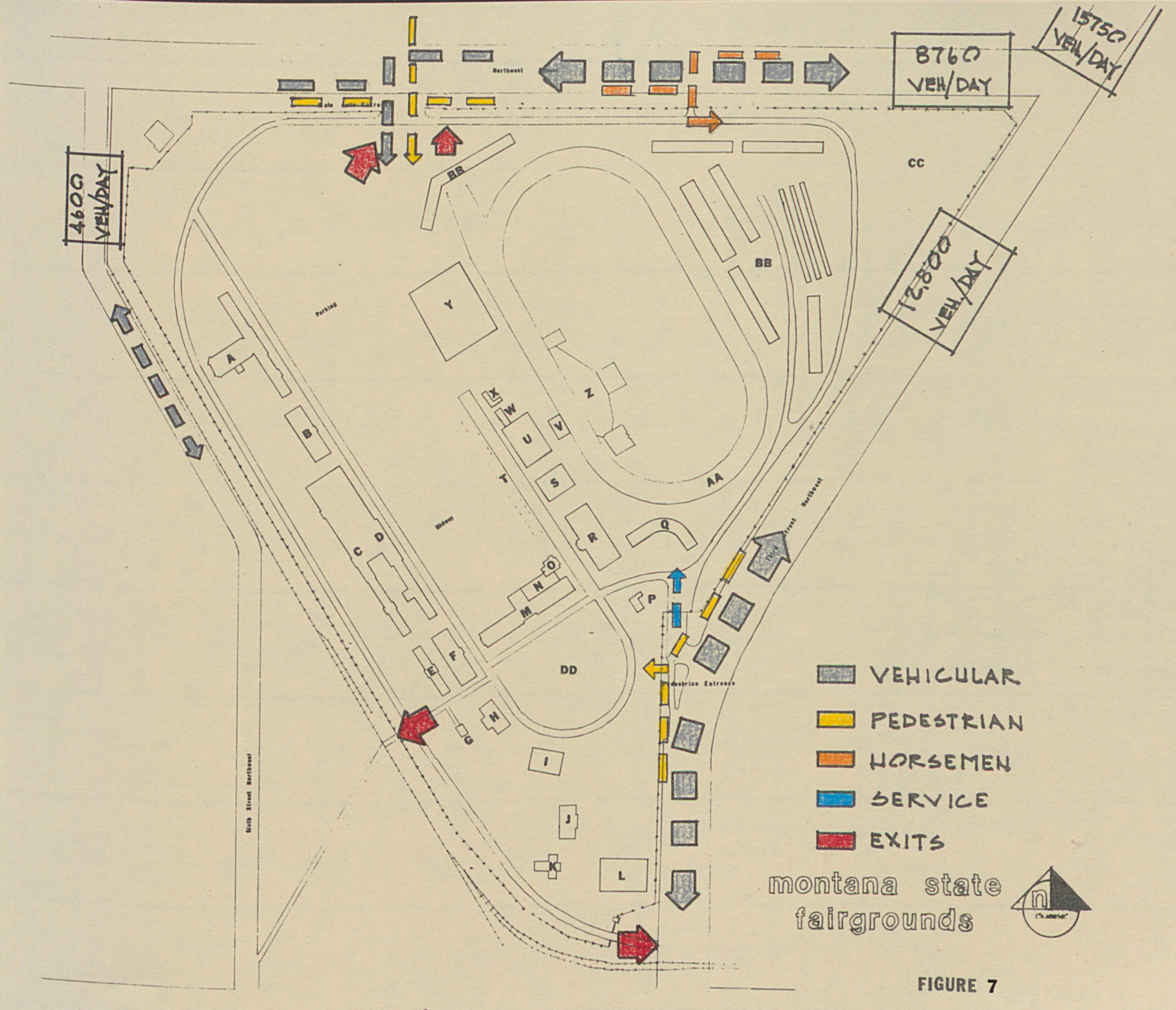

15750 VEH/DAY
8760 VEH/DAY
4600 VEH/DAY
12,800 VEH/DAY
CC
BB
AA
DD
VEHICULAR
PEDESTRIAN
HORSEMEN
SERVICE
EXITS
montana state fairgrounds

FIGURE 7

PEDESTRIAN CIRCULATION

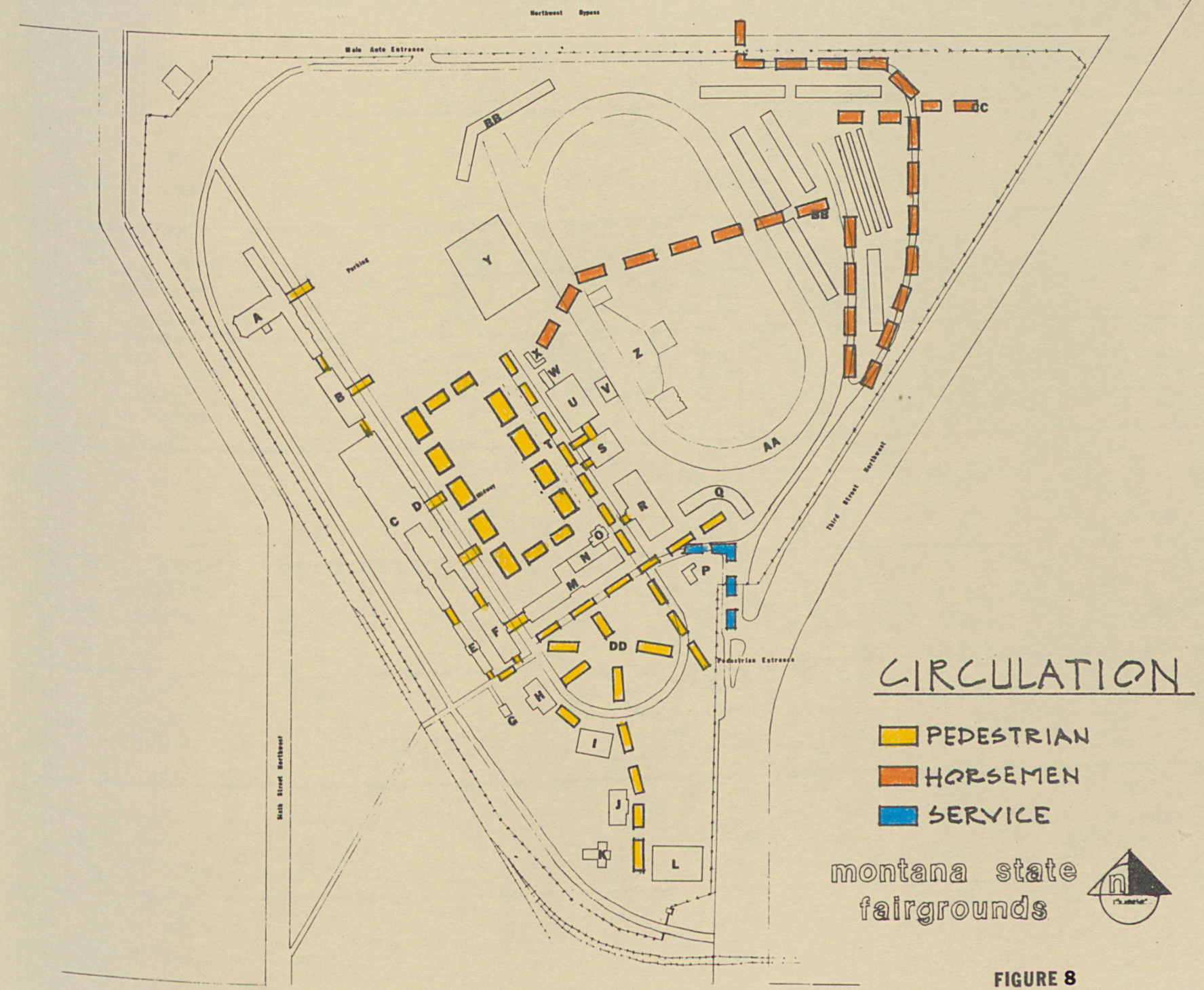
Once visitors have entered the fair, they are free to circulate as they wish. There is no general pattern of circulation, although there are a few strong paths. The major concentration of fair visitors is found on the midway in a U-shaped traffic pattern and on the strong linear axis where the concessions and food fair are located (figure 8).

The agriculture related structures form an axis, but this axis can be penetrated at any point. It does not have a strong start and finish.

The exhibition buildings and spaces are in need of stronger linkage. Often times people do not travel south of Central Park as there is no pathway to lead then there. Central Park is a mixing of many pathways and is the general relaxation and picnic area of the Fairgrounds.

There is a strong separation of horsemen and visitor areas in the Fairgrounds. This is generally due to security reasons. Horsemen circulation in their area is good, although they are required to bring their horses across the track before and after the race. This could prove dangerous or distracting if not carefully administered.

Circulation appears to be one of the major weaknesses of the existing facilities. Careful consideration must be given to this aspect of the master plan.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CIRCULATION
PEDESTRIAN
HORSEMEN
SERVICE
montana state
fairgrounds

FIGURE 8

PARKING AND TRANSPORTATION

A serious problem with the Fairgrounds is the lack of adequate parking facilities. Too often during fair week the parking lot is filled early in the afternoon and the main auto entrance is then closed. This necessitates parking along the major thoroughfares or the vacant lot to the north of the Fairgrounds. Consequently, the major problem here is pedestrians entering the grounds must cope with the heavy traffic while crossing these streets as there are no well defined crosswalks or signals. However, this problem will occur only during fair week. Major events generated by the Four Seasons Arena will usually attract no more than 3,000 cars which the Fairgrounds can easily handle because the midway land is available for additional parking. Nevertheless, this is a serious problem which should not be overlooked.

The vacant land to the north of the complex will soon be developed into a major shopping center and large hotel complex. This will provide paved parking which could be used by the Fairgrounds during fair week. This has been approved by various merchants who own the land. Another possibility is for the Fairgrounds to provide a shuttle bus from these parking facilities to the grounds.

Great Falls is presently undergoing a study to determine transit routes. This bus system has been approved by the voters and should be in operation by 1983. As gas costs rise and conservation efforts come into being, more people will likely utilize public transportation services. This will be beneficial in releiving some of the parking problems at the Fairgrounds. Another benefit of mass transportation services might be the utilization of satellite parking throughout the city and smaller communities nearby. A shuttle bus could then provide transportation to the Fairgrounds.

CENTRAL PARK AND LANDSCAPING

The primary relaxation area of the Fairgrounds is Central Park (figure 9). This park consists of the southern quarter of the Fairgrounds and is well landscaped. There are numerous Blue Spruce and dozens of Cottonwood trees that are over 40 feet in height. A gazebo is located here that provides shelter for picnic tables and in general this area is elegantly landscaped. Because of its many trees, there are no athletic fields here and the area is primarily utilized for picnics and relaxation.

This park, with its heavy landscaping, is a rarity in Great Falls. Most parks being neighborhood parks, consist of open grass fields with recreational facilities. Outside of fair week, the park is used for large community picnics as well as social club gatherings auch as the Elks Club or Jaycees.

A proposal is currently being studied by the city commissioners to develop the west bank of the Missouri River into a public park. Research has shown that this proposal is likely to be accepted and constructed in the very near future. This presents a potential design factor in considering a master plan. Ideally, Central Park and the West Bank Park could be linked and riverfront access would then increase the potential use of the Fairground facilities.

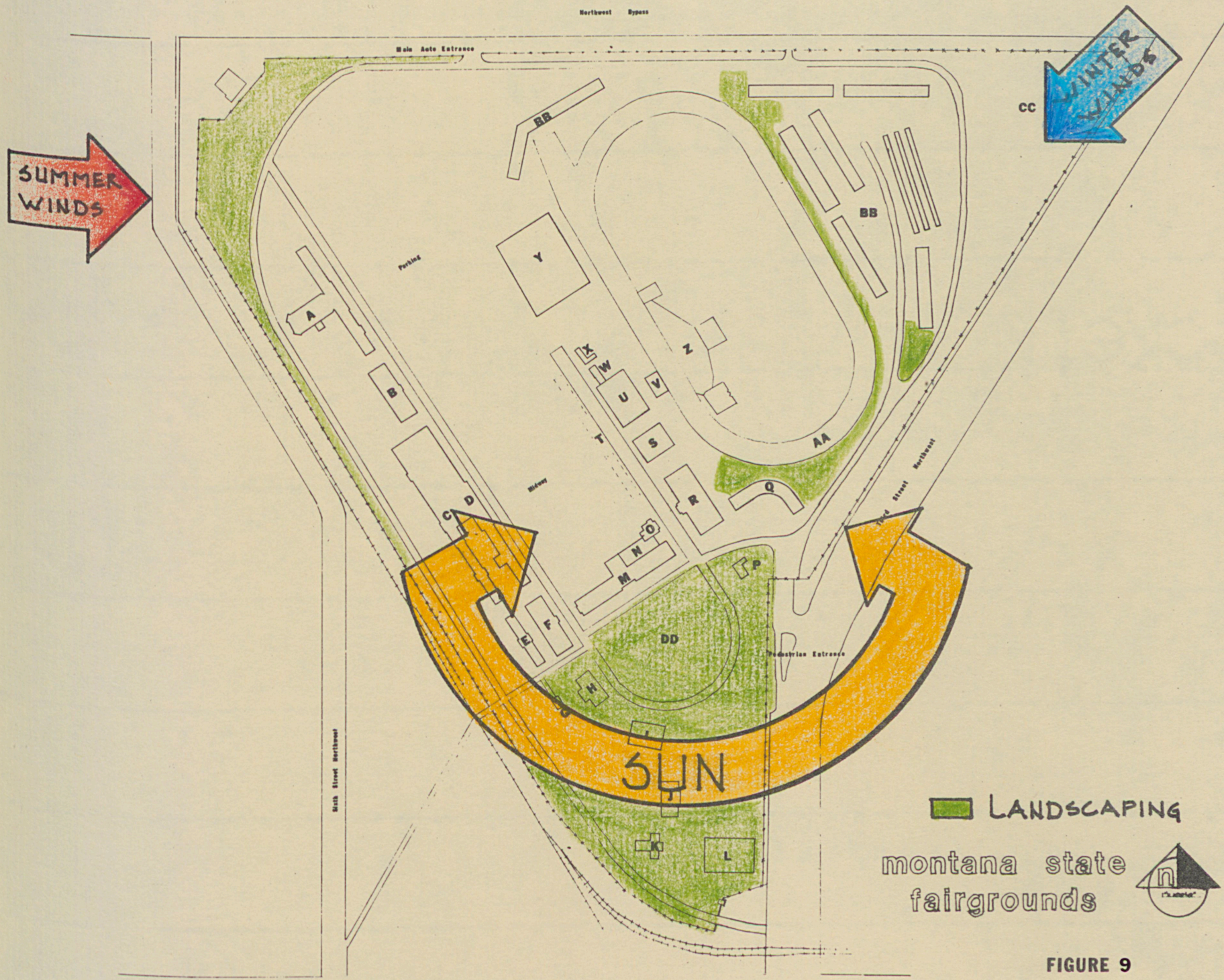
Northwest Bypass
Main Auto Entrance
SUMMER WINDS
WINTER WINDS
CC
RR
BB
AA
Y
Z
A
B
C
D
E
F
G
H
J
K
L
M
N
P
Q
R
S
T
U
V
W
X
DD
Parking
Midway
Pedestrian Entrance
Third Street Northwest
Sixth Street Northwest
SUN
LANDSCAPING
montana state fairgrounds

FIGURE 9

UTILITIES AND GEOLOGY

Test bores[2] taken from the Fairgrounds show the site and its subsoil conditions to be close to uniform throughout the entire Fairgrounds. The following is typical:

ground cover: fill; gravel/sand; topsoil or bituminous surface

6" - 6' below surface: silty clay; dry to moist, soft to firm

6' - 10' below surface: sandy silt; soil is very soft to firm, frost susceptable, moisture sensitive, and compressible

10' - 15' below surface: silty sand; fine sand with clay near the top of the layer

15' and more below surface: plastic clay; soil is very expansive and moisture sensitive

Groundwater is at depths varying from 8-12 feet below the surface. The water level is known to rise to within 4 feet of the surface depending on the water level of the Missouri and Sun Rivers.

As this site has been previously developed, all utility hookups are readily available. Sewer, water, gas, and irrigation lines are currently underground and throughout the Fairgrounds. Electrical and telephone lines are above ground and there are numerous utility poles on the Fairgrounds. The visual impact of these poles is very disconcerting and deserves serious consideration. Many of the lines could be accomodated below grade.

It appears unlikely that the vacant land to the north of the Fairgrounds has had any of these improvements done to it. Should it be necessary to improve this land, it will require a large financial backing of the county.

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2. Northern Testing Laboritories, Great Falls, Montana

CLIMATOLOGICAL DATA

Great Falls is characterized by generally pleasant weather in the summertime. Cool nights and warm days are the norm. Thunderstorms are common in the mid-summer nights with steady rainfall in the late spring and early summer. One of the unfortunate environmental factors of the State Fair is the unpredictability of the weather. Normally, it will rain one or two days during fair week and the wind will blow constantly.

Temperatures can often reach 100 degrees or more in July and August. Winter temperatures may fall as low as 40 degrees below zero. The first frost is usually in October and frost temperatures last until April. These temperature extremes can change as much as 40° in 24 hours, particularly in the winter during a cold spell. The southwesterly breezes are warm winds known as "chinooks". The cold spells do not last more than four or five days at a time. Wind is a well-known characteristic of Great Falls. It is often unnoticed be natives, but terribly uncomfortable to visitors of the city. Gusts of 70 m.p.h. are not uncommon in the summer or winter months. This combination of weather gives rise to sudden storms as a result of large temperature changes and gusty winds. In the winter, Great Falls will have blizzards and in the dry months, dust storms.

Great Falls Meteorological Data[3]

elevation - 3333 feet
annual rainfall - 14" (70% from April to September)
average winter temperature - 24°
average summer temperature - 69°
norm wind speed - 19.2 m.p.h.
prevailing wind direction - southwest
annual snowfall - 60 inches

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3. Great Falls Chamber of Commerce and Visitors Bureau

SUMMARY

The pressures of an increasing population for Great Falls and Cascade County create a potential that the Fairgrounds will decline in operating capabilities. If proper redevelopment of the antiquated facilities is not accomplished in the near future, the Fairgrounds will not be an acceptable facility to its users.

The existing and future potentials for the State Fairgrounds are outstanding. Great Falls and Cascade County have the opportunity to take advantage of, and maximize the potentials for the Fairgrounds. Conversely, if the potentials are overlooked, the Fairgrounds will continue to decline in operational capabilities.

The Fairgrounds has no potential to expand as there is no land that is readily available. Nearly all the surrounding property is developed or presently undergoing development. For this reason, an effort must be made to best utilize the 90 acres that make up the Montana State Fairgrounds. One way to do this is to increase the density of the structures by perhaps combining the functions. If the antiquated singular-use type facilities are replaced with multi-purpose facilities, the opportunity for increased usage, additional function and increased income is much improved.

Any new development will have to provide for a minimum of the existing facilities. In addition, the present drawbacks such as parking, vehicular access and pedestrian circulation have to be given careful consideration. The following statements summarize the reality of the situation at the Montana State Fairgrounds:

1. For the Fairgrounds complex to meet the increasing demands and fulfill the needs of the public, a major redevelopment program must be undertaken. Such a program can transform the Fairgrounds from an obsolete, limited use facility to a highly productive multipurpose facility that will better serve the public in many additional ways, and throughout the entire year while creating the opportunity for a

more economically feasible operation. If redevelopment is not undertaken, the Fairgrounds will continue to be claimed by old age and ultimately the operation of the State Fair will become more and more impractical.

2. The Fairgrounds site is limited in area and therefore future redevelopment must be of efficient, space-saving methods. Large structures that consolidate compatable uses have proven very effective at other fairgrounds and appear to be the most practical approach. Compatable functions should be developed in physical proximity of one another to enhance both individual and group uses at the State Fairgrounds.

programming

NEED FOR PROGRAMMATIC DEVELOPMENT

The analysis has determined that the Fairgrounds needs a major development plan. Before programming of this master plan can be implemented, it first must be determined which structures and facilities will be kept, modified or added. The building inventory and analysis is a critical factor in the selection of this criteria.

Any new proposal must provide for a minimum of the present facilities. Additionally, provisions must be made for multipurpose use of new facilities and year-round usage of the Fairgrounds.

What follows is a general summary of the analysis and recommendations for specific fair functions.

EXHIBITION FACILITIES

A review of the building inventory reveals that several major exhibition facilities are in poor condition and should be replaced first. These structures are the 4-H building, the International Center, the Family Living building, and the Hobbies and Schools building. These four structures total 32,500 square feet and the Commerce building, classified as marginal, is another 8,500 square feet.

The most practical alternative is to consolidate these five functions into one facility. This proves to be the most economical solution as well. It appears unlikely the fair will lose some of its character of people going from structure to structure, from indoor to outdoor as there are still four exhibition facilities remaining. Careful consideration will be given to the amount of display space needed and perhaps tensile structures can be used to house some of the temporary displays set up for fair week only. The major structure would serve as a multipurpose center and the remaining facilities would be used either for smaller functions or storage as at present.

PROPOSED AGRICULTURE PAVILION

Plans are currently underway at the Fairgrounds to dismantle and remove the existing livestock pavilion. It will be replaced with a metal structure of 150' x 300', dirt floor and clear span to serve agriculture related activities. This structure will not be a part of the thesis design, but will be incorporated into the master plan. Additionally, provisions will have to be made for expansion of this area as other agriculture related structures are rapidly deteriorating and must be replaced soon.

The new agriculture pavilion will provide more varied year-round uses of the Fairgrounds. and will be a welcome addition.

A number of agriculture related structures are classified as marginal. These buildings have a limited lifespan, are worn, and should be replaced in the near future. A possibility exists in the consolidation of all agriculture facilities near the new agriculture pavilion. The land then made available by removal of existing structures can be utilized as parking.

GRANDSTAND, RACETRACK AND BARNS

Analysis has determined it would be most beneficial to relocate the present horse racing track. The reasons for this are numerous, but the primary one is relocation would provide for better utiliaation of the limited fairgrounds land. The present location of the track effectively separates a large particle of land at the northeastern corner of the fairgrounds. This tract is too large of an area to accomodate only horsemen and could be better utilized.

A new track could be greatly improved by providing banking on the turns. The present track is not banked and this puts an extra strain on the horses as they round the turns. Lighting might possibly be added for night racing and these two changes could bring an increase of horses and bettors to the fairgrounds.

Another major change to the track would be the lengthening of the chutes to allow for quarterhorse racing. The present track does not have a long enough stretch of straight track to accommodate this type of meet and a barn is in the way of constructing this chute. A new track, with this change would probably increase the number of race days and bettors using the fairgrounds.

The infield of this new track would be landscaped and would provide a facility that Great Falls does not presently have: a soccer field. This too would increase the number of Fairgrounds usage days.

There are two major drawbacks to relocating the track. First is that many , if not all of the horse barns will have to be removed. A review of the building inventory shows that only one of the race barns is in good condition, and the rest are rapidly becoming safety hazards. Additionally, the race barns are presently the most limiting structures on the fairgrounds as they can be used for nothing except to house horses over fair week. All other fair structures are utilized for storage after the race season is over. As more and more of the fair structures are replaced with multipurpose facilities, a replacement structure must be built to house heavy equipment and rental boat storage in the off season. These large barns with collaspable stalls

could provide just that.

A second major drawback of constructing a new track is the grandstand. The present one is fine, although it is over 30 years old, and a new steel superstructure roof was erected over the concrete grandstand in 1974. This grandstand was moved to its present site by tractors and it is conceivable that it could be relocated again. Economics will judge whether or not to construct a totally new grandstand with a clubhouse, judges' quarters, parimutual offices and race offices, or renovate the existing structure.

