INDIANAPOLIS ZOO
INDIANAPOLIS, INDIANA

Landscape Architecture
Thesis Project
College of Architecture and Planning
Ball State University
Muncie, Indiana
1975-76

Larry C. Bashore
Fall Quarter

Introduction
Program
History
Attendance Projection
Program Specifics
Program Concepts
Quarter Outline/
Graphic Presentation
Interviews, Data Collection,
Observations, Correspondence

Winter Quarter

Introduction
Analysis
- assets/liabilities
- problem concepts
Spacial Analysis
Spacial Concepts
General Site Plan
Sections/Perspectives

Spring Quarter

Introduction
Conceptual Master Plan
Entrance Detailing
Log Record of Project
Fall Quarter

Introduction
Program
History
Attendance Projection
Program Specifics
Program Concepts
Quarter Outline/
Graphic Presentation

Interviews, Data Collection,
Observations, Correspondence
Introduction
We are all to blame for the plight of our diminishing wildlife, whether we have been active in collecting or keeping animals or passive in simply not caring what has happened to the animals that share our planet with us.

The collections in museums of bird and animal skins, which may number in the thousands or millions, have not increased our wildlife. In fact, the rarer the bird or animal, the more urgent the desire to collect it, which could in some instances result in the extinction of an entire species. The land developer who drains swamps and fells vast woodlands to build houses has destroyed wildlife habitat forever. Even the nature and conservation magazines cannot get away unscratched, for we must wonder how many trees must be cut down just to print their thick magazines each year. Or perhaps we might ask could not the money taken in from subscriptions and donations be better spent by putting out a slightly less pretentious magazine and using the extra funds to purchase new wilderness reserves each year, before such areas are turned into housing lots? Nor can our own government escape the scolding finger, for it is known that government trappers still put out deadly poisonous baits to kill wolves and coyotes and in fact kill many other animals, even some that are on the verge of extinction. Yes, we are all guilty of wanton destruction of wildlife.

We must save our wildlife. One institution within our society whose aim is to conserve wildlife is the zoo. Zoos have existed for over 4000 years and are as popular as ever. In the United States today, one-half of the country's
population visits the zoo each year. Zoos have changed very little since their ancient beginnings, but this complacency has begun to disappear only within the past few years.

A zoo has four basic aims - conservation, recreation, research and education. These are valid even in the face of changes zoological gardens are going through. It is new factors, factors of our day and age, that have ushered in the new look in zoos. Let's investigate three of these factors.

First, the fact that the population of almost every species of wild animal is dwindling and many types are actually endangered makes it most important that the zoo consider carefully each specimen that is proposes to take out of the wild. There must be justifiable reasons for its acquisition; just to have it on display is no longer good enough. A specimen, for example, should not be displayed just as an item of interest alone, but also to encourage breeding so that the needs of other zoos can be filled without further drain on perilously low wild animal populations. In short, a zoo must have better reasons for being, than those we have historically known.

Second, rapidly occurring ecological crises make the whole natural realm, and what happens to it, the concern of everyone. There is much enthusiasm for, and interest in what is happening to nature. This enthusiasm may become effective action when well informed individuals are involved.

Third, their popularity makes it possible for zoos to reach a large audience. Which is better educated than ever before. Indeed, studies have shown that those who visit zoos are better educated than the general public.

Zoos fill their recreational aim simply by existing there. The recreational aspects of a zoo are enhanced, however, by proper landscaping, spaciousness,
cleanliness and the feeling of the visitor that the animals are content and well cared for. Adequate visitor facilities, diverse habitat areas and all the amenities that make up a zoo are enhanced if incorporated into a totally designed unit.

Those zoos that are building new exhibits with an educational theme are leading the way. It is important to differentiate between an educationally oriented exhibit and an educational program. The educational program is a formal curriculum guided activity directed toward students and executed by the zoo staff. The educational exhibit is primarily aimed at the casual visitor. If properly planned, it hooks his interest and teaches him something even though he came to the zoo merely to spend some leisure time. When he leaves, he has a better understanding of the natural world of which he is a part. He has gained some knowledge without the feeling of having been 'educated'. Rather, he feels fascinated by what he has seen while spending some time in a pleasant and relaxing place. It is apparent that the proper handling of this aspect of education will make or break a zoo. It is further apparent that this proper handling can be, to a large extent, facilitated by proper and imaginative planning and design.
Problem:
The Indianapolis Zoo is a local zoo. It is surrounded at a distance by large regional zoos, most notable of which are the two Chicago Zoos, and the Cincinnati Zoo. The Indianapolis Zoo has the potential to expand and develop into a state wide attraction. Other small zoos exist in our state but none offer the variety, excitement and recreational opportunity that a larger more comprehensive zoo could incorporate.

