THE PLANNING AND DEVELOPMENT OF BLANDFORD NATURE CENTER OF THE GRAND RAPIDS, MICHIGAN, PUBLIC MUSEUM

By

Mary Jane Dockeray

A THESIS

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

Department of Fisheries and Wildlife

1973

ABSTRACT

THE PLANNING AND DEVELOPMENT OF
BLANDFORD NATURE CENTER OF THE
GRAND RAPIDS, MICHIGAN, PUBLIC MUSEUM

By

Mary Jane Dockeray

Nature centers are springing up all over the United States in an effort to provide stimulating, educational outdoor programs for a public that is farther removed from actual contact with the land and its resources than at any time in history.

While there are agencies such as the Nature Centers Division of the National Audubon Society and the Natural Science For Youth Foundation that will provide assistance for groups interested in starting a center, there are few if any documentary accounts of the total development of such a facility.

Although each nature center must serve the particular needs of its community, and must plan according to its own natural attributes, the processes of developing a center have many similarities. It is hoped that the description of Blandford Nature Center from its days as the writer's childhood woodland retreat to its present oasis of "Nature in a Nutshell" for the citizens of Grand Rapids, will give that needed impetus to someone who would like to see a nature center in his community.

This is not an outside observer's account, but a resume of the major physical and philosophical components of a nature center from the viewpoint of its Curator, who has been privileged to guide its development from its inception.

Basic information for Blandford Center's facilities and programs

has been gleaned from numerous nature centers and conservation oriented organizations all over the United States. The sifting of information has taken place over twenty years, with the practical application becoming possible in 1964, when Mr. and Mrs. Victor Blandford donated ten acres of land to the City of Grand Rapids, to be administered by the Grand Rapids Public Museum.

Blandford Center is still growing in size and adapting to the needs of its visitors, while attempting to guide their attitudes about their environment and their place in it. The staff does not pretend to have all the answers about how to best work with the public or how to most wisely use the resources at its disposal, but is enthusiastic about the progress that has been made and eager to step up to the challenges of tomorrow.

ACKNOWLEDGMENTS

Blandford Nature Center could never have become a reality without the foresight and dedication of many people; starting with Mr. and Mrs. Victor Blandford, who so generously gave their cherished property so others might enjoy it.

The writer expresses her deepest gratitude to Grand Rapids Public Museum Directors Frank L. DuMond and Weldon D. Frankforter for granting her the opportunity to launch a new program, to Miss Norma E. Raby, her friend and colleague who has worked untiringly behind the scenes, to the late Richard Damstra, members of the Contractors and Suppliers Association, and hundreds of contributors who made the interpretive building possible, and to the many groups and individuals, especially Mrs. William A. Johnson, who have given of themselves and their funds to promote the various projects and programs of the Center.

Sincerest appreciation is expressed to Dr. Gilbert Mouser of Michigan State University, who directed this graduate program, and to Drs. Rollin Baker, Eugene Roelofs, and Julian Smith, also of Michigan State University for their patience and suggestions.

To the staff and volunteers of Blandford Nature Center - the warmest affection - for without your devotion, skill, and enthusiasm, the Center could not succeed.

Blandford Nature Center's motto ties it all together -

"Nothing is Accomplished Unless Somebody Cares."

TABLE OF CONTENTS

LIST OF FIGURES	vi
INTRODUCTION	1
General Background	5
The Dawning of the Nature Center	6
Initial Site Planning	10
Initial Use of Center	12
Planning For An Interpretive Building	12
Construction of the Interpretive Building	22
Development of an Operating Program	25
Chronology of Land Acquisition	28
GROUNDS DEVELOPMENT	29
Trails	29
Fencing	43
Ponds	43
Parking	47
Log Cabin and Plant Trail	48
Schoolhouse	54
Preserving Habitats	56
EDUCATIONAL PROGRAM	58
General Procedures	58
Special Educational Programs	68
Sugarbush	68
Pioneer Heritage	71
Student Farmers	73
General Farm	74
Alternative Education Plan	75
SPECIAL CLASSES AND EVENTS	78
Children's Classes	78
Adult and Family Programs	80
Pancake Supper	84
Family Camping Tips	86
Fall Harvest Festival	88
Winter Outdoor Skills	90
EXHIBITS	93

PERSONNEL 96

Educational Staff 96
Building and Maintenance Staff 98
Secretarial Staff 99
Dress 99

VOLUNTEER PROGRAM 103

Junior Aides 103
Youth Groups 105
Adult Aides 106

STUDENT TEACHER PARTICIPATION 112

Western Michigan University 112
Michigan State University 112
Aquinas College 113
Senior High School Ecology Students 113

FUNDING 115

Budget and Salaries 115
Contributions 115
Federal Funding 120
State Recreation Bond Fund 121

PUBLICITY, PUBLICATIONS AND PUBLIC RELATIONS 123

News Releases and Newsletters 123
Informational Brochures 124
Public Relations 125

LIVE ANIMALS AND USE OF DEAD SPECIMENS 126

Acceptance Policy 126
Care of Animals 127
Salvaged Specimens 133

VANDALISM 136

INTERPRETIVE BUILDING EXPANSION 138

Financing the Addition 141

SUMMARY AND CONCLUSIONS 143

LIST OF REFERENCES 150

Nature Centers and Similar Institutions Visited or Consulted 150
Teacher and Youth Leader Training Programs Attended 151
Organizational Memberships Which Provided Information 151

Useful Publications 151
Site Planning 151
Program and Philosophy 151
Miscellaneous Publications 152

LIST OF FIGURES

Figure		Page
1	General Map of Blandford Nature Center	4
2	Woods and Stream in Early Spring	7
3	Field Approach to Nature Center, Showing Edge and Mature Forest in Background	7
4	Deuling Meadow with C.A.Frost School in Background	7
5	Facing North, Away From Woods	8
6	Group Set to Explore Meadow with Volunteer Guide	8
7	Showing Rough, Original Plans	13
8	Architects' Sketch of Interpretive Building	13
9	Front View	15
10	Lobby	15
11	Book Nook	16
12	Wildlife Viewing Windows in Book Nook	16
13	Laboratory	17
14	Mezzanine - Auditorium	17
15	Mr. and Mrs. Victor Blandford Presenting First Junior Aide Badges	19
16	Groundbreaking with C.A.Frost School Children Looking On Left, Dr. Ralph B. Baldwin, President of the Art and Museum Commission Right, Mr. Victor Blandford	21
17	Lobby Before Waterfalls	23
18	Lobby Waterfalls	23
19	Showing 2 x 4 Curbing	30

Figure		Page
20	Steps and Railing	30
21	Painted, Frosted Plastic Label	31
22	Turn-the-Handle Action Label	31
23	Numbered Cedar Post	33
24	Welded Iron with Fiberboard Insert	33
25	Girl Examining Leaves	35
26	Boy Calling Chickadees	35
27	Packed Road Gravel Trail	37
28	Raised Boardwalk	37
29	Pond Showing Vinyl Lining	38
30	Finished Pond and Bridge	38
31	Woodland Overlook	38
32	Freshly Cut, 1965	40
33	Growth Along Sewerline, 1971	40
34	Outdoor Classroom Along Sewerline	40
35	Man-made Woodland Pond and Boardwalk	44
36	Man-made Pond, Looking Toward Trails and Interpretive Building	44
37	Muskrat Pond, Undeveloped	44
38	Muddy Parking Lot	46
39	Surfaced Parking Lot, Service Area Fence, Garage-workshop, and Interpretive Building	46
40	Front View	49
41	Pioneer Farmyard	49
42	Kitchen Area	50
43	Bedroom	50
44	Pioneer Life Class Working in Garden	51

Figure		Page
45	Tool Shed	51
46	Pioneer Plant Trail Through Field	51
47	Moving Day	53
48	Restored on Temporary Site	53
49	Aseembling for Blindfold Sensory Walk	60
50	Trimming Birds' Christmas Tree	60
51	Supervised Exploration at Edge of Woods	66
52	Class with Field Mouse - Face to Face Introduction to Nature	66
53	Sap Boiling in Sugar Shanty	69
54	Class Sampling Maple Syrup	69
55	Candle Dipping	72
56	Making Cross-stitch Samplers	72
57	"Tadpole" Class Experiencing a Pond	77
58	Pioneer Life Class Making Hand-cranked Ice Cream	77
59	Outdoor Survival Class Cooking	79
60	Lapidary Class	79
61	Student Teachers After Teaching Techniques Workshop	81
62	Campfire Leaders Examining Soil Samples	81
63	Food Line	83
64	Seating	83
65	Examining Camping Equipment	85
66	Camper Bus	85
67	Outdoor Cooking Techniques	85
68	Indian Ceremonial Dance	87
69	Pioneer Hunting Skills	87
70	Making Horseshoes	87

Figure		Page
71	Cross-country Ski Demonstration	89
72	Winter Camping Gear	89
73	Do-It-Yourself Leaf Identification	91
74	Three Dimensional Mural - From Treetops to Bedrock	91
75	Class Orientation Mural	91
76	Electric Board - Owl's Eyes Light Up	92
77	Sensory Display	92
78	Pelt Table	92
79	"Snow, Friend or Foe?"	94
80	Michigan Minerals	94
81	"Who's Who in the Underworld"	94
82	Blandford Center Sleeve Patch	101
83	Junior Aide Taking Young Raccoon on a Hunting Expedition	101
84	Sanding Beams in Interpretive Building During Construction	102
85	Spreading Wood Chips on Trails	102
86	Gathering Sap in Sugarbush	102
87	Junior College Forestry Club Members Building Outdoor Classroom	104
88	Horizon Club Girls Painting Tracks on Floor	104
89	High School Student Conducting After School Class	104
90	Guides on Compass Walk During Training	107
91	Preparing for Benefit Bazaar	107
92	Planting Fern Garden	107
93	Stitchery Wall Panel	117
94	Michigan Rock and Mineral Table	117
95	8" x 10" Parchment	118

Figure		Page
96	4 1/4" x 5 1/4" Heavy Paper	118
97	Screech Owl Animating Mural	128
98	Large Cage for Injuried Songbirds and Visitors Getting Acquainted With Fanny Ferret	128
99	An Unforgettable Experience	129
100	Orthopedic School Children Enjoying Young Squirrel	129
101	Sparrow Hawk Ready for Release	130
102	Volunteer Skinning Salvaged Muskrat	130
103	Schoolhouse with Protective Fiberglas Shutters in Place	135
104	Garbage Gobbler	135
105	Relocation of Entry Road to Consolidate Habitats	142
106	The Theme Underlying the Total Story of Blandford Nature Center	148

INTRODUCTION

Nature centers and similarly oriented outdoor education facilities are being developed at an increasing rate across the United States. Some of the centers are privately endowed, some operated by organizations such as the National and state Audubon societies, and some by school systems, cities, counties, or states.

The purpose of this dissertation is to outline the development, purposes, and projects of Blandford Nature Center of the Grand Rapids (Michigan) Public Museum believing that communities, groups, and individuals interested in organizing a similar facility will find ideas and assistance. Its development is not touted to be unique in most of its approaches. It is an amalgamation of many programs and ideas considered by its curator to be useful to the Grand Rapids community which it principally serves.

The writer was fortunate in that she knew the area in her childhood, assisted in the acquisition of the original land parcel, worked closely with fund raisers and architects, and has been privileged to direct the development of the Center since the construction of the interpretive building in 1968.

Blandford Center is still in its formative stages--perhaps it always will be--perhaps it always should be. Its program has developed in cooperation with other organizations in Grand Rapids so as not to duplicate or infringe upon other programs, but to complete and supplement them. Its educational program is especially coordinated with

the science and social studies curricula of the Grand Rapids schools, but its many facets are available to all schools, youth groups, educators, clubs, and the general public.

Before delving into the particulars of Blandford Nature Center and its development, it might be wise to consider and briefly describe some common attributes of a nature center. Accordingly, the following generalized statements reflect similarities associated with typical nature centers and an intimate involvement with one.

A nature center is a natural area, usually from several acres to several hundred acres in size, where organized groups and casual visitors can literally "get their feet back on the ground." In our increasingly urbanized society adults have lost contact with the land and nature, and children have frequently never been exposed to it.

An ideal nature center will provide varied habitats for study, adventure, and relaxation. To many, relaxing with nature is one of the highest forms of recreation.

A nature center should offer a stimulating educational program which challenges a child to explore, discover, think, wonder, and develop values which can influence his future decisions as a citizen. The center usually provides salaried and/or volunteer naturalists who are trained to help the visitor interpret what he sees--to help him to look and see, listen and hear, feel, smell, and perhaps even taste. The naturalist helps to bridge the gap between nature and the man-made, further assisting the visitor to see interrelationships between man and the natural resources and life support systems upon which his life depends.

Today, as sincere but often confused citizens are being influenced

by emotionalism and sensationalism over environmental problems and crises, a nature center should become the source of sound, up-to-date information, and a stimulation for constructive action relative to environmental problems.

A nature center frequently includes an interpretive building which may house exhibits to augment the outdoor experience, auditorium space for supplementary indoor programs and orientation, laboratory or workshop facilities, and a reference library.

There are some basic questions a group interested in starting a nature center should consider before undertaking such a project.

1. What type of nature center and program focus do we propose?
2. Is there a need in our community for such a program?
3. Whom will the nature center serve?
4. Is such a service being provided by a similar facility or organization?
5. Is suitable property available, and at what price?
6. Who will finance the facility?
7. Will this be adequate support or will supplemental funds be necessary?
8. Are we assured of continued support?
9. Do we plan to have an interpretive building and salaried staff?
10. What type of building will suit our needs?
11. Depending on our program focus, how many and what type of staff members will we need immediately?

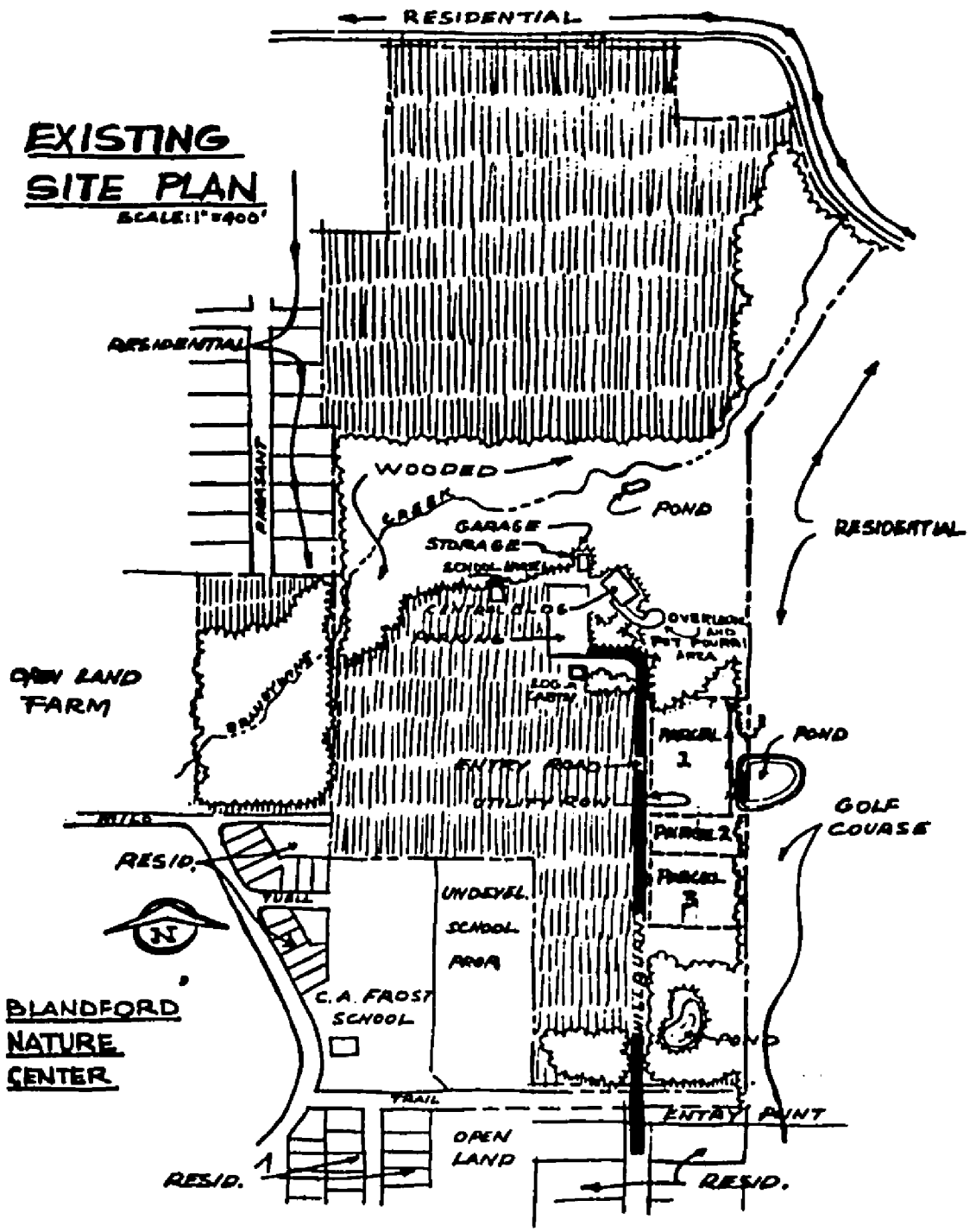

Figure 1. General Map of Blandford Nature Center

General Background

Blandford Nature Center is located on approximately 60 acres of land in the very northwest corner of Grand Rapids at 1715 Hillburn Avenue. Although it has the potential of expanding to approximately 120 acres of undeveloped forest, field, ponds, and streams, it is surrounded by rapidly growing, middle class housing. Within two miles there are seven elementary schools, two middle schools, and two high schools.