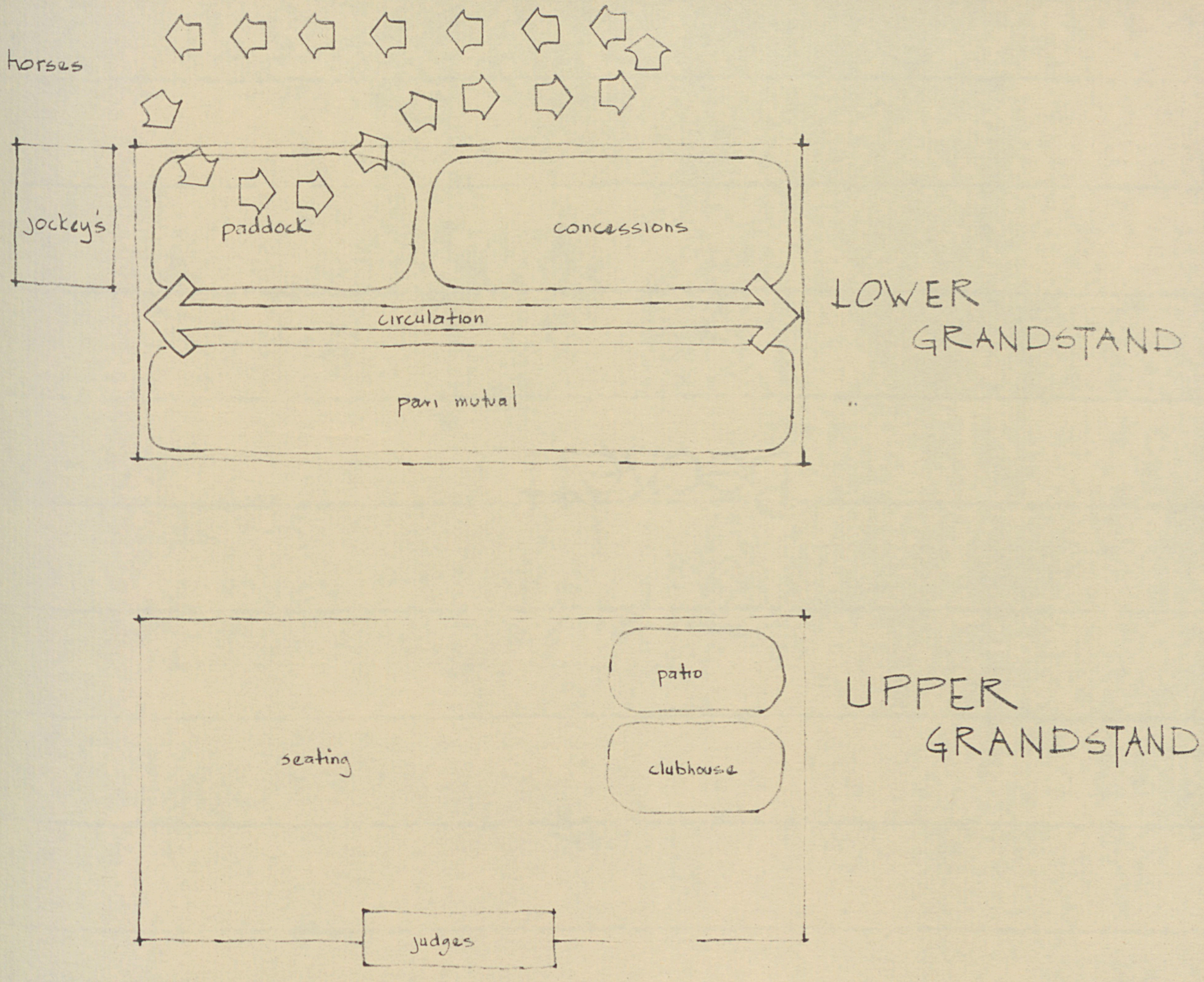
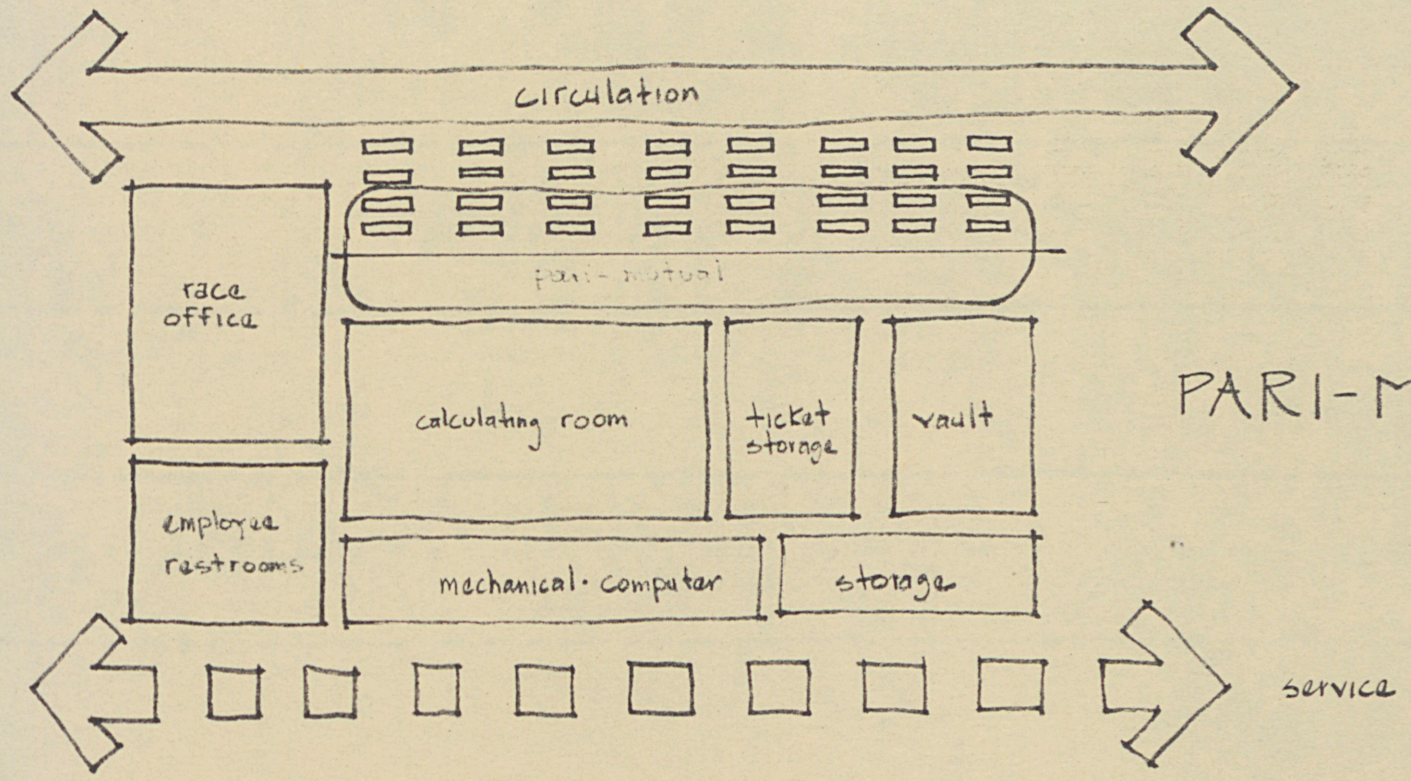
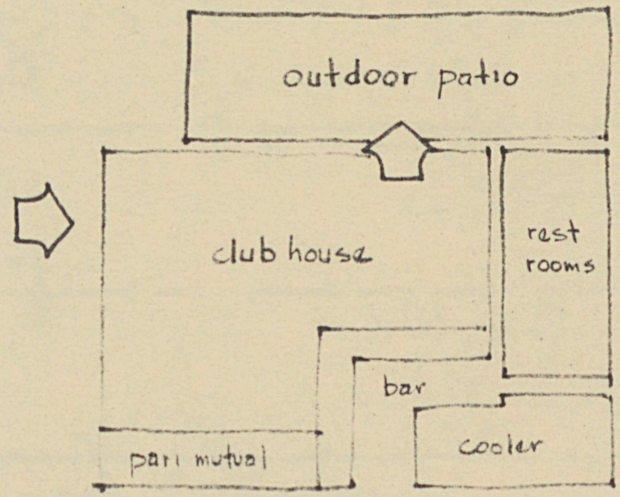

horses
jockey's
paddock
concessions
circulation
pari mutual
LOWER GRANDSTAND
seating
patio
clubhouse
judges
UPPER GRANDSTAND

FIGURE 10

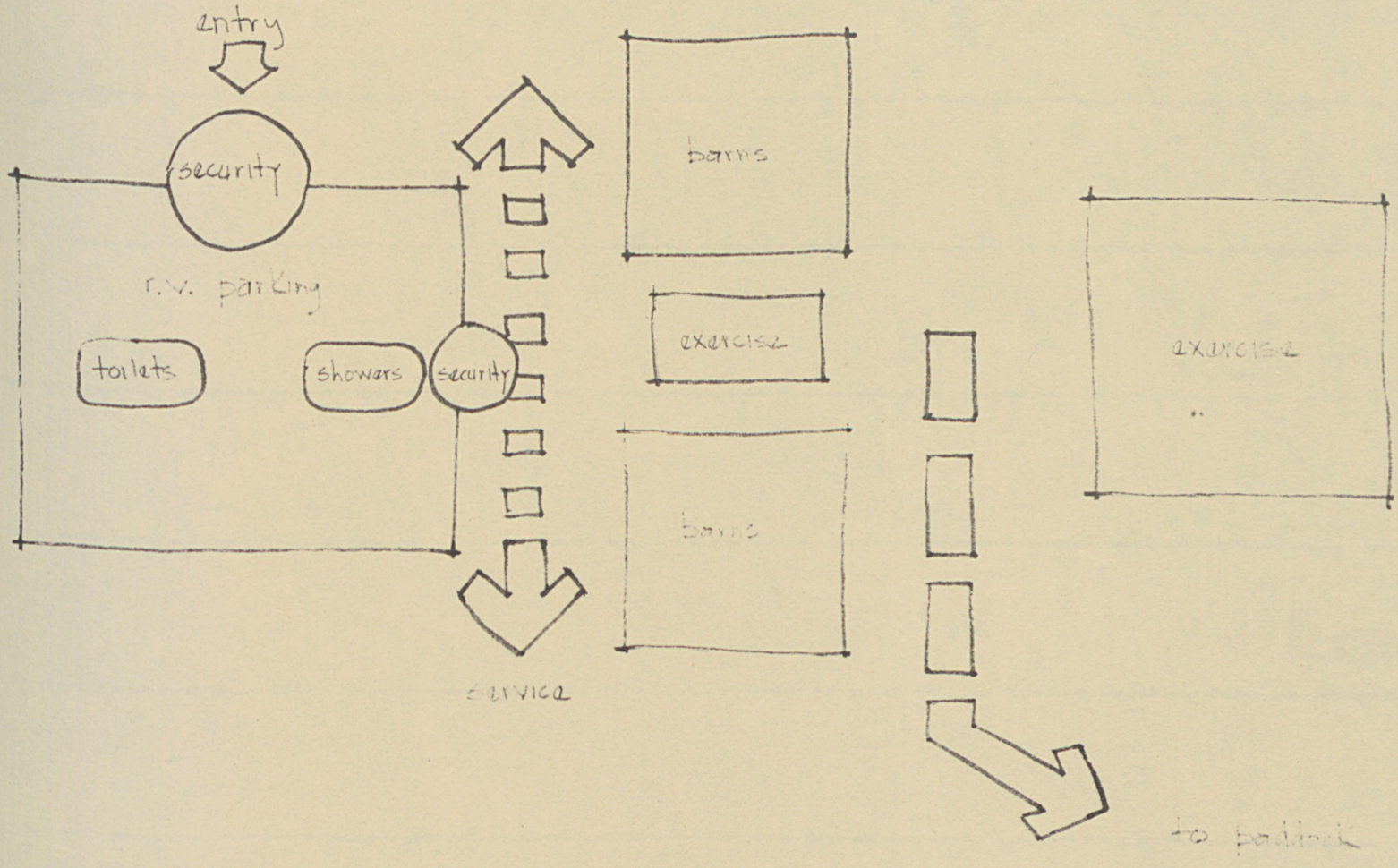


PARI-MUTUAL



CLUBHOUSE

FIGURE 11



HORSEMEN'S FACILITIES

FIGURE 12

MIDWAY AND CONCESSIONS

The present midway space is adequate, but additional land allocated for the carnival would be beneficial. More landscaping is needed as well as pathways or sidewalks for pedestrians. Year-round lighting would be a welcome addition.

The present gravel surface is poor and this area is oiled just before the fair begins. Research has found that the best midway surface is grass. Asphalt tends to get soft in hot weather and is unsafe for heavy carnival rides. Concrete cracks and causes settlement problems. Dirt blows when it is windy and oil sticks to the feet of fairgoers. Grass midways create a potential for expanded use once the carnival is gone.

There are at most only two carnivals a year at the State Fairgrounds. Outside of these days, the midway space is not used except as parking. Other uses of this space should be considered such as athletic fields or landscaped areas.

The concessions area is in disarray, but it does do much for the character of the fair. These booths are not in use other than fair week and perhaps a food fair area might be considered to increase usage during good weather.

PARKING

Parking has previously been shown to be inadequate. The solutions have also been proposed (see parking and transportation). What needs to be determined is, if the Fairgrounds is to become multiuse, possibly not all the parking space available will be in constant use. A secondary use of the parking space is needed and this could be athletic fields. This has proven to be successful at other fairgrounds and the damage caused by the automobiles to the grass is minimal. Great Falls can always use additional athletic fields as there is not a surplus of park and recreation land available.

However, with increased year-round usage, it might be necessary to have paved parking to accommodate thses functions. In that case, there will be little or no land left to use for athletic events.

R.V. AND TRAILER PARKING

The present trailer park is inadequate and does not perform satisfactorily. There are two separate facilities and not enough hookups or services are provided that are necessary for comfortable living. Many horsemen stay for the entire spring racing meet, six or more weeks, and need sufficient shower facilities that are not provided.

A possibility here is a year-round trailer park that would be used by tourists or people attracted by the new multi-purpose Fairgrounds. Ideally, there would be adequate hookups (sewer, electrical, and water), as well as shower facilities. This park would provide a source of revenue either by leasing the entire area to the private sector for management, or managed by the Fairgrounds.

PARK AND PEDESTRIAN AMENETIES

While the land alloted to the present State Fair park is adequate, means must be found to increase year-round usage of the space. Additional sheltered spaces are needed and more picnic tables and barbequing facilities should be provided.

An amphitheater or similar facility would increase usage of Central Park. Pedestrian amenities could enhance the pleasure and comfort of the Fairgrounds both during and after fair week. Among these might be additional sitting areas, a plaza, more drinking fountains and additional, improved toilet facilities. There is a 20' x 40' roofing structure presently unused on the Fairgrounds that can be put on columns to create a sheltered space in the park. This would help increase usage of the area.

One political alternative the State Fair may have to consider is turning the park over to the City Parks and Recreation Department. They have become responsible for maintainance as well as the construction of an amphitheater and overpass to the West Bank Park. This would take some of the financial strain away from the Fairgrounds board.

CONVENTION CENTER AND YEAR-ROUND USAGE POTENTIAL OF THE FAIRGROUNDS

One of the most versatile structures that can be constructed on the Fairgrounds to increase year-round usage is a convention center. There are several facilities in Great Falls which can comfortably accommodate conventions up to 500 people (Table A), but larger facilities are limited and not totally satisfactory. The reason is primarily economic: numerous market studies have indicated that it is not feasible for the private sector to provide convention facilities for groups larger than 450-500 because of the relatively few meetings of that size held in the city. Normally, there are only four conventions held per year in Great Falls of this magnitude, but the four conventions constitute 32% of the total convention attendance. (Table B)

Research has found the city of Great Falls to be actively interested in developing such a center, but it is not the intention of the city to compete with facilities offered by the private sector. Therefore, only large conventions could be held at this center, and while it is likely that the number of larger conventions would increase, it is still necessary to find further uses of this facility.

The Fairgrounds is home to a new multi-purpose center, the Four Seasons Arena, and while it is conceivable this facility could house large conventions, it has one serious drawback. The Four Seasons Arena is a sports arena and should be considered as such. Its primary function is ice events while rodeos can be accommodated here and basketball in the future. The structure was not designed for trade shows or conventions and furthermore, the environment of the sports arena is not appropriate as a convention center.

The Four Seasons Arena is sufficient for sporting events. The new agriculture pavilion under construction provides an excellent opportunity for year-round agriculture related functions. A convention center provides a space for the rest of the possible year-round uses of the Fairgrounds.

There is no better place to locate a large convention center than on the Fairgrounds. In terms of accessibility, parking space, further utilization, land availability, and image, the Fairgrounds is the best site available. The following tables give possible year-round uses of the State Fairground facilities.

Four Seasons Arena

Ice hockey
Ice shows
Basketball, college and high school games and tournaments
Tennis
Wrestling, boxing
Rodeos
Agriculture events requiring large seating
Circuses

Livestock Pavilion

Horse shows
Cattle shows
Dog shows
4-H and FFA exhibitions
Livestock schooling shows
Breeder shows
Cattle sales
Dog obedience classes
Livestock sales

Grandstand

Spring horse racing
Outdoor circuses
Rock, jazz and music festivals
Soccer

Convention center and exhibition hall

Regional, state or national conventions
Trade shows (machinery, automotive, boat, recreational vehicles
Symphonies

Convention center and exhibition center (con't)

Stage and drama events
Political rallies and meetings
Boy Scout or Girl Scout jamborees
Civic functions and seminars
Local service clubs (Lions, Kiwanis, etc.)
C. M. Russell Art Auction
Cultural exhibits
Art shows and exhibits
Home economic workshops and exhibits
Floriculture and horticulture workshops and exhibits
Hobbies, crafts, and fine arts workshops and exhibits
Business/professional club meetings
Fashion shows
Antique and historical exhibits

Park area

Amphitheater functions
Social park events
Public recreation and relaxation
Art in the Park
Shakespeare in the Park
Outdoor Concerts
Social picnics

From an economic standpoint, a convention center-multipurpose center would result in an increase in retail trade activity in Cascade County. Any economic growth benefits every resident in the area by raising the basis of the standard of living for everyone. A center, by its very nature of drawing visitors, talent, and activities from outside Cascade County, naturally broadens the athletic, cultural, entertainment, and educational opportunities of the area's residents.

With the development of the agriculture pavilion and the addition of the convention center, the Fairgrounds changes from a little used facility to a complex of great cultural, educational, and recreational benefit to Great Falls and Cascade County.

CONVENTION FACILITIES AVAILABLE IN GREAT FALLS[4]

Facility	Meeting Capacity	Eating Capacity
Black Angus	80	80
3-D Restaurant	300	200
Jack Club	200	200
Heritage Inn	600	600
Rainbow Hotel	1100	700
College of Great Falls	2900	800
State Fairgrounds	1000	750
C. M. Russell High School		
Gym	4740	---
Auditorium	775	---
Ponderosa Inn	150	150
Eagles Manor	600	600
Sheraton Inn	625	500

TABLE A

4. Great Falls Chamber of Commerce

CONVENTIONS HELD IN GREAT FALLS FROM JANUARY 1971 THRU MARCH 1978[5]

	All conventions	Conventions over 500
Total Conventions	390	29
Total Attendance	97,329	31,260
Average Attendance/Convention	250	1,078
Average Number of Annual Conventions	53.79	4
Average Annual Attendance	13,425	4,312
Average Expenditure in Great Falls (per meeting)	$37,500.	$161,700.
Average Expenditure in Great Falls (annually)	$2,013,750.	$646,800.

TABLE B

5. Great Falls Chamber of Commerce

SITE FEASIBILITY FOR CONVENTION CENTER

1- Excellent
2- Good
3- Fair
4- Poor

Accessibility

1- Streets and highways: ingress and egress
1- Transit access
3- Pedestrian access

Parking

1- on site parking capabilities
1- off site parking capabilities

Support Services

3- Proximity to hotels/motels
2- Proximity to restaurants/bars
2- Proximity to entertainment/recreational attractions
1- Proximity to retail stores

Economic Impact

1- Potential for attracting outside dollar
2- Potential for generating local spending
3- Attraction for additional public/private spending
1- Community image and pride

Site Availability

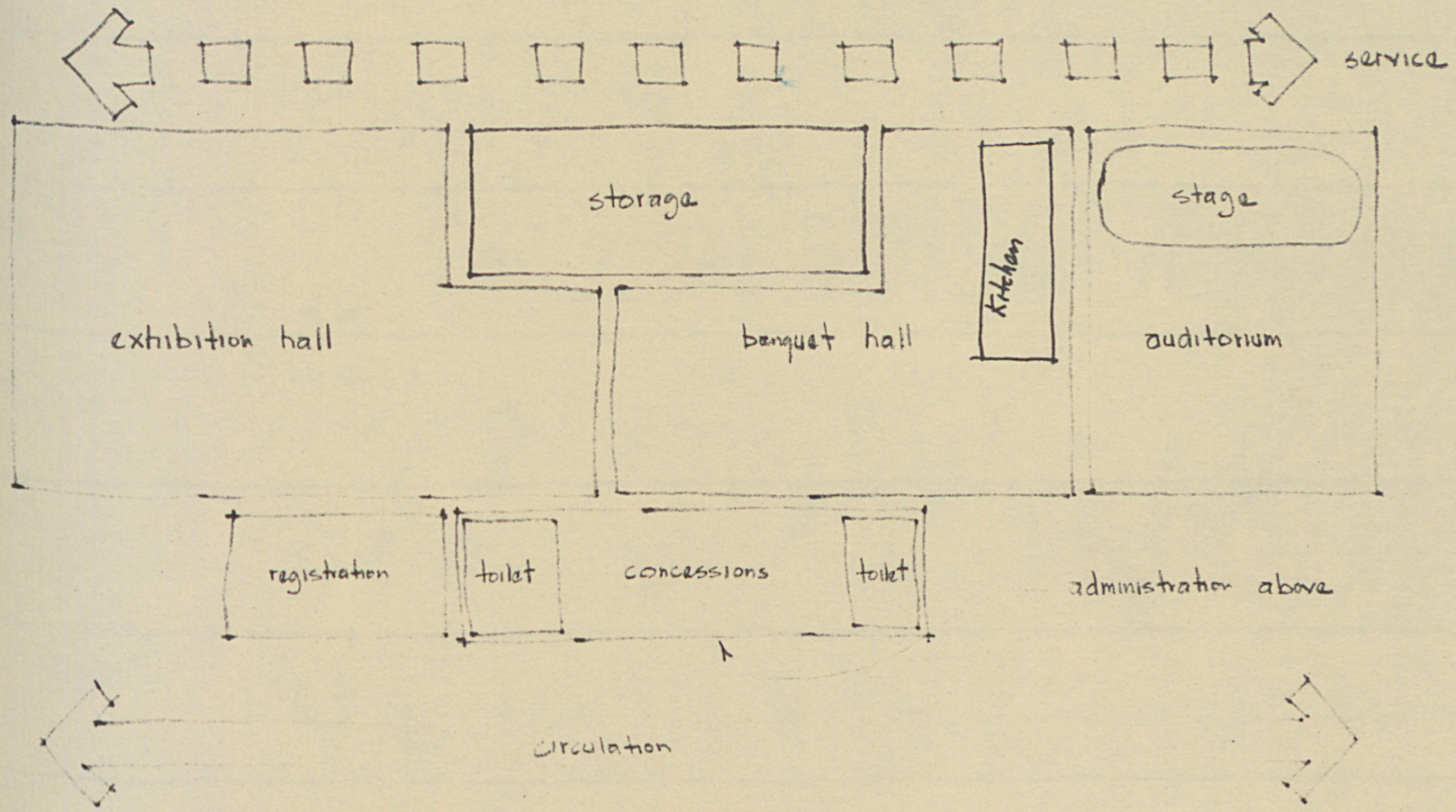
1- Site size
1- Possibility of acquision of land
1- Site preparation
1- Utilities available
1- Site cost
1- possibility for future expansion

TABLE C

SITE IMPROVEMENTS NEEDED

A number of site improvements are needed to better enhance the quality and appearance of the Fairgrounds. Among them:

- better vehicular access to the site
- better pedestrian access to the site
- better vehicular and pedestrian circulation
- develop exterior lighting
- develop landscaping in all areas except Central Park
- remove utility eyesores
    - utility poles
    - wiring
- paint and renovate existing structures
- removal of fencing
- development of new security measures
- development of turnstiles for fairgoers



EXHIBITION HALL & CONVENTION CTR.

IMPROVING THE QUALITY OF THE FAIR

What exactly is a fair? An agriculture fair is defined by Ballantine's Law Dictionary as "a fair conducted by an agricultural society for educational purposes and also furnishing harmless amusement and entertainment and consisting not only of horse racing and exhibition of livestock and agriculture products, machinery and implements, but also shows, exhibits, and amusements of all kinds recognized and permitted by it to have space upon its grounds. These attractions, no less than the exhibits, canstitute a part of the fair."

A fair is created by an act of government, subsidized by state appropriations from the tax on horse racing and subject to all rules, laws, directives, and policies of the federal, state and local governments. Under the Montana law, the primary influence of the State Fair is to be agricultural.

A fair is a See-er's Digest. A fair is a mirror of the area's character; its people and their living. It is a city, peopled once a year for definate purposes. It has streets, property, police, hospitals, housing, politics, people, restaurants, accidents, commerce, garbage collections, amusement zones and traffic problems.[6]

A fair provides a chance for urban to see rural; for rural to see urban. A fair is an educational experience, a stimulus for every sense. A fair is variety in everyday life. In all the confusion and competition of the fair, its theme is "to take a day or two out of time, to meet, to celebrate, the world which made us and which we are making".[7]

Hopefully, fairs are here to stay. But fairs are slow to change with the times. For years, the Montana population has become less agriculturally orientated and the fair has not reflected

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6. Louis Merrill, fair consultant, Sacremento, California
7. anonymous

this change. Consequently, people complain and the three major complaints, year after year are:

- The fair looks the same every year.
- There is nothing new at the fair.
- The fair is not changing with the times.

Something must be done to appease these fairgoers or attendance will continue to decline. The Montana State Fair had some of its best weather ever in 1979, yet total attendance was down 9,000 people from 1978. What do these people want to see? What can be changed? How do we improve the fair's quality and image?

To begin with, we must remember that every survey available indicates that people attend fairs to see the exhibits. This then should be the major area of improvement. The Western Fairs Association recognizes this problem and has put forth a proposal, that hopefully would be adopted by fairs all over America and Canada.

The idea is a ten-year exhibit group program in which to bring all related industries seeking to inform, entertain, and enrich their self-image to work jointly with the fairs. The fair will provide space for exhibits and industry will fill the space. This greatly improves the quality of the fair as the major exhibits change every year and offer something new. The ten-year joint industry fair program is--

1980- Family living- lumber, wood products, furniture
1981- Air, rail, highway transportation
1982- Metal, steel fabrication
1983- Minerals, petroleum products
1984- Arts, ceramics, pottery
1985- Communication, press, printing, radio, TV
1986- Apparel, travel, recreation
1987- Food packaging, processing, agriculture
1988- Electronics, hardware, computers
1989- Finance, real estate, ecology
1990- Education, learning, industrial arts

These exhibits could be housed in the new exhibition hall proposed for the Fairgrounds. Smaller exhibits would remain in existing buildings or be placed in temporary tensile structures.