The Indianapolis Zoo is located in north-east Indianapolis and is easily accessible from anywhere in the state. The zoo is situated in the 130 acre George Washington Park. The Indianapolis Zoo covers approximately 30 acres of the park at present, however, the Indianapolis Zoological Society has just signed a lease for additional land not to exceed 70 acres for future expansion and development.

Presently the Indianapolis Zoo is primarily aimed at children with domestic and wild animal exhibits from our native area creating the major emphasis. Animal species from the various continental land masses have been added since the zoo opened in 1964.

The Indianapolis Zoological Society runs the zoo as a non-profit organization. It relies totally on gate receipts, concession receipts, donations and membership dues to the Society for support, being one of the very few non-tax supported zoos in our country. Currently plans are underway for major funding drives to facilitate the expansion the Zoological Society invisions.

Expansion would include a representative selection of wild animals from each of the five major land masses (Africa, Australia, Eurasia, North and South America
to compliment the existing animal life. A zoo of this caliber offers immense potential to be fascinating as well as educational.

Amenities to be re-evaluated and dealt with would include entrances, access, parking, administration facilities, library, security, first aid, storage, concessions and rest rooms, service areas and maintenance, greenhouse, animal hospital, moats, fencing and total circulation.

The history of the Indianapolis Zoo, program concepts and specifics follow in this document.

As a progressive community, Indianapolis should be concerned with improving public spaces so it is to the advantage of people and zoo that the area be utilized most effectively. Indianapolis could offer no better atmosphere than the zoo and its immediate amenities for entertainment both in summer and winter.
The Indianapolis Zoo can be traced back to the 1940's when Lowell Nussbaum, a local journalist, first mentioned the idea. Response was good and in 1944 Mr. Nussbaum and his close friends incorporated the Indianapolis Zoological Society.

Post war years were not productive in establishing a zoo. In 1955, site selection was instituted, and in 1960 a lease was signed with the city for the zoo's present location in George Washington Park. The city now has set aside 90 acres of the park for the zoo.

A public appeal for funds to be used in construction was met with good interest and in 1964 the one million dollar zoo provided by donations was opened. It was twenty years of planning to completion of the children's zoo.

In 1965 the Indiana Wildlife Exhibit was added, the hoofed animal complex and the Education Building were completed. In 1966, cat runs were built followed by the Arthur Jordan Flight Cage in 1968. The Lily Endowment Giraffe House (68), WFBM Australian Exhibit, and Siberian Tiger Exhibit (73) followed. A Lion-Leopard Exhibit from Lily Endowment was just completed four months ago (mid 75).
A forecast of attendance through 1985 was made to determine the requirements for future parking, concession facilities and rest rooms as part of the consideration of anticipated expansion. The attendance forecast was based on three principal considerations:

1. A study of other zoos in similar northern climates indicates that a fully developed zoo has an attendance potential equal to its metropolitan population. In the case of a fully developed Indianapolis Zoo, the attendance potential could be equal to the Marion County population.

2. A forecast of Marion County population through 1985, furnished by the Department of Metropolitan Planning.


The historical Indianapolis Zoo attendance figures indicate that attendance has been growing at the same rate as the Marion County population, about 1.4 percent per year. However, the historical attendance has only ranged from 25 to 40 percent of the attendance potential (Marion County population).

The Department of Metropolitan Planning forecasts that Marion County will increase at about 2 percent per year through 1985. This means the county-wide population is expected to increase from 800,000 in 1971 to 1,000,000 in 1985.

During the same period, the zoo will be expanding, and it is expected to become a significantly larger attraction. The chart on a following page shows three potential growth rates for zoo attendance.

1. A minimum growth rate, equal to the growth of the county-wide population.

2. A moderate growth rate, 50 percent greater than Marion County population growth rate.

3. A maximum growth rate, twice as large as the county growth rate.
The maximum growth rate begins to approach the attendance potential of the fully developed zoo in the 1980's. It is felt that this growth rate is most likely; therefore, this maximum forecast should be used in estimating parking requirements, etc.