Grand Rapids has a population of 200,000, with a county population of 365,000. Grand Rapids alone has 53 elementary schoools, 9 middle schools, 4 high schools, and 7 special schools in the public system, and 41 church supported schools.

The city has a long-standing, strong, conservative Dutch and Polish influence with a recent upsurge of the black and Spanish-American population.

Blandford Nature Center is a division of the Grand Rapids Public Museum. The Museum is a department of the City of Grand Rapids, deriving its principal financial support from a budget submitted by the Director and the Art and Museum Commission for approval by the City Manager and City Commission. The Art and Museum Commission is made up of seven citizens of metropolitan Grand Rapids who are appointed by the City Commission and have general control of the Museum's operations.

Much of the financial support for land acquisition and buildings has come from the Grand Rapids Museum Association. The Museum Association is made up of citizens of the metropolitan community who are interested in the Museum's programs and help support special projects through their membership dues and fund-raising activities.

For many years the Grand Rapids Public Museum has provided a

variety of services to the area schools, and staff members have assisted the Grand Rapids Board of Education in the development of science and social studies curricula. In 1949 a naturalist was employed to present illustrated classroom programs and conduct field trips on various phases of natural science and conservation.

As this program developed, it became evident that city parks and unposted private land, though adequate to a degree, did not constitute educational resources that a coordinated program organized around housed facilities including a resident professional staff, library facilities, displays, meeting rooms, and laboratory could offer.

The Dawning of the Nature Center

One of the most popular field trip sites was a tract of land recently annexed to the northwest corner of the City of Grand Rapids. A check with the Assessor's office in the spring of 1964, determined that the parcel was owned by Victor A. Blandford. A call to Mr. Blandford further determined that he had hesitated to sell the property because he and his family had enjoyed roaming there with friends and youth groups and he had long felt that such a spot should be preserved as a park.

The then Museum Director, Frank L. DuMond, and the naturalist briefly outlined to the Blandfords how the Museum could use the area as a living laboratory where school classes, youth groups, and all interested citizens could literally "get their feet back on the ground." In June 1964, the City Commission accepted the Blandfords' donation of ten acres, to be managed by the Museum and used as a nature center.

About eight acres of this plot is forested with a near climax beech-maple-oak woods covering the top and sides of a deep ravine.

Figure 2. Woods and Stream in Early Spring

Figure 3. Field Approach to Nature Center, Showing Edge and Mature Forest in Background

Figure 4. Deuling Meadow with C.A.Frost School in Background

THIRTY ACRES OF ROLLING MEADOW

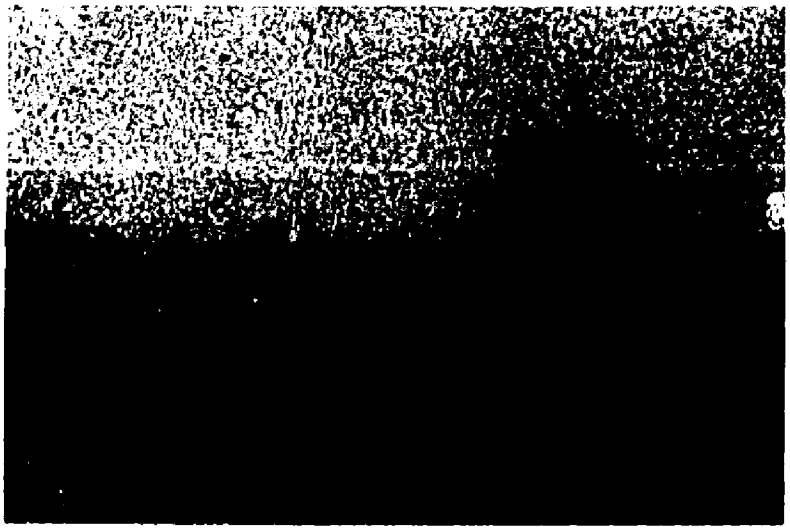

Figure 5. Facing North, Away From Woods

Figure 6. Group Set to Explore Meadow with Volunteer Guide

Narrow Brandywine Creek meanders through the ravine, intercepted by a clean-water runoff from a drainage ditch in an adjacent residential area to the east. The remaining two acres to the south are aspen-cherry-ash-sassafras "edge" growth and open meadow. Beyond the property line to the south lies twenty-five acres of open meadow and marsh now owned by the City of Grand Rapids, except for six acres. Most of the meadow portion had been planted to corn and cover crops until the late 1950s, at which time it was placed under the United States Conservation Reserve program and allowed to revert to natural succession. The Elks Club golf course borders the east side of this property. A small section of meadow adjacent to the woods had been fenced off from the cultivated area some years previously and was filling in with sumac, hawthorn, grape vines, and a few mixed hardwoods.

Approximately twenty acres of meadow owned by the John Deuling family lies to the west. C. A. Frost Elementary School of the Grand Rapids School System is located on the southwest corner of this plot. The north end of the Deuling property includes a continuation of the wooded deep ravine and Brandywine Creek. Mr. Dueling had cut the marketable timber during the late 1930s, resulting in a thick, spindly second growth of predominately sugar maple. North of the wooded area lies about thirty acres of rolling open meadow dotted with several small elm-rimmed marshy spots, a remnant of an old apple orchard, and a sentinel black cherry surrounded by a thicket of assorted fruit-producing wild shrubs. A powerline right-of-way separates the woods from the meadow.

To all sides of this described undeveloped land are rapidly growing residential areas.

Initial Site Planning

Hillburn Avenue, the only access road to the Nature Center, terminated 1700 feet from the property line. The Museum petitioned the Grand Rapids Foundation for funds to extend Hillburn to that point and gravel a turn-around. The Foundation allotted $3,400, and during the summer of 1965 a crude graveled road was constructed by the City and a private excavating company.

The Center was used primarily for school classes under the guidance of the Museum naturalist, but it was also heavily used by neighborhood families who found it a pleasant place to play and walk. Heavy use of the steep sides of the ravine would have quickly resulted in barren, unsightly spots and a loss of much of the variety of wild flowers and shrubs. Two one-quarter mile trail loops were laid out to reach as great a variety of interesting features as possible. At first the trails were marked with streamers of white sheet and used with classes on an experimental basis. After a few minor traffic adjustments were made, the trails were covered with a four foot wide, four inch thick layer of wood chips contributed by the City Forestry Department. (See Trails, p. 32)

Prior to contributing the land for Nature Center use, Mr. Blandford had given the City of Grand Rapids permission to route a sanitary sewerline through the valley. He asked that all possible care be taken during the excavation because he wanted the property left in a natural state. The resulting disturbance along the 320 foot sewerline section denuded a 50-75 foot wide strip of forty trees six inches and over in diameter, and all undergrowth of shrubs and wild flowers. A small area of cattail marsh was also eliminated. The excavation caused Brandywine

Creek to jump its banks at the west end of the property and create an auxiliary stream channel in the sewerline slash.

The written agreement between Mr. Blandford and the City called for the City to replace vegetation destroyed by the sewerline project. Although this was quite impossible in this instance, the Park Department did plant several small trees and shrubs across the east end of the sewerline to act as a traffic buffer. The sewerline strip had the appearance of a dirt road and connected two streets in its course across the landscape. It was quite naturally used as a scenic shortcut by horseback riders, bicyclists, snowmobilers, and drivers of all-terrain vehicles. It was hoped by the staff that through a good job of neighborhood public relations, vehicular traffic would use this route and stay off the foot paths in the woods. Since the Nature Center was not fenced or supervised in any regular manner, it was apparent that certain compromises would have to be made with the public.

It must be admitted that the sewerline presented an interesting object lesson in plant succession as the disturbed land began to fill in! It also afforded an ideal place for the placement of log seats for an outdoor classroom and council fire ring.

With guidance from the local office of the United States Soil Conservation Service, a small pond was dug to replace the marshy area which had been obliterated by the sewerline. The intent was to create a similar springtime wet spot, but the result, due to a high water table, was a permanent pond about seventy-five feet by fifty feet and three feet deep. (See Grounds Maintenance, p. 43)

Initial Use of Center

The Center was used sporadically by Grand Rapids school classes as teachers requested an outdoor experience. The naturalist noted that in her classroom programs the students exhibited less and less knowledge of natural phenomena, less awareness of their role in nature, and little respect for living things. They were caught up in a boxed, bagged, and canned economy without realizing that the contents of the boxes, bags, and cans were products of nature.

It was difficult to plan anything except brief excursions to the Nature Center because of the complete lack of shelter, restrooms, or emergency facilities. The Center is located six miles from the Museum, causing time lost through travel and waiting for classes to arrive. From these minor frustrations grew an evermore elaborate plan for an interpretive building with a resident staff.

Planning For An Interpretive Building

The dream began to take form in August of 1965 as the new Museum Director, W. D. Frankforter; Miss Norma Raby, Curator of the Museum's Visual Education Department; and Miss Mary Jane Dockeray, Naturalist (now Curator of Natural History), staked out the site for an interpretive building and drew rough floor plans and exterior views. These would be ready in case someone should show interest in financing the project. There was little hope that City funds would ever be available for building purposes.

Within the month, as though the Fates had been standing by, the Grand Rapids Museum Association Board of Directors announced that it was looking for a special project. Mr. Frankforter presented the plans

MUSEUM ASSOCIATION PROMOTIONAL BROCHURES

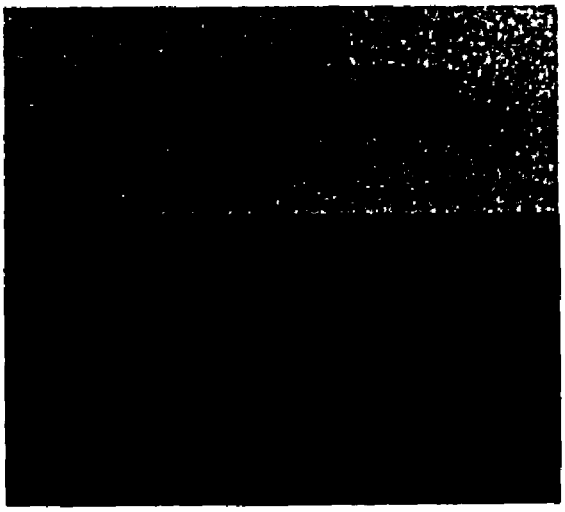

Figure 7. Showing Rough, Original Plans

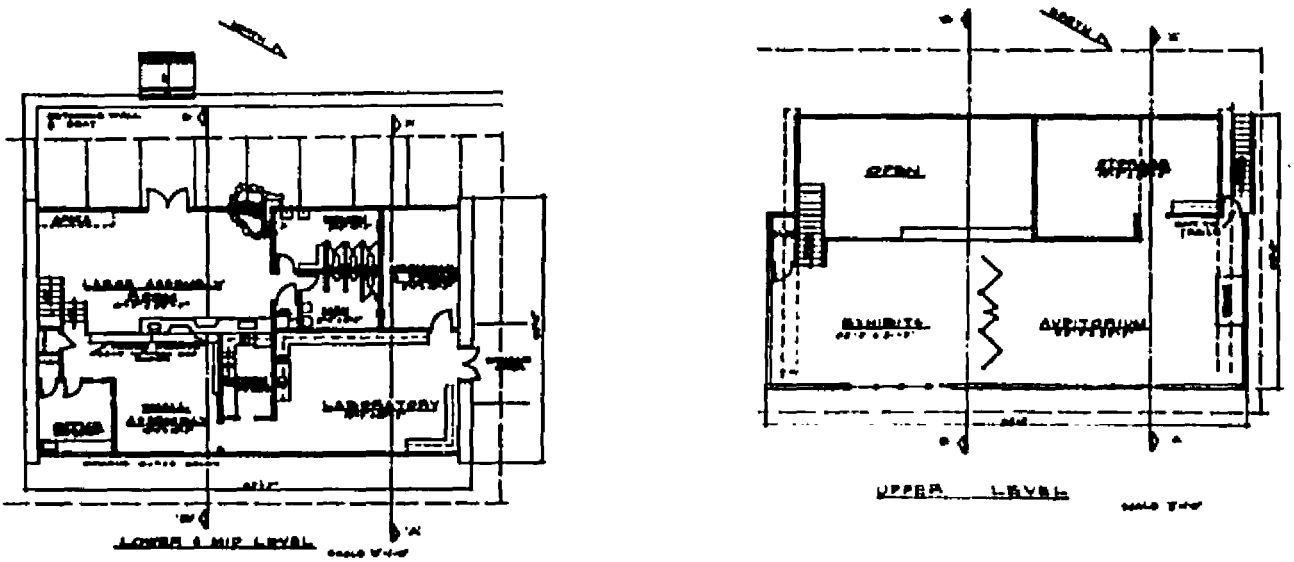

Figure 8. Architects' Sketch of Interpretive Building

for the building and the Board agreed to seek funds for its construction. President Donald Thompson appointed fund raising and building committees, all members of the Association. The Association had limited funds of its own, derived primarily from profits of its Nature Shop in the Museum. Local foundations, organizations, and industries were tapped for funds, and interested individuals made contributions. Mr. James Sanderson, Museum Association Board member, was particularly instrumental in making contacts and securing pledges.

The idea of a nature center was a new one for the area--a conservative community that frequently takes slowly to new ideas. The Curator of Natural History seized every possible opportunity to present illustrated talks to area clubs and civic organizations. It was stressed that the Center would be open to the general public as well as to school classes. A $5,500 contribution came from a couple who said that the project appealed to them because it was for everyone. The Grand Rapids Foundation and Downtown Kiwanis Club each contributed $10,000, and many organizations and individuals gave from $5.00 to $500. A complete list was made of all donors and acknowledgements sent. Special appeals, such as the "Be a Christmas Angel" bulletin sent to Museum Association members, netted $1,000 - $2,000 each.