There should be a type of building to display modern living. Along with featuring live presentations of old favorites such as home canning, needlepoint, and quilting, new related quality exhibits should be there. This would include health spas, building and loans insurance, household finance, estate planning, tours, vacation centers, home decorating, advice for the unmarried, living together and the like.

Perhaps there could be improved Food Worlds or Food Fairs. International bazaars and modern women's world would be welcome additions. Local recreation should be emphasized and community pride studied in fair exhibits. There should be more exhibits by government agencies, particularly those that relate to energy.

The youth of the area should not be forgotten. 40% of the population of the U.S. is under 20 years of age. Todays teens spend 25 billion dollars annually.[8] This represents an untapped resource for both attendance and money for the fairs, and today's teens are the partons and exhibitors of tomorrow. Not only should the usual 4-H, FFA, and FHA be recognized, but also the urban teens. Create a teen town with exhibits of interest to this age group: sports, movies, skateboards, makeup, college life, television, bicycles, pinball, jobs, motorcycles and the like.

Those are just some of the many possibilities for increasing the quality of the fair. Something must be done and it must be done now. A master plan alone is not the answer, nor are just site improvements. This thesis represents many ideas that are the responsibility of the architect and fair management to implement. The Montana State Fair needs New Directions for the eighties.

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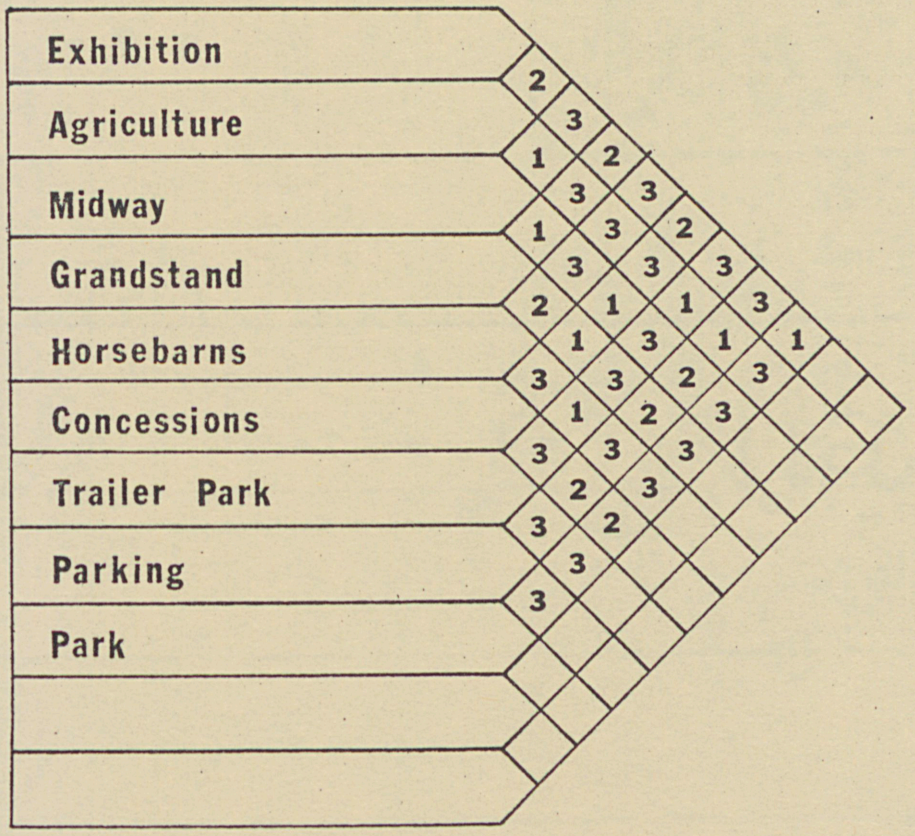
8. Louis Merrill, fair consultant, Sacremento, California

Relationship Matrix:

Matrix 1 shows the existing relationship between areas of the Fairgrounds. Matrix 2 shows the desirable relationship of these spaces. For the most part, the existing Fairgrounds satisfy the desired relationships. In development of a master plan, the following relationships may be changed. These are the primary ones which should be considered.

- stronger relationship between exhibition and agriculture spaces
- stronger relationship between agriculture spaces and horse barns
- stronger relationship between park and agriculture spaces
- stronger relationship between park and trailer park
- weaker relationship between midway and agriculture spaces
- weaker relationship between agriculture and trailer park

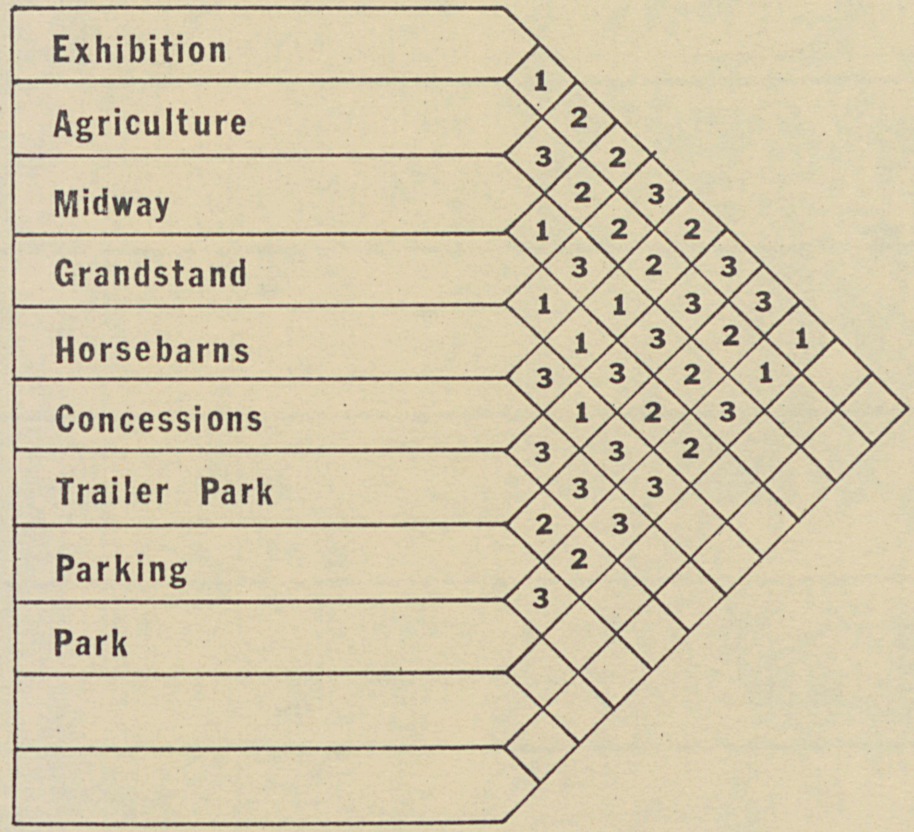


1 Strong

2 Moderate

3 Weak

Matrix 1



1 Strong

2 Moderate

3 None

Matrix 2

DRAWBACKS TO A MASTER PLAN - ECONOMICS AND POLITICS

Funding for such a project as the scope of my thesis is a touchy and difficult issue. The economics and financing of this plan are perhaps the greatest barrier to the implementation of the redevelopment and revitalization ideas for the Montana State Fairgrounds.

Generally, in any civic development, the capital costs are borne by the taxpayers in the form of higher mill levies approved in a bond issue. Ideally, upon completion of the bond, the structure would pay for itself in operating costs. However, this is usually not the case. The Billings METRA, for example, generates enough revenue to pay for only 65% of its operating costs.

The benefits to the community in terms of access to the complex for educational, recreational, and cultural purposes are incalculable. Additionally, there is revenue generated for merchants by out-of-town visitors utilizing the complex. This can roughly be calculated (see table C), and perhaps those who profit most from the complex can be expected to support the complex in the form of room or sales tax. Following are some funding methods:

1. Joint Financing- Some multi-use complexes are funded by combinations of private doners, community funding drives, county and city funds, state government grants, and federal grants. Sometimes successful, this would require extensive planning and cooperation among government agencies, as well as an organized effort on the part of community leaders.
2. Bonding- The most common method of financing such a redevelopment plan is by issuing general obligation bonds. A mill levy is established to support the operating losses plus an amount to establish a "sinking fund and interest" for servicing the bonds. Interest is paid on the bonds at a rate shown on the bonds. The sinking fund is established by calculating the necessary principles and accumulated interest to retire the bonds at their maturity date. A vote is necessary to approve the bonds.
3. Joint Financing and Bonding- A recent method used to finance such a plan is the combination of funds from federal programs and bonding. Programs such as EDA, revenue sharing, and

CDA monies can be used a partial funding. The balance would come from bonding.

4. Sales or room tax on local merchants- A special tax could be levied against merchants who directly profit from business brought in by the center. The tax would be proportional to business income and would apply to hotels, motels, restaurants, bars, merchants, and automobile service stations.

Politically, master plans are difficult to implement. Oftentimes entire Fairgrounds managment committees will be removed in an effort to bring forth the changes. Fair boards are politically appointed and they tend to be conservative, older people, with little thought for long range plans.

In order to implement a master plan, it will require a great deal of community support and involvment. We must find out what taxpayers want and we must convince them that the changes are necessary and will benefit them. We must involve them in planning, development and implementation of the master plan.

Everybody will win or everybody will lose if changes are made. There is no in-between compromise.

AVERAGE CURRENT EXPENDITURES IN GREAT FALLS DUE TO CONVENTIONS OVER 500 PEOPLE

	PER DELEGATE	PER MEETING	ANNUALLY
Hotel/Motel Rooms	$ 41.30	$ 44,520.00	$ 178,080.00
Hotel/Motel Restaurants	18.45	19,890.00	79,560.00
Other Restaurants	20.52	22,120.00	88,480.00
Beverages	9.94	10,715.00	42,860.00
Retail Stores	28.78	31,025.00	124,100.00
Local Transportation	4.93	5,315.00	21,260.00
Theaters	1.49	1,605.00	6,420.00
Sightseeing	1.14	1,230.00	4,920.00
Night Clubs and Sports Events	8.87	9,560.00	38,240.00
Automobile Service	4.84	5,220.00	20,880.00
Other Items	9.74	10,500.00	42,000.00
	$150.00	$161,700.00	$646,800.00

TABLE D (from the Great Falls Chamber of Commerce)

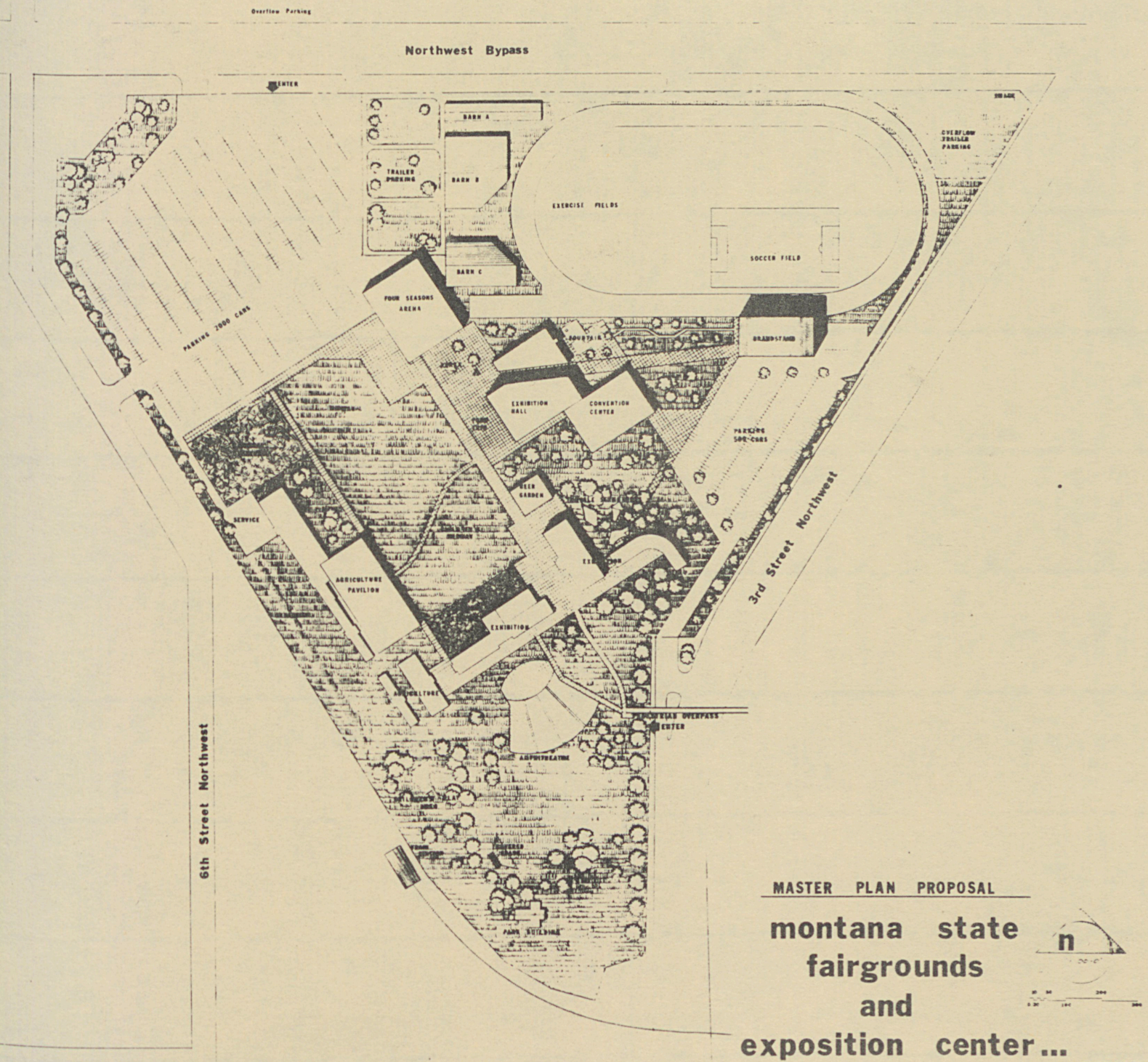
master plan

"Fairs bring us together...they render more pleasant, more strong and more durable the bond of social and political union among us... Constituted as man is, he has positive need of occasional recreation. Such recreation our fairs afford... They make known to many, what was previously known to a few. They quicken the hand of genius...they stimulate discovery and invention into extraordinary activity."

Abraham Lincoln

"If the cities as we know them today are to survive, then we must provide the things that make us civilized -- theatre...sports...culture."

Alan Cohen
President, Madison Square Garden



MASTER PLAN PROPOSAL

montana state fairgrounds and exposition center...

FIGURE 14

THE MASTER PLAN

Figure 14 shows the proposed master plan for the State Fairgrounds at maximum and optimal development. There are areas of flexibility that may or may not need development and these will be determined as time passes. These areas are not critical to the success of the master plan. The best proposals allow for some flexibility as time changes the criteria for needs.

The major change, and perhaps the most important, is the relocation of the race track. Numerous reasons have previously been stated for this, however it does provide for the best utilization of the land available to the Fairgrounds. Inside the horse track, the infield, will consist of one regulation size soccer field and three practice fields. The infield to the west will be utilized as exercise areas for horses during racing meets.

To the east of the track lie the horse barns. These three barns will accommodate 600 horses and design details are outlined under design guidelines. East of the barns, is a year-round trailer park for visitor to the fair, tourists, and horsemen during racing season.

The grandstand has been relocated and this can be the existing one or if necessary, a new one can be constructed at this site. The grandstand will seat 4000 and will have all the features necessary for racing and spectator events, such as soccer.

A horsemen's entrance is provided at the north boundary of the Fairgrounds. An auxillary entrance is at the smaller parking lot. Security will be provided at these gates. A ten foot cyclone fence will surround the track, barns, grandstand and overflow trailer parking area.

In order to accommodate the changed position of the race track, all structures previously located in this area will be removed. The newest horse barn will be relocated to barn 'A', but no others will be saved.

An area for the development of the convention center - multi-purpose center becomes available by the relocation of the track. This area will consist of a plaza, the food fair and the

new exhibition hall - convention center. A new paved paved parking lot for 500 cars is provided at this site. Nearby is a gate to utilize for racing needs. Also at this area is a space for tensile structure development. All existing landscaping here will remain.

Four older exhibition buildings will be removed. These are the 4-H, International, Hobbies and Schools and the Women's Building. Land made available by the demolition of these structures will be landscaped to blend in with the rest of the State Fair park. A children's play area will be constructed as well as an amphitheater capable of accommodating 1500 persons. The gardening building remains, although it will not be an exhibition building. Instead, it will be utilized as a park building for picnics, a warming shelter and playhouse.

A rail track made available by the bankrupt Milwaukee Road is accessible and it will be utilized by the Fairgrounds. A train station will be constructed near the park, and the train will run to the West Bank Park, over the river to the east shore, and down to the minicipal golf course. This track and rail cars would be utilized primarily by fairgoers during the fair week. It is conceivable that it could become a year round tourist attraction. The land to the north of the station can be bought by the Fairgrounds and utilized as agriculture expansion and additional parking. The success of the master plan is not dependent upon this land being acquired by the Fairgrounds.

The Mercantile, Fine Arts, and Trades and Industries building remain. The Commerce building becomes a new agriculture structure. The Administration building will be removed and offices will be relocated in the Exhibition Hall-Convention Center.

The stock pavilion is removed and a new agriculture pavilion constructed adjacent to the dairy bar. The beef barn and swine barn are removed to create additional parking.

The midway is enlarged somewhat and will be landscaped with grass, small shrubs and paved

walkways. All pedestrian walkways will be paved and amenities such as toilets, seating, water fountains, exterior lighting and the like will be provided.

A new gate for the automobile entrance will be provided at the west boundry of the Fairgrounds. A new exit gate will be added bringing the total number of gates at this lot to be three. This lot will be paved and cars orientated at a 90 degree angle from the fair axis. This allows people to walk on the driveways rather than between cars.

The entry plaza is established during fair week only. It consists of overhead cables, canvas, flags and lighting. Outside of fair week, cars can park on this area as well as the grass midway. Near the entry plaza are removable turnstiles for pedestrians to walk through as they enter the fair.

The carnival quarters and carnival storage areas are gravel. The quarters are for parking of their semi-trailers and their living quarters. The storage is for miscellaneous objects they might have. Both areas are adjacent to the midway for convenience.

A pedestrian overpass will be constructed as a means to link the Fairgrounds with the river-front park. A bus drop-off point is below this overpass. A new security system will be established with the removal of the cyclone fencing except at the racetrack area. A six foot water moat will run along the perimeter of the property line. A four foot high brick wall will border the moat. Bridges will be provided for access at all gates. This will be a valuable aid to the opening up of the Fairgrounds and helping to destroy its present hard, formidable character caused by the cyclone fences.

The organization remains strong and excellent. Pedestrian pathways and circulation spaces are well defined. Access to, from, and inside the Fairgrounds is improved and more functional. In general, the Fairgrounds is a more efficient and pleasing organization with the implementation of this master plan.

DEVELOPMENT STAGES

No master plan can be implemented overnight. The development of this proposal has been divided into five stages of construction. It is estimated that a total of twenty years may be necessary to fully implement this plan, however it may be done in as few as seven if a full effort by all interested parties is achieved. The first stages of the development are by far the most important and will require the largest financial backing. The rest can be implemented as time, money, demand, and interest allow. Figure 15 details the five developmental stages.

Phase One

- relocation of the racetrack and grandstand
- lengthening of the chutes on the racetrack
- removal of all barns except barn 'A'
- construction of new barn facilities
- development of trailer park, utilites, etc.
- construction of convention center and exhibition building
- construction of plaza and pedestrian amenities
- removal of fencing (except race area) and road

Phase Two

- removal of four exhibition buildings
- construction of amphitheater and train station
- removal of administration building
- tensile structures incorporated (if necessary)
- development of childrens play area
- develop plaza and pedestrian amenities
- construction of West Bank overpass
- development of Mercantile building into year round youth building

Phase Three

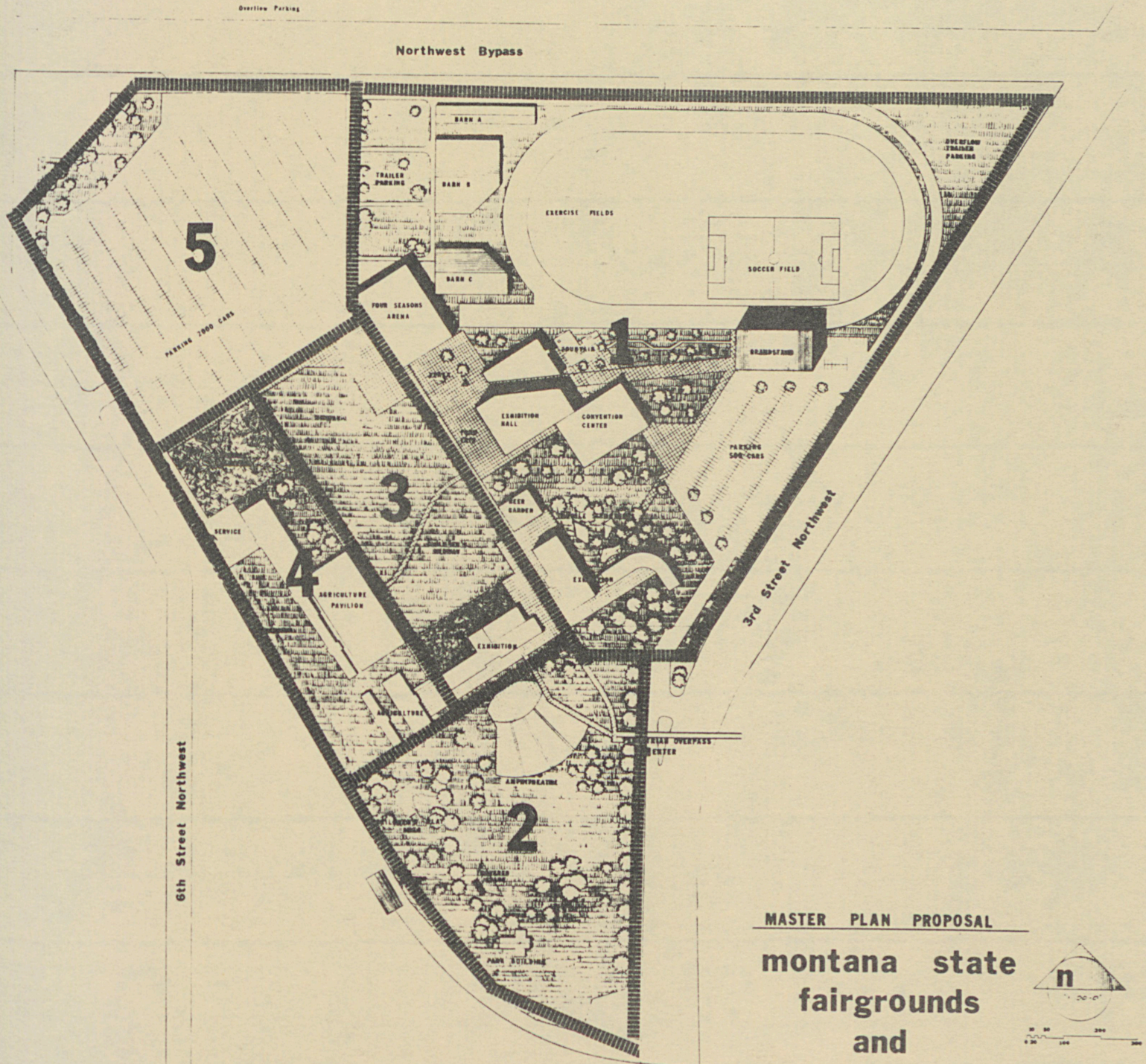
- removal of all overhead wires and poles
- relocation of utilities underground
- landscaping of midway
- development of outdoor lighting
- develop pedestrian walkway

Phase Four

- expansion of agriculture facilities (if needed)
- landscaping of the area

Phase Five

- removal of beef barn and swine barn
- expansion of parking space
- auto and pedestrian gate added



MASTER PLAN PROPOSAL

montana state fairgrounds and exposition center...

FIGURE 15

design guidelines

AGRICULTURE FACILITIES

Every master plan, in order to be successful, must have flexibility. Realizing that no large scale development can be done overnight and knowing that Montana's population is becoming less agriculture orientated, the agriculture facilities offer one area of flexibility.

With the new agriculture pavilion, the agriculture space provided is adequate. In the future, after the beef barn and swine barn succumb to old age and are removed, it may or may not be necessary to provide new facilities. For this reason, a space is provided for expansion but no development is actually planned. Development in this area, behind the agriculture pavilion, would be for agriculture use only to maintain the strong organizational character of the Fairgrounds. The development would not cover the service parking area nor would it utilize the land enclosed by the dairy bar and agriculture pavilion. This land creates a nice pedestrian space and should be considered as such.

The commerce and pony barns are adequate structures and could, in the future, be replaced by a structure in the same space. Expansion of this structure would take place along the same lines as the previously mentioned agriculture expansion.