It should be noted that in the maximum forecast, attendance is not expected to reach full potential even by 1985. This result is expected because of the following factors:

1. The zoo will require several years to develop completely.

2. Indianapolis residents are typically moderate supporters of their entertainment organizations.

This forecast was the product of a study by Eli Lilly engineers, planners and the in house staff of the zoo. It was accepted by me totally without question due to lack of time.
Program Specifics:
The following spatial requirements were a result of several inputs. Those being 1) a study done by Eli Lilly, 2) the in house staff at the Indianapolis Zoo, 3) my discussions with Mr. Roy Shea, zoo director.

Zoo Operation:

Maintenance 2500 sq.ft.
Storage Area 2500 sq. ft.
Green House 2500 sq. ft.
Animal Hospital 2400 sq. ft.
Quarantine Area 1400 sq. ft.
Central Circulation Articulator unknown at present
Railroad Stations/Expanded Railroad 3000 sq. ft.
Parking 1200 automobiles

Support Services:

Food Concession and Consumption Areas 5000 sq. ft.
Gift Shops 2000 sq. ft.
Souvenir Concessions 2000 sq. ft.
Rest Rooms 3200 sq. ft.

Five Zoogeographical exhibition habitats:

Africa:

Lion, Leopard existing
Cheetah 14,000-16,000 sq.ft.
Antelope 90,000-95,000 sq.ft.
Great Ape House

Outdoor Exhibition Areas

Shelter

existing
800 sq. ft.
1000 sq. ft.
12,000 sq. ft.
<table>
<thead>
<tr>
<th>Animal</th>
<th>Outdoor Exhibition Areas</th>
<th>Shelter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Africa: African Building</td>
<td>85,000-95,000 sq.ft.</td>
<td>4600 sq.ft.</td>
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<tr>
<td>a. Zebra</td>
<td></td>
<td></td>
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<tr>
<td>b. Gnu</td>
<td></td>
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<tr>
<td>c. Giraffe</td>
<td></td>
<td></td>
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<tr>
<td>d. Rhino</td>
<td></td>
<td></td>
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<tr>
<td>e. Elephant</td>
<td></td>
<td></td>
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<tr>
<td>f. Pygmy Hippo</td>
<td></td>
<td></td>
</tr>
<tr>
<td>g. Other Species</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL: 5 3/4 Acres</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asia:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nilgai and Blackbuck</td>
<td>25,000-30,000 sq.ft.</td>
<td>1000 sq.ft.</td>
</tr>
<tr>
<td>Asian Deer</td>
<td>12,000-16,000 sq.ft.</td>
<td>1000 sq.ft.</td>
</tr>
<tr>
<td>Camels and Persian Gazelle</td>
<td>12,000-16,000 sq.ft.</td>
<td>800 sq.ft.</td>
</tr>
<tr>
<td>Hyena</td>
<td>3,000-4,000 sq.ft.</td>
<td>1200 sq.ft.</td>
</tr>
<tr>
<td>Wild Ass</td>
<td>11,000-12,000 sq.ft.</td>
<td>450 sq.ft.</td>
</tr>
<tr>
<td>Probosicus Muntjac</td>
<td>2,500-3,500 sq.ft.</td>
<td>450 sq.ft.</td>
</tr>
<tr>
<td>Tiger</td>
<td>6,000-8,000 sq.ft.</td>
<td>800 sq.ft.</td>
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<tr>
<td>Yaks</td>
<td>7,000-9,000 sq.ft.</td>
<td>1400 sq.ft.</td>
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<tr>
<td>Ibex</td>
<td>10,000-12,000 sq.ft.</td>
<td>800 sq.ft.</td>
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<tr>
<td>Asian Building</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Orangatang</td>
<td>11,000-13,000 sq.ft.</td>
<td></td>
</tr>
<tr>
<td>b. Elephant</td>
<td>14,000-16,000 sq.ft.</td>
<td></td>
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<tr>
<td>c. Various other species</td>
<td></td>
<td></td>
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<tr>
<td>TOTAL: 3 1/2 Acres</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Australia:</td>
<td></td>
<td></td>
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<tr>
<td>Australian Building</td>
<td></td>
<td>17,000 sq.ft.</td>
</tr>
<tr>
<td>a. Cassowary</td>
<td>14,000-16,000 sq.ft.</td>
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<tr>
<td>b. Wild Dingo Dog</td>
<td>3,500-4,500 sq.ft.</td>
<td></td>
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<tr>
<td>c. Kangaroo, Wallaby</td>
<td>90,000-95,000 sq.ft.</td>
<td></td>
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<tr>
<td>TOTAL: 3 Acres</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Americas:</td>
<td>Outdoor Exhibition Areas</td>
<td>Shelter</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>-------------------------</td>
<td>-----------</td>
</tr>
<tr>
<td>South America:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Capybara</td>
<td>13,000-15,000 sq.ft.</td>
<td>200 sq.ft.</td>
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<tr>
<td>Alpaca</td>
<td>48,000-52,000 sq.ft.</td>
<td>1000 sq.ft.</td>
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<tr>
<td>Llama</td>
<td>55,000-60,000 sq.ft.</td>
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<tr>
<td>Rhea</td>
<td>contained with Llama</td>
<td>1000 sq.ft.</td>
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<tr>
<td>Spider Monkeys</td>
<td>2,500-3,500 sq.ft.</td>
<td>350 sq.ft.</td>
</tr>
<tr>
<td>Jaguar</td>
<td>3,000-3,500 sq.ft.</td>
<td>500 sq.ft.</td>
</tr>
<tr>
<td>South American Building</td>
<td></td>
<td>6,000 sq.ft.</td>
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<tr>
<td>South American Rain Forest</td>
<td></td>
<td>10,000 sq.ft.</td>
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<tr>
<td>Central America</td>
<td></td>
<td>8,000 sq.ft.</td>
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<tr>
<td>Everglades</td>
<td></td>
<td>10,000 sq.ft.</td>
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<tr>
<td>North American Desert</td>
<td></td>
<td>5,000 sq.ft.</td>
</tr>
<tr>
<td>Puma</td>
<td>6,000-7,000 sq.ft.</td>
<td>600 sq.ft.</td>
</tr>
<tr>
<td>Moose</td>
<td>24,000-26,000 sq.ft.</td>
<td>600 sq.ft.</td>
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<tr>
<td>Deer</td>
<td>contained with moose</td>
<td>600 sq.ft.</td>
</tr>
<tr>
<td>Bison</td>
<td>43,000-46,000 sq.ft.</td>
<td>3,000 sq.ft.</td>
</tr>
<tr>
<td>Bear (Grizzly, Polar)</td>
<td>14,000-16,000 sq.ft.</td>
<td>7,000 sq.ft.</td>
</tr>
<tr>
<td>Bighorn Sheep</td>
<td>15,000-17,000 sq.ft.</td>
<td>900 sq.ft.</td>
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</tbody>
</table>