During the winter of 1966, the architectual firm of Frank and Stein of Lansing was commissioned by the Museum Association to design a building, working from the original rough sketches. Its outside appearance should blend as unobtrusively as possible into the woodland edge setting. Periodically the Museum Director, the Curator of Natural History, and the Museum Association Building Committee met with the architects to evaluate the plan. Several compromises were made. A one story building

LAYOUT OF ROOMS IN INTERPRETIVE BUILDING

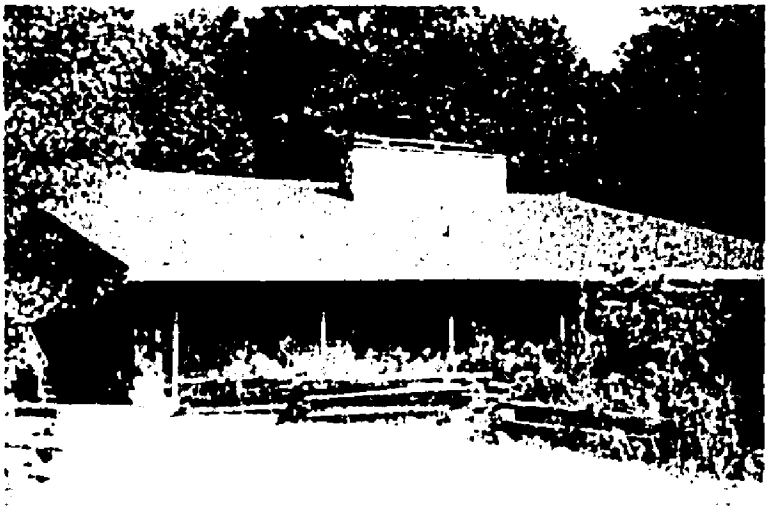

Figure 9. Front View

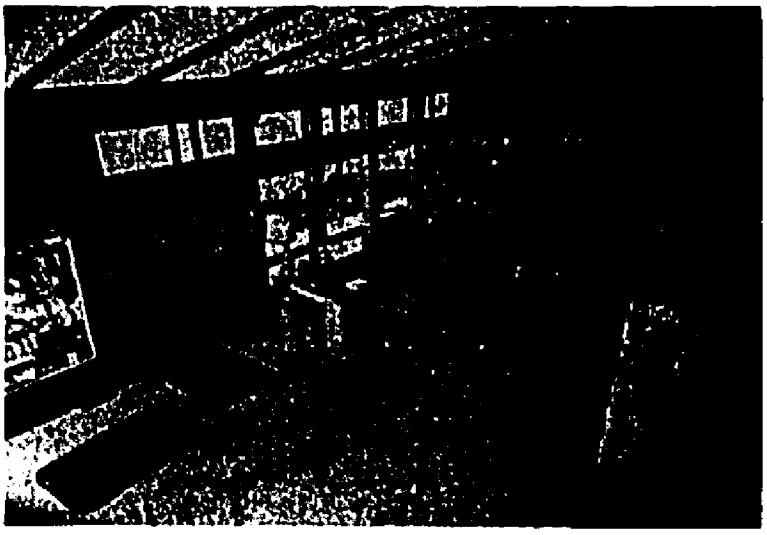

Figure 10. Lobby

Figure 11. Book Nook

Figure 12. Wildlife Viewing Windows in Book Nook

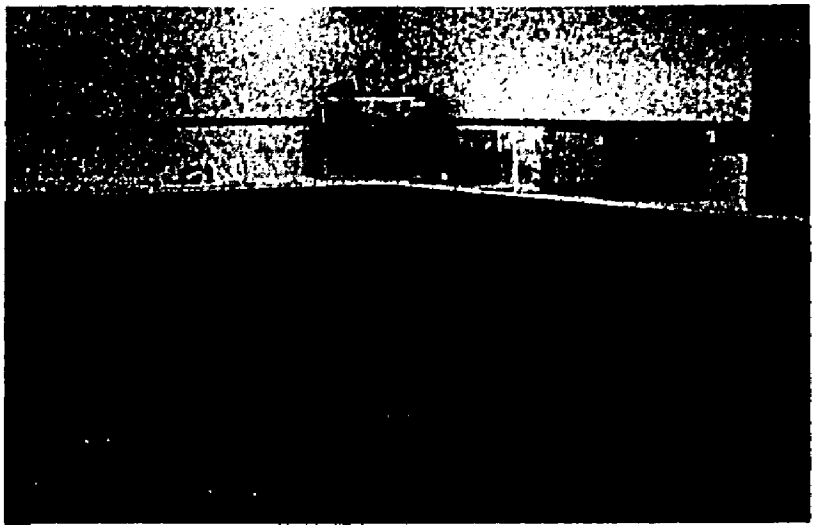

Figure 13. Laboratory

Figure 14. Mezzanine - Auditorium

would have been easier for physically handicapped visitors, but it would have spread the facility over too great a land area. Electric heat, though more expensive than natural gas, was considered until Michigan Consolidated Gas Company agreed to contribute the cost of extending the gas main 1700 feet to the Nature Center property. Although the trunk-line of the Lake Michigan water system to Grand Rapids passes through the Center property, it could not be directly tapped. At this point there was no City water service on Hillburn Avenue. The decision was to drill a well. However, the City did grant permission to attach directly to the sanitary sewer which had caused such a disruption in the valley.

The tri-level plan submitted by the architects could not be modified to include a dumb waiter which would be highly desirable for moving books, exhibit materials, and food service. Original sketches called for a large mechanical room in the finished plans. Fire inspectors approved the plans after an additional emergency door was included at the rear of the building.

The finished plans included all of the facilities in the original sketches, but modified as to size and arrangement. The broad front overhang, enlarged lobby, and upstairs auditorium can shelter three separate groups at a time. The "Book Nook," a comfortable lounge-type room with a fireplace, serves as a library, small meeting room, and wildlife feeder viewing area. The laboratory is large enough to provide working space for an average class of 25-30. The mezzanine, or upper level, can seat up to 125 and doubles as an exhibit area. The portion of the upstairs affected by the slant of the roof is used for storage and office space. Most incoming groups assemble in the

Figure 15. Mr. and Mrs. Victor Blandford Presenting First Junior Aide Badges

auditorium for a brief orientation and leave for the trails by the outside back stairway. The total inside space is approximately 4800 square feet.

The plans were submitted to the City Commission and approved. It was not without precedent, however, it was far from usual, that a private organization--the Museum Association--should be permitted to construct a building on City property, with the agreement that it would be turned over to the City upon completion.

As money raising continued, the Curator of Natural History realized it was most important that the immediate community surrounding the Center be informed of the new facility, the role it would play, and how they as neighbors could use it and aid in its success. To effect this type of public education, the Curator spoke at nearby PTA meetings, school assemblies, scout meetings, and neighborhood clubs.

A budding volunteer corps began when the Curator encountered neighborhood children playing in the woods. They were excited about the prospect of the Nature Center and wanted to know how they could help. Since they came from a half dozen different schools, they frequently did not know each other and spent considerable time jousting for power. One of the boys suggested that all helpers should have some kind of badge to mark them as members of the Blandford Nature Center Junior Aide Corps. The result was a sleeve patch featuring the Center's emblem--a screech owl--and marked Blandford Nature Center Junior Aide, Aide, or Staff. Boys and girls eight and older qualify by helping to keep the property litter-free, asking visitors to use the trails, and helping to maintain those trails. This is a loosely knit group of youngsters whose enthusiasm outruns the number of tasks available to them. The Curator's

Figure 16. Groundbreaking with C.A.Frost School Children Looking On
Left, Dr. Ralph B. Baldwin, President of the Art and Museum Commission
Right, Mr. Victor Blandford

initial thought was to provide a feeling of belonging to the children who might otherwise engage in mischievous destruction which exists in any community. Good public relations cannot be over stressed!

Construction of the Interpretive Building

Fund raising proceeded slowly through 1966 and 1967. The Museum Association was reluctant to begin construction until sufficient funds were assured. Richard Damstra and Edward Johnson, members of the West Michigan Contractors and Suppliers Association as well as the Museum Association, solicited help from other members as a community service project for their organization. Members interested in participating went over the plans and determined what they could contribute in the way of labor and materials. Mr. Damstra then drew up a contract with a "not to exceed" cost of $69,414.89. They estimated the cost would be approximately $150,000 if all labor and materials were obtained through retail sources.

With all but a small portion of the funds secured, the Museum Association authorized ground breaking to take place on December 17, 1968. It is to be especially noted that this was not "just a job" for the participating members of the Contractors and Suppliers Association. Richard Damstra was appointed general contractor, with his father, M. C. Damstra, a retired construction foreman, installed as on-the-job general supervisor. Great care was taken to see that surrounding vegetation and terrain were spared from construction damage. Retired stonemason, Thomas Damstra, made the rounds of local gravel pits, selecting, splitting, delivering, and ultimately supervising the placement of forty-four tons of fieldstone. Workers and supervisors showed genuine interest

Figure 17. Lobby Before Waterfalls

Figure 18. Lobby Waterfalls

and care in their part of the building process. Several minor modifications requested by the Museum staff were taken in good humored stride by the builders, as were several unique building problems posed by the architects. The Contractors and Suppliers final cost was $66,014.56, a savings of $3,400.33 over their estimate, a true cooperative effort, and a beautiful monument for the community.

While the building was under construction, three large thermopane windows were broken, either by vandals or all too curious children. To ward off future breakage, the Museum carpenter fashioned shutters of eight ounce Fiberglas to fit each of the fourteen ground floor windows. Each set of four or five is secured at the base by a metal pipe which is locked in place with a coupling. It takes less than ten minutes to remove or replace them. The Fiberglas is strong enough to repel a pellet gun blast as close as three feet. The shutters also prevent after-hours visitors from looking into the building.

Finishing touches inside the building were left for the Center's caretaker. One of his first challenges was construction of a waterfall in one corner of the lobby. The architects had left this item entirely to the staff's ingenuity, providing only a 2 1/2' x 2 1/2' square hole. Boulders were added which help tell the geologic story of Michigan; plantings provide a bit of native greenery the year around. It is a focal point in the lobby, emphasizing design and beauty in nature. Visits to gravel pits and gifts from local rockhounds provided the necessary stone. The square hole was camouflaged as a pool, and the boulders were spread out and up the wall to cover an area 10' long, 5' wide, and 7' high. A circulating pump recycles water which tumbles refreshingly over the rocks and waters the plantings.

There was an immediate need for a garage to house a station wagon and a twelve H.P. garden tractor and attachments. The Museum Association donated $2,000 for a two-stall garage constructed to blend with the interpretive building. A year later a 20' x 20' addition, also donated by the Museum Association, provided a much-needed carpenter shop.

In the first two years of the Center's operation, an office for additional staff was partitioned off from the upstairs storage area, and a Museum Association Nature Shop showcase was built in the lobby. Air conditioning was installed to alleviate an upstairs heat problem caused by the huge expanse of southern exposed roof. Once again the Museum Association and private contributors came to the rescue, since financing air conditioning through the city budget would have been out of the question.

The Development of an Operating Program

As the interpretive building neared completion in September, 1968, the City Commission informed the Museum that there had been no budget allocated for the operation of the Nature Center. The Commission announced that this was a new project for which funds had never been provided. However, Museum records showed the Center had been authorized a budget of $5,000 the previous year, the Commission had approved plans for the building, and had agreed to permit the Grand Rapids Museum Association to construct the building and turn it over to the City. The Commission continued to plead lack of funds. They assured the Museum they felt this was a worthwhile project, but that funds were more urgently needed in other departments.

The Museum Director was able to arrange the transfer of the salary

of the Curator back to the central Museum budget. The official transfer of the Nature Center caretaker from the Museum custodial staff had not yet taken place.

As teachers called to arrange appointments for fall field trips, they were informed of the tenuous future of the Nature Center. This led to a chain reaction of teachers calling teachers, who in turn called the Mayor and members of the City Commission. A delegation of teachers appeared at a City Commission meeting with the Museum Director and the Curator to voice their concern and support.

The Curator seized every opportunity to talk to civic organizations and explain the reasons for a nature center in the community. Citizens responded as the teachers had, urging their Commissioners to authorize sufficient funds to give the Center an opportunity to open. The Grand Rapids Press and WOOD-TV ran news items on the plight of the Center.

The Curator offered to pay initial operating expenses herself until regular financing could be found. This prompted friends to donate small sums for such purposes. Neighborhood children, caught up in the crusade, went door-to-door soliciting donations; Cub Scouts held rummage and bake sales -- the Center's doors stayed open. Students from nearby Oakleigh Junior High School gathered 2,000 signatures on petitions which were presented to the City Commission. In early January, 1969, the Commission appropriated $5,000 toward a budget, with the understanding that the Grand Rapids Board of Education would allocate a like amount. The shaky ark had reached calmer waters! Since then, prudent, conservative budget requests have been approved with very little alteration and no controversy.

During the financial crisis it also became apparent that a

naturalist and caretaker were not sufficient staff for such an operation. Who would greet visitors, answer the phone, prepare exhibits, perform secretarial chores? How could one naturalist provide guidance for more than one class at a time? Newspaper articles reporting on the Center's problems and possibilities appealed for volunteers. It was during this hectic and uncertain beginning that an essential volunteer corps was formed. (See Volunteer Program, p.106)

Since a Nature Center was a new concept for most of the people of Grand Rapids, the first year was devoted primarily to getting acquainted. School classes, unless the teacher requested a specific emphasis, were given a "general tour" to introduce them to an ecological survey of a West Michigan woodland and its surroundings. Youth groups and casual visitors were, and still are, encouraged to use self-guiding woodland trail brochures.

Although the interpretive building was open Monday through Friday from 8 - 5 p.m., the trails were open at all times, since the area was not fenced and had been regularly used by neighbors. Interested organizations which had made contributions were permitted to use the interpretive building for a meeting if their program was given by the Center's Curator.

Continued newspaper and television coverage of activities, plus enthusiastic word-of-mouth comments from visitors and volunteers, helped to keep Blandford Nature Center before the public as its total program continued to grow. The following pages will cover in more detail many of the facets of the Center's operation which may prove to be useful to others interested in a similar facility.

Chronology of Land Acquisition

June, 1964 - 10 acres donation by Mr. and Mrs. Victor Blandford

January, 1968 - 6 acres donation by Mr. and Mrs. Victor Blandford

May, 1971 - 12 acres purchased from Mr. and Mrs. Victor Blandford by the Grand Rapids Museum Association from the sale of stock donated by the Ralph F. and Melvin Baldwins

July, 1972 - 30.7 acres purchased from Mr. Chris VanEss from Michigan Recreation bonds

August, 1972 - 1 acre donation by Mr. and Mrs. Victor Blandford

Total - 59.7 acres

GROUNDS DEVELOPMENT

Blandford Nature Center serves a metropolitan population of 365,000 and is inside the city limits of Grand Rapids, with a population of about 200,000. One of the biggest questions that looms uppermost in its development plans is how to provide visitors a stimulating, active program, yet preserve its delicate habitats for these and future generations.

The original ten acres of the Center is located in the choicest part of the mature beech-maple forest. Here are the magnificent 100-200 year old trees, beds of many varieties of wild flowers, and the steep sides of a deep ravine. The district forester for the Michigan Department of Natural Resources recommended no cutting of mature trees nor removal of diseased or dead ones unless they pose a hazard along the trails. This particular area is maintained as "Nature taking its course" as much as possible. Fallen trees and branches are also left unless they fall across trails. Visitors occasionally ask, "Aren't you going to clean up the woods?" A managed woodlot is planned for a section of second growth woods which does not yet belong to the Center.