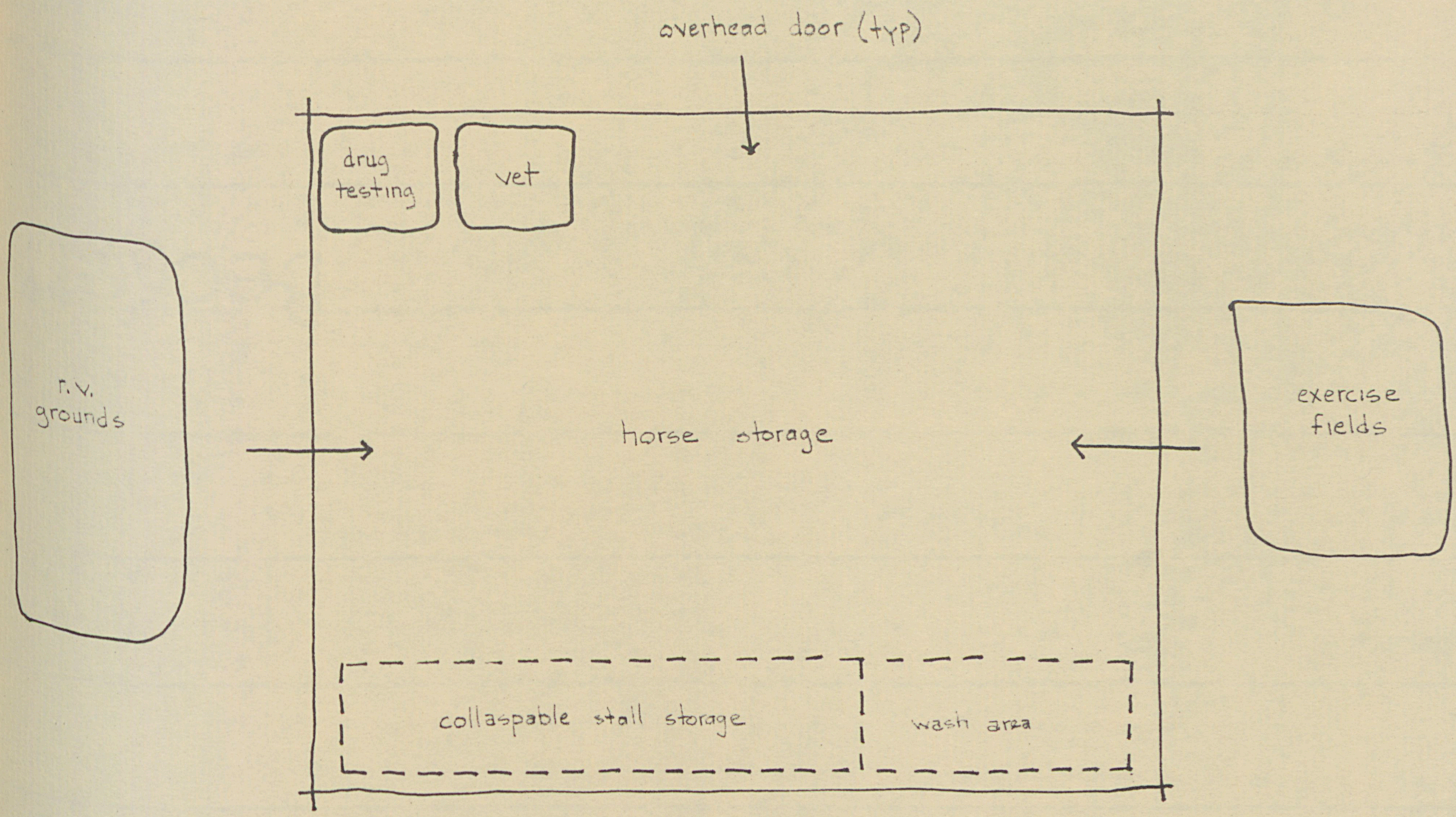
HORSEMEN'S FACILITIES

One existing horse barn will be kept and relocated in the master plan. This barn will be expanded and possibly the 10' x 10' stalls leased in the off season.

Two new barns will be constructed. These will be large concrete block structures with steel roofs capable of housing a minimum of 250 horses each. The surface will be dirt floor with horses being housed in collapsible stalls of 10' x 10'. Clear aisles of 15' between rows will be provided as well as cross aisles every 100'. Natural ventilation is a necessity and natural light will be provided by a 3' window running near the top of the wall around the perimeter. A four foot overhang is necessary on these structures to block direct light. The ceiling height should be a minimum of 15' and lighting fixtures should not be dropped below this line. Large overhead doors should be provided on all sides of the structure both for fire escapes and access for storage of boats and recreational vehicles during the off season.

A wash stall should be provided in the barns as well as several water outlets. A testing area is necessary in one barn as well as a small storage area for veterinary supplies.

Storage for collapsible stalls will be against the walls. The following diagrams make clearer the relationships of the barns to the race are and the barn design itself.



BARN DIAGRAM

EXHIBITION FACILITIES

An exhibition building of 45,000 square feet is covered in more detail elsewhere in this thesis. The exhibition areas offer another aspect to this master plan flexibility. With the existing structures that remain and the new exhibition hall, it is difficult to justify the addition of new structures solely for exhibition purposes, since there will be little potential for outside fair week usage.

A space has been provided in the rear of the Trades and Industries building for exhibition expansion. It is expected for this space to house tensile structures that will remain up for fair week and then be removed. Tensile structures offer a viable alternative to permanent structures and can be efficiently incorporated into the fair layout.

All existing landscaping will remain at this location and the structures will be raised over grass surfaces. Several structures can be accommodated, as necessary, and cover up to 50,000 square feet. There are many versatile uses for these structures as they could house culture, 4-H, international, wildlife, schools, commercial or outdoor exhibits.

GRANDSTAND

Redevelopment of the grandstand should provide the following services:

- pari-mutual offices
- race offices
- jockey's area and locker rooms
- judges quarters
- club house with bar, tables and lounge
- seating for 4000
- concessions space
- paddock area for showing of horses
- weighing area for jockey's

Refer to figures 10, 11 and 12 for diagrams showing the optimum conceptual design.

EXHIBITION HALL

A major addition to the Fairgrounds in this master plan proposal is the exhibition building to replace the four which are scheduled to be removed. These four structures enclose an area of 32,500 square feet and presently house such diversified exhibits as 4-H, school projects, international interest, and home arts such as quilting, weaving, jam and jelly making, cookies and cakes, needlecrafts and sewing. For reasons of convenience, as well as economics, it has been determined that a large exhibition structure of 45,000 square feet will best benefit the fairgrounds. Outside of the fair week this building can be used for community gatherings, events in conjunction with conventions, trade shows, art shows and exhibits, political rallies and meetings, boy or girl scout jamborees, and other civic functions. It is the purpose of this building to be versatile and multi-use, as well as to encourage year round activity.

The building must be flexible. It should be possible to subdivide the floor area into smaller spaces so that more than one event can take place. At the same time, functions of importance to all spaces should be readily accessible. This would include the main entrance, exits and fire exits, service areas, lobbies, and restroom facilities.

The architecture of an exhibition hall does not need to be a building in the conventional sense. They can be experiments in design, attempts at new theories, daring theater or a challenge to a traditional approach to design and its product. Crystal Palace, an innovator towards modern architecture, was an exhibition building. The design of an exhibition hall does not need to be functional or a study in functionalism. There is much flexibility in the design aspects for an exhibition building to support innovative attempts at architecture. With the theory of perception in mind, the exhibition hall will be so designed.

CONVENTION CENTER

There is no structure which has been designed as a convention center in Montana. No one city has a facility designed to serve that purpose. For this reason, many state organizations go elsewhere to hold there conventions and national organizations apply only to convenvention centers for space. To many of these conventions, the atmosphere of a sports arena or a gymnasium is not appropriate to their organizations. Small conventions, in Montana, of less than 500 people appear to do well in hotel ballrooms and the like, but larger conventions usually fone the facilities lacking in space, service or suitability.

A center, capable of accommodating 1200 people would be a welcome addition to Great Falls and Montana. Hotels, motels, and merchants will welcome the business generated by the center. Residents and taxpayers would also benefit. First, by having the space available for civic functions when conventions are not in session and secondly by having the cultural, educational, and recreational benefits that conventions sometimes provide. Often times, these exhibits and meetings are open to the public, giving the public the opportunity to witness political, industrial, religious, educational, governmental, labor or civic groups, ideas, and knowledge.

An exhibition hall adjacent to the center would be beneficial to conventions in terms of additional display space to utilize. It provides a space for trade show equipment as well as additional meeting space. It provides a strong separation of the two services, but at the same time, they are linked.

A convention center would consist of a banquet hall with kitchen facilities, an auditorium for meetings, and storage for the banquet fixtures as then there is additional space for meetings. The banquet hall would be adequate to utilize as a ballroom floor once tables are removed. A large registration area is necessary as well as a coat room, adequate toilet facilities and a lobby.

Outside of the fair week the auditorium will be utilized by the community for stage and drama events. Musical productions would be held here as well as a lecture series. The banquet hall can continue to serve as such or it can be converted into a ballroom for civic functions as well as wedding receptions. The convention center, too, encourages year-round utilization of the Fairgrounds.

Offices for the Fairgrounds management would be located in this structure. Also included would be a small gallery for permanent display of the State Fair art collection. The following consists of the programmatic requirements for both the Exhibition Hall and the Convention Center:

Exhibition Hall

floor area - 45,000 sq. ft. (should be divisible)
storage (10%) - 4,500 sq. ft.
mechanical - 500 sq. ft.
toilets - 500 sq. ft.
entry lobby as needed
fire escapes as needed
floor type - V.A.T. or finished concrete
ceiling height - 20-40 feet

Convention Center

ballroom/banquet room (10 sq. ft. @ 1200) - 12,000 sq. ft.
banquet kitchen (15%) - 1800 sq. ft.
storage (8%) - 960 sq. ft.
coatroom (2 sq. ft. ea.) - 2400 sq. ft.
lobby (3 sq. ft. ea.) - 3600 sq. ft.
toilets - as necessary
mechanical - as necessary
auditorium - capable of seating 1200
stage - 600 sq. ft.
dressing rooms - 550 sq. ft.
storage - 400 sq. ft.

Administrative Offices

managers office - 350 sq. ft.
personal secretary - 250 sq. ft.
asst. manager - 200 sq. ft.
secretarial pool - 500 sq. ft.
receptionist area - 100 sq. ft.
bookkeeper - 150 sq. ft.
conference room - 600 sq. ft.
toilets - as needed
coffee bar - 200 sq. ft.
records area - 150 sq. ft.

Art Gallery

exhibition space - 450 sq. ft.

perception

per•cep•tion [9] 1. a) the act of perceiving or the ability to perceive; mental grasp of objects, qualities, etc. by means of the senses; awareness; comphrehension b) insight or intuition, or the faculty for these 2. the understanding, knowledge, etc. got by perceiving, or a specific idea, concept, impression, etc. so formed.

9. Webster's New World Dictionary, Second College Edition, 1974

"...design quality is not simply a product of visual order and technical efficiency, but also the way the designed artifact meets the social and psychological needs of its users."

Edward T. Hall [10]

Today the importance of other fields that affect the quality of good design is becoming more clear to architects. No longer can we call ourselves 'good' designers without a basic understanding of sociology, psychology, or anthropology. Granted, it is difficult to master all these fields and it is nearly impossible to learn of the importance of these areas in the short time we are alloted for schooling. The solution, of course, is to look at architecture as a lifelong pursuit of academic excellence, and to never stop striving to learn more every day. Knowledge, then, becomes a critical factor in life and to strive for more knowledge, rather than to practice architecture with the knowledge you have, is the goal of the professional.

I look at thesis as a buffer between academia and practice. I felt it was important to do research into an area where the research will never end, but will continue to be affected by change and technology in the years to come. This field of study would be so broad as to include the other 'arts' and 'sciences' pertaining to it, but also limiting in that the knowledge gained can be applied to architectural design. This field of study would provide the nucleus of knowledge for myself and allow me to pursue additional knowledge after academia with a background, a base, and a never ending supply of questions. The goal of this study for thesis is to come to a better understanding of the psychology of perception. The long range objectives are to have a base for future study.

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10. What is Quality?, AIA Journal, Vol. 40 No. 1, July 1963

I found that we as architects are not equipped to deal efficiently and with completness, the complex issues that face us. These issues include social, political, and environmental aspects that are not allowed for in the design process. I also found that we do not have a basic understanding of the way things are. The basic design theory that is taught in school is based on the insights of the profession rather than on a well formulated analysis of what the goals of the design profession are or should be. Basic design is primarily concerned with pattern making on a two dimensional surface, and not with the architectural layout of the environment. Basic design does in fact draw its concepts from Gestalt psychology without acknowledging the impact of psychology. Why do we perceive order, meaning, geometry, and countless other aspects of architecture? Why are we affected by the built environment and how are we affected? Can we control movement, behavior, response to forms, or predict behavior in the built environment? What could be a stepping stone to this answer?

The approaches to the answers are numerous. I choose the field of perception to research for this basis of knowledge. Perception can loosly be defined as "the process of becoming aware of objects, qualities and relations, or the process of obtaining information from the environment."[11] I feel that by looking into this basic property, and by achieving an understanding of it, I can become a more humanistic designer. Too often we design without realizing the impact of the structure on the environmental layout, nor do we consider the needs of man or the consequences to his social welfare. By using perception as a design tool, I can put myself into the shoes of those who will experience the design. By doing this I make their needs a design factor and I try to understand what they will perceive, why they perceive it, and encourage certain postive perceptions of the design. The fields of psychology, anthropology, and sociology can inform this area of study and were utilized for research purposes.

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11. Jon T. Lang. Applying the Behavioral Sciences to Theory Building for the Design Profession, Doctoral Dissertation, Cornell University, 1977, p.84

Soon after embarking on this lofty pursuit of the answers, I realized that I would not find the complete answer. James J. Gibson, a noted psychologist, said "you are right to believe the psychology of perception is basic to the theory of design, but the psychology of perception is full of contradictions" (see appendix). This proved to be true. I then looked at research with a new insight. "A good question is greater than the most brilliant answer." Consequently, a building that evokes no question, gives no answer. With this in mind I continued my research.

Rudolf Arnheim in Visual Thinking stated "We are trained to neglect the arts because they are based on perception, and perception is disdained because it is not assumed to involve thought."[12] Perception is important and the Greeks knew that direct vision is the first and final source of wisdom. Aristotle noted that "the soul never thinks without an image." This statement alone brings the dichotomy of perceiving and reasoning together. Image, meaning, movement,character and thought can be traced to perception as a beginning to further research.

Perception is not confined to what the eyes record of the outer world. What has happened in the past and what survives in the memory is the greatest influence on perceiving the built environment. This 'experience' factor causes the greatest difficulty in formulating and applying theories of perception.

Our whole experience influences what we have learnt to discriminate in the environment. The associations we have learned and the symbolic meanings something holds for us are a result of experience. A persons attitudes towards environmental layouts can be partially explained by his personality traits. There is a correlation between the type of environmental layout and the development of personality, and the ability to cope with change.[13]

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12. Rudolf Arnheim. Visual Thinking (Berkeley: University of California Press, 1969) p.3

13. Lang p. 108

Additionally, each group or individual is different in a number of ways other than in their 'experience'. In particular:

1. The nature of the individual or the group involved in terms of their physiological characteristics.
2. The nature of their personalities.
3. The social groups of which they are members.
4. The cultures of which they are a part.[14]

As a result of these differences their motivations and needs differ. Therefore, because of that fact, and the fact that each group or individual is accustomed to a particular terrestrial environment, the response to the same stumuli may not be the same in all cases. This makes it difficult to predict behavior in certain situtations. But I do feel that some behavior can be predicted and certain postive responses to the environment can be encouraged.

Most psychologists will agree on these four observations about perception:

1. Movement plays a major role in perception of the environment.
2. We seek information for some purpose.
3. There is a major difference between object perception and environmental perception.
4. Perception is multi-modal.[15]

One of the basic needs of man is his constant need for stimulation. If man is temporarily deprived of his senses he will, after a period of time, begin to go mad. It is our perception of the stimulation of our senses that allow us to think, reason, react, and live in our environment. We seek stimulation by movement and the information given by the environment is a source of stimulation. The built environment is a part of the overall environment and it does provide a source of ever important stimulation.

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14. Lang p.221
15. Lang p.89

A perceiver cannot see all of a figure clearly in a single glance. The perceiver has to be quite far away from the object to get a good overall effect of it. It takes a number of eye movements to explore the pattern visually. As a result of these eye movements, perception is not an immediate outcome of stimulation, but is the result of processing over time. Neither the perceivers visual experience, nor his overt responses are immediate results of stimulation.[16]

As a precondition to this eye movement and subsequent perception, two factors must exist.[17] There must be illumination and an organism must have the ability to scan the structure of light reflected from the surfaces of the world that is presented. Some psychologists feel because of this, that architecture is nothing more than the structuring of light. The reasoning for this is that the structure of reflected light at any point in the environment depends on the geometric structure of the environment.[18] Once the light, a stimulus, reaches the eye, the eye movements begin. The contents of the first glance help to determine the direction of eye movement to get the second glance. The eye movements fall into three types:[19]

1. Convergence - to keep the eyes pointed at whatever is our center of information.
2. Saccadic - to shift both eyes to a new center of attention.
3. Pursuit - to follow an object moving in space or maintain fixation on an object as we move in space.

These movements stimulate the brain and we then begin our perception processes. We use two categories of information to see things in depth. These are to look at the world with one eye (monocular clues), and to look at the world with both eyes (binocular clues). The monocular clues include:[20]

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16. R. N. Haber and Maurice Henderson. The Psychology of Visual Perception (New York: Holt Rinehart and Winston, Inc. 1973) p. 158
17. Lang, p. 142
18. James J. Gibson. The Senses Considered as Perceptual Systems (Boston: Houghton-Mifflin 1966) p. 15
19. Haber p. 22
20. Jacqueline Ludel. Introduction to Sensory Processes (San Francisco: W.H. Freeman and Co, 1978) p. 182

1. Relative size - nearby objects appear larger than more distant objects of the same size.
2. Interposition - nearby objects appear to cut off the view of more distant objects.
3. Details - we can discern the details of nearby objects better than more distant ones.
4. Height in the horizontal plane - more distant objects appear 'higher up' than near ones.
5. Geometric perspective - parallel contours seem to converge in the distance.
6. Aerial perspective - the colors of distant objects are less distinct than nearby ones.
7. Movement perspective - close objects appear to move faster than those farther away.
9. Shadowing - the light comes from above.

These are just some of the clues that help us to perceive our visual world. Additionally, there are certain qualities of visual stimulation needed for perception. These include:[21]

1. location - of objects in space, where they are, whether they have moved.
2. spatial extents - sizes,shapes, textures.
3. serial order - what happened before and what is expected to happen next.
4. scale of space - distances between objects of relative sizes and their organization in space.
5. integrate - across the successive retinal projections that occur when our eyes meet.

As we perceive, our brain begins its attempts to pick out order. We unconsciously look for order and meaning in the environment as we are stimulated. Searching for this order our perception becomes selective rather than inclusive as we may be aware of only certain qualities. Gestalts laws,[22] which are actually predictions, explain the response that can be expected from certain stimuli. The laws (figure 16) are:

1. law of proximity - some groups are formed from elements which are either spatially or temporary closer to one another (see A).

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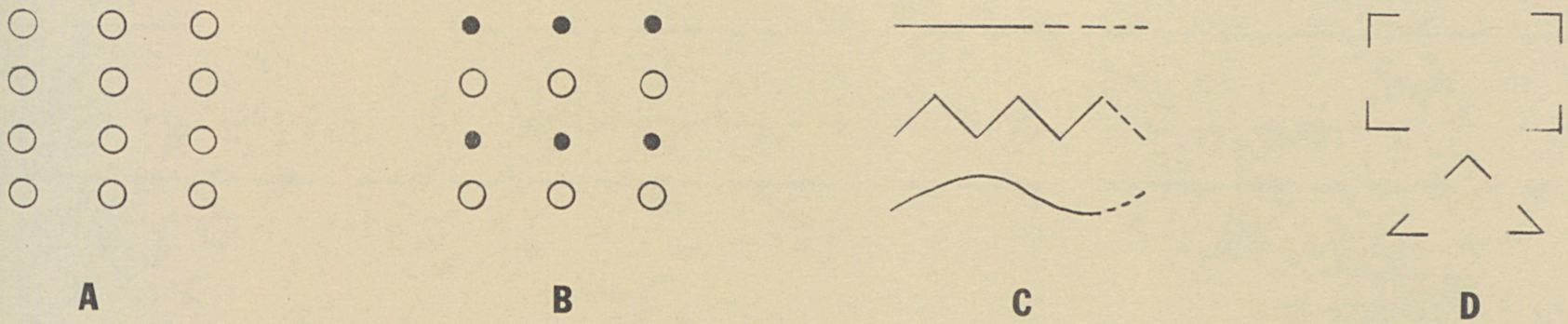
21. Haber, p.36
22. Haber, p.189



We tend to perceive 'A' as three vertical lines and not four horizontal ones because of the law of proximity. We see 'B' as four horizontal lines because of the law of similarity. Drawing 'C' demonstrates the law of continuity. Because of the law of closure we perceive 'D' as a rectangle over a triangle even though neither actually exists.

FIGURE 16

2. law of similarity - some groups are formed from elements that are more similar to one another (see B).

3. law of continuity - the vector of a set of elements will determine the direction of the next element. One will be considered 'good' and the other 'bad'. (see C).

4. law of closure - parts of a figure not completed will be filled in to complete the figure. This is similar to the law of continuity. (see D).

5. law of common fate - objects which move or change together are seen as a unit with a common fate.

It then follows that some responses can be predicted. Prak, in The Language of Architecture, feels that organization is grouped into preferences. He believes that we show a preference for one type of perception over the other. His preferences can be grouped into four headings:

1. proximity - similar to Gestalt's proximity.
2. repetition - we are inclined to perceive equalities even where they do not exist.
3. simplest and largest figure - we perceive the simplest and largest forms possible. (fig. 17)
4. continuity and closure - similar to Gestalt's.

It has been shown that we favor certain perceptions over others. We can encourage certain perceptions also. (figure 18). This information, and the above can be applied to the design of architectural facades.

There are other factors that can be used to predict preferences for types of environments.[23] These include:

Coherence - the degree to which a scene hangs together. The greater the coherence, the greater the liking.

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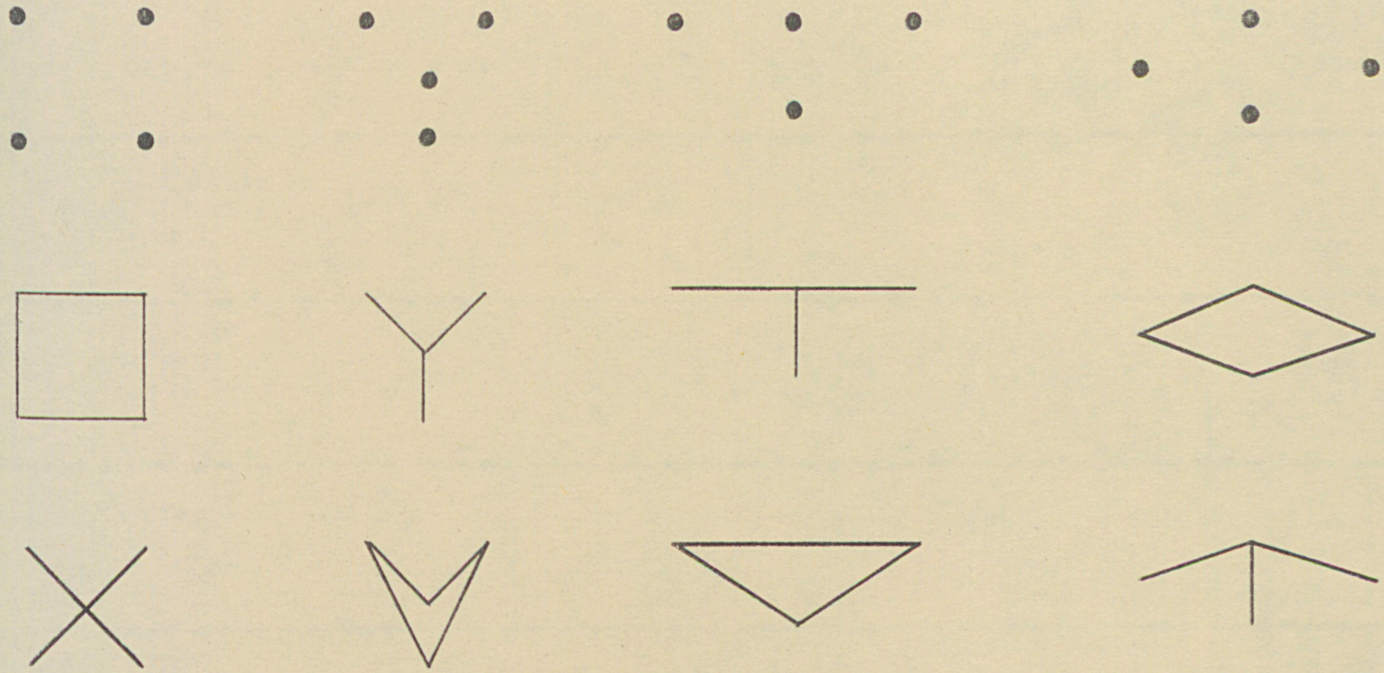
23. Paul A. Bell, Jeffrey D. Fisher, and Ross J. Loomis. Environmental Psychology (Philedaphia: W. B. Sanders Company, 1978), p.48



The dots in the top rows can be perceived in a number of ways. But because we seek out the simplest and largest geometric forms, we see the second figure below and not the third. Prak feels that the basic regular forms of Euclidean geometry are the language of visual perception. The same law applies to what we are more likely to perceive in the figures below:

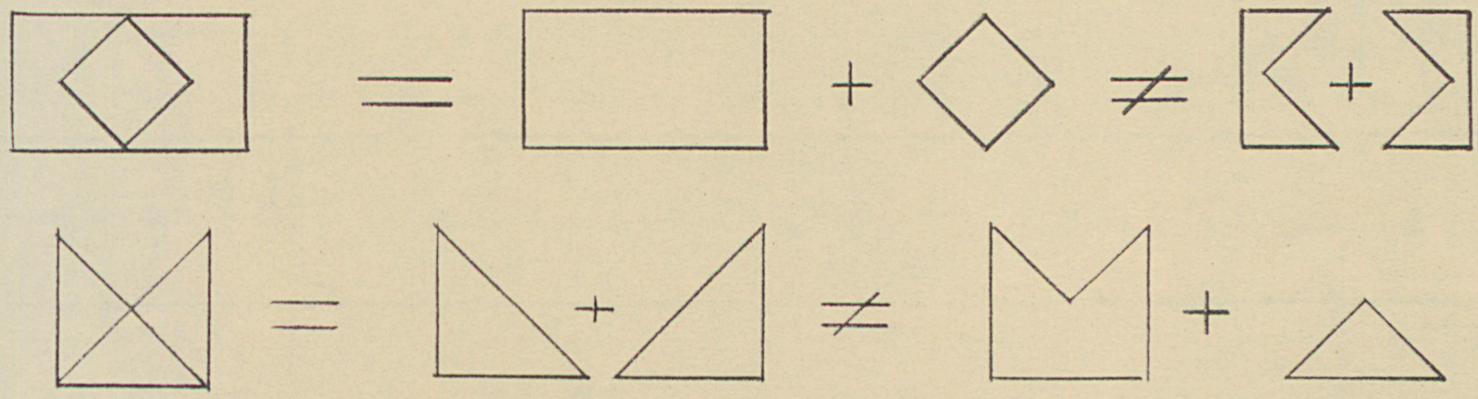
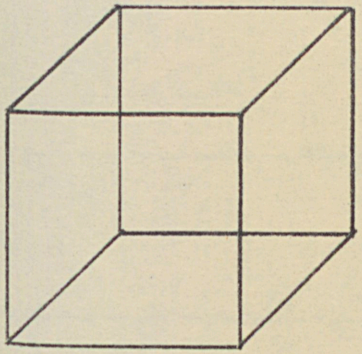
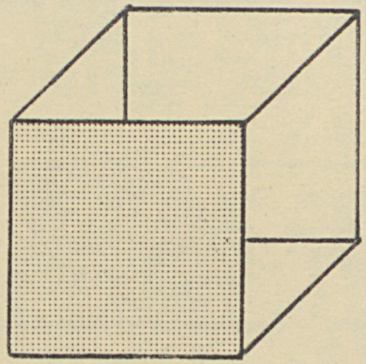


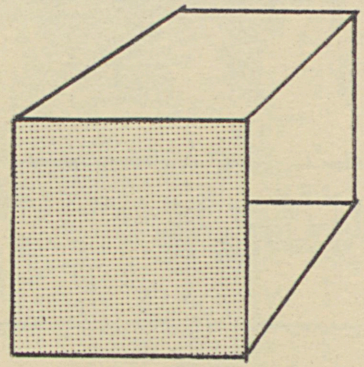
FIGURE 17



A



B



C

The cube in 'A' can be perceived as one with two different orientations. One in which the front faces the viewer, and the other whose top is in the upper right corner. A particular perception is encouraged in 'B' by the shading and the second cube can be recalled with some difficulty. Further reinforcing as in 'C' emphasizes only one viewing and it then becomes nearly impossible to visualize the second cube. This shows that it is possible to encourage a particular perception.