TOTAL: 8 Acres

Other requirements will be determined as design concepts and alternatives are developed such as buffer zones, green space, entry plazas and ponding areas.
Program Concepts:
1. Existing topography should be utilized regarding exhibits when possible. Walkways could be located in low areas with viewing into exhibits located on slopes.

2. Moats should be used in exhibits, where possible, to minimize the amount of visible barrier between the visitors and the animals.

3. Exhibits should be grouped by zoogeographical areas, such as Africa, Asia, North America etc.

4. The different areas should be connected by a central circulation articulator. Natural screening should be provided so that there is a distinct change of environment when a visitor passes from that central circulation articulator into any exhibit area.

5. The central walkway (circulation articulator) could have exhibits of popular interest such as a monkey island and/or sea lion pool.

6. Situated along the central circulation articulator should be major visitor services such as rest rooms, concession stands, and train stations.

7. The miniature railroad, which has been a successful part of the Children's Zoo, should be developed further to include the expanded zoo. The railroad should pass through the exhibit areas were feasible. This would provide interesting views of the exhibits not available from the walkways. It is also logical to follow the existing contours where possible with the railroad bed to minimize grade changes.

8. Railroad and pedestrian traffic should not be mixed on the central circulation articulator. Possibly an underpass or over pass could be utilized.
9. Service areas should be located away from public view. Service buildings should be away from circulation areas, and service roads and entrances should be completely separate from pedestrian walkways.

10. Pedestrian walkways should be designed so that visitors can walk from exhibits without having to backtrack. Walks through the exhibit areas should branch from and return to the central walkway.

11. The main entrance is currently located in the Children’s Zoo. It should be moved to a location more central to the expanded zoo. The Children’s Zoo entrance could be retained as a secondary entrance/exit.