Trails

Two 1/4 mile loop trails are woven through the woods, passing as many sites as possible that help to explain the development of and life in such a habitat. The trails were first marked with strips of sheet until they were used by several groups and their adaptability established. Although it was an added thrill for the youngsters to ford the creek, balance on a log, and scramble up the slippery banks of the ravine, this was hard on school clothes, devastating to ravine banks, and

Figure 19. Showing 2 x 4 Curbing

Figure 20. Steps and Railing

FIRST TYPES OF TRAIL LABELS

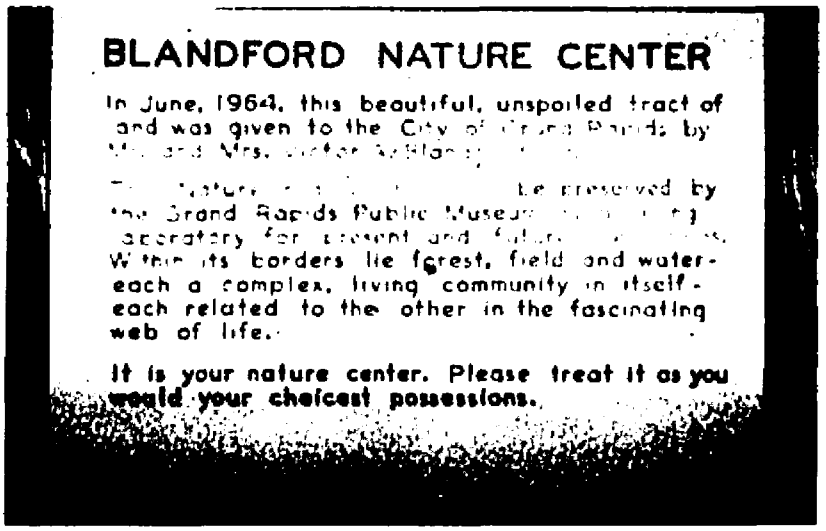

Figure 21. Painted, Frosted Plastic Label

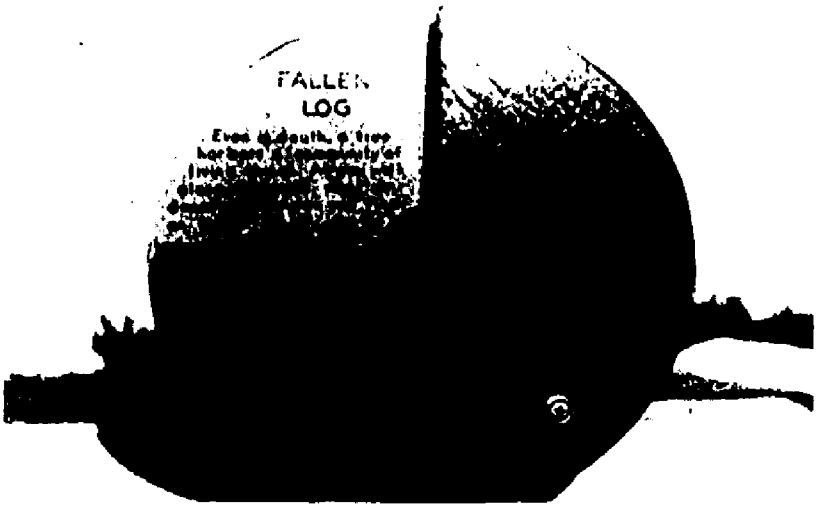

Figure 22. Turn-the-Handle Action Label

difficult for older folks who also enjoyed the opportunity of tramping the woods in a less strenuous manner.

Slight adjustments were made in the trail routes to accommodate a twelve horsepower tractor which was necessary to maintain the trails--carry supplies, haul wood chips, clear snow.

Wood chips, first from the City forestry department and later from the Consumers Power Company, are spread along the trails four feet wide and about four inches deep. During the first year of use, the trails widened to twelve feet in some places as groups tended to spread out. Raking the wood chips back to the four foot width helped little. The caretaker installed rough sawn two by fours as curbing in the most vulnerable areas. It is not as pleasant visually as a simple path, but it confines the footsteps and the chips!

The first winter pointed up another hazard. Even though the trails were cleared by snow blower, the steeper areas became extremely slippery after a few classes had passed. This was remedied by handrails made from three inch cedar posts. Negotiation of the ravine and stream were made easier by railroad tie steps and a rough board foot bridge. Sand is sprinkled on steps and along the steeper parts of the trail during the winter.

Curious, energetic neighborhood children who had been used to having the woods as their playground made trail marking a challenge. The first attempt was idealistically elaborate, with signs that had covers to lift, knobs to turn, and interesting shapes. The written material was printed with lettering guides in India ink on frosted 1/16 inch thick plastic that had been painted on the back with assorted colors. The printed side was sprayed with a plastic coating and framed with

PRESENT TYPES OF TRAIL LABELS

Figure 23. Numbered Cedar Post

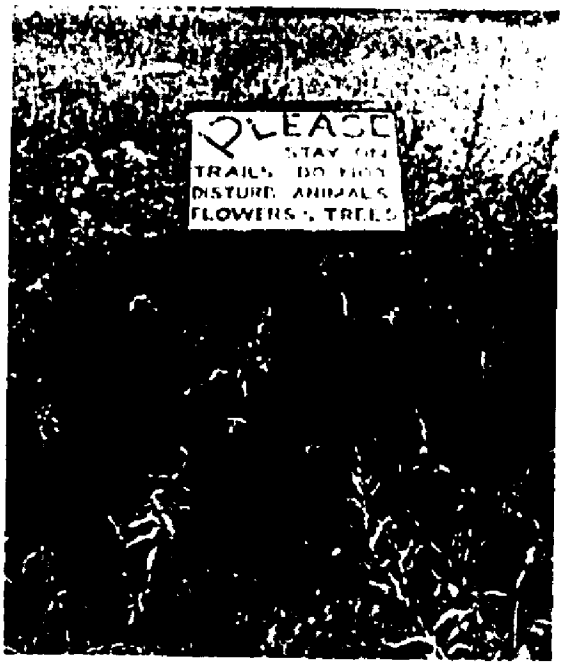

Figure 24. Welded Iron with Fiberboard Insert

strips of wood. Each had a brief paragraph of information written in language most later elementary age children could read, but in such a way that adults would also enjoy them. The signs were attached to two by two inch wood stakes five feet tall, imbedded firmly in large fruit juice cans filled with concrete, and buried two feet in the ground. These were quickly and systematically pulled out and strewn through the woods -- the labels wrenched from the stakes. This type of marking should obviously be used only on a closely supervised trail with limited access!

The next step was to try the two by two inch stakes with only numbers on top. A self-guiding trail brochure was written featuring fifteen to twenty stops each quarter mile. The brochures can be obtained for five cents each at the information desk in the interpretive building. Because this meant that visitors were out of luck when the building was closed, a dispenser was fastened to the front porch. Although there were never more than a few coins in it at a time, it proved to be too much of a temptation to petty thieves and was soon damaged beyond repair.

As the numbered posts met the same fate as the trail labels, they were replaced by three inch, four foot long cedar posts, imbedded in the ground in two feet of concrete. The slanted top was numbered to follow the trail brochure. These have proved to be quite durable, lasting over two years to the date of writing with very little damage. These are gradually being replaced by welded black metal signs with numbers that should be the most durable of all. The printed paragraph may yet be possible on one of the more closely watched trails in the future. Directional signs which slide into a metal frame, welded on a metal post, have proved to be durable except for occasional defacing.

Figure 25. Girl Examining Leaves

Figure 26. Boy Calling Chickadees

Since there are several classes of physically handicapped children in Grand Rapids, provisions are being included to make the Nature Center more useful to them. Since the Center opened, visually handicapped students have come annually to collect insects in the open fields where fences, curbs, and traffic will not get in the way. The trails through the woods are useful to them, but restrictive. Braille trails now in existence around the country depend on clumsy trail brochures in Braille and guide ropes or wires with a complicated system of knots or knobs. Therapists from the Grand Rapids Association for the Blind reviewed the material for Blandford Center's Braille Trail and deemed it would make too bulky and expensive a booklet. They remarked that the blind person would be apt to frequently lose his place in examining the object and returning to the booklet again and again. They also advised against guide ropes or wires which had already been ruled out by the Center's staff as being too easily vandalized. The therapists' suggestion was a regularly printed brochure to be read by a sighted person accompanying the blind investigator. In this way the blind visitor's attention can be focused on sensing his surroundings while hearing the story at the same time. Some of the walk follows the first loop of the woodland trail, but since there will be relatively few blind persons using it, notations in the brochure will indicate where they can step off the trail to "see" a nearby feature. A small bag of special props, such as crystals of the minerals in granite, chips of sassafras root, will be part of the trail guide. A tape of identified typical seasonal sounds will be available for those who would like to use it.

The first part of the trail for the blind will follow the Pot Pourri Trail in front of the interpretive building. This area is being

POT POURRI TRAIL

Figure 27. Packed Road Gravel Trail

Figure 28. Raised Boardwalk

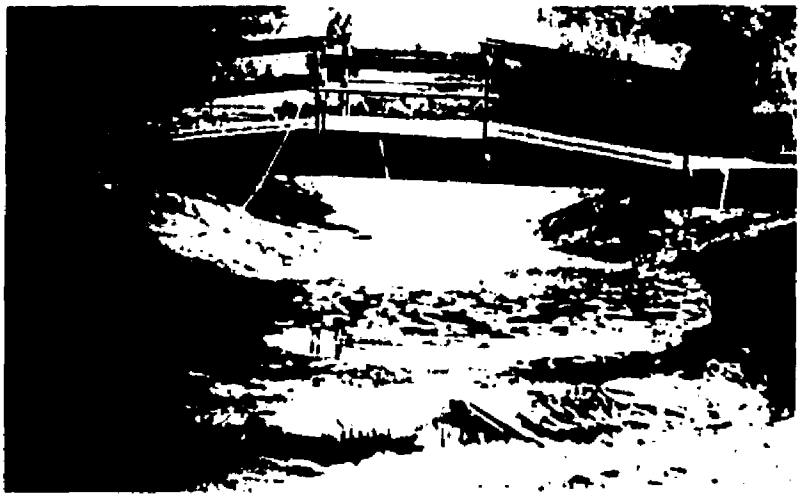

Figure 29. Pond Showing Vinyl Lining

Figure 30. Finished Pond and Bridge

Figure 31. Woodland Overlook

designed as a "mini nature center" for those physically handicapped or elderly who cannot negotiate the regular trails. The trail itself is packed road gravel, hard enough to support a wheel chair. Included also is a raised, railed boardwalk past a marshy area. Abbreviated habitats of woods, edge, field, pond, and marsh are being developed here on about one acre of land. A local garden club is financing this trail, giving $1,000.00 for construction of the walks, ponds, black dirt, and an underground sprinkling system. Special memorials to deceased members have added native specimen trees found seldom or not at all elsewhere in the Center. Another memorial provided a large bird feeder. All construction is done by the Center's caretaker. The underground sprinkling system is constructed of 3/4 inch plastic pipe with detachable whirlibird sprinklers.

The pond is about 25 feet long, 10 feet wide and 1 1/2 feet deep, lined with 10-mil vinyl, covered with clean sand. It is filled from the sprinkling system with gradual seepage maintaining a marshy spot on one side. Grass seed planted around the irregular edge of the pond where the vinyl was anchored and buried, held the soil until native pond plants were introduced or grew naturally.

Neighborhood children almost immediately planted some small bluegills which quickly set up housekeeping that could be easily watched in the clear water. Some minnows were added the same way later in the summer. Supplemental feedings of canned dogfood were necessary until natural foods became available. A remedy for a thick algae bloom that appeared in the fall, has yet to be found.

A bridge over the pond allows for wheel chairs and has a bench on each side where visitors can watch the pond animals in action.

SEWERLINE SLASH THROUGH RAVINE

Figure 32. Freshly Cut, 1965

Figure 33. Growth Along Sewerline, 1971

Figure 34. Outdoor Classroom Along Sewerline

In this same area and just 75 feet from the interpretive building, the caretaker has built a 20' x 30' "Woodland Overlook." It is placed to give the visitor a feeling of being projected into the woods without walking the trails. This railed platform was designed for the physically handicapped, but it is thoroughly enjoyed by all. A railed, hard surface path leads from the building to the Overlook. A slab of concrete at the beginning of the path has imbedded in it the imprints of the common leaves of the woods. An answer sheet is available at the information desk.

As mentioned in the introduction, at the time Victor Blandford gave the City of Grand Rapids the first ten acres for the Nature Center, he also gave permission for a sanitary sewer trunkline to run through the ravine. Although there was a written agreement from the City that as little as possible would be disturbed and destroyed and vegetation would be replaced, modern excavating equipment and methods do not respect such agreements in the eyes of a naturalist! A 50-75 foot swath, 320 feet long was laid bare through the eight acre woods. Forty trees six inches in diameter and over were toppled; all undergrowth and a small springtime frog pond were also destroyed.

Members of the local Audubon Club pitched in to clear debris along the sewerline and trim broken shrubs and trees. After the Museum staff's initial shock wore off, it was determined that this would be an excellent trail for several years to show how nature heals such a wound in the landscape. The living picture of plant succession is laid out perfectly from the bare center of the path to the climax forest a few feet away. The opening was a good spot for an outdoor classroom, which was constructed from old barn timbers by members of the Grand Rapids Junior College

Forestry Club. The sewerline happens to connect two streets in its half mile snake through the woods; so this quite naturally became a short cut for not only those on foot, but also for those on horseback and motorcycles. While it upsets the sensibilities of many to think that motorcycles are allowed in the nature center, there are several factors to consider:

1. There is no fence around the Center.
2. The property is not patrolled regularly and not at all for many hours at night and on weekends.
3. Horses and motorcycles are an all too evident fact of life in the Blandford Nature Center neighborhood.
4. Every effort is made by the staff to talk with cyclists and horsemen encountered in the Center. They are permitted passage along the sewerline with the agreement that they will pass as quietly as possible and stay off the wood-chipped trails that are for foot travel only.

This procedure has worked well, even though it must be repeated as newcomers appear. Far more cooperation and good will are created by this approach rather than a ban which cannot be enforced, or impatient scolding which is sometimes on the tip of the tongue!

Visitors sometimes mentioned that it would be pleasant to be able to sit and soak up the atmosphere of the woods, but there were no benches. This has now been remedied with two rough hewn benches placed in especially scenic spots. They are anchored to a concrete slab which also serves as a hard base which swinging feet will not wear away.

When 30.7 acres of meadow were added to the Center, the immediate query was, "What are you going to do <u>to</u> it?" Except for a protective

multiflora rose hedge around it, there are no plans to do anything more to it than to try to maintain it as it is with no regular trails. This is a place where classes can explore without the confinement of a trail. Classes will be supervised by a Center naturalist and sample collecting will be heavily restricted. This is true throughout the Center, except for some leaf collecting in the fall, and insects in the fields.

Fencing

In the summer of 1972 the Center acquired 30.7 acres of beautiful rolling meadow north of the original parcel. One steep hill has been gouged by motorcyclists who have access along a power company line right-of-way. Thirty members of the senior class of a local high school planted multiflora rose along the boundaries of this meadow. As the rose hedge grows, unwanted access will be reduced. It is the Curator's hope that the Center property will never have to be fenced except for similar hedges placed in potential trouble spots where vehicles might enter. This whole natural area had been a neighborhood oasis where children played and families walked. With thoughtfulness and cooperation from the neighbors and the Center staff, a free and friendly atmosphere will prevail without the menacing, challenging presence of a chain link fence.