FIGURE 18

Texture - the degree to which a scene appears smooth or rough. The smoother, the better.

Identifibility - the degree of familarity by which the viewer can categorize the scene. The more familar, the better.

Spaciousness - the amount of space visible in a scene. The more space, the better.

Complexity - the number and variety of elements in a scene. The greater the complexity (to a degree) the greater the liking.

Mystery - the degree to which a scene contains hidden information, so that one is drawn into the scene to try to solve or find this information. The more mystery (to a degree) the greater the preference.

This mystery factor can be a very positive tool in design. Mystery causes movement which causes stimulation, which can call for the support of certain perceptions. As a person is introduced to a 'new' environment, he will first scrutinize it for, in Gibson's terms, the affordances, its invitational qualities or in the terms of Louis Kahn, its availabilities. If the environmental layout does not provide the affordances for an activity, then the individual will reorganize the situtation by changing the layout, changing his behavior, or seeking the opportunities elsewhere.[24] However, adaptation to an unfamilar environment consists mostly of exploration. People can adapt to their environment by watching others interact with the environment.

There are a number of stimulus properties that elict comparative or investigatory responses:[25]

1. complexity - the extent to which a variety of components make up an environment.

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24. Lang, p.105

25. Bell, p.45

2. novelty - the extent to which an environment contains new or previously unnoticed characteristics,

3. incongruity - the extent to which there is a mismatch between an environmental factor and its context.

4. surprisingness - the extent to which our expectations about an environment are disconfirmed. These processes are involved in the evaluation of beauty, i.e. pleasingness.

Exploration can occur as a result of understimulation and one seeks arousing stimuli in the environment. This type of exploration is known as diverse exploration. When one is aroused, and explores to reduce the uncertainity or to satisfy the curosity aroused, is known as specific exploration. Exploration is a function of the stimuli complexity, novelty, incongruity, and surprisingness. We are happiest with intermediate levels of stimulation or uncertainity and do not care for excessive stimulation or for excessive arousal.

Providing dark hallways for exploration is not in the best interests of the public. Lateral leaders in a building can be effective in encouraging movement towards a point. Light, a fountain, a planter, ornament, windows or the intersection of spaces attract the eye and encourage exploration towards that point. A postive feeling can be the result of this exploration as the mystery unravels.

Disorientation in a structure can result from over or under stimulation. Disorientation is a result of unsuccessful adaptation and increases fatigue. Consequently, to aid the public's orientation in large structures can also raise their level of satisfaction with that setting. Color can provide one means to do this. A different color for different areas or the same color for common facilities. Maps provided on kiosks or in circulation areas help to improve orientation.

Sometimes exploratory movement is not as complete as it should be, particularly in art galleries or museums. One reason for this is that fatigue interfers with completing more through

patterns of exploratory behavior. Fatigue is not due only to physical exertion, but also is a result of the visitor growing tired of maimtaining a high level of attention. Museum fatigue can be alleviated somewhat by building discontinuity into the design of an exhibit. The discontinuity refers to a change of pace in the stimuli presented.

Observations have shown that exploration in a gallery is a result of its shape and complexity. (figure 19). Visitors in entering a rectangular shaped gallery will turn to the right and follow along a wall. They will stop at the first few displays and then decrease the number of stops until they have either completed the tour or have found an exit that leads into another exhibition hall. It is conceivable that a design can be devised to encourage the number of stops.

Our perception of change is another factor that is utilized in judging pleasantness of the built environment. Change can be described as a measurable difference that an organism experiences in relation to its environment.[26] Change is an essential part of the human condition. If we have no change, then we have a lack of stimulation which causes tension and perhaps eventually death for mankind. Change has always been with us. What is different now in this fast moving world "....is the pace of change, and the prospect that it will come faster and faster, affecting every part of life including personal values, morality, and religions which seem most remote from change."[27]

We cannot control change but we can seek to control the rate of change. A controlled change, then, can become effective in the environment. Change can be related to contrast in design. Where we have no contrast we have monotony. Monotony, a lack of stimulation, will normally arise from a lack of attraction and high spots in establishing, development and completing the basic design sequence. It can be a result of poor design or the effect of economics on a building.

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26. Don Fabun. The Dynamics of Change (Englewood Cliffs,N.J.:Prentice-Hall Inc,1967) p. 7

27. Fabun, p.3

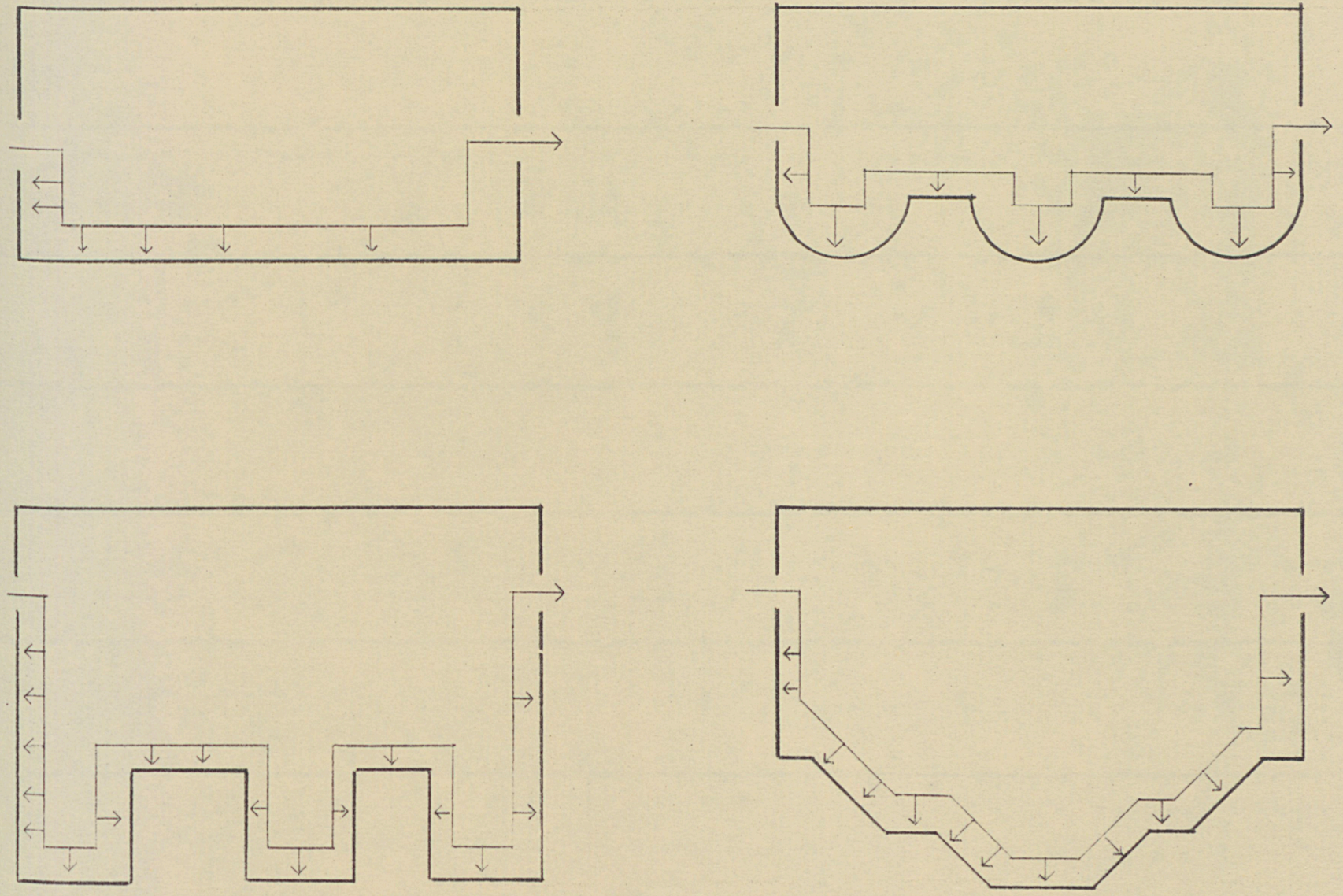

FIGURE 19

Many architects do not know the importance of providing contrast in our built environment.

Too much redundancy leads to a lagging of interest. However, very complex patterns are of little interest too. The solution is that a certain amount of redundancy is a prerequisite to the perception of a pleasing environment. Change, then, becomes an important factor to consider in design. However, when everything is changed constantly, change loses much of its creative power. Architecture is a tangible symbol and is relied on as a constant condition.[28] A structure gets its identity through experience, and it is possible that it could lose it through change. There is a certain amount of our environment which should not be subject to change. For if everything is changed constantly,we lose all identity of the environment. A figure which does not posess identity is recalled by the brain with great difficulty or perhaps not at all. Identity is a matter of degree; it depends to a large extent on the past experiences of the observer.[29] Identity and image are closly interwoven.

An architect, creating an unfamilar form, may have difficulty in getting the structure or building accepted by the public. However, for the public to be surprised is a different matter. We have seen that the element of surprise is a property that elicts an investigatory response and consequently is used in evaluating pleasantness in the environment. Architecture is an object that has and never will be seen in its entirety by anybody. The reasoning for this is that no three dimensional object can be completely recorded as an optical image by the eye at any one time from one fixed viewing point. The optical image is a two dimensional projection and because of this, architecture allows a variable for surprise. There is more than one way

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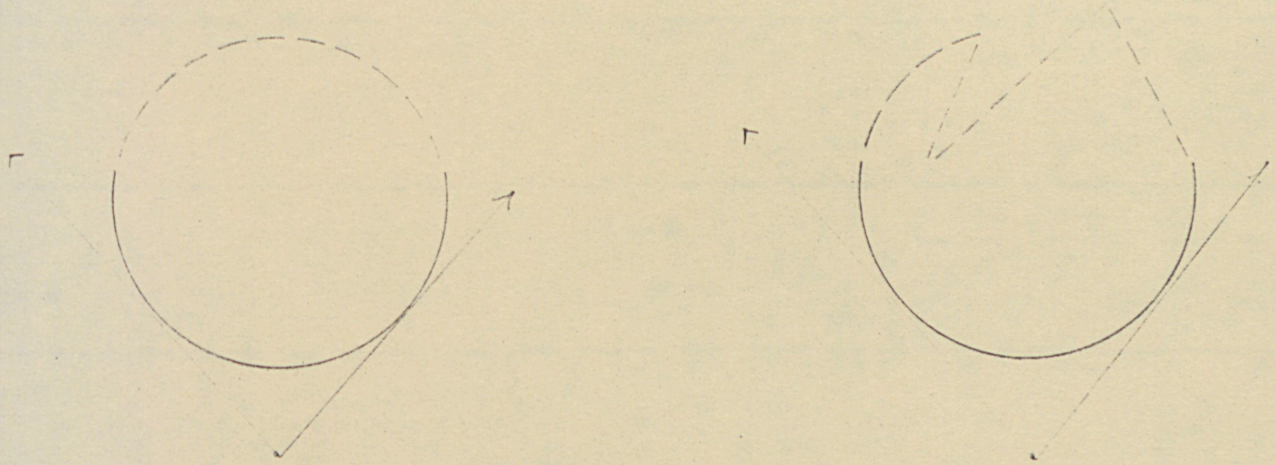
28. Rudolf Arnheim. The Dynamics of Architectural Form (Berkeley: University of California Press, 1977) p. 146

29. Haber p. 185



to create surprise. A barrier to a path causes more awareness of its surroundings. Optical illusions cause a second glance to themselves.

The stimulus-response perceptual relationship between the environment and an inhabitant depends not just upon the individual stimuli in the landscape. It also depends upon the patterning, complexity, novelity and movement of the contents of the landscape, and upon the past experiences of the perceiver, his ability to impose structure on the landscape, his olfactory and auditory associations with the landscape, and his personality characteristics. Perception is multi-modal and is the basic process by which thought and reason follow.

To me, the greatest flaw in architecture today is the lack of humanism. Too often it appears that man has not been considered in the development of the environmental layout. Applying the basic understanding of perception to design, by its process, includes man and his needs. Utilizing perception, the architect visualizes himself and his experiences and makes an attempt to rationalize how others will experience the design. Man is now being considered.

Architects have long been obsessed with the physical form of buildings often at the expense of the life lived within. The reality of a building has been seen only in its physical substance

by its designer, but the experience of a building in time, as movement through its spaces is equally a form in the pattern of experiencing the structure. This form can be better understood and utilized by the designer with an understanding of the psychology of perception.

Movement is behavior and a building becomes known only by movement through it. It is perceived and experienced first by movement, then by thought and reason. For a building to be functional to those who perceive it, it must offer movement patterns that will efficiently support the activity patterns, physiological needs and psychological needs of the buildings' users. Models for design approaches to satisfy these requirements have been proposed.

A model offers an approach to carefully study, implement or utilize various factors critical to the success of a design. For a good model, the more comprehensively and rationally the process is carried out, the more closely the designed product will provide for the needs of its users. Jon T. Lang has offered such an approach for those who are having difficulty in understanding and meeting the diverse needs of society. For the want of a better term, it is called a Neo-Functional approach and it takes into consideration the psychological, sociological and physiological needs of its inhabitants.

Figure 20 illustrates two attitudes towards the act of design.[30] Figure 21 details the Neo-Functional Design Process. The traditional model is concerned primarily with the artist and least with the impact on the observer. The Neo-Functional attitude is the opposite with the impact on the observer being the critical factor. The Neo-Functional approach to basic design is interested mainly in

1. Surfaces- the types and surface textures
2. Edges
3. Contours

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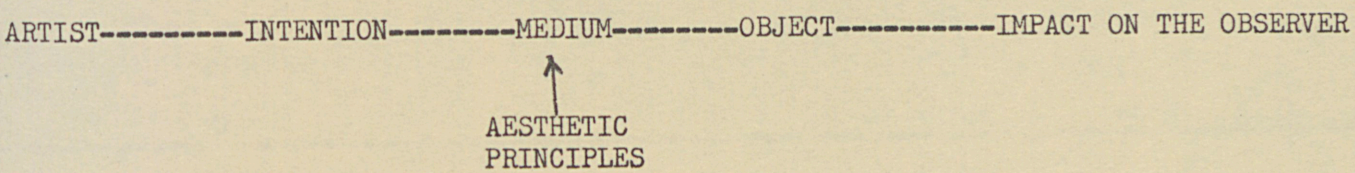
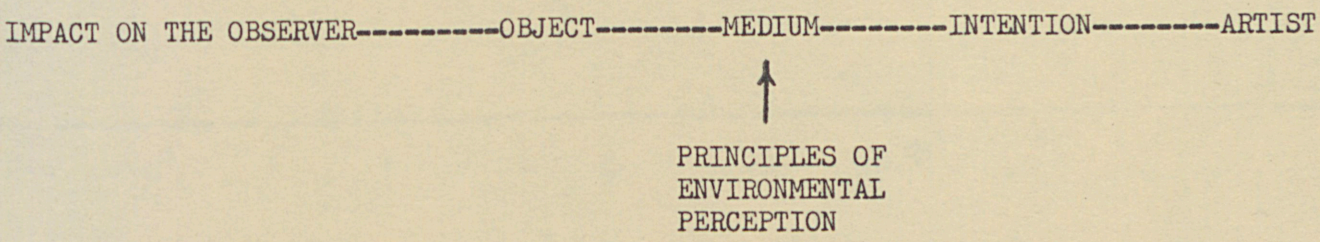
30. Lang, p. 36.

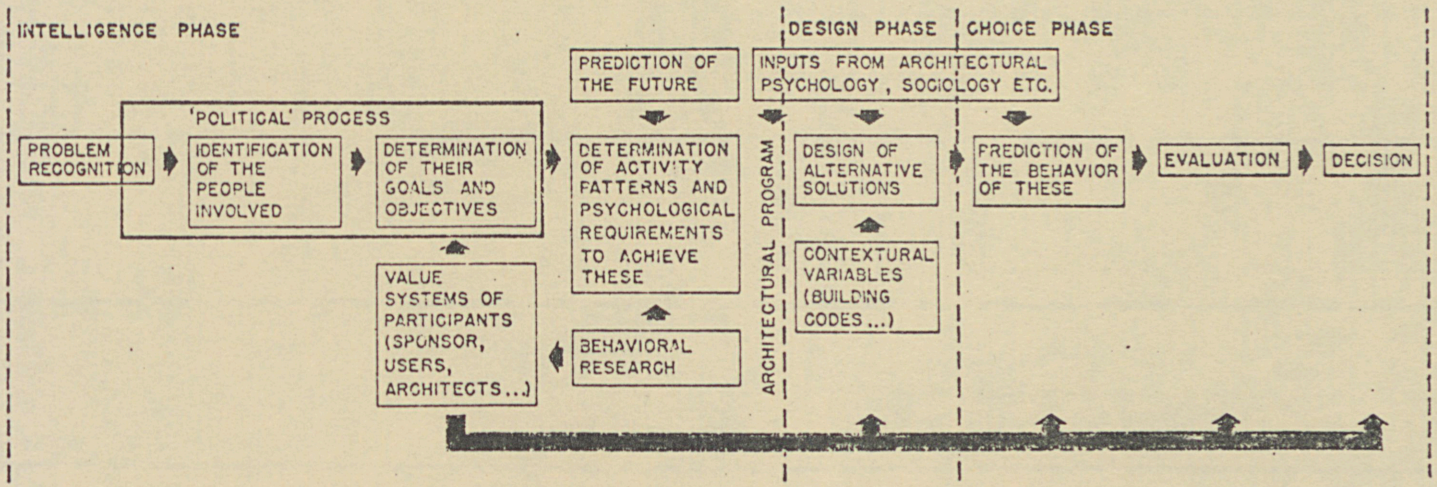


a) The traditional attitude towards the act of design



b) The Neo-Functional attitude towards the act of design

FIGURE 20



NOTE: THE ARROWS ONLY INDICATE THE PRIMARY ORDER OF ACTIVITIES. FEEDBACKS AND SECONDARY FLOWS ARE NOT ILLUSTRATED.

A NEO-FUNCTIONAL MODEL OF THE DESIGN PROCESS

FIGURE 21

4. Movement in environmental perception

5. Motion of objects in the visual environment

These are the elements of design to the Neo-Functionalist.

The Neo-Functional approach has a clearly defined goal. It intends to provide the layout of surfaces which provide the 'affordances' for the behavior required by people to achieve their goals in providing:

1. support for the activity systems required by them to achieve these goals.
2. shelter for these activity systems in terms of the physiological nature of the human body.
3. certain psychological support by affording supportive aesthetic experiences.

By shifting the design approach to the Neo-Functional method, there comes a shift in architectural thought from the main realm of philoshophy to that of psychology.

The design process is a number of decision making processes, which can be divided into a number of phases. The first is the intelligence phase which involves the identification of what to do or defining the problem. A design phase follows involving the synthesis of different possible surface layouts to meet the objectives set forth by the intelligence phase. A choice phase follows which allows selection of a layout for the implementation stage. The last phase, an evaluation, may be the most important as we learn from successes and mistakes. This trial-and-error approach is regrettable, but the mistakes of Pruitt-Igoe will never be repeated.

This model for design is not perfect, but it does provide a basic framework and is a start in the right direction. The model takes into consideration the variety of affordaness for both behavioral and symbolic needs that the layout of the environment has to provide. The needs, as defined by this model, are those of Abraham Maslow's detailed in his Theory of Human Motivation. The needs in order of its heirarchy are survival, security, belonging, self-esteem, self-fulfillment

and certain cognitive and aesthetic needs.

I am not entirely certain that these are the needs of men. Louis Kahn defines the three needs of men as the need to meet, the need for knowledge, and the need for well-being which are provided by the institutions of the street, the school, and the village green. Hadley Cantril's essay in Humanscape - Environments for People[31], lists eleven demands humans present on any society or political culture. Among them are order, freedom of choice, a chance to experience their own identity and worthwhileness, and a sense of confidence that their society holds a degree of hope that their aspirations will be fulfilled. Stephen Carr, in the same book, lists some criteria for architectural form. The nine criteria include the need to stimulate and encourage exploration of the environment, to structure city form to facilitate the various modes of structuring mental representations, and to enhance the unique qualities of environmental settings. Perhaps the needs, desires, and requirements that man has to impose on the environment are too numerous to list or have not been adequately defined.

The application of the psychology of perception to building form or surface layout is perhaps the area where the least research has been done. Psychologists, anthropologists, sociologists and architects have not done all they could to sharpen the meaning of their concepts and to protect them from loose generalization by analogy and metaphor. The information I have presented can be interpreted in a number of ways. Nevertheless, it is possible to design surface layouts so that the probability that certain opportunities or affordaness of the environment can be more readily perceived.

In order to design an environmental layout in which it will be easy to find one's way, it is necessary that the layout should provide some logical order, clarity, or each component should be a part of a whole in some hierarchical sequence. For layouts in which the aim is to provide an

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31. Stephen and Rachel Kaplan, Humanscape - Environments for People (Duxbury Press, North Scituate, Massachusetts, 1978), pp. 94-102.

interesting geographical environment for the observer in motion, the layout should provide for the maintenance of an attention level. This can be done by the use of color, texture, or illumination differences.

In order for the layout to provide cues so that the information for the affordaness for behavioral patterns can be more readily perceived, the more important details which specify the affordaness should be clearly differentiatable from the remainder. This can also be done by the use of color, texture, illumination or surface inclination.

If an architect wants a long facade to appear shorter, it can be divided in a number of ways. A column, drainspout or pilaster will encourage the building to be perceived as two parts. The contrast between parts can be enhanced by differences in color, texture, materials, etc. Conversly, a number of different facades can be unified by using common materials, building heights and the like. The law of continuity can be affective in unifying structures.

The theory of a need for variety can obviously be applied to the built environment. Many structures are praised for their 'variety' or 'liveliness' and are condemned because of their monotonous or plain structure. Within this variety, there should be a perceivable order and not a chaotic form. Complexity of a structure is difficult to measure, but it is likely that everyone has their own preferred level of complexity. To follow the Gestalt laws totally, results in simplicity in design. To go against them causes complexity. A coherance is necessary to unify the structure and this can be done by the use of order, geometry, color, materials, and building heights.

Materials have been found to command emotions.[32] Wood is evaluated by its perceivers as a positive material. It has been described as beautiful, friendly and interesting. Conversly,

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32. Nels Luning Prak, The Visual Perception of the Built Environment, (Delft University Press, Delft: The Netherlands) p.85.

concrete appears to be a material that evokes negative feelings. It is expressed as ugly, unfriendly and dull. Brick and glass were found to be in an intermediate position between the two extremes.