12. Exhibit buildings should have a neutral exterior appearance and emphasize the interior design. Outdoor exhibits should emphasize the animals and the site, not building architecture. Where possible, buildings other than exhibit building, should be hidden from view by placing them in the ground, into hillsides or through vegetation screening to avoid imposing too much architecture on the natural settings.

13. Interior of exhibit buildings should simulate natural animal environment with minimal visible barriers between visitors and animals.

14. The parking area is presently an open barren desert. The addition of vegetation would remedy this, along with mounding, earth sculpture etc.
Fall Quarter Objectives:
<table>
<thead>
<tr>
<th>Date</th>
<th>Research</th>
<th>Graphics &amp; Mechanics</th>
<th>Design &amp; Planning</th>
<th>School</th>
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<td>13</td>
<td></td>
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<tr>
<td></td>
<td>20</td>
<td>develop bibliography</td>
<td>develop problem</td>
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<td>statement</td>
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<td>27</td>
<td>chicago zoos</td>
<td>develop sheet size,</td>
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<tr>
<td>Oct.</td>
<td>4</td>
<td>collect general/physical</td>
<td>format &amp; logo</td>
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<td></td>
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<td>st. louis zoo data</td>
<td>base sheet prep.</td>
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<tr>
<td></td>
<td>11</td>
<td>contact firms having worked with zoos</td>
<td>drawings, graphics &amp; slides for quarter presentation</td>
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<tr>
<td></td>
<td>18</td>
<td></td>
<td>outline problem tasks</td>
<td></td>
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<td></td>
<td>25</td>
<td></td>
<td>begin physical analysis</td>
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<tr>
<td>Nov.</td>
<td>1</td>
<td>cincinnati zoo</td>
<td>restate problem based on analysis</td>
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<td></td>
<td>8</td>
<td></td>
<td>final presentation</td>
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<td></td>
<td>15</td>
<td></td>
<td>conceptual alternatives</td>
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<td>22</td>
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- weekly grits
- thesis advisor
- grits from other profs
- fall quarter schedule
Research:

Develop bibliography

Books, periodical resources

Visitation/ Observation

Chicago Zoos

Cincinnati Zoo

St. Louis Zoo

Collect general/ physical data for Indianapolis Zoo

Location - regional and local

Size and existing conditions

History

Financing

Expansion possibilities/ limitations

Attendance projection

Program concepts

Existing bas maps

1. Topo

2. Vegetation

3. Soils

4. Zoning

5. Circulation

6. Present condition
Graphics/Mechanical

Develop sheet size(s)

According to area of zoo site

According to existing base maps

Dependent on amount of detail

Develop sheet format and Logo

Base sheet preparation

Formed from the above

Quarter Presentation

1. Regional map
   a. state
   b. county/city

2. Ideal function diagram (abstract relationship of objectives)

3. Existing land use
   a. recreational
   b. middle class residential
   c. commercial
   d. industrial
   e. open space
   f. churches
   g. schools


5. Slope analysis (0-2% 2-6% 6-12% etc.)

6. Soil capabilities-development constraints
   a. prime
   b. good
   c. fair
   d. marginal
   e. unsuitable
7. Vegetation
   a. deciduous canopy - clean understory
   b. coniferous canopy - clean understory
   c. mixture canopy - clean understory
   d. deciduous - clean understory
   e. coniferous - clean understory
   f. natural / tree-brush

8. Circulation Analysis
   a. primary
   b. secondary

9. Existing Conditions - Indianapolis Zoo in its present form

10. Site related functional diagram/resultant from analysis

Design/Planning

Develop Problem Statement

1. Dependent on research and collection of general and physical data

2. From generated program concepts - generate ideal function diagram

Physical Analysis

As outlined in Graphics/Mechanical

Restate problem on analysis

1. In graphic form/function diagram as it relates to site after analysis
Interviews, Observation, Correspondence, Data Collection
Interview: Mr. Roy Shea
Director, Indianapolis Zoo

Discussion included:
I. Initial introductions
   A. Explanation of thesis
II. Zoo History
III. Animal Care and Philosophy
IV. General Tour of Existing Facilities

Specifics:
I. After initial cordial introduction to one another, I explained who I was and my status as a thesis student.

I proposed to take the Indianapolis Zoo, analyze it with all its various amenities and so on. He was very receptive.