Ponds

The small springtime frog pond, destroyed by the sewerline, was a feature desired in that part of the woods. A spot was selected with the help of the local office of the United States Soil Conservation Service. As the caretaker dug the pond, it became immediately apparent that this would be a permanent pond. Conditions were too wet to dig the pond to

PONDS

Figure 35. Man-made Woodland Pond and Boardwalk

Figure 36. Man-made Pond, Looking Toward Trails and Interpretive Building

Figure 37. Muskrat Pond, Undeveloped

a depth of more than three feet in the middle. The original outline was quite round, which invited neighborhood bicyclists to use its edge as a track. This was remedied by creating an irregular outline and building a boardwalk along one side to afford access to the pond edge without injuring vegetation and move traffic easily to the north section of the Center. Annual rye grass stabilized the pond edge and a few desired native plants were introduced. An inlet was created from Brandywine Creek to help flush off surface algae. The overflow is seepage into a low spot on the far side of the pond. Ultimately this inlet will create a silting problem which can be easily taken care of by a few pulls with a dragline.

Greater water saturation caused the death of several large trees close to the pond. Those which endangered the boardwalk were removed.

A 1971 purchase of twelve acres included a muskrat pond of about two acres. To a large degree its water level is determined by runoff from an adjoining golf course and its high fertilizer content. Water plants abound, but conditions seem to have remained stable for a good many years. Its greatest depth is about four feet. Open water gives way to a ring of cattails, beyond which there is a dense growth of such species as red-osier, gray dogwood, highbush cranberry, with a sprinkling of young elms, poplars and ash. Beyond this growth is open meadow. It is difficult to direct the excited movements of a class of children in this area unless a narrow trail circles the pond in as unobtrusive a way as possible. A small dock will enable students to reach deeper water for observations which cannot be made from the trail. Self-guiding brochures will be available by the spring of 1973. The pond is a quarter of a mile from the interpretive building so it will not

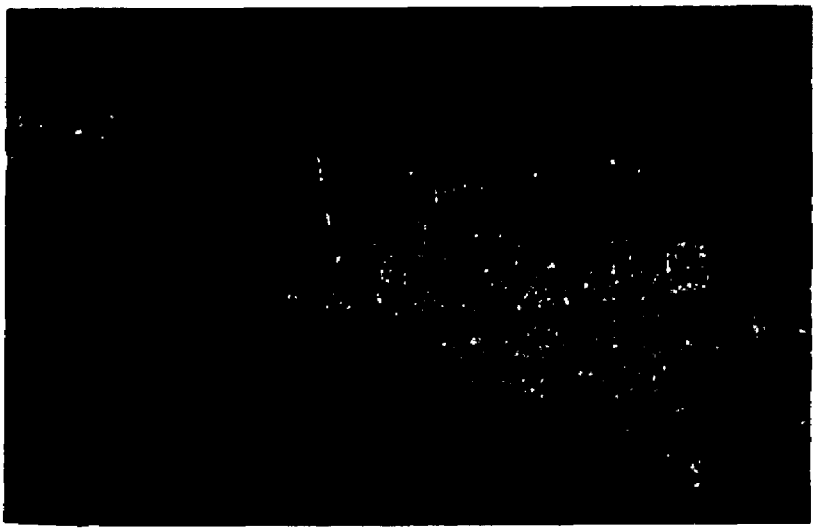

Figure 38. Muddy Parking Lot

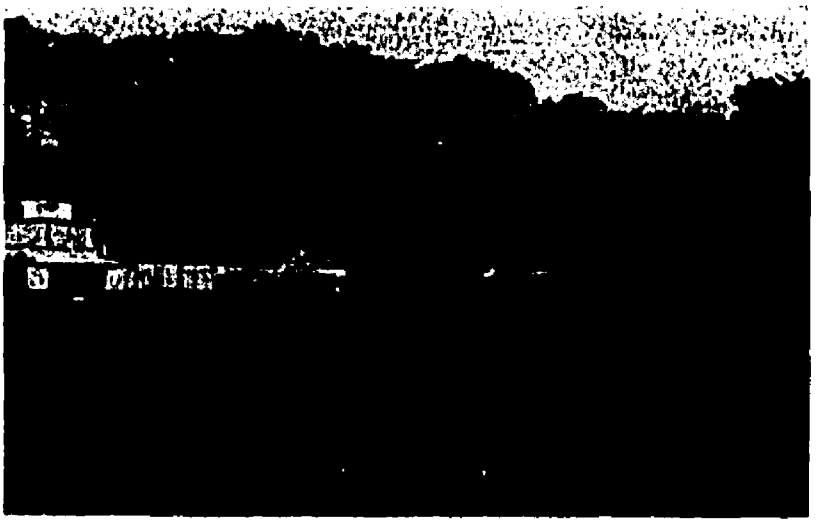

Figure 39. Surfaced Parking Lot, Service Area Fence, Garage-workshop, and Interpretive Building

receive the extensive, concentrated use as do the closer trails.

The dividing line between the forest and fields that were cultivated until about ten years ago, has become the popular "Edge Trail." As yet, it remains only a narrow foot path, weaving back and forth from the trees, through the shrubs and along the edge of the field -- a blend of habitats, yet with a unique story of its own. There is no written guide brochure at present and the trail is used primarily by groups accompanied by a guide-naturalist. It loops into the ravine, along the sewerline, and returns to the interpretive building by way of a branch of woodland trail -- a distance of slightly more than a half mile.

Parking

Adequate parking areas are a must. At one time the parking lot at Blandford Center may contain twenty or more cars and two or three school buses. The first three years after the interpretive building opened, the parking area was about 250 feet by 50 feet with a thin graveled surface. It was frequently overcrowded and muddy to the point where cars had to be pushed out. Visitors complained of wet and muddy feet -- staff complained of wet and muddy floors! Estimates for blacktopping were about $5,000.00. After newspaper publicity pictured the lot during an especially muddy period, a City Commissioner suggested glassphalting the surface with crushed glass as a way of using discarded bottles. At this point the lot was doubled in size to accommodate estimated future crowds and local companies were solicited for assistance. The director of the City Street Department supervised the operation which would have cost $10,000 had the full price been paid. Donations of $500 each from the local chapter of the Izaak Walton League and the Grand Rapids-based

Dyer-Ives Foundation, labor from the Center caretaker and street department employees offset some of the expense. The local Coca-Cola Bottling Company contributed 100 tons of glass for which they could have received $20.00 per ton at a recycling depot. Local paving companies donated some of the cost of mixing and laying the glassphalt. Total actual cost was approximately $3,000.00. Besides this being another community effort for the Nature Center, it is an experimental recycling project in a public place where it can be observed by all.

At one end of the parking lot and beside the garage-workshop lies a flat, bare area where gravel, sand, compost, railroad ties, cedar posts and fireplace wood are stored. This is screened on the parking lot side by a natural wood slat fence. Typical Michigan shrubs are planted along the fence for an attractive softening effect as well as being instructional. The parking lot median will also be planted with Michigan trees and shrubs. Boulders of typical and interesting rocks from a local gravel pit make a geology trail along the west side of the parking lot.

Log Cabin and Plant Trail

In the summer of 1971 a friend of the Nature Center spotted a log cabin that was being torn down near Wayland, Michigan. Investigation disclosed that it belonged to the Joseph Kuhtic family, was at least 100 years old, and they would give it to the Center. This was the beginning of the Pioneer Heritage program (See Program, p. 71). Because the structure of the building would not permit it to be moved intact, each piece was carefully numbered, dismantled and reconstructed in a pleasant setting under a venerable maple adjacent to the south end of the parking lot. New chinking of mortar and straw and a new shake

LOG CABIN

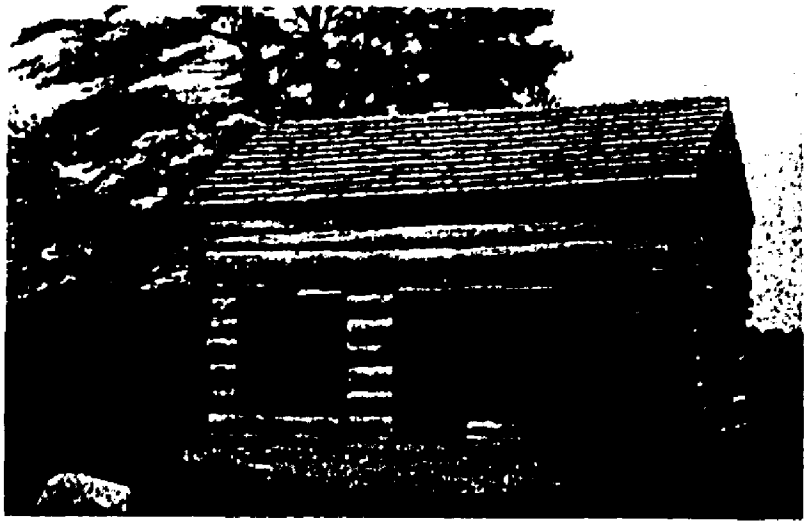

Figure 40. Front View

Figure 41. Pioneer Farmyard

LOG CABIN INTERIOR

Figure 42. Kitchen Area

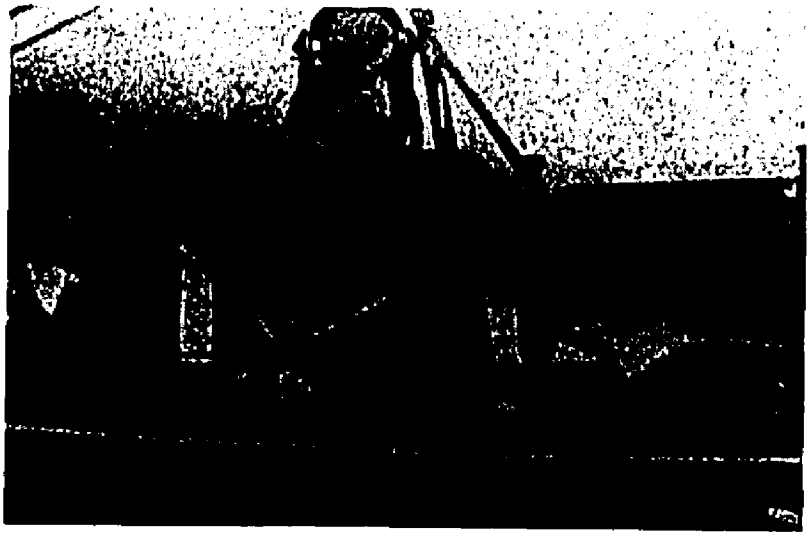

Figure 43. Bedroom

PIONEER FARMYARD

Figure 44. Pioneer Life Class Working in Garden

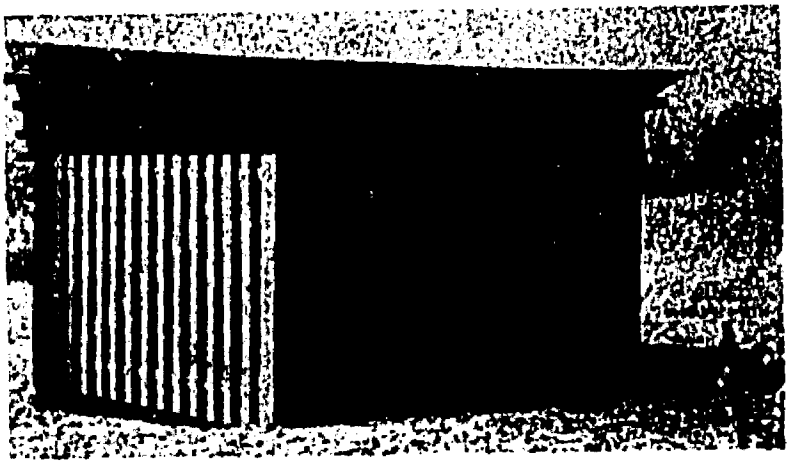

Figure 45. Tool Shed

Figure 46. Pioneer Plant Trail Through Field

shingled roof gave the appearance of livability. The cabin had had a cobblestone cellar which was also included at the new site. The inside of the cabin contains one room with an upstairs bedroom. It has white-washed walls and furnishings that were used by area cabin dwellers of the 1860s to 1900.

The yard around the cabin is being developed to appear as it might have in that era. Old fashioned yellow roses and lilacs have been planted, along with flowering and red-osier dogwood, Indian currant, a trellis trained wild grape, and four old-time apple trees. A herb wheel decorates the front yard and a neatly stacked half cord of wood is close at hand in the backyard. The immediate yard is separated from the field by a pine stump fence. A split rail fence will separate the front yard from the parking lot. The Pioneer Life class of the children's summer program maintains a small old time vegetable garden in the side yard, complete with scarecrows and companion plants to discourage insects. Some of the harvest is stored in the cellar of the cabin or dried in the attic bedroom. A rough board and batten farm equipment shed and corn crib complete the farmyard setting.

A loop of about 1,000 feet circles a portion of the field behind the pioneer log cabin. Its emphasis is on plants that were used by the pioneers and Indians. It opened in the fall of 1972 in conjunction with the Pioneer Heritage program being instituted especially for third level students. (See Educational Program, p. 71). Brochures are available for teachers to take back to the classroom, and for adult visitors to use on their own. It is far from an exhaustive account of useful plants, but lists about twenty-five species, along with comments on the pioneer farmyard.

Figure 47. Moving Day

Figure 48. Restored on Temporary Site

Schoolhouse

An 1853 one room schoolhouse, donated in the summer of 1972, is being restored and is being used as a workshop for the Pioneer Heritage program. The cabin is too small to permit classes to participate in any of the pioneer skills, although demonstrations can be held there. The school will permit 25-30 children at a time to move about freely and work in an atmosphere similar to that known to a child of the mid-1800s to 1900.

To further ease the current lack of space, the school will be used as the headquarters for the Center's summer program for children. It will eventually have a basement lapidary shop and darkroom.

Moving a building is an expensive and involved project. The donor was given a $2,000.00 contribution grant for income tax purposes. It would have cost far more than that to construct a building of similar size. Even though the building was located only four and one half miles from the Center, numerous powerlines, mailboxes, and tree branches crossed and lined the route. The telephone company engineer announced that he "stopped counting" when the estimated fee for their services reached $10,000.00. Both the telephone company and power company agreed that their charge would be greatly reduced if the roof could be removed from the school to clear most wires.

The lowest estimate for roof removal and replacement was about $2,100.00; mover, $600.00; telephone company, a $750.00 deposit; and power company a reduction to $300.00 from their original $1,200.00 figure as a philanthropic gesture. After the school was safely delivered, there was plaster, paint, rewiring, and a future cost of basement, foundation, water, sewer, and power hook-up, and the installation

of a furnace. Total cost including all moving and renovation is estamated to be about $10,000.00. For a donated building many will think this is a very high price! Contributions will cover all but Blandford Center staff labor, as did the $2,500-$3,000 required to move and refurbish the log cabin. Already much interest has been shown in the buildings themselves. They are a remnant of the past for which a strong feeling still smolders within the hearts of senior citizens. The current trend toward preserving our heritage runs high among the middle aged, and a certain spirit of excitement and adventure stirs in the young who marvel at the way things looked and were done in the "olden days." A tie between man's made and natural heritage is a valid facet of the educational program of a nature center. Having the authentic buildings to work with adds a much greater sense of realism than could be conjured up in a modern structure.

All buildings have been located in such a way as to blend with the general landscape and not overpower each other or detract from the pleasant vista as visitors approach along Hillburn Avenue.

Approximately twenty acres to the west of the existing property line is now under negotiation. This is mostly open field cultivated until only a few years ago. When this becomes available to the Center sometime in 1973, plans will proceed with the Grand Rapids Board of Education to develop this into ten by ten foot garden plots for fifth level students. (See Program, p. 73).