Herb Green in Mind and Image states, "The presence of human scale in our environment helps to give a feeling that man has been considered. The beholder feels that the human being is in control of his environment. Human scale may be considered a metaphor of the body projected into the environment." Perhaps, that is what we as architects ought to do. Make man feel he has been considered, and is in control of his own environment and destiny.

In a perceptually rich environment, we hardly notice the architecture. But the built environment does form the backdrop for the comedies and drama of life. The contrasts of the environment are important for an efficient utilization of our vast urbanized areas. The visual perception of the built environment forms a part of the continuous process of interaction between man and his environemnt.

The factor to remember when considering perception as a design tool is that behavior depends on a large number of variables. These variables influence perception, and the willingness or desire of the indeviduals to carry out that behavioral experience. The use of perception does, however, include the consideration of man, his reactions and needs, and encourages a more humanistic and pleasing environment.

design

"The quote that opens my perception chapter summarizes my feelings about design. The post-modern movement that many of us embrace and much of other modern architecture does not meet the social and psychological needs of its users. Post-modern architecture is esoteric. It is an art, a sculpture intended to be understood only by a few. It is created by the designer for the designer.

We as designers of the built environment weld a great deal of power over people and often we are unaware of the magnitude of this power. The built environment does affect the human condition and consequently architects have the potential to manipulate human movement, response, and behavior.

We have responsibilities. Bad buildings are a result of not meeting these responsibilities. Buildings where people leave with negative opinions give all of us architects a bad image. Myself, I have experienced architecture both good and bad. Wilson Hall, for example, while beautiful on its exterior is a maze upstairs. My first experience there was a very frustrating one. I walked in circles, I became disorientated, lost, fatigued, and consequently have negative images of it.

The same goes for the SUB basement and the Student Health Center. Narrow dark twisting hallways leading into the unknown made me very uncomfortable towards the building.

Disneyland was a great experience. You carry with you and in your head a color-coded map and you know where you are every minute.

The Denver Museum of Modern Art was a bad experience. The building itself is a puzzle and inside it is even worse. There is no strong movement pattern. You miss many displays, travel in circles, become lost, disorientated, frustrated and too tired

to notice many of the displays. Movement from floor to floor is easy only if you can find the elevators or stairways which are cleverly concealed.

I felt I could use perception as a means to avoid these mistakes. I hoped to be able to experience the structures before they got off the board. By understanding perception and utilizing it, I imagined I could put myself into the shoes of the people who would experience the design. Something like a modelscope. By digging deeper into study I believed I could control and encourage certain positive perceptions to make the building a better experience to the perceiver.

I was wrong. But I was right too. The field of perception is very broad and controversal. It does hold great promise to us as designers, but first we must decode the information available. One great expert may not agree with another. Theories might be measurable to a degree and the degree might be an unknown or a variable.

I cannot put myself into the shoes of the perceiver because I am not and never will be average. As a designer I understand more of structure, of meaning than the average person. Also, my experience with life and the environment is different from everyone else's. My cultural influences are very strong. Why, for instance, did I use brick and concrete as materials? Perhaps it is because Great Falls has much of this. My elementary school, the high school, the airport, the library, the museum, and all structures that I like in Great Falls are very similar to this building. Perhaps that is an unconscious influence. It should come as no surprise that this building was done by a Great Falls firm.

But you cannot say most architecture is like this. There are no structures in Great Falls similar to Wilson Hall or Johnson Hall. In San Francisco you see a lot of concrete and glass. In southern California you see a lot of stucco and tile. This

I feel is a strong cultural influence.

When using perception as a design tool it becomes important to use the design process model shown on page 117. With this comes a shift in thought from the realm of philosophy to that of psychology. This correlates to the attitude I have towards design shown on page 116. I am mostly concerned with the built environment's impact on the observer and not so strongly on the art of architecture.

The intelligence phase of this design process requires the determination of the people involved, goals, and objectives. These are really difficult to define. It is also difficult to define certain words to the perception related field, like relate to a building, understand a building and its meaning, etc.

Humans have many needs. I covered some of these ideas in my book, such as those of Abraham Maslow's. We as architects have a responsibility to determine the needs to be met for each design problem.

There are sociological needs such as the need to meet. We must provide the spaces for people to interact to meet this need. Pruitt Igoe had no wasted space and was praised for it. Consequently, it had no spaces for people to meet and it failed.

We have physiological needs. Shelter. Most times we do provide this. I recall seeing an addition to a house that had no roof. It was acclaimed, but was it necessary? It did not meet the physiological needs of man.

We have cultural influences. We walk on the right sides of sidewalks and malls. We drive on the right side of roads. Where there are two doors are we most likely to enter the one on the right?

We have psychological needs. We need to be stimulated. All five senses, a little at a time,require stimulation. If we are deprived of our senses for just a little while

we begin to go mad. This is called sensory deprivation. Monotony does not provide the stimulation needed.

I learned of this doing research into perception. Because of this I feel I can be much more sensitive to the needs of the people..more humanistic.

I developed a master plan for the state fairgrounds without perception in mind. I then used perception as a design tool to reinforce the design.

It is important to develop a sense of entry to a complex as large as this. I have an automobile entry and a pedestrian entry. These entries should be perceived as spaces.

The perception of space is polemics in itself. What is necessary to perceive space? Some say a column is enough. Others feel you need one, two, three, or four planes. I have always thought of space as a volume. My experience is that if I can perceive a volume I can perceive a strong space. My back is one plane. I have noticed that looking down a street I do not perceive space. But if the space is blocked by a city hall, for example, there is space. A mall has space with its roof. So, my feeling is that a volumetric space is a strong perceivable space.

The automobile entry and the main fair pedestrian entry provide a front to volumes. They thus become stronger, and easier to perceive.

The mercantile plaza is a very strong space. It will be seen from the main plaza and remembered. Thus, no matter which direction the pedestrian takes, the mercantile plaza will be remembered and eventually visited.

Symbols are important. Symbols have meaning to us because of prior exposure to them. They can be valuable and useful only if they have meaning otherwise they do not exist.

Expo 74 had a powerful symbol at its entry gates. It was a giant butterfly sculpture. Each gate and its surrounding area was color coded to the color of the symbol. So if you wanted to find the Japanese pavilion, and you knew it was in the yellow area, you would walk towards the yellow symbol.

I have developed a new symbol for the fairgrounds. It is a smooth rhythmic sculpture. It will be used to desiginate entry, as well as various areas of the fairgrounds such as exhibition, agriculture, park, and grandstand areas. Near each symbol will be pedestrian amenities such as information kiosks, drinking fountains, benches and restrooms. The one located at the entry helps to provide the first identification of the symbol. The ones located at the overpass and the image corner provide year round experience with the symbol and help to give it meaning. People will look for these symbols as they begin to get lost and will reorientate themselves here.

In a perceptionally rich environment, we tend to not notice the architecture. The buildings become backdrops, stages to support the other activities taking place. Recalling Expo 74, the only two structures I can remember are the Americam pavilion and the Spokane opera house. I did not notice these structures as I was close to them, but they were dominate structures when viewed from afar. I do not remember the design of other pavilions but I can remember the movement of some and the good experience I had with the Expo.

A fair stimulates every sense perhaps even too much. What becomes important in the fair structures is the creating of a building that does not require a high attention span to experience. The architecture should offer support to the fair activities taking place around it. Spaces to support the needs of people become very important.

Those are some of the goals and objectives I tried to meet in the design development

of my solution. I do want this design to be perceived positively by those who will experience it.

Plaza is an important people space. A plaza is a space where people watch others interact with their surroundings. By doing this they find it easier to themselves to adapt to the space. It serves a sociological purpose. Plaza is marked by the planes that contain it, and more important by its pattern. The pattern changes from the entry area to the main plaza. The pattern, by not encouraging an axis, should be perceived as a space for free movement. The only way to know if it will work is to evaluate.

The west triangular piece of structure serves several purposes. First, it serves as a change. It will attract the eye and encourage investigatory movement towards that mark. It also helps the building to be perceived as one function. Gestalt's law of closure implies that we will in the voids of the structure to enclose the structure and so that it will not be fragmentary. I do hope the structures will be perceived this way and have tried to encourage that perception. The triangles also help to extend the movement axis and make it stronger. The east piece helps to enclose the outdoor display space.

I am anticipating that people will be funneled into the void that marks the entry to this facility. Most of the fairground structures are entered through an arch. Perhaps this can be viewed as a void within a solid. Since the Four Seasons Arena has no strong entry, it is weak and fails in its purpose. Upon entering the center court, a change occurs. As change causes awareness of the surroundings, the building entrances should be more readily perceivable. This change is in the pattern but also in that the space is interrupted by the vertical movement axis.

Entry on the north structure lower level is marked by a wall projection. The cultural influence of entering on the right should help to mark the correct entry. Also the right set of doors will open in, while on the left they open out to mark exit. Once inside the entire scene is not presented to the viewer. This should encourage invest-

igatory movement as there is a little mystery and some surprise in this space. People should be able to experience and explore both halves of this north building and know it. They will then leave feeling more positive.

At the south building, the entry is set back. Here, columns are used to define the spaces. Prak says we tend to perceive the simplest and largest geometric forms. If it is true that we carry cognitive maps of architecture in our minds then perhaps the shape of this structure will be perceived as three areas. The columns reinforce that perception and the display booths will confirm it. To the perceiver, there are three areas to be visited and it does not matter in what order they are explored. But the perceiver will know whether or not he has missed an area. The windows help to orientate to the space. In one rectangular volume the window is a long line, at the other the same has been broken into three segments.

I extended a wall to enclose the outdoor display. The wall also helps to prevent people from going to the outdoor display before they have finished their tour and leaving too early. The other plane of this space would be defined by a beam, or the wall of the convention center should it be built. Hence, it is not necessary for the convention center to be made to insure the success of this master plan.

The use of concrete helps to break up the monotony of masonry and provide a little variety within the structure. The concrete lines should encourage movement along their axis and reinforce the fair activities. As previously mentioned, these materials are common to Great Falls and should help the structure in being accepted postively by the area.

The facilities outline strongly conforms to the ones defined by the other structures on the site. This hall has been set back from the other structures and this space will

become the food fair area. It will be enclosed by a temporary tensile roof. This space is an improvement over the present food area in that fair goers are not forced through the area but they have a choice. Again, this area is marked by a change in the pattern.

The axis to the grandstand becomes similar to a mall. People spaces are created along its axis. A fountain, picnic area, park and other pedestrian amenities are provided. Nature provides a relief from the constant overstimulation of the fair activities, and this is a psychological need. The parks and garden relieve the tension and fatigue of maintaining a high attention span.

Perhaps the goal of post-modern architecture is to evoke questions. I mentioned the importance and usefullness of questions in my book. Then, in this area it succeeds. However, I do feel architecture should also provide for the answers.

As previously mentioned, a critical element of applying perception to design is the evaluation of the structure and subsequent applications of the material gained to future designs.

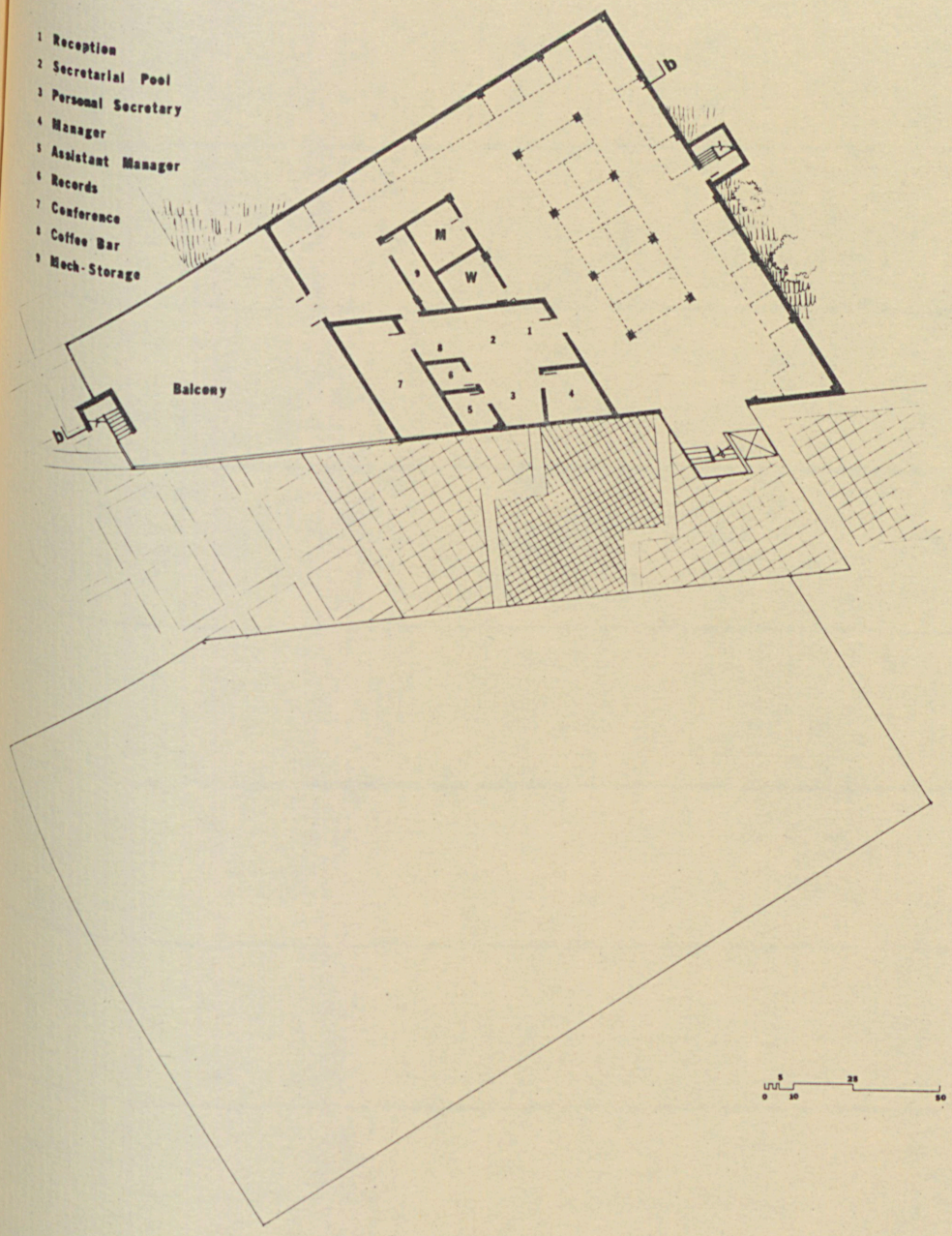
I can visualize my experience and responses to this structure, but is it fair to say that others will too? I attempted to encourage certain perceptions in order to get the desired positive effect from those who will experience the structure. This was and is and always will be a primary concern to me.

I do not profess to know all of the needs of man. When it comes to defining the goals and objectives of the people involved, it will probably be necessary to consult with others outside the field of architecture. But since I am from Great Falls, I have the feeling that this building would be well received by its culture. Each individual's experience with this Exhibition Hall will be different, but it should not be a frustrating or bad experience.

However, it is important to realize the importance of psychological and sociological aspects in architecture. The utilization of perception as a design tool is an aid to this. The application of perception's implications to design can only benefit the success of the design. Applying the basic understanding of perception to design, by its process, includes man and his needs, thus the design becomes more humanistic. But the implications of perception require careful consideration and decoding by the designer.

With this knowledge in mind, I should become a designer with more consideration given to the needs of people. This research can be applied to all of my designs and will help the complexity of my future solutions to be less esoteric. I am now and will be, a more careful and better designer as a result of my study."

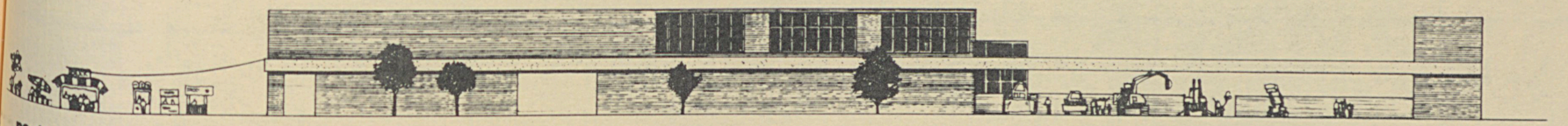
Ron R. Bibler
June 3, 1980



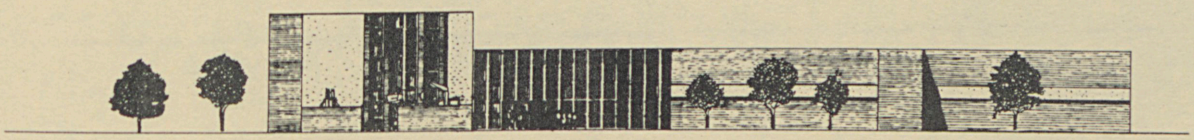
an exhibition hall

sheet	title
1	site master plan
2	upper floor plan
3	lower floor plan
4	elevations
5	sections
6	perspective
7	fair sections
8	mercantile plaza
9	park display area
10	tensile structure
11	fair sculpture
12	fountain area

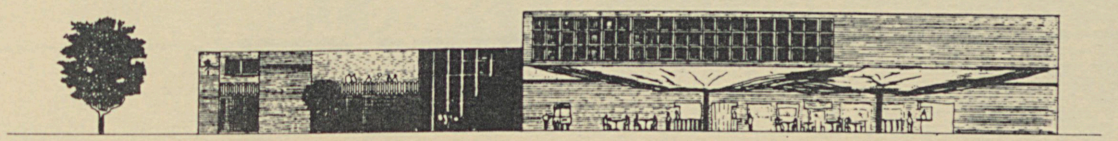

Fountain
Picnic
Plaza
M
W
Center Court
Future
Convention
Center
Storage
Food Fair