II. The Indianapolis Zoo can be traced back to the 1940's when Lowell Nussbaum, a local journalist, first mentioned the idea. Response was good and in 1944 Mr. Nussbaum and his close friends incorporated the Indianapolis Zoological Society.

Post war years were not productive in establishing a zoo. In 1955, site selection was instituted, and in 1960 a lease was signed with the city for the zoo's present location in George Washington Park. The city set aside 89 acres of the park for the zoo.

A public appeal for funds to be used in construction was met with good interest and in 1964 the one million dollar zoo provided by donations was opened. It was twenty years of planning to completion of the children's zoo.
In 1965 the Indiana Wildlife Exhibit was added, the hoofed animal complex and the Education Building were completed. In 1966, cat runs were built followed by the Arthur Jordon Flight Cage in 1968. The Lily Endowment Giraffe House (68), WFBM Australian Exhibit, and Siberian Tiger Exhibit (73) followed. A Lion-Leopard Exhibit from Lily Endowment was just completed.

III. Emphasis has been placed on interesting exhibits of animals in their natural habitat rather than expensive rare species in more modest exhibits. Animals are adapted to Indiana winter climate in that they are allowed out most of the time. In severe weather the animals are kept inside obviously. Their tolerance is very high and the zoo is open year round.

Animals are kept healthier than ever before because of better insights to their needs. Ten years ago animal losses were high nation wide and fertility rates low. Now animal losses are low and many animals are on birth control.

IV. The zoo as it exists now occupies approximately 1/3 of the available acreage. Included in this thirty acres is the parking facilities, maintenance and service areas, administration and education buildings and of course the animal exhibits.

The original zoo has a couple of areas that lack any purpose and their seems to be a lack of total harmony between the newer exhibits and the original facilities.

They have a small train that seems to be a big attraction and I feel this could tie the entire zoo together as progress is made in expanding the zoo. There is a noticeable lack of planting in many areas. The zoo is one of the few, if not the only zoo, that is a self-supporting instition. This is why development will span over several years.

The problem so far is that when money is acquired for additional exhibits, it is tacked on to existing facilities. A master plan needs to be formulated so exhibits 'fit' into a total unity. Also, funding might be easier to acquire.
when people know what their money is going for in the long range. A critical path for construction and development could be derived once a master plan was developed.
September 27, 1975

Visit/Observation:
Brookfield Zoo - Chicago, Illinois/slides accompany

1) Many of the walkways had exhibits only on one side - as opposed to exhibits on both sides.

2) Extensive use of the moat was used and lack of bars was refreshing

3) Maintenance access was on the same circulation nodes as visitor walkways

4) Location signs are spaced throughout, visitor knows where he is most all the time

5) Parking was very drab - lack of planting

6) Many large open areas ('open' meaning with no exhibits) both manicured and natural that gave the park variety

7) Have train circulation that crosses pedestrian circulation. No problems seem to exist with this due to use of RR cross guards. Train is used extensively.

8) Variety of eating accommodations including picnic areas, sandwich concessions and restaurant. Other supporting facilities are located conveniently throughout park

9) Materials varied from wood, stone, concrete, brick, etc. was nice transition at times. Some formal areas - and other areas more natural

10) Animals exhibited by species as opposed to geographic location
October 1, 1975

Data Collection: Indianapolis, Indiana

Accomplished:

I. Photo Composite
II. Data Gathering From Zoo Director
III. Visit to City County Building

Specifics:

I. I photographed the existing zoo and also the newly acquired land for expansion and the rest of George Washington Park. This is not to say that I photographed every single amenity but enough coverage was made to get the flavor of existing conditions and the character of the acquired landscape. This is a very beautiful, spacious park with small mounds, ridges and maturing vegetation that give a country air to the metropolis of Indianapolis.

II. No existing base map is available at this time to me. However, by the first of next week Mr. Roy Shea, Zoo Director, is supposed to forward such from a local architect who has just completed such. As is usually my luck - the architect is slow. I was to have that this week.

No utilities exist on the additional acreage including no sewers. A road cuts along the back side of the existing zoo.

I acquired attendance projections and am preparing that in graph form.