To the west of this plot lies a twenty-four acre general farm which is now being worked. A ten or twenty year projection of nature center plans calls for Blandford Center to develop a model general farm with a resident farmer. (See Program, p. 74)

Preserving Habitats

Besides these many areas of development at Blandford Center, it is also necessary to maintain the status quo in habitats which need to be preserved as wildlife cover as well as for educational purposes. Fields gradually fill in with shrubs and young trees as the orderly march of plant succession moves on, ponds fill with silt and vegetation, trees invaded by forest insects and broken by weather will block or endanger trails and clog the stream. At Blandford Center, woody growth is regularly cut in the fields, the shrub zones are thinned, and dangerous branches are removed only from on or near trails. Trail guides and brochures explain the natural cycle of trees being returned to the soil as nutrients for vegetation of the future, but there are still those who ask, "When are you going to clean up the dead logs?"

Thus far it has not been necessary to dredge any of the ponds, although excess fallen branches are removed from the creek. Some are left to decrease stream flow in the spring and during heavy rains.

Traffic flow direction along the trails has already been discussed. It is also necessary to find means of directing traffic away from certain areas that seem to draw the public. Neighborhood children especially tend to establish new trails as short cuts. Ravine hillsides are tempting as mud or snow slides. The area below the Woodland Overlook is scarred by sliding feet. Birds and squirrels scurry for cover when people blunder into their feeding area. Signs are removed or frequently ignored to make this a constant maintenance problem. Shrubs are planted along unofficial trails. Brush cuttings are also used here as well as on the ravine hillsides and around the Overlook. A rustic fence and a sign asking visitors to stay out of the

wildlife feeding areas do help.

Messages on signs should be brief, unconfusing and stated in a positive rather than a negative vein whenever possible. "Keep Out!" and "Do not pick flowers," foster less good will and cooperation than "Please stay on the trails" and "Please take nothing except happy memories." Unsupervised small fry who frequent Blandford Center must have some of the rules of conduct explained. Most off trail abuse is not intentional, only a case of ignorance. The principal reason for a nature center's existence is to erase the ignorance and replace it with an intelligent concern for living things.

General Procedures

When Blandford Center officially opened in September, 1968, the Curator-naturalist was the only instructional staff. Her immediate plan called for one class visit in the morning and one in the afternoon, as she had been conducting field trips for many years. Since this would severely limit the number of classes that could be served, and also leave no one in charge of the interpretive building, it was imperative that a corps of volunteers be immediately activated. By October that year, the building hostess system had been established and about a half dozen volunteer guide-naturalists were conducting general tours. (See Volunteer Program, p. 106).

The general tour was an over all introduction to the Center to acquaint teachers and students with the new facility. This initial trip consisted of a tour of the building and its exhibits and usually an exploration trip along the trails in the woods, using a broad ecological approach geared to early or upper elementary grade levels. Occasionally teachers who had frequently worked with the Curator, would request a specific topic be covered on the field trip. The Curator took these appointments until volunteer guides developed broader backgrounds.

As the number of guide-naturalists increased, the Curator set an arbitrary limit of four classes or approximately one hundred students for each half day. She felt that with careful planning, the guides could still manage to find an area to be alone with their class and escape the feeling of confusion and people pressure. The first year, as teachers learned about the Center, the question of limits did not arise

until spring, when many classes take annual trips. After permitting a few classes to use the Center without a guide-naturalist, the Curator decided that a trained guide must accompany each group. Teachers generally agreed with the plan as most of them were not used to teaching outdoors and felt that a trained guide would make the class experience much more worth while.

There was an occasional comment that Blandford Center is a public place and limits could not be set. The limits continued with the spring and fall rushes causing several thousand students to be turned away each year. At this writing, the limiting of numbers of people who use state and national parks is becoming standard. The Curator still firmly believes that a quality experience is more important than herding through vast numbers to accomplish very little except to make a glowing statistic on a report! As more people search for a rewarding outdoor education experience, even the remotely located nature centers will be hard pressed to present a quality program unless numbers are limited.

The Museum had an established policy of providing guides in its planetarium and health hall programs for none younger than first level students. The Nature Center soon adopted a like policy when it was inundated with requests from nursery schools, head start classes and kindergartens. The farmyard animals phase in the Center's future plans will accommodate these children. (See Special Educational Programs, p. 74)

In the spring of 1971 a Kindergarten visitation program was initiated, sending a guide-naturalist into a Kindergarten classroom for a fifteen or twenty minute informal talk. These talks use a seasonal theme to stimulate interest in and an appreciation for living things.

Figure 49. Assembling for Blindfold Sensory Walk

Figure 50. Trimming Birds' Christmas Tree

Frequently some of the animals from the Center's "menagerie" are used. This has become known as the "Visiting Lady Bug Program," although some of the male student teachers rebel at the "Lady Bug" appellation and coin their own title, such as "Horse Fly" or "Cockroach!" They admit to immensely enjoying their Kindergarten adventure.

For nineteen years prior to the opening of Blandford Nature Center, the Curator visited Grand Rapids school classrooms on a request basis. She had prepared approximately one hundred programs relating to the science and social studies curriculum. Although her time is now limited primarily to the administration of the Nature Center, these programs are still available upon request. Most of the programs are illustrated with 35 mm. slides, which became the source of material for some of the indoor supplemental material now used with classes visiting the Center.

As teachers and volunteers became more familiar with the Nature Center, there were requests for more specialized programs that would supplement a classroom unit of study. The staff felt that it was more important to prepare as useful an experience as possible, rather than to set up a specific theme for a given time and hope that it would fit into a teacher's plan. Since most teachers schedule a trip to the Nature Center to supplement a science unit, the staff reviewed the several science curricula used in the schools of metropolitan Grand Rapids and planned field experiences accordingly. Discussions with teachers making appointments help to pinpoint useful approaches.

A schedule book at the information desk makes it possible for any hostess or staff member to take appointments. Each page is a day divided into morning and afternoon. Each appointment records: name of school, name of teacher, school telephone number, number in group,

grade, program desired, amount of time at the Center, and date appointment was made. Another column is later filled in with the name of the guide assigned. Most of the hostesses have become adept at asking a teacher about the kind of program desired.

To confirm appointments, each morning hostess calls the schools scheduled for the following morning and each afternoon hostess calls those scheduled for the following afternoon. This system has worked very well, catching the few cancellations which have not been reported. Many nature centers send confirmation notices to each class.

During the busy seasons of fall and spring, it is advisable for teachers to schedule a month or two in advance to reserve the time which will be most convenient and useful to the class. This is also true for the tour of the sugar bush, a popular annual event which runs the month of March. (See Special Educational Programs, p. 68).

The winter months from about Thanksgiving to March 1, are relatively slow, permitting staff naturalists to prepare and update programs and exhibits. Some nature centers use this time to send naturalists into the schools on a regular or request basis, depending on the size of the system served. The Grand Rapids system is too large and the Nature Center staff too small to permit any kind of a total coverage. By designing catchy programs, Blandford Center is endeavoring to promote the use of the outdoors during the winter. An introduction to winter birds and bird feeding in December is entitled, "The Birds' Christmas." Classes frequently bring strings or cups of wild bird foods to hang on the birds' Christmas tree in front of the interpretive building.

With the introduction of a variety of conifers along the Pot Pourri

Trail, classes will be scheduled for Christmas greens and legends about them from around the world.

January and February are months to schedule trips which further draw in units on social studies concerning "Michigan Mammals - Trails, Tracks and Trapping." Field trips are highlighted by a search for animals' winter retreats, tracks of active members of the Center's wild community, and a demonstration program of the history of the fur industry in Michigan. All programs are adapted to varying grade levels when possible.

Trips are rarely cancelled because of inclement weather. Each guide and staff naturalist is expected to have an indoor prgram to present on an extremely rainy or cold day. They use slides from the Center's library, a flannel board presentation, chalk talk, games, actual specimens, or any materials from the numerous stored supplies. There is usually some time during the visit when the rain lets up or when a short period in the icy air is stimulating and exciting. The brochure to the teachers and the follow-up telephone call caution about having the class and the teacher and adults dress according to the weather and to expect conditions at the Center to be somewhat more severe than they are in the city.

A frequent question from teachers is "How many adults do you want with the class?" Or they report how many mothers will be accompanying the group. Even though it is still usually not possible staff-wise to divide a class of twenty-five or thirty into half or thirds, it does not seem to help to have several mothers included. Some mothers tend to group together at the rear of the class, carrying on an animated and totally unrelated conversation. Or there may be one who gets so wrapped

up in the field trip that she is constantly butting in to ask or answer questions, even when the guide subtly suggests that the trip is for the children.

Most classes arrive on school buses, although a few come in private cars. Buses usually hold fifty to sixty children, and teachers, trying to cut expenses, prefer to schedule two classes at a time. Children in the outlying school districts are provided free transportation to the Nature Center. The Grand Rapids Public Schools charge students according to the number of miles and the amount of time the bus is used. Charges may run seventy-five cents per student for schools farthest from the Center. Students are not charged for trips which are included as a required part of the curriculum.

Since the Grand Rapids Board of Education makes an annual appropriation to the City for Museum services, the Grand Rapids school children do not pay an admission charge. Students from the outlying schools, which make no appropriation for Museum services, are charged twenty-five cents each. This money must be turned into the City's General Fund.

Carefully prepared children are stimulated by the prospect of being out of the classroom and having an adventure. Those who arrive in private cars tend to be particularly stimulated. Since as it has been previously stated, it is the general policy at Blandford Center to have each class assemble in the auditorium for a brief orientation before going outside. This is an opportunity for the group to reorganize, the guide to introduce herself and for her to find out by questioning the students, how prepared they are for the program scheduled for them. She also goes over a few basic "ground rules" and explains why they are important:

1. Stay on the trails in the woods to protect the delicate living things from the beat of thousands of visiting feet,
2. stay with or behind the guide so as not to miss anything,
3. remember that this is a wildlife sanctuary and collecting specimens would soon destroy the plants and wildlife that live and work here.

Discipline is seldom a problem, even with an entire class in tow. Teachers are asked to handle any disciplinary action that might be necessary.

Most classroom visits to the Nature Center are necessarily limited in time by schedules with buses, safety patrols, lunches, team teachers and special teachers. Secondary schools are especially limited to one hour or less unless, under some team teaching programs, blocks of time can be reserved with all involved teachers participating in the field trip. Under these circumstances, arrangements can be made to permit the students to eat sack lunches in an area specified by the Nature Center. Otherwise there are no picnic facilities available. This is a policy which will stand at least until such time when adequate indoor and outdoor space can be adapted for easy care and the average person has acquired better manners about cleaning up after himself!

Teachers who have visited the Center before are aware of the live animal room and frequently request that the guide spend some time there, even if it is not part of the planned program for that class. This is true, to a lesser extent, of the exhibits in the building, which are designed more for the casual visitors. These requests are honored as time permits.

The rare high school class which does have a day to spend at the Center, may select a series of experiences such as comparative

Figure 51. Supervised Exploration at Edge of Woods

Figure 52. Class with Field Mouse - Face to Face Introduction to Nature

investigations into the several water habitats or land habitats with limited sampling which can be studied in more detail in the laboratory. Another investigation includes contrasting man's impact on the land and its resources around the Nature Center with his impact on the area around the students' school neighborhood. This study can be culminated with a bus trip highlighting current environmental concerns around Grand Rapids. A Blandford Center naturalist can be scheduled to help plan and conduct the trip.

Physically, mentally and emotionally handicapped children are regular visitors. Except for the trail for the blind, the Pot Pourri Trail and Woodland Overlook for physically handicapped, (See Grounds Development, p. 41) each guided group of handicapped children has a program designed to meet its special needs. These are usually small groups of less than one dozen, although increasing numbers of wheel chair cases are coming at one time. Present building facilities are not adequate or particularly designed for wheelchairs but plans for the proposed addition will rememdy this. (See Interpretive Building Expansion, p. 139)

An annual summer event for the blind and perceptually handicapped children is a session of insect collecting in one of the Center's fields. Each student comes prepared with net and killing jar he has made. Those who are totally blind have sighted persons do the actual catching for them. They are free to roam the field without fear of traffic or other impediments - free to feel, listen, smell, and satisfy a child's urge to collect. Certainly the few insects sacrificed in this way is justifiable!

Special emphasis on the observation of and care and respect for living things is the general theme which runs through all programs for

the emotionally handicapped, even though a particular theme is requested.

With forty-five to fifty thousand visitors using the facilities each year, most of them in organized classes, it is impossible to permit free investigation and collecting. The principal focus of the planned programs is to cultivate a feeling of respect for living things and a better understanding of the complex interrelationships among them and man. The greatest challenge is to relate the city child to the often strange and frightening world he sees at the Nature Center. Is there any way, in the brief visit, to make a lasting impression on a child that may influence his attitudes and actions? How does one measure the impact an outdoor experience has on a child? There are so many variables that a valid measurement is impossible. The Blandford Center staff is continually searching for better ways of making those impressions positive, lasting ones which will reflect on the student's decisions as he functions as a responsible citizen in his community. Lofty sounding phrases, but they reach to the core of the reason for the existence of nature centers.

Special Educational Programs

Besides the optional programs that have been mentioned, there are some special event programs which occupy a significant block of time.

Sugarbush

March is set aside for tours of the small sugarbush located in one of the one-quarter mile woodland trail loops. There are more requests for this program than the staff and volunteers can handle; therefore, all March appointments are for the sugarbush.

Figure 53. Sap Boiling in Sugar Shanty

Figure 54. Class Sampling Maple Syrup

About a dozen and a half taps are made on maples close to the trail. Several of the closest trees are left to be tapped when a class can watch. Galvanized or plastic pails with covers are used to collect the sap. A couple of the closest trees have a wooden removable platform at their base to prevent damage to the undergrowth during snowless muddy periods. This enables children to get right up to the pails and watch the sap drip. Care is taken to drill the tapholes on these trees no more than three feet from the ground so that small children can peer into the pails.

On a good day, a fifty gallon barrel of sap is collected in late afternoon for the following day's boil. A three sided rustic boiling shanty near the beginning of the trail houses a rectangular steel pan, partitioned to prevent sap boilover. The pan rests on cinder blocks stacked two high. A steady wood fire boils the fifty gallons of sap down to about three gallons in approximately six hours. The condensed sap is strained at least twice through flannel cloth and finished on the stove in the interpretive building. The smallness of this demonstration sugarbush does not warrant the time and expense required to invest in a more elaborate evaporater or tap more trees.

Visiting classes are given a preliminary talk on pioneer and Indian syrup and sugar making, a slide program on a large commercial sugarbush, or as one high school economics class requested, a discussion about the economic factors involved in operating a sugarbush. Exhibits explain the tree's part in the syrup making process and a large maple log is festooned with the various old and modern ways of tapping.

Then it's out on the trail to see the trees, taste the sap, watch it boil, check the final boiling with a hydrometer to measure syrup density and crown the adventure with a taste of fresh syrup. The syrup is

meted out - a drop from a medicine dropper on each extended index finger as the class troops past the guide.

Interesting sidelights occur at this point. One young visitor, severely involved with cerebral palsy, could not manage to hold out a finger, but became a beaming spirit of elation when the guide put his drop on his extended tongue. In another instance, a mother called to complain that the syrup she purchased at the Nature Center was not as good as the sample she had had at the end of the tour. The syrup she had purchased had been made at a quality controlled commercial sugarbush. The thrill of seeing it happen even influences taste!

Pioneer Heritage

In an endeavor to relate modern man with his dependence on and his responsibility for the land and its resources, Blandford Center, with the cooperation of the Grand Rapids Board of Education, launched its Pioneer Heritage program in the fall of 1972. All Grand Rapids third level students - about 3200 - will participate as part of their social studies activities. Because this is a required trip, bus transportation is furnished free and scheduling is arranged by the Board office.

Forty to sixty students at a time spend about an hour and a half at the Center. Their activities are divided into three parts, all led by a staff or volunteer guide. A visit to the furnished log cabin contrasts life styles at the time the Midwest was settled, with urban America today. Particular attention is focused on household equipment, foods, their preparation and preservation, and daily and seasonal family activities.