north elevation



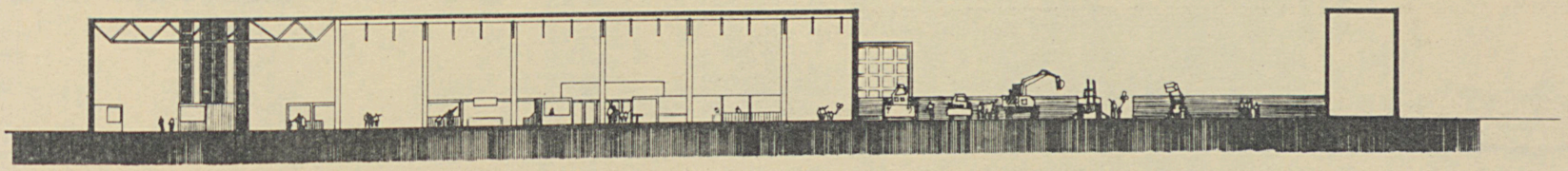
west elevation



east elevation

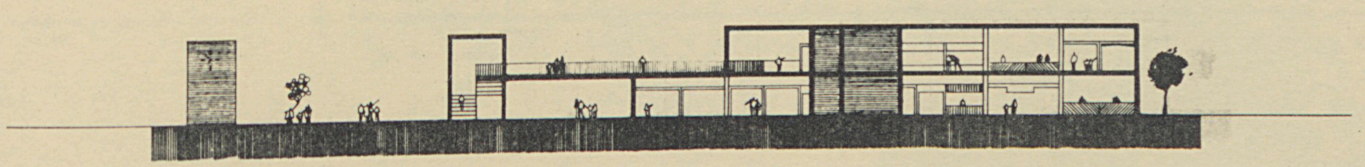


section - center court

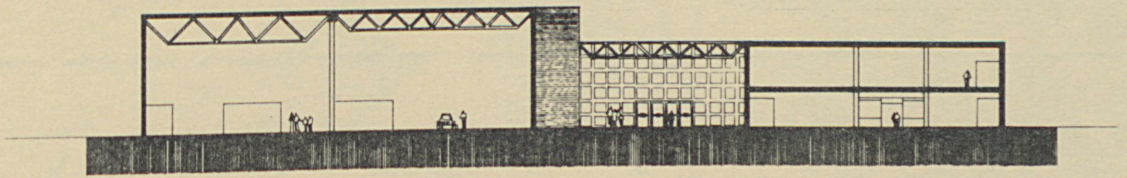


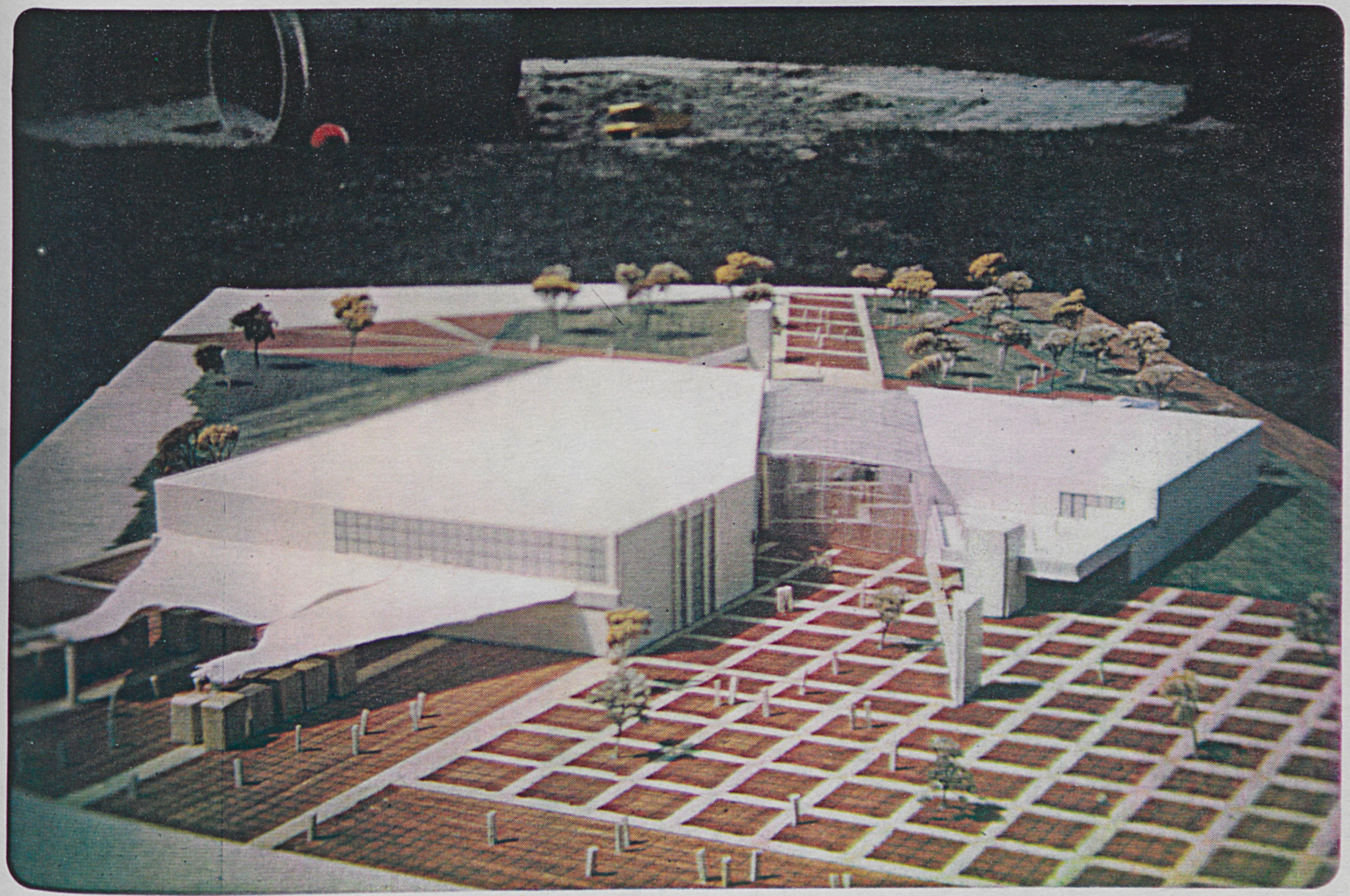
section aa

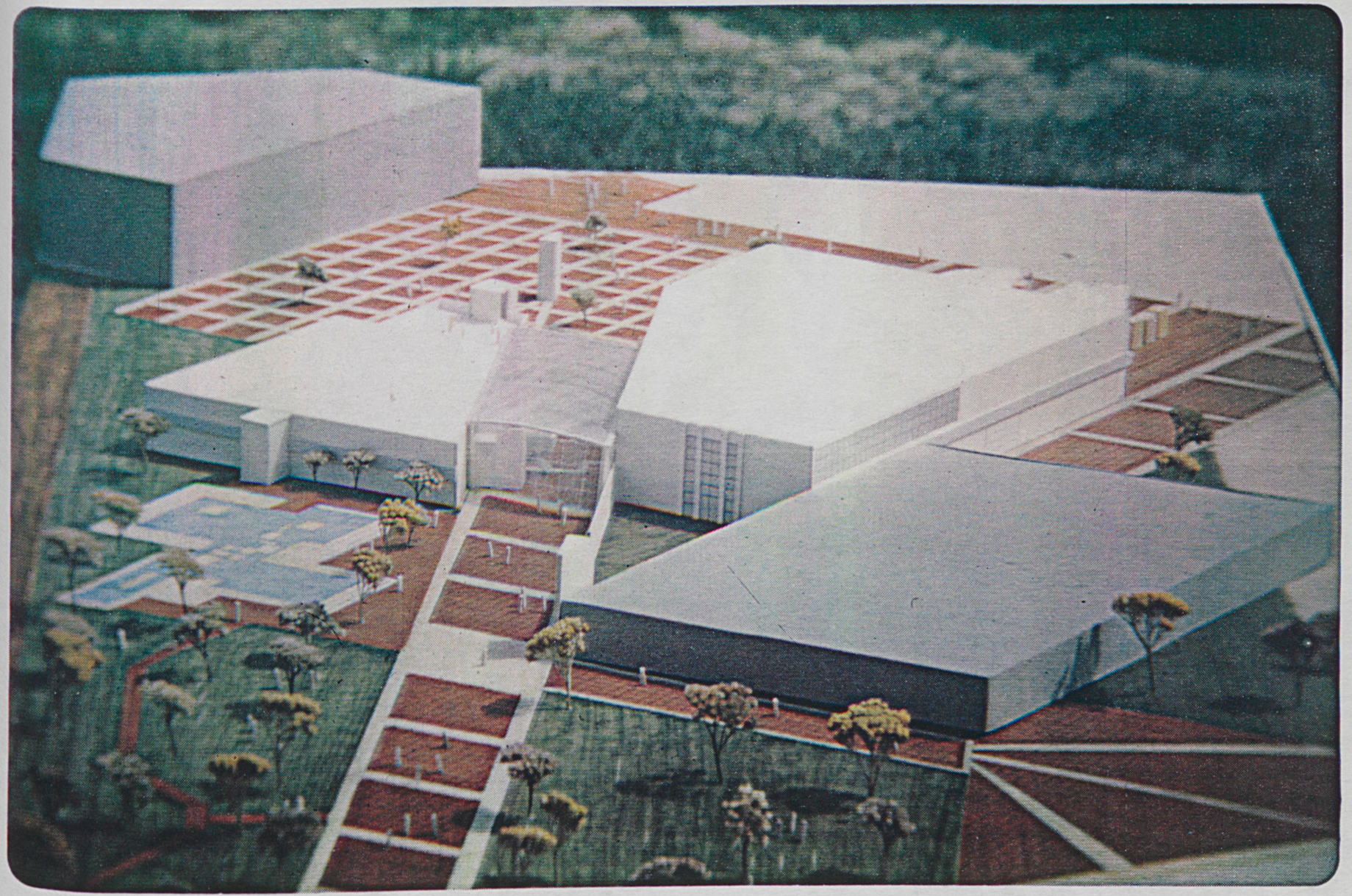
section bb



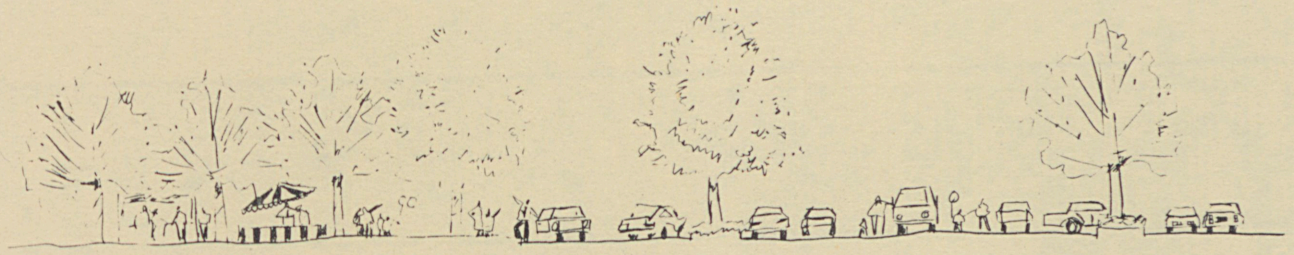
section cc



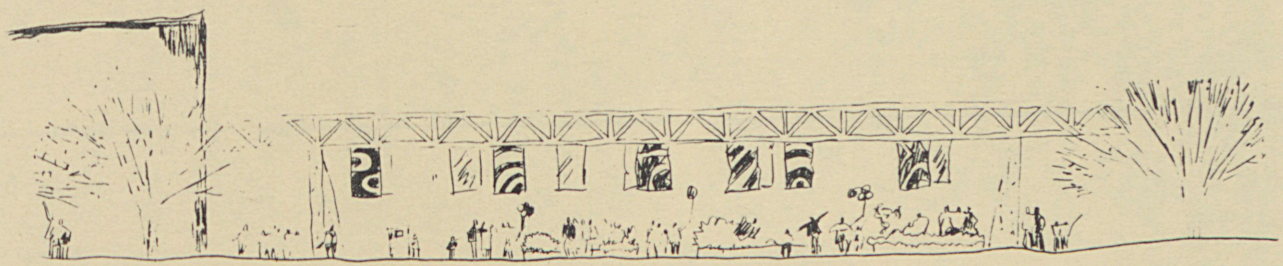




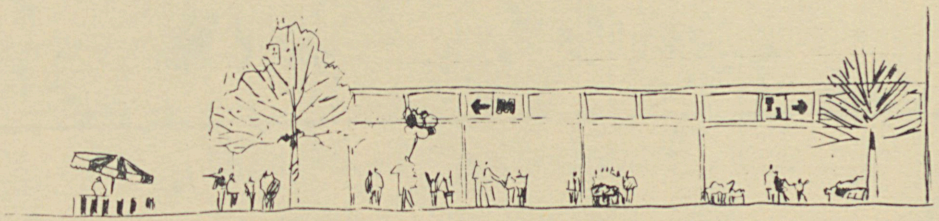
entry, loop road, & parking



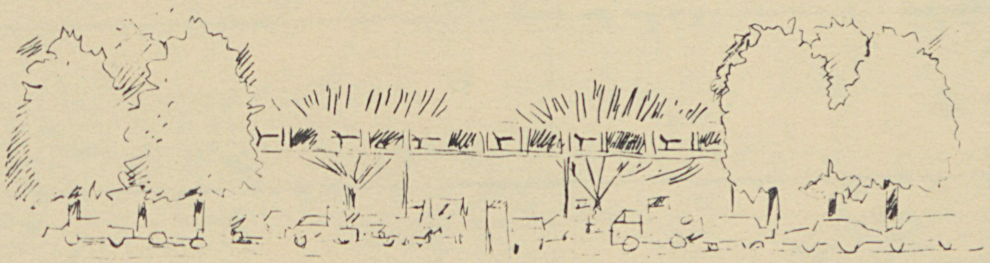
entry plaza



mercantile plaza

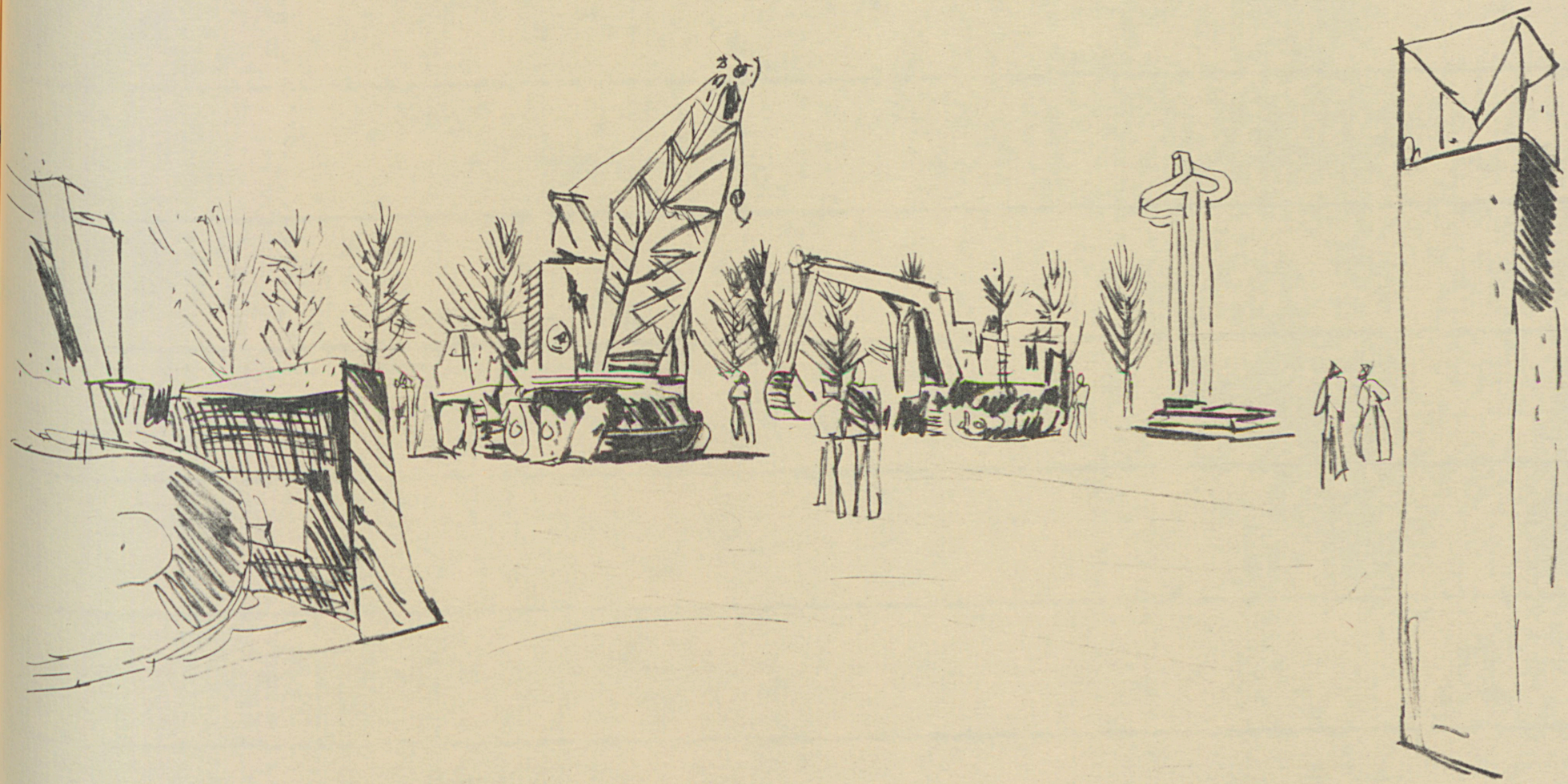


automobile entry

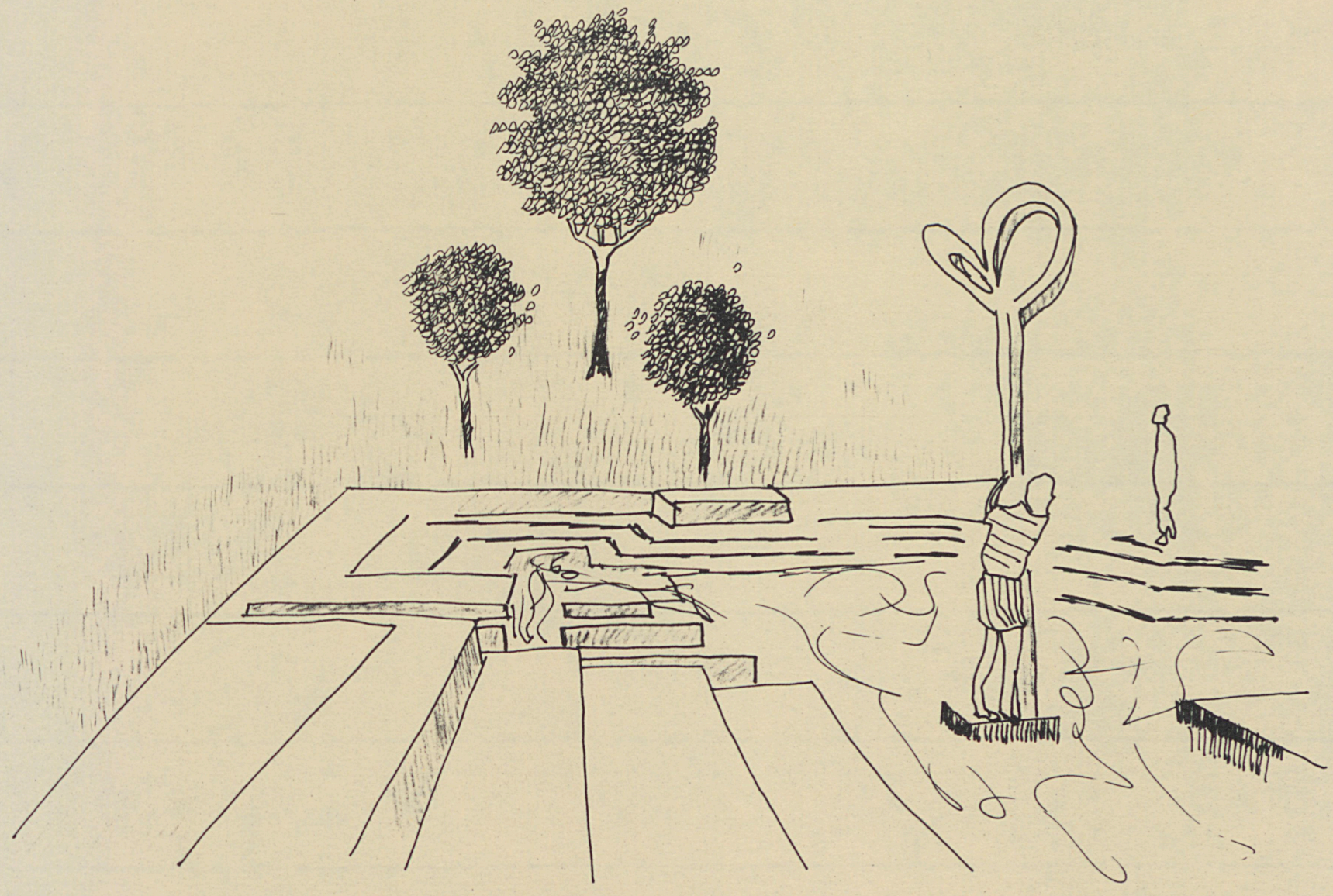




MERCANTILE PLAZA

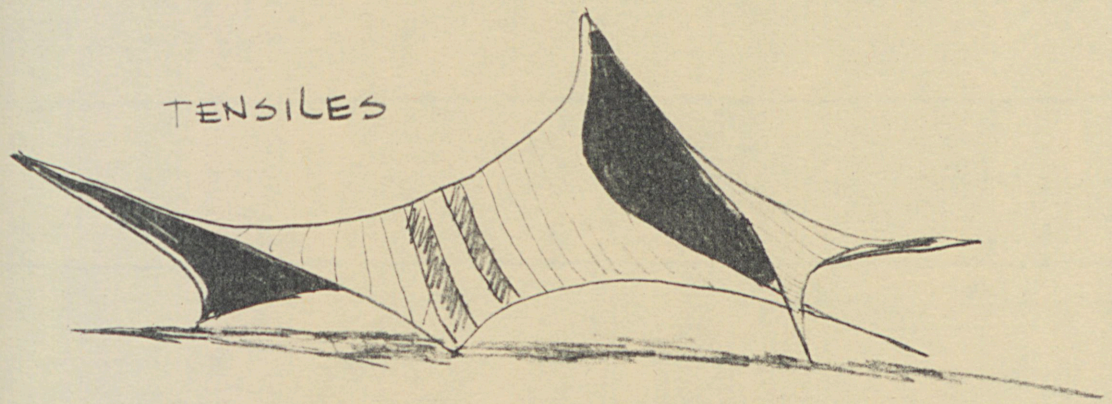


PARK AREA



FOUNTAIN AREA

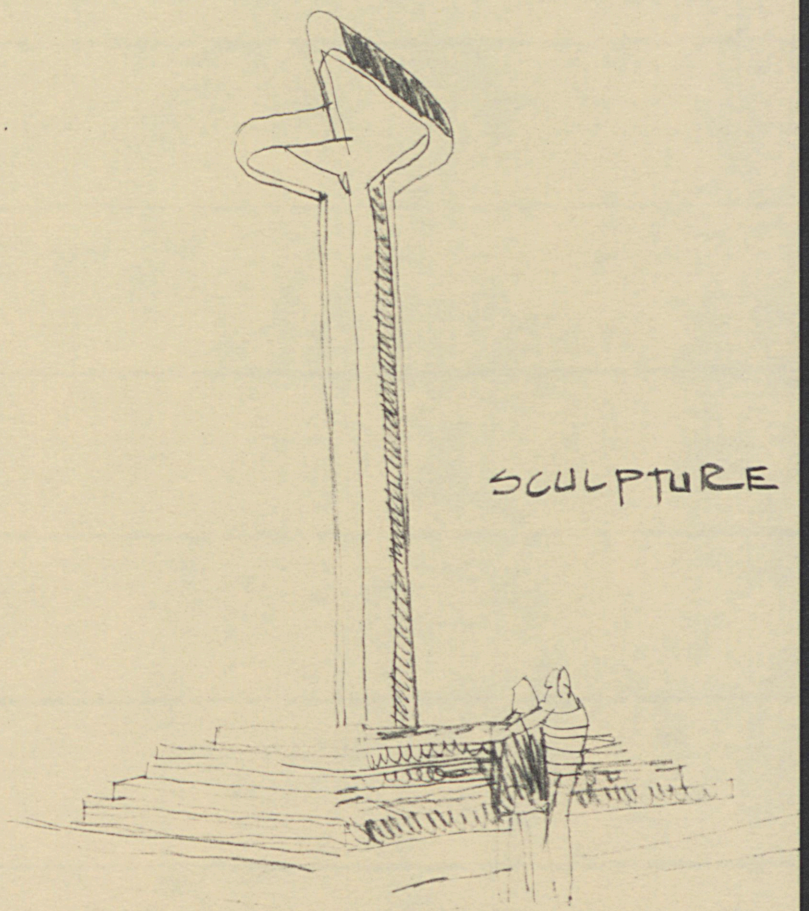
TENSILES

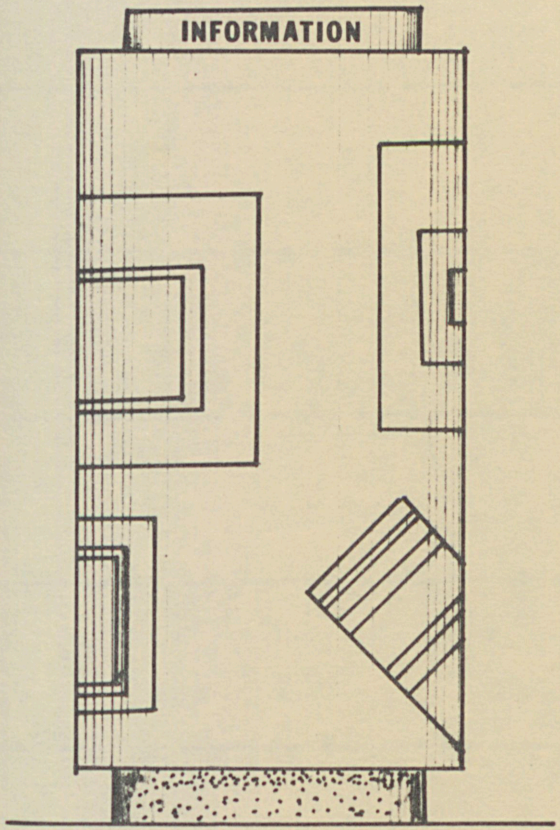


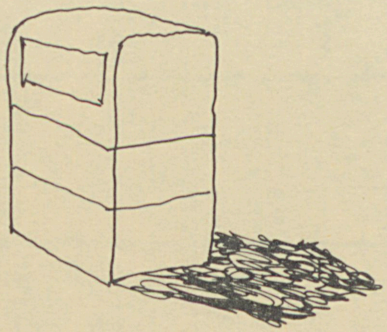


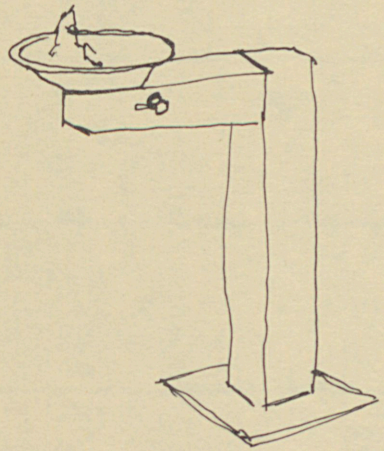
BUILDING
LANDSCAPING

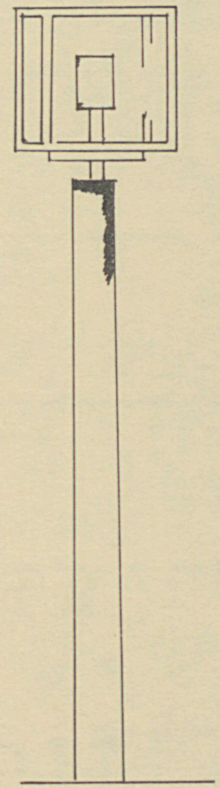
SCULPTURE

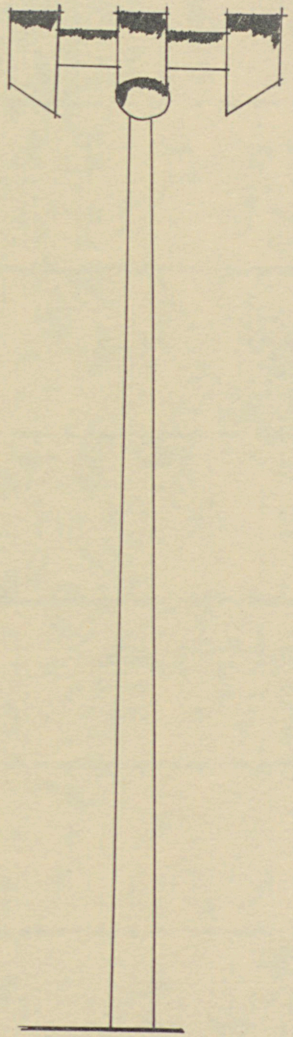


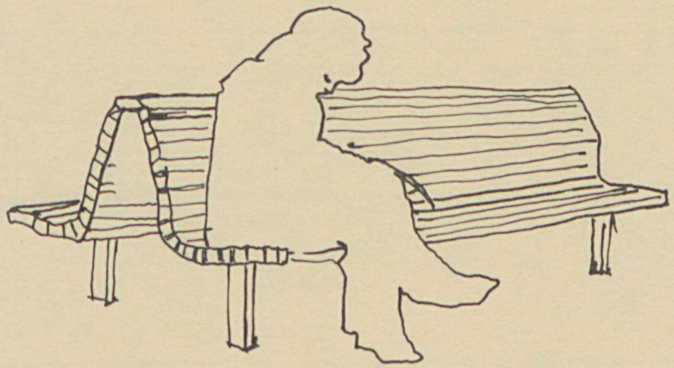

INFORMATION

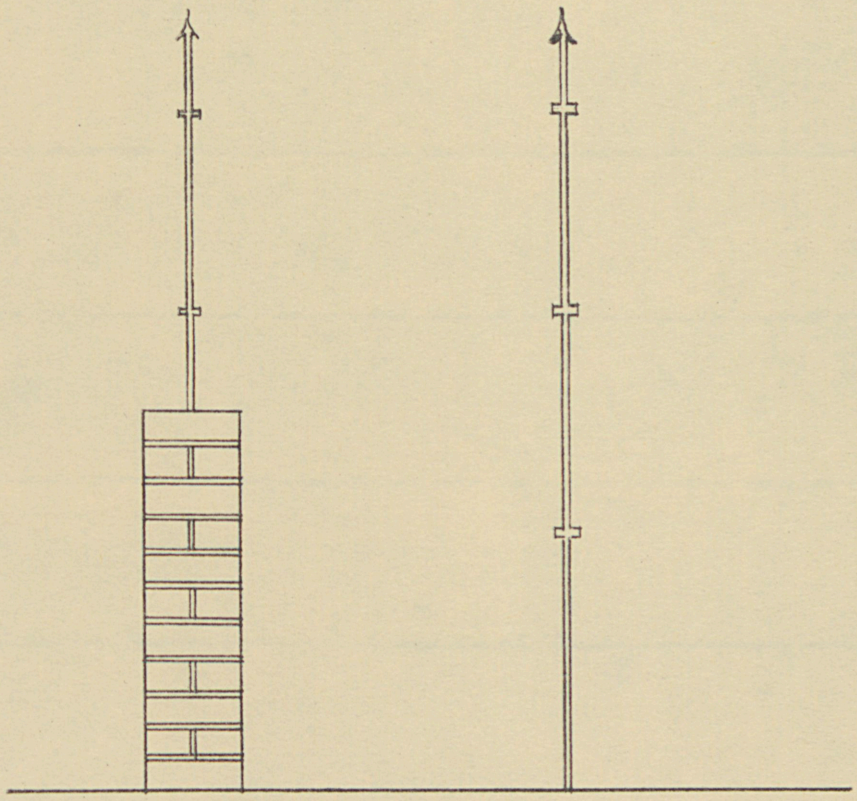












alternative security methods

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Sommer, Robert. Tight Spaces- Hard Architecture and How to Humanize It. Englewood Cliffs, N.J.: Prentice-Hall, Inc.,1974

In addition, the following uncirculated brochures and studies were made available:

Great Falls Multi-Purpose Feasibility Study prepared by THK Associates, Denver CO, 1975

Multi-Purpose Information Brochure prepared by Davidson and Kuhr, Architects, Great Falls, MT, 1976

Civic Center Feasibility Study prepared by Davidson and Kuhr, Architects, Great Falls, MT, 1979

1978 and 1979 State Fair Annual Report, prepared by Bill Chiesa, State Fair Manager

Notes and materials from Louis Merrill, Fair Consultant, Sacremento, CA

appendix

CARBON COPY TO RON

July 25, 1979

Mr. Bill Chiesa
State Fair Grounds
Great Falls, MT

Dear Bill:

This letter is in reference to a recent phone conversation regarding one of my employees, Ron Bibler and his architectural thesis project. One of the final requirements for the degree of a Bachelor of Architecture is to write a thesis on a specific project, design it, and present it to a jury, the drawings and a scale model of the project.