One very important thing that seems to be lacking totally is research. It seems to be hit and miss. They plant a species and if it survives, good. If not, they plant something else, having lost their original investment. A guide needs to be developed with this in mind - but thus far is nonexistent.
III. I went to the City/County Building to acquire soils information. All the extension office had was a very general map with the entire Maion County on an 8 x 10 format. I am going to have to contact Purdue University to obtain further information.
Visit/Observation:
   Cincinnati Zoo - Cincinnati, Ohio/slide accompany

1) Topography was the subtle asset the Cincinnati area gave this zoo. Located on 64 acres, with smaller exhibit areas and fewer species than Brookfield, this zoo never offers an overall view of itself. Totally new views are given as one winds his way up-down and around the walkways.

2) Second oldest zoo in the country and many exhibits remained with bars intact.

3) One was able to get closer, physically, to the animals than at many other zoos.

4) A noticeable lack of signage was evident. You didn't know where you were in context with the zoo.

5) Several medium size parking lots were used as opposed to one or two super large facilities.

6) Maintenance and pedestrian circulation were one in the same.

7) Had manicured as well as natural areas - nice variety when coupled with topography.

8) Visitor support facilities were poor in number and location. (Rest rooms, food concessions and gift shops)

9) Animals were exhibited by species as well as geographic area - both

10) Integrated a train/lake water feature very nicely. (Depicted in slides)

11) Food consumption was primarily aimed at picnicker's. A large area was set aside for this.

12) Adjacent to the zoo was a small amusement park with various rides. It seemed almost anti climatic.
Winter Quarter

Introduction

Analysis

- assets/liabilities
- problem concepts

Spatial Analysis

Spatial Concepts

General Site Plan

Section/Perspective Study
Introduction
The end goal for this quarter is to arrive at a point in the design process that lends itself to an expression of a general site plan.

Last quarters work consisted of a data collecting process. I must now analyze the physical data and marry it to the problem concepts as outlined earlier in this document.

From this marriage will spring a logical space utilization plan. Further refinements can then be sought after completing a scale change.
Analysis
Assets/Liabilities

Assets:

- room for expansion
- variation in topo
  a) flat areas for parking etc.
  b) rolling areas for exhibits
- existing vegetation is varied in species
  a) varied in maturity/ mostly mature
- very adequate circulation exists surrounding Washington Park
- good buffer zone possible around expanded zoo due to available space
- soil conditions favorable to all anticipated uses including ponding
- surround area/ outside buffer zone/ of Washington Park is quiet residential

Liabilities:

- contour/ slopes
  a) exciting in a design sense/ will be a challenge
Problem Concepts

Animals
- emphasis on interesting exhibits, animals in natural habitat as opposed to expensive rare species in modest habitats

Topography
- walkways in lower areas - viewing up on slopes where possible

Architecture
- architectural elements through material usage or placement should not impose too much architecture on the natural surroundings

Exhibits
- slope orientation
- use of moats to minimize visual barrier
- exhibit buildings should have neutral exterior, should not compete with exhibits, emphasis placed on building interiors

Central Mall
- connector for zoogeographic regions
- visitor support services location
- should not have to retrace steps on circulation walkways
- secondary circulation should branch off and return to central circulation articulator

Railroad
- where possible, railroad should pass through exhibits
- experience spacial variety, ground level, tunnels, tressles and or water etc.
Services Areas
- located away from public view
- separate circulation system for service

Entrances
- keep number of entrances to minimum
- primary entrance located in regard to expanded zoo
- retain existing entrance as secondary

Water features
- form and view control to create illusion of large water expanse
- will separate individual elements but will also tie together a totality
To initiate the spacial analysis, topography and its conceptual consideration were used as a starting point. Flat areas were designated as potential parking. It was discovered that the city would not allow any parking on the west side of the site which was an immediate limitation.

Contour analysis was accomplished to note visual lines of site which in turn indicates where potential pedestrian circulation could occur.

Keeping service circulation to the outside perimeter of the zoo would separate pedestrian/service circulation.

Slides which depict this graphically are available and are expected to accompany any review of this document.

Having located areas for expanded parking and a conceptual pedestrian walkway it was the next task to designate where the zoogeographic regions should and could take place. This was determined by three (3) factors: One - existing conditions, Two - number of exhibits in each geographic area and Three - number of animals that will inhabit each exhibit. In summary, existing conditions and spacial requirements as outlined earlier determined the general location of these zoogeographic regions.

The main entry node was established to link the expanded zoo with expanded parking.