The second part of the visit consists of an examination of the

Figure 55. Candle Dipping

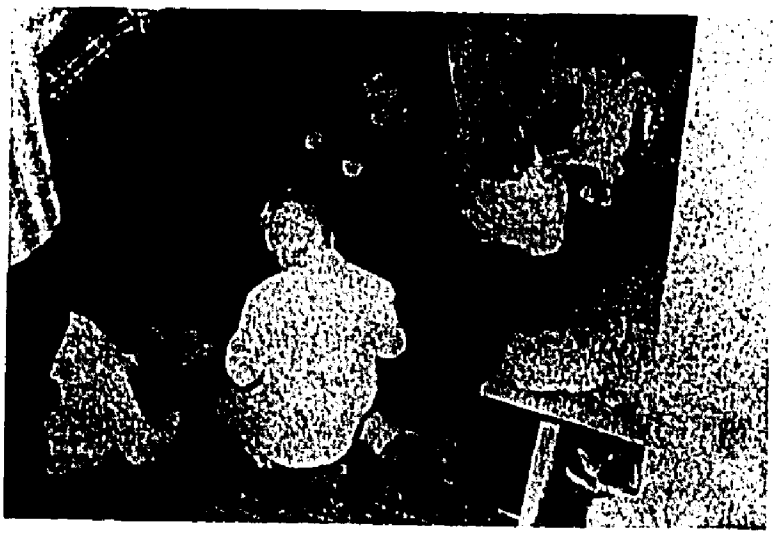

Figure 56. Making Cross-stitch Samplers

vegetable garden, cabin yard, and furnished toolshed. A short walk along the Pioneer Plant Trail behind the cabin permits students to discover that numerous wild plants furnished foods, dyes, medicines, and fibers - a veritable super market - for resourceful pioneers.

The third part of the visit takes place in the one room schoolhouse, where students participate in one of several pioneer skills that the class has selected prior to its arrival. The choice for the first season this program was offered, was limited to candle dipping, butter making, corn husk dolls, or cross-stitch sampler insignias. The children have the results of their labors to take home.

Although it was designed for third level students in the Grand Rapids schools, it is also available to third and fourth level students from outlying schools, who cover this material in their social studies.

Thus far, Pioneer Heritage has been enthusiastically received by both children and teachers. The contemplation of what it was like to be a pioneer seems much more real when an imaginative youngster stands in a one hundred year old log cabin, surrounded by the everyday materials of life of that era. The lack of modern equipment and the utilities he takes for granted becomes readily apparent as he searches for a light switch or a thermostat! The exciting but tedious dipping of a candle accents modern man's dependence on power, the assembly line and human comforts.

Student Farmers

Within the next five years another joint program should be functioning between the Nature Center and the Grand Rapids Board of Education. This will be student gardens at the fifth level. About fifteen acres

adjacent to the Pioneer Heritage complex will be sufficient for each student to have a ten by ten foot plot, plus areas for group plantings and paths.

C. A. Frost elementary school adjoins this area on the south and will be the assembly spot for classes coming to work in the gardens. Parking, orientation rooms and tool storage there will separate that activity from the rest of the Nature Center. Further plans will develop as the Center acquires the necessary land and the Board of Education budget permits. This and the Pioneer Heritage program are two facets of a Kindergarten through twelfth level science and social studies plan that is currently being written by a joint Museum and Board of Education Committee.

General Farm

According to the Grand Rapids curriculum plan, first level children will visit a general farm to become acquainted with the typical animals and the role they play in a modern child's life. Future land acquisition at Blandford Center includes a twenty-four acre general farm which is presently in operation. As farms of this type are becoming more and more difficult for teachers to find, the Nature Center hopes to muster the resources to buy and operate such a facility within the next twenty years. Besides its use with Grand Rapids first level students, it would be visited by other schools and the general public.

This operation will require a resident farmer and will interest a new legion of volunteers. Such a major addition will also require the approval of the Grand Rapids City Commission.

Alternative Education Plan

The Curator has recently approached the Supervisor for Elementary Instruction for the Grand Rapids schools with a suggestion for an alternative education plan for gifted sixth level students. According to this plan, about twenty five students from all parts of Grand Rapids will be selected - with teacher recommendations and parental and student approval - to attend school at Blandford Center for their entire sixth year.

The plan prefers that the students be housed in the proposed addition to the interpretive building, but nearby C. A. Frost School could be used. Changing population patterns indicate that this facility may be phased out as a regular school in the near future.

A highly motivated teacher, trained to work with gifted children, will be assigned by the Board of Education to develop an enriched curriculum stressing outdoor education in its broadest sense. The teacher and class will work closely with the Nature Center staff in both planning and teaching. Modifications of their curriculum will be incorporated into the standard curriculum where suitable. Additional assistance in curriculum development will be sought from Michigan State University Departments of Education, Fisheries and Wildlife, and Parks and Recreation.

Emphasis will be placed on attitude building and problem solving which will stimulate the student to sensitive, intelligent life-long decisions concerning his total environment. Early in 1973, the Curator and a Board administrator will begin formulating an outline to be submitted to the Art and Museum Commission and the Grand Rapids Board of Education.

There are many frustrating questions about how to reach today's young citizens. How to focus his senses and provide him with the assurance that "the bears won't get him," "No, there aren't any gorillas in the woods," and the "stink" a young man smells is the rich, moist living earth. What fun it is to guide the enthusiasm of the boys who excitedly exclaimed, "Ooo, mud - and we get to step in it!" How challenging to fathom the thinking of an inner city second grader who volunteers, "I know why that bird sounds so happy. Because he's free!" What a surge of hope when a fourth grader is heard to say, "I never before thought how important it is to keep something alive."

Figure 57. "Tadpole" Class Experiencing a Pond

Figure 58. Pioneer Life Class Making Hand-cranked Ice Cream

SPECIAL CLASSES AND EVENTS

Special Events at Blandford Center can be lumped into two major categories - one being formal educational classes such as the summer program for children, and informal programs, more for the entertainment of visitors.

Children's Classes

The first summer program for children was a loosely knit series of classes in nature crafts, bird study, insect study, lapidary and general ecology, presented by volunteers once a week for four weeks. The following summer a more elaborate, in-depth program of two four-week sessions was presented by three biology students from Grand Valley State College and a student teacher from Western Michigan University. This has become the general pattern for the program. It is designed to supplement rather than compete with the classes conducted at the Museum proper. College students and outdoor education specialists are hired for a ten week period or receive partial credit for student teaching.

The age range for participants is from 10 to about 14 years. In 1972 an advanced field biology class was offered for those who had been in the program for a year or more. A class for 7, 8 and 9 year olds featured the "acclimatization" techniques of introducing youngsters to nature by having them experience as closely as possible what it is like to live like a raccoon, a snake or a frog. Participants were instructed to wear their oldest clothes and expect to get wet and muddy. Ecology on an early elementary level really came alive!

A class in pioneer life in 1972 tried out some of the skills that

Figure 59. Outdoor Survival Class Cooking

Figure 60. Lapidary Class

were to be incorporated into the Pioneer Heritage program starting that fall. Time was also spent in the pioneer garden weeding, thinning, building two scarecrows, harvesting, and preserving some of the crops, and finally feasting on some of the fruits of their labors. Venison stew, corn boiled in an iron kettle over an open fire, home-made butter and corn bread, and hand cranked ice cream disappeared in short order!

At the end of each four week session the students are taken on an overnight campout to further hone some of the investigative skills they have learned during the month. At least one parent signs a field trip permission slip, indicating that he is aware of the nature of the program and will not hold the instructors or the Nature Center responsible for injuries sustained by the child. A short term insurance policy covers every student. The City of Grand Rapids does not carry any type of insurance.

Each winter a thirteen week geology and lapidary course is conducted on Saturday mornings for children ten years and older. Saturday classes will expand as staff and budget permits.

It was thought that the children's classes would be particularly attractive to neighborhood boys and girls, but this has not been the case. Most come from every other section of the city and suburbs.

Adult and Family Programs

Although there have been two four-session adult lapidary courses, there has as yet been no effort to establish additional adult classes because of lack of staff. An M.S.U. graduate credit course in conservation and outdoor education has been taught at the Center almost every term since 1969, with instructors coming from the East Lansing campus.

ADULT WORKSHOPS

Figure 61. Student Teachers After Teaching Techniques Workshop

Figure 62. Campfire Leaders Examining Soil Samples

In the fall of 1972, the Curator taught a science methods course for Michigan State University's Educational Intern Students. This will be taught again winter term.

Half day in-service workshops for teachers and youth leaders are scheduled on request, with no attempt to cover all school faculties or all of the leaders of the Scouts or Camp Fire Girls. In late summer 1972, a one day teacher workshop in nature activities was offered for any area teacher. The response from about one hundred teachers resulted in a second session a week later. A charge of fifty cents per teacher was made to cover materials. Emphasis during these workshops was on techniques of using all one's senses outdoors and various ways of using natural materials to sharpen the senses in the total observation and appreciation of nature. While crafts make up a portion of these workshops, they are not approached only as an art technique, but as a part of this total observation and appreciation picture.

Sunday afternoon programs are usually designed for families. They are organized and frequently conducted by a college student who is a naturalist in training. During mild weather, the programs are held outdoors, emphasizing such themes as seasonal changes, nature photography, life in ponds and streams, birds, wild flowers. Outside speakers present programs on subjects such as back packing, scenic spots in Michigan, water quality in the State, poisonous plants, flower drying, and bird banding.

As space, time, personnel and budget become available, a greater variety of special classes will be held. There is a continuous demand for adult lapidary classes, an increased interest in programs for senior citizens, and requests for nature discovery classes for mothers of

PHYSICAL ARRANGEMENTS FOR PANCAKE SUPPER

Figure 63. Food Line

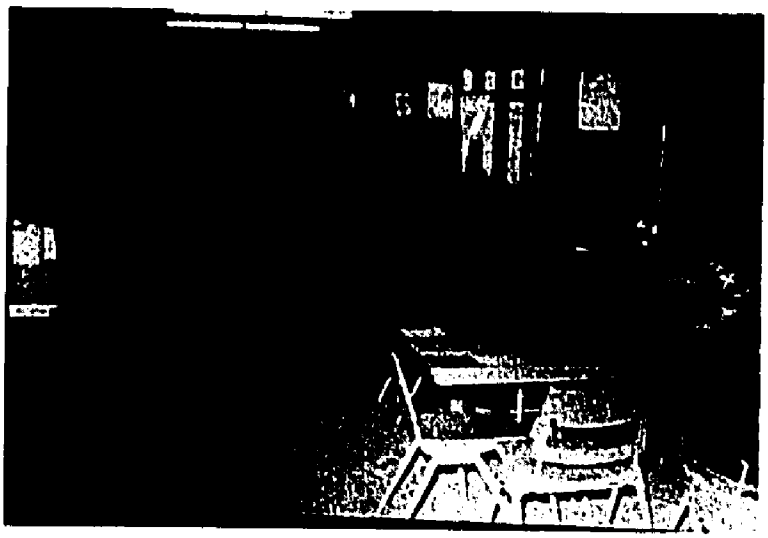

Figure 64. Seating

preschool children. The current trend toward environmental awareness may lead to a class which will calmly explore both sides of some of the debatable issues.

Blandford Center has the opportunity of providing unique educational and recreational outdoor experiences. Its urban-edge location and municipal funding make it easily accessible for all ages and classes.

Pancake Supper

In March, 1969, Blandford Center began a small demonstration sugarbush. (See Educational Programs, p. 68) As a culmination of this highly successful month long activity, the staff planned a public pancake supper near the end of the month. A professional pancake baker was hired who charged by the plate, with no charge for seconds. All the remaining assistance came from volunteers who were organized by a staff naturalist. With no previous experience to go on that first year, plans were made to serve about five hundred. About seven hundred and fifty showed up! Obviously there was a frantic scurry for additional supplies!

The event was staged as much for public relations as for profit; although about $500.00 was realized. The Pancake Supper has become an annual affair with procedures developed to an efficient system which can comfortably serve up to one thousand people in three hours. Profits remain between $500.00 and $600.00 as prices rise and supplies are purchased rather than sought as donations. Maple syrup and sugar from a local commercial sugarbush are sold on a consignment basis.

Some of the general procedures are:

1. Menu: Pancakes, sausage, applesauce and coffee or milk.
2. Traffic regulated by the Museum bus which brings about fifty people

FAMILY CAMPING TIPS

Figure 65. Examining Camping Equipment

Figure 66. Camper Bus

Figure 67. Outdoor Cooking Techniques

preschool children. The current trend toward environmental awareness may lead to a class which will calmly explore both sides of some of the debatable issues.

Blandford Center has the opportunity of providing unique educational and recreational outdoor experiences. Its urban-edge location and municipal funding make it easily accessible for all ages and classes.

Pancake Supper

In March, 1969, Blandford Center began a small demonstration sugarbush. (See Educational Programs, p. 68) As a culmination of this highly successful month long activity, the staff planned a public pancake supper near the end of the month. A professional pancake baker was hired who charged by the plate, with no charge for seconds. All the remaining assistance came from volunteers who were organized by a staff naturalist. With no previous experience to go on that first year, plans were made to serve about five hundred. About seven hundred and fifty showed up! Obviously there was a frantic scurry for additional supplies!

The event was staged as much for public relations as for profit; although about $500.00 was realized. The Pancake Supper has become an annual affair with procedures developed to an efficient system which can comfortably serve up to one thousand people in three hours. Profits remain between $500.00 and $600.00 as prices rise and supplies are purchased rather than sought as donations. Maple syrup and sugar from a local commercial sugarbush are sold on a consignment basis.

Some of the general procedures are:

1. Menu: Pancakes, sausage, applesauce and coffee or milk.
2. Traffic regulated by the Museum bus which brings about fifty people

FAMILY CAMPING TIPS

Figure 65. Examining Camping Equipment

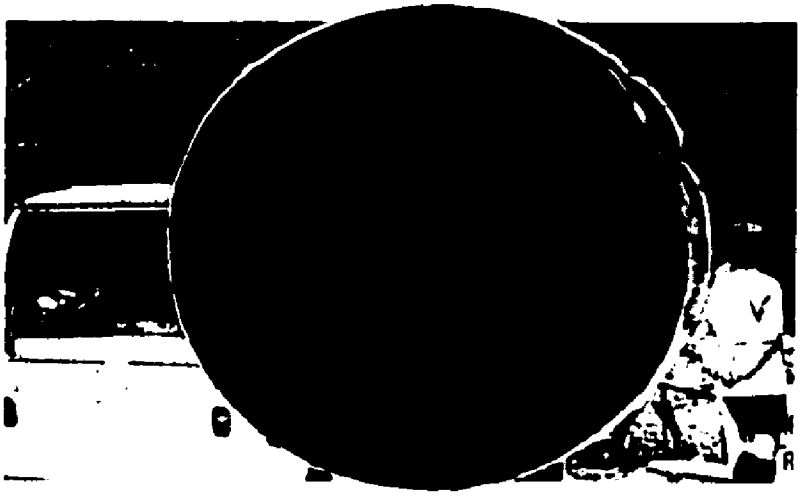

Figure 66. Camper Bus

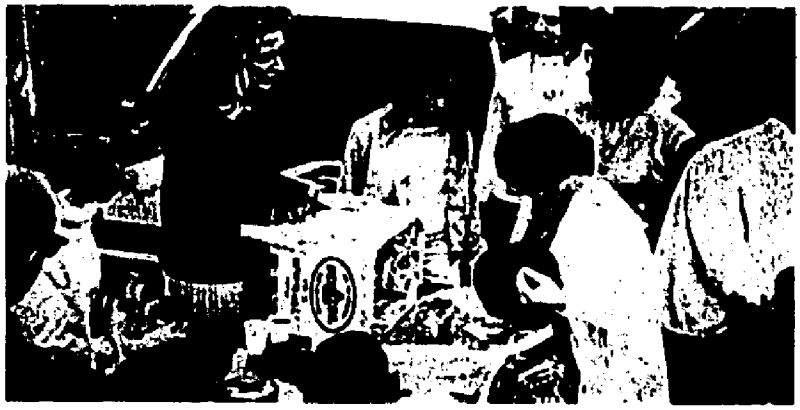

Figure 67. Outdoor Cooking Techniques

at a time from a nearby church parking lot. A policeman and a crew of volunteers direct parking.

3. Volunteer guides take tours through the sugarbush.
4. Visitors file past cashiers and pancake baker cafeteria style and are seated by volunteers. Other volunteers serve beverages, seconds on pancakes, clear and reset tables, and wash dishes. Over one hundred volunteers share the responsibility for the success of the supper. Most volunteers serve a 1 1/2 hour shift and have specific assignments.
5. The staff is assigned to potential critical areas or generally circulates to provide emergency assistance.

Detailed organization provides a smooth running event which attracts many of the same visitors plus friends each year. The Pancake Supper is a community tie-in with the regular educational program.

Family Camping Tips

May, 1971, saw the beginning of another annual event. Family Camping Tips grew out of the increased interest in camping by people who had never tried such an adventure or by those who are always looking for new ideas. People of the community who actually practice various camping and related skills are recruited to share their experiences with the public. Sites are set up around the parking lot and in the interpretive building where visitors can circulate, ask questions, and in some cases, participate in the skill.

This has become a Sunday afternoon event, with demonstrators on hand from 1 - 5 p.m. Demonstrations include:

Backpacking Survival skills

FALL HARVEST FESTIVAL

Figure 68. Indian Ceremonial Dance

Figure 69. Pioneer Hunting Skills

Figure 70. Making Horseshoes

Tenting	First aid
Trailer camping	Fishing skills
Camper van	Travel games
Camper van across Europe	Nature crafts
Outdoor cooking	Nature sketching
Family biking	Woodcarving
Nature photography	Books on outdoor skills

The 1972 Family Camping Tips day included a public bike hike from the Museum to the Nature Center, with 109 participants pedaling the seven mile, police escorted route.

Fall Harvest Festival

The first Fall Harvest Festival was held in late September, 1972, as part of the public opening of the log cabin complex and schoolhouse. There were tours of the furnished century old cabin, garden, tool shed, and pioneer plant trail. On display in the cabin's "Michigan cellar" were stored fruits and vegetables from the garden harvest. The schoolhouse was used for demonstrations of pioneer methods of food preservation and sales of old time baked and canned goods. Other demonstrations included:

Cider making	Pioneer tools
Bee keeping and honey harvest	Blacksmithing
Pioneer hunting skills	Do-it-yourself candle dipping
Indian ceremonial dances	Apple and corn husk doll making
Native plant dyes	Quilting

An "ox roast" provided roast beef sandwiches, beverage and apples carnival style during the festival hours, 1 - 5 p.m. Two hundred fifty

WINTER OUTDOOR SKILLS - "THE SNOW SCENE"

Figure 71. Cross-country Ski Demonstration

Figure 72. Winter Camping Gear

pounds of beef in five rounds were roasted on a spit over charcoal in a converted fuel oil tank. This was to serve one thousand people - which turned out to be the estimated attendance.

Like the Pancake Supper, the Harvest Festival will be an annual event which will relate to a facet of the regular educational program - in this case, the Pioneer Heritage classes.

Winter Outdoor Skills

In January, 1972, the first cross country ski demonstration occurred on one of the most snowless Sundays of the winter! Snow spread from the median strip in the parking lot provided enough surface for a Norwegian ski professional and his family to show eager newcomers to the sport how it should be done.

Winter camping gear was on display inside the building where there was also a film on cross country skiing.

This project is to be enlarged in 1973, with several additions, such as winter fishing skills, sensible snowmobiling, winter wildlife and plant recognition, and winter photography.

Special events appeal to different groups of visitors. Inquiries preceding the events indicate that each one attracts many newcomers. The staff has been impressed by the scores of happy faces and truly interested questions. The new and innovative, the old and traditional - all fit into a nature center program that serves the total community.

EXHIBITS

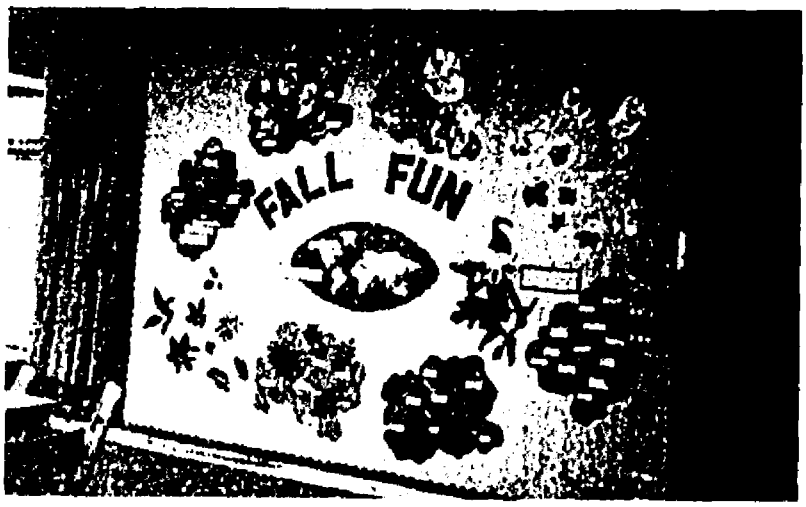

Figure 73. Do-it-yourself Leaf Identification

Figure 74. Three Dimensional Mural - From Treetops to Bedrock

Figure 75. Class Orientation Mural

EXHIBITS

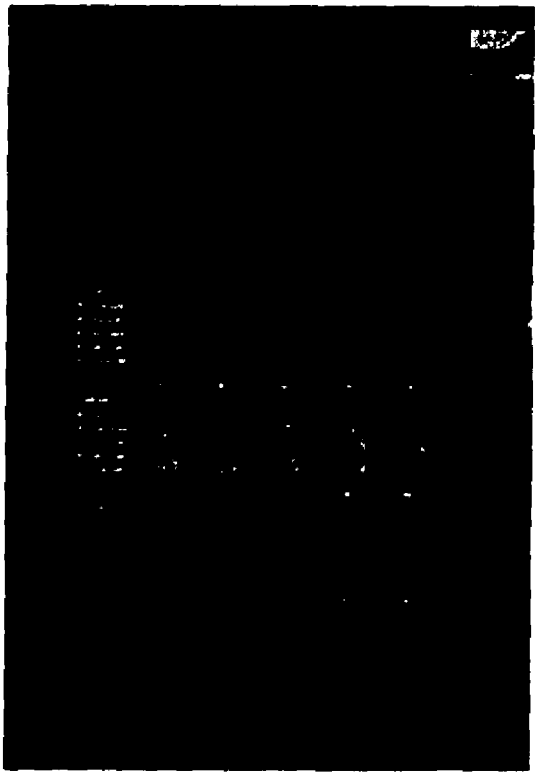

Figure 76. Electric Board - Owl's Eyes Light Up

Figure 77. Sensory Display

Figure 78. Pelt Table

EXHIBITS

Although the majority of Blandford Center's visitors come in supervised classes which have requested a specific emphasis, there are increasing numbers of casual visitors. Electric boards, sensory displays, a self-operating automatic projector, and catchy, colorful exhibits and guessing games supplement and reinforce the outdoor experience.

When several area schools assign leaf collections each fall, an attractive display of laminated leaves makes the idenfication process easier for puzzled students. A three dimensional cross section mural shows a generalized Nature Center scene from tree tops to bedrock. This has not been completed, but already adds a pleasant outdoor-like vista across one end of the auditorium.

The opposite end of the auditorium has a rolled screen mural of a woods in winter, showing the homes of various forms of wildlife. Accompanying cut outs of matching animals can be stuck on the mural near the proper home. This mural is frequently used during class orientations in fall and winter. Another mural depicting the pond in spring is almost finished. Still another on a summer field, is yet to be done.

A staff member with artisitic ability and a flair for design is a real asset. However, a little practice with an opaque projector will permit a novice to turn out some creditable displays adapted from books and magazines.

Most visitors like to become actively involved with an exhibit; so electric boards and sensory boxes are favorites.

Blandford Center has a standing order with the public for road and window killed animals which can be made into study skins or mounted in

EXHIBITS

Figure 79. "Snow, Friend or Foe?"

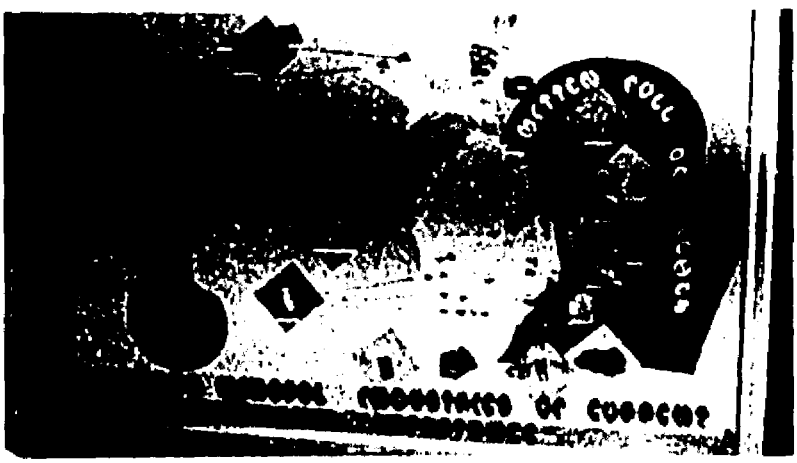

Figure 80. Michigan Minerals

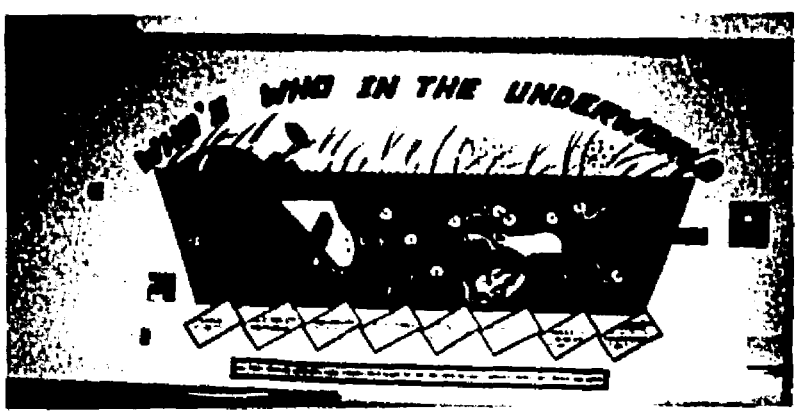

Figure 81. "Who's Who in the Underworld"

life-like poses. Granted, a "stuffed" animal is a poor substitute for the real thing, but it is as close as many people will get to a wild creature. The texture of fur, length of toenails, shapes of feet, tails and general body size tell volumes about an animal that is not evident from a description in a book. A table of study skins in the auditorium is one of the first exhibits a visitor heads for.

Another attraction is the observation bee hive which an amateur bee-keeper stocks. So far it has been only a warm weather exhibit, but attempts are being made to install an automatic feeding device for winter. Eventually, a glassed, lighted hollow log is the goal.

Well planned exhibits are not a substitute for the real outdoors, but their influence can spark an inquiry which can lead a timid city dweller to the woods, fields, and ponds beyond the protective walls of the interpretive building.

PERSONNEL

Except in the rare instance of a relatively unlimited budget, a nature center's paid personnel will never be adequate to cover the requests for services, the multitude of ideas to be explored, and the development of the physical plant. The size of the staff depends heavily on the focus of the program, the proximity to population centers, and of course, the funds available for salaries.

Obviously, the smaller the salaried staff, the more dependent the center will be on volunteer help. It is difficult to address one without considering the other. However, only the paid personnel will be discussed in this section. (See Volunteers, p. 103)

It should be noted that at this writing, Blandford Nature Center reaches from 45,000 - 50,000 people per year with its varied programs. Since most of these people have the services of a naturalist, the small salaried education staff listed below would soon be out of steam without the assistance of volunteers.

Educational Staff

All of the educational staff should have a good basic knowledge of ecology and the natural sciences and be able to adapt this knowledge to a variety of levels in developing programs that will interest the participants and stimulate them to investigate further on their own. These naturalists must enjoy working with people, especially children, be extremely adaptable and willing to assist around the Center in a wide variety of ways -- from emergency cleaning to first aid.

No one person can fill all performance niches well. It is up to the

director to define the scope of the program and to mete out the various responsibilities to those whose skills best fit. When additional naturalists are hired, care should be made to cover needed skills. For instance, after the first year, when it became possible for Blandford Center to hire a naturalist besides the Curator-Director, two women were selected on a half-time basis. They are young women who had volunteered their services during the previous year and who did not want full-time employment while they still have young children at home. One schedule is Monday, Wednesday and every other Friday; the other, Tuesday, Thursday, and every other Friday. Both communicate well, are enthusiastic and relaxed with groups and spend much more than half time working on different parts of the program. One has much artisitic ability which lends to the production of appealing, innovative displays. The other has a knack for organizing and training volunteer guide-naturalists, student teachers, and high school assistants.

A young man who is a local college student, has been working half-time as an educational assistant, organizing and usually conducting Saturday morning programs for children and Sunday afternoon programs for the general public. He completed a thirteen week naturalist training program at a National Audubon Society Nature Center and will be a senior in an environmental education program this year. Because he is a veteran of the Armed Services, he qualifies under the Federal Emergency Employment Act, which allocates funds to governmental units. Even though this may be only a temporary source of money for staffing, the Blandford Center program has grown to the point where another full time naturalist should be hired through the ordinary City employment structure.

The summer program for children is staffed with college students who

have a basic natural science background and a naturalist from the Grand Rapids Board of Education who has the summer free. It is also possible to tap the Urban Corps, another federal program which employs college students who need financial assistance. They are employed full time during the summer and up to 15 hours per week during the school year. Student teachers form another source of educational staff. (See Student Teacher Participation, p. 112)

Building and Maintenance Staff

It has been Blandford Center's good fortune from the very beginning to have a highly skilled, multi-faceted maintenance man. Besides his skills of carpentry, heavy equipment operation, basic plumbing and electrical know-how, he is energetic, enthusiastic, imaginative, artistic, and a good public relations representative in the community. Not all nature centers will be fortunate enough to get such a package, but all should try for as many of these attributes as possible. There are endless projects at a new and growing nature center. Men naturalists, and some women, may possess some of these skills, but a full educational program leaves little time to pursue them.

After three and a half years of operation and minimal vandalism, it was possible through Emergency Employment Act funds to hire a night maintenance man. His hours are 5:30 p.m. to 12:00 a.m., Monday through Saturday -- the peak times of possible trouble. He has taken over all of the basic cleaning chores in the interpretive building and patrols the grounds. His friendly presence and activity discourage most after-hours highjinks.

A small part-time employment budget enables the Center to hire

assistance for special short term projects. The Urban Corps also provides summer help for building and grounds development.

Secretarial Staff

Secretarial help is vital unless the director-naturalist becomes almost entirely bogged down with correspondence, filing, bookkeeping, mimeographing, report making, and the myriad other day-to-day details that must be kept up-to-date.

Until now, Blandford Center has operated with only volunteer help. Fortunately, some of the volunteer hostesses have been able to assist -- each delegated a specific job. One, with office experience, has been devoting two to three days per week to managing the nature shop, mimeographing, filing, and attending to many general secretarial chores. This has released the Curator from countless details. Emergency Act funds may soon make a full time secretary possible. Volunteers will always be needed as hostesses and