Ron has chosen to design a "new" fair grounds for Cascade County. Ron is a graduate of C. M. Russell High School, presently a fifth year student at Montana State University, and has wanted to be involved in a redesign of the fair grounds for some time.

In order for Ron to include the opinions of as many people as possible during fair week, he plans on spending considerable time meeting with people, discussing their needs and how best they could be served. His intent is to not be critical, but to involve as many people who use the fair grounds for input on his final design and planning for his thesis.

As we previously discussed, Ron intends to meet with you after the fair to gain more insight into the matters of the fair. He is anticipating that you will be willing to provide information and give him ideas towards a new fair design. If possible, perhaps he could meet with the state fair board to get a critique on a preliminary proposal.

Ron wishes to make it clear to you that he in no way intends to disrupt the fair personnel during the fair week. With your approval he would like to meet with as many personnel as possible and involve himself in fair procedings. This approval would be a great aid towards his research and design of the fair.

I wish to emphasize the sincerity and dedication of Ron in his work towards his degree. Should you have any questoins, please do not hesitate to contact me.

Professionally yours,

Daniel W. Cook

ems

RODEO · RACING · STOCK SHOWS · EXHIBITS · ENTERTAINMENT · EXCITEMENT

STATE FAIR

GREAT FALLS, MONTANA · JULY 28 - AUGUST 4, 1979

BILL CHIESA — MANAGER
P.O. BOX 1524 • PHONE: (406) 452-6401
GREAT FALLS, MONTANA 59403

To Whom it May Concern:

This letter is to introduce Ron Bibler, a graduate architectural student who is working on his degree thesis project.

He has selected State Fair for this project and is authorized to move freely about the fairgrounds to interview people. A few minutes of your time would be greatly appreciated.

Ron is deaf, but reads lips very well.

Sincerely yours,

Bill Chiesa
Manager

BC/at

School of Art

University of Michigan
2000 Bonisteel Boulevard
Ann Arbor, Michigan 48109
313-764-0397

August 2, 1979

Office of the Dean

Mr. Ron Bibler
524 27th Avenue NE
Great Falls, Montana 59404

Dear Mr. Bibler:

Thank you for your letter of July 24th. I certainly share your enthusiasm for a more humanistic form of architecture. Since you mentioned the researches into perception by Piaget and Arnheim let me suggest you write directly to Professor Arnheim who is on the Art History faculty here at Michigan. He is presently away for the summer but I believe his mail is being forwarded to him and I am sure if he can find the time you will hear from him. Naturally I can suggest no better source than Rudolf Arnheim himself. Best wishes on your continued success in your research.

Yours sincerely,

George V. Bayliss
Dean

GVB:jm

RUDOLF ARNHEIM
1133 SOUTH SEVENTH STREET
ANN ARBOR, MICHIGAN 48103
TELEPHONE (313) 668-6483

7 October 1979

Dear Mr. Bibler

Once you have seen the bibliography given in my book on the dynamics of architecture, you have most of the references I have found useful.

Beyond that you might look at two books by Niels Luning Prak:
The Visual Perception of the Built Environment
The Language of Architecture.

The Journal of Social Issues, October 1966:
Special issue on Man's Response to the Physical Environment.
You may have seen the recent book by K.C.Bloomer & Charles W. Moore:
Body, Memory, and Architecture. I don't find it very good, but you may want to look at it.

Otherwise I can only suggest to consult the Psychological Abstracts at your Psychology Department. Under headings such as Environmental Psychology or Architecture they list anything published in that area.

That is all I can think of.

Please give my regards to Professor Wyatt.

Yours with good wishes

Rudolf Arnheim

University of Houston
HOUSTON, TEXAS 77004
College of Architecture

November 9, 1979

Ron Bibler
524 27th Ave NE
Great Falls, MT 59404

Dear Mr. Bibler

We do not teach any courses in environmental behavior or perception. These issues are an inherent part of any program in architecture but they are indirectly incorporated in our basic design and architectural design courses to what ever degree our faculty feels appropriate at the time. Besides the standards text we rely on personal intuition and general knowledge to approach these issues.

Sincerely

Philip R. Goyert, AIA
Assistant to the Dean

EQUAL OPPORTUNITY EMPLOYER

Cornell University
Ithaca, New York 14853

Department of Psychology
Uris Hall

August 3, 1979

Mr. Ron Bibler
524 27th Ave., NE
Great Falls, MT 59404

Dear Mr. Bibler:

Your letter about architecture and visual perception came to me. I have a former student, Jon Lang, now teaching in the Urban Design Program at the University of Pennsylvania, Philadelphia, whose doctoral dissertation shows the relevance of my work on perception to architecture. Read my new book The Ecological Approach to Visual Perception (Houghton Mifflin, Boston) and then read Lang's comparison of my approach to others. It is not consistent with either Arnheim's or Piaget's, you will find.

You ought to be able to get my new book from your library, or to order it.

You are right to believe that the psychology of perception is basic to the theory and practice of design. But most of the psychology of perception is full of contradictions.

Good luck,

James J. Gibson
Professor, Graduate Faculty

JJG:rw

AUBURN UNIVERSITY

AUBURN ALABAMA

36830

SCHOOL OF ARCHITECTURE AND FINE ARTS

Architecture Department

Telephone 826-4516
Area Code 205

22 October 1979

Mr. Ron Bibler
524 27th Avenue, N.E.
Great Falls, Montana 59404

Dear Mr. Bibler:

Attached are copies of some of the material covered in my courses on Perception.

I hope it will be of help.

Sincerely,

William R. Gwin
Associate Professor

WRG/slr

Attachment

THE UNIVERSITY OF ARIZONA
TUCSON, ARIZONA 85721

COLLEGE OF LIBERAL ARTS
DEPARTMENT OF PSYCHOLOGY

November 6, 1979

Mr. Ron Bibler
524 27th Avenue NE
Great Falls, MT 59404

Dear Mr. Ron Bibler:

Professor Wheeler has asked me to reply to your letter. Obviously you are interested in a very broad area and it is a little difficult to know where to begin. Perhaps the best starting place would be a general overview of the literature. I am enclosing a selected bibliography of books in Environmental Psychology for your guidance. Many of these books are not directly relevant, but categories 1, 2, 3, and 5 should have material of interest to you.

I hope this is of some help.

Sincerely,

William H. Ittelson
Professor

Enclosure

WHI:nd

THE UNIVERSITY OF WISCONSIN–MILWAUKEE
SCHOOL OF ARCHITECTURE AND URBAN PLANNING
P.O. BOX 413
MILWAUKEE, WISCONSIN 53201
414·963·4014

August 16, 1979

Ron Bibler
524 27th Avenue NE
Great Falls, MT 59404

Dear Mr. Bibler:

I would recommend two books, particularly as they treat the psychology of perception in a rigorous way and also relate it directly to architecture:

Hesselgren. Man's Perception of Man-Made Environment. Stroudsburg, Pa.: Dowden, Hutchinson & Ross, 1975.

Prak. The Visual Perception of the Built Environment. Delft, The Netherlands: Delft University Press, 1977.

I'm enclosing a recent book review of them. You might also want to look at Arnheim's new book on architecture, if you haven't already.

I'm also taking the liberty of enclosing some information on our Master of Architecture program, which has a strong concentration in Environment-Behavior Studies. If you wished to continue your interests in architectural perception, and in particular to conduct research in this area, we would be pleased to consider your application.

Sincerely yours,

Gary T. Moore
Assistant Professor
Coordinator, Environment-Behavior Studies Option

GTM/ph

Enc.

DEPARTMENT OF ARCHITECTURE

Ron Bibler
524 27th Ave N.E.
Great Falls, MT 59404
September 24, 1979

Dr Brecht

Dear Sir,

Recently I wrote to your department inquiring of possible research material into the study of perception and architecture. I am enclosing a copy of that letter so you may reconsider it. Possibly, The letter came at a bad time since much of your faculty was gone for the summer.

Your University does have environmental behavior and perception classes. Perhaps you could forward this to the instructor. In any event, I would appreciate what help or advice you have to offer. Thank you.

Sincerely yours,
Ron Bibler
Ron Bibler

Dear Ron,

No research here directly relevant to your request. You might track something down from the references in Environmental Psych texts such as:

Bell, P.A., Fisher, J.D., & Loomis, R.J. Environmental psychology. Philadelphia: W.B. Saunders, Co., 1978.

Kaplan, S. & Kaplan, R. Humanscape: Environments for People. North Scituate, Mass: Duxbury Press, 1978.

Proshansky, H.M., Ittleson, W.H. & Rivlin, L.G. Environmental Psychology: People and the physical settings. New York: Holt, Rinehart and Winston, Inc. 1976

Regarding perception of hair, contact Dr. Ann Weber; Psychology Dept.; University of North Carolina, Asheville; Asheville, NC; 28804.

Good luck,
Mark Brecht

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POST OFFICE BOX 987
BILLINGS, MONTANA 59103

January 31, 1980

Mr. Ron Bibler
119E Julia Martin Drive
Bozeman, MT 59715

Dear Mr. Bibler:

Thank you for your letter of January 28, 1980.

I will be most happy to meet with you at the Yellowstone METRA on Tuesday, February 12, 1980, at 10:00 a.m. to provide you with information for your thesis.

Sincerely,

Robert L. Glasgow
Manager

RLG:kae

Lou Merrill Associates

2938 LAND PARK DRIVE • SACRAMENTO, CA 95818 • (916) 448-1504

February 15, 1980

Mr. Ron Bibler
119 E Julia Martin Drive
Bozeman, Mt. 59715

I enclose, Ron,

several copies of outlines I've used for the last 19 years for the class in Fair Management, California Polytechnic State University, San Luis Obispo.

In general, they relate to fairs in the West, primarily California.

I am not a specialist nor even qualified to advise or counsel on fairground design.

For some 40 years I have visited fairs about the United States and some 35 countries. My observations of fair operations, management patterns are often used by architectural firms and planners to avoid mistakes or develop new fair activities and programs.

Currently, I work as a consultant to fairs for Stanford Research, Economic Research Associates and POD, Inc. of Orange County, California. All of these firms have complete in house fair oriented personnel. They hire me on a per diem fee for fair planning.

Recently, I completed with POD a Master Plan proposal for a fair in Wyoming. During my study of fairs in Montana, Wyoming and Idaho, I became convinced that the region in general was not keeping abreast of changes in fair programming in relationship to physical, social, economic and family living changes and attitudes within the fair area. This is possibly due to the age of directors and dependence upon local customs and tradition.

You state "...population of Montana is becoming less agriculture oriented....I welcome your comments....".

To present an acceptable fair as a means of communication and enjoyment, the general quality of exhibits needs be bettered. This may be best accomplished, in my opinion,

by elimination of the payment of premiums for exhibits. The fair has little control over exhibits judged for a cash prize. Quality may be good or poor; most often, mediocre to poor.

By contracting for exhibits for a given sum with adequate outlines for design and exhibit accomplishment, good appealing exhibits will most often result.

My ideas are expressed more fully in the enclosed speech I made at the Western Fairs Association convention in January of 1979.

Frankly, I discourage many fair managers from seeking a full scale Master Plan including concession design, public amenities and detailed signage. Reason: managers, directors often deal with local concessionaires, local designers, rural publics, all of whom often desire perpetual mediocrity.

As a test before undertaking a Master Plan study, I ask these questions:

What are your reasons for wanting a Master Plan?

To update, stay ahead, be alert, new facility or are you in self inflicted difficulty and expect a Master Plan to bail you out.

Are you in financial difficulty and expect consultants to provide easy answers.

Are you looking toward someone to provide answers you already have, but are afraid to adopt necessary corrections.

As a manager, are you sure on examination that under close scrutiny you could continue as a manager.

Is your Board politically, economically and age oriented to change directions if a Master Plan so recommends.

Are you seeking a Master Plan to achieve financial support in your community, when it is obvious there is no support existing.

Providing a Master Plan is developed, how much time will it have for fulfillment or acceptance under political authority now in charge of fair philosophy.

Ron Bibler
2/15/80--3.

Will you plan to retain consultants for a period of months - years - to implement recommendations.

Often, after review of my questions another person is selected as a consultant.

I do hope the enclosed material will aid you in your thesis preparation.

Sincerely,

Lou Merrill

Louis S. Merrill, President
Lou Merrill Associates

LSM:bm
Enc. 6

Lou Merrill Associates

2938 LAND PARK DRIVE • SACRAMENTO, CA 95818 • (916) 448-1504

March 3, 1980

Mr. Ron Bibler
119 E Julia Martin Drive
Bozeman, MT 59715

In answer, Ron,

to your request for a Master Plan, I enclose a copy of THE GENERAL MASTER PLAN for the Orange County Fair and Exposition Center.

It, in my opinion, is a usable format for Master Planning:

First: the copy you have before you is a summation of six complete binder copy proposals prepared for review and implementation.

Second: the plan has proven to be workable (it is now in stage three of progress).

Third: it provided financial analysis of proposals.

Fourth: it finally resulted in the Master Planners (POD, ERA, Lou Merrill Associates, etc.) being retained for five years to oversee completion.

Fifth: we were using facilities of an old army base/ fairground and preserving, utilizing many facilities.

It did, as some Master Plans do, result in dismissal of previous management and selection of more people oriented and attuned to management.

Although there are several types of Master Plans, I submit this as one of the successful ones.

I would appreciate the return of the plan after it has served your purpose.

Sincerely,

Lou Merrill

Louis S. Merrill

LSM:bm
Enc.

DAVIDSON AND KUHR ARCHITECTS PC

AIA 309 DAVIDSON BUILDING - GREAT FALLS, MONTANA 59401 - PHONE 761-2277 AIA

5 February 1980

Mr. Ron Bibler
119 East Julia Martin Drive
Bozeman, Montana 59715

Dear Ron:

In reply to your letter of 24 January 1980, we have gone through our files to see what kind of information we might have which would be helpful to you in your thesis. Unfortunately, the only thing we have is the enclosed brochure, which primarily presents uses to which the Center would be put, with estimates of revenue and attendance and cost estimates for the various portions of the building. We have additional information which you could look at in the office; however, since we have only one copy, we prefer not to let it out of the office.

Most of the work at the fairgrounds in recent years has been done by Page-Werner & Partners. It might be helpful if you contacted them, since they have completed a number of projects.

We do not have an aerial photograph of Great Falls. In fact, the only one I have seen is the one you saw at City Hall. They are available through the Department of Agriculture in Salt Lake City, but I am sure you would have to buy one.

Good luck on your thesis.

Sincerely yours,

Dave Davidson

DAVIDSON AND KUHR
a r c h i t e c t s

DSD/n
enc

GREAT FALLS CITY-COUNTY PLANNING BOARD

SERVING THE COUNTY OF CASCADE AND THE CITY OF GREAT FALLS, MONTANA

February 4, 1980

Mr. Ron Bibler
119 E. Julia Manlin Drive
Bozeman, Montana 59715

Dear Mr. Bibler:

Your January 24th letter relative to public facilities and the relationship between population and public land areas has been referred to this office by the Park and Recreation Department for our response.

Presently, the Great Falls urban area has a total parkland area of 1,113 acres. With a total estimated population of approximately 74,000, the commonly recognized standard of 10 acres per 1,000 population is greatly exceeded. However, of the 1,113 total available acres, approximately 557 acres are presently developed within the City. A further breakdown shows there are 710 acres within the City limits and a total of 403 acres within the County area of the 4-1/2 mile City-County Planning jurisdictional area.

When considering parkland, another important consideration is the characteristic of the parkland and the improvements thereon and their relationship to the clientele being served. Obviously, neighborhood parks and their improvements and clientele are different than community-wide or regional parks. From reading your letter, we question if the parkland/population ratio is applicable to a state fairground project design.

Concerning possible development of the "west bank" of the Missouri River, studies for development have been completed by a landscape architect. This project is a high priority of the City Commission, however, a definitive plan for development has not been accepted at this time due to funding limitations. At the present time, the City Commission is discussing the possibility of a local bond issue.

If we can be of any further assistance, please contact the Planning Office.

Sincerely,

John Mooney
Director

JM/MR/j

cc: Tom Sullivan, Park & Rec. Director
Bill Chiesa, State Fair Manager

CIVIC CENTER GREAT FALLS, MONTANA P.O. BOX [redacted], 59403 (406) 727-5881

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STATE FAIR

GREAT FALLS, MONTANA · JULY 26 - AUGUST 2, 1980

BILL CHIESA — MANAGER
P.O. BOX 1524 • PHONE: (406) 452-6401
GREAT FALLS, MONTANA 59403

January 17, 1980

Mr. Ron Bibler
119 E Julia Martin Drive
Bozeman, MT 59715

Dear Ron:

Thank you for your letter of January 11th. My apologies for not writing sooner, however, I have been out of the office.

First of all, State Fair was established in Great FAlls 49 years ago. The buildings were added primarily in 1928 through the efforts of the WPA. The number of people participating or attending in early years; I simply cannot give you an answer, however we do have indications that it was a very popular event.

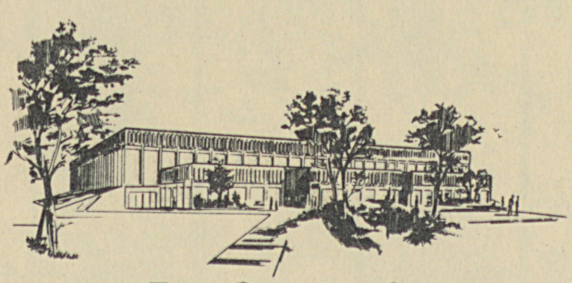
Please find enclosed your copy of THK's report.

Sincerely yours,

Bill Chiesa
Manager

Enc. THK report

BC/at



Four Seasons Arena

Hockey • Rodeos • Trade Shows • Concerts • Ice Shows • Tennis • Basketball • Circuses

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STATE FAIR

GREAT FALLS, MONTANA · JULY 26 - AUGUST 2, 1980

BILL CHIESA — MANAGER
P.O. BOX 1524 • PHONE: (406) 452-6401
GREAT FALLS, MONTANA 59403

February 1, 1980

Mr. Ron Bibler
119E Julia Martin Drive
Bozeman, MT 59715

Dear Ron:

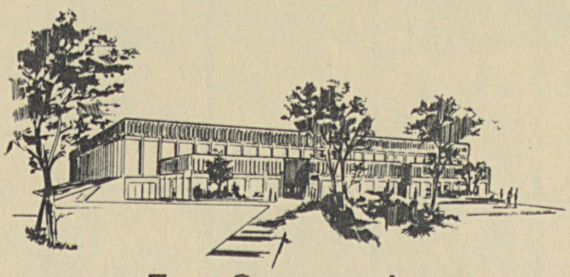
Thank you for your letter of January 28, Ron. I believe there are a number of things I need to review with you. I believe that what you are talking about is a grandiose scheme that would be of great interest when you talk about re-producing all of the buildings and starting over, but unless you can provide an alternative for funding, it's going to be an effort in futility. Where would you find the millions of dollars necessary to replace the buildings?

You mention, in fact, that there are 83,000 square feet of space that is not being used other than Fair Week. This is a gross error. Every building on this fairgrounds at the present time is being used, other than the horse barns. They are either being used for storage, and/or being used for meetings and activities, in the case of heated buildings. The heated buildings are the Family Living Center, T & I Building, Fine Arts Building and the Beer Bar. Again, I repeat to you, there are not any vacant buildings other than the horse barn stalls.

As I hope I indicated to you earlier, we in the process of dismanteling the Stock Pavilion structure and replacing it with a building that will be 350 feet long and 150 feet wide. Clear span, dirt floor for Ag related activities.

The last paragraph on page 1 indicates you would be providing a grandstand, midway, race track. I need to advise you that as recently as 3 years ago, Boise, Idaho spent over four million dollars on that piece of real estate alone.

At the present time we house 650 horses on the fairgrounds and need at least another 100 stalls. We do not rent them on a year around basis, but we would never consider replacing any barns in that area with horse barns only. They need to be buildings



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that can be used for horses and other things.

The State Fair Collection is minimal, with only one piece selected per year and we now have only eight. I doubt very much that you could justify a facility that would house the State Fair Collection.

On page 2 of your letter you ask such questions as: What buildings are heated? I refer you to my previous acknowledgement of that. Grandstand seating capacity - the present grandstand structure will hold 4,500 people, which is adequate for horse racing. What is now needed and planned on in our long range plans is a Club House.

Also you will notice in our 1978 report that our Fair revenue was $748,000, while our total disbursements were $1,078,000, there was not a loss in 1978; the remainder of the money was $110,000 in tax money and the remainder o f that money was generated in non-fair revenue.

We do appreciate your enthusiasm and your questions, but I am extremely concerned about the fact that you would be wanting to show a masterplan ground-up and provide no alternative to financing. We saw what the voters thought of the general obligation bond for a large multi-purpose center just two years ago. I'm only being critical to the point that when you make a presentation to the Board, if it is not economically feasible, little or no credibility will be given to it.

I will be looking forward to visiting with you on the 7th.

Sincerely yours,

Bill Chiesa
Manager

BC/at

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STATE FAIR

GREAT FALLS, MONTANA · JULY 26 - AUGUST 2, 1980

BILL CHIESA — MANAGER
P.O. BOX 1524 • PHONE: (406) 452-6401
GREAT FALLS, MONTANA 59403

February 15, 1980

Mr. Ron Bibler
119E Julia Martin Dr.
Bozeman, Mt. 59715

Dear Ron:

As of your letter of February 12, I am answering your following questions.

1. Clubhouse is an area where people may eat, drink and watch the horse races and simultaneously bet. I haven't any idea how big it should be. Its only in the talking stage, but I do see a tentative location at the north end of the grandstand. We have discussed the possibility of putting it upstairs over the betting window extension we made last year.

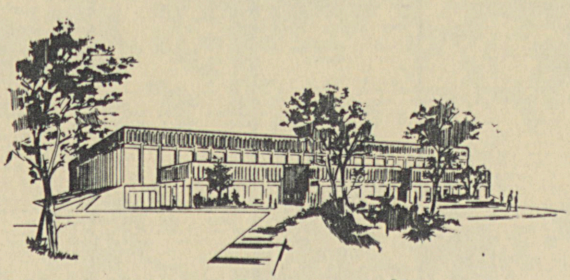
2. We are dismantling the entire stucco livestock barn complex. We will keep the steel barn and we will keep the dairy barn.

3. Yes, the pavilion goes over the road. We will simply reroute the road around the side of the building.

4. The pony barn and commerce building serve a very important part of the exhibit space during the State Fair week. The caretaker's house is an integral part of his contract.

5. We don't put horses on the grounds here year round because it costs to much money and no one will pay the rent necessary to justify the area.

6. If you'll study the state law its important for tax purposes that the primary influence of the fair needs to remain agriculture. Enclosed



Four Seasons Arena

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are the minutes of the last board meeting.

7. I'm sorry to advise you that my time just prohibits me from attending the review of the thesis in Bozeman. The only thing I might do is set up a review here at State Fair. I'm sorry but because of my work load I cannot justify a day away from the office.

Sincerely yours,

Bill Chiesa
Manager

Enc.

BC:mb

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STATE FAIR

GREAT FALLS, MONTANA · JULY 26 - AUGUST 2, 1980

BILL CHIESA — MANAGER
P.O. BOX 1524 • PHONE: (406) 452-6401
GREAT FALLS, MONTANA 59403

APR 28 1980
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April 25, 1980

Mr. Bob Utzinger, Director
School of Architecture
Montana State University
Bozeman, MT 59715

Dear Mr. Utzinger:

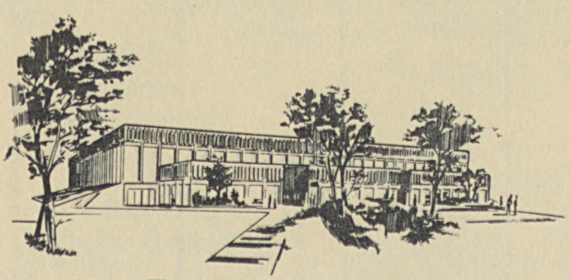
Yesterday at the regular Fair Board meeting a student of yours, Ron Bibler, did a very complete presentation relative to a master plan for the State Fairgrounds located here in Great Falls.

On behalf of the State Fair Board, I would like to commend you and your department for allowing this man to pursue this particular project. We feel that conceptually, the master plan has a number of very functional uses for this Board in future years. We feel Ron has presented a great deal of useful information and certainly appreciate all of his efforts and hard work. You are to be congratulated for the type of student graduating from our University.

Sincerely yours,

Bill Chiesa CFM
Manager

BC/at



Four Seasons Arena

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Overflow Parking

Northwest Bypass

ENTER

IMAGE

BARN A

BARN B

BARN C

TRAILER PARKING

OVERFLOW TRAILER PARKING

EXERCISE FIELDS

SOCCER FIELD

FOUR SEASONS ARENA

PARKING 2000 CARS

FOUNTAIN

GRANDSTAND

PLAZA

EXHIBITION HALL

CONVENTION CENTER

MIDWAY

FOOD FAIR

PARKING 500 CARS

CARNIVAL QUARTERS

BEER GARDEN

TENSILE STRUCTURES

SERVICE

CHILDREN'S MIDWAY

EXHIBITION

AGRICULTURE PAVILION

CARNIVAL STORAGE

EXPANSION

EXHIBITION

AGRICULTURE

PEDESTRIAN OVERPASS

ENTER

AMPHITHEATRE

CHILDREN'S PLAY AREA

TRAIN STATION

COVERED STAGE

PARK BUILDING

GRASS FIELD PARKING 60 CARS

6th Street Northwest

3rd Street Northwest

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MONTANA STATE UNIVERSITY
BOZEMAN

MASTER PLAN PROPOSAL

montana state fairgrounds and exposition center...

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