General areas having been located, a further break down and location of internal elements had to be under taken subject to program concepts. An analytical model was developed showing relationships of the following components:
pedestrian circulation
service circulation
service areas
vehicular circulation
parking
entrances
architectural entities
exhibition areas

This was graphically executed in a very abstract form and became a tool in the next step of the design process.
Spacial Concepts
A spacial concept starting to show some form and definitely showing scale is the next step in following the road to a logical solution.

Using the abstract model as a base it became a problem of fitting the pieces of a gigantic jigsaw puzzle together resulting in a logical sequence of events as one traversed mentally through the zoo.

This was accomplished with relative ease and seems very workable but upon review of all the program concepts and physical analysis it was determined that the northern boundary of the zoo (which is a road) served no necessary function in its present capacity and the zoo could expand past the boundary to form a more aesthetically pleasing, logical and interesting plan.
Spring Quarter

Introduction
Conceptual Master Plan
Entrance Detailing
Log Record of Project
Introduction
The final quarter was spent polishing up the entire project such that it could be included in a portfolio with some pride.

I'm principally a magic marker freak when it comes to presentation and it was at the insistence of Professor Stan Gede that I completed a pencil line rendering of the conceptual master plan. It was a long, hard process not having attempted this before, but was well worth the effort.

Thus the quarter ended with myself having added another rendering skill in my tool box of professional graphic techniques and struggling with this document of record.
Conceptual Master Plan

Entrance Detailing
The conceptual master plan was not meant to suggest a hard line master plan, but is trying to convey or express an attitude. It was a successful experiment on my part, with the advice of Stan Gede, in a rendering technique that I had not explored prior to this. Conceptual design progressed beyond the prior quarters work but not substantially. It was principally a graphic presentation of the same.

The entrance area was blown up to a scale of 1 ft. = 10 ft. 0 inches such that further design developments could be explored. The expression of such is the extent at which my investigation was concluded. Grading was dealt with to establish a lower train station area to separate it from the main pedestrian circulation direction. Being a low lying area with no drainage outlet it would need further investigation into culvert drainage or pumps to compensate for water drainage and the water fall. Mounding was situated such as to start enclosing the entrance area and to separate parking and drop off areas from the zoo. One must walk through the central mall formed by visitor support services and over a wooden trestle situated above the railroad yard before he sees the zoo explode into view, almost as if he has discovered a lost world, and indeed he has.

Sitting areas combined with planters and an overhead space frame arbor which provides shade create a relaxing place for those who need a rest, are waiting for relatives or want to browse at the gift shop or food concession.
This document is a brief summary of 30 weeks of work. It is weak in some areas and satisfactory in others. It is the resultant product of time, simply meaning that its completion was competing for time with graphic presentation drawings and end of school duties such as organizing a portfolio and acquiring a job.

This record is to be accompanied by slides and also yellow trash pertinent in the design process. It is hoped they would be utilized and in fact are necessary to fully understand the processes that evolved during this project.

As a personal comment, I did not arrive at a satisfactory point in the design process like I had hoped I would. Unfortunately time is the culprit, not using it as an excuse but rather as simply a statement of fact.

A critical look at thesis should be initiated and possible revision of the same would ensue.
Animals -
- compact in handling
- exclusive / sensitive / isolated
- exhibit or special
- rare species
- limited availability

Topography -
- sidewalks lower away, clearing up on slops where possible

Architecture -
- architectural elements through natural usage, organization, orientation.
- should not obstruct natural architectural on the natural surroundings

Exhibits -
- visual compatibility
- use of walls to minimize visual barriers
- exhibit buildings should have
- exhibit design should accommodate building interiors

Central Mall -
- provides for geographic regions
- nature of visual perceived framework
- should not have too curved steps
- secondary circulation through area and various.
- central circulation guidelines

Roads -
- where possible / required should pass through exhibits
- should be adapted variety
- ground level, elements, shadows

Service Area -
- located away from public view
- separate ventilation system

Entrances -
- primary entrances located in proper to pedestrian flow
- public existing entrance as secondary

Water Feature -
- form and water control to create illusion of larger water, making appearances.
- separate individual elements, also fitting together totally.
The final quarter was spent polishing up the entire project such that it could be included in a portfolio with some pride.

I'm principally a magic marker freak when it comes to presentation and it was at the insistence of Professor Stan Gede that I completed a pencil line rendering of the conceptual master plan. It was a long, hard process not having attempted this before, but was well worth the effort.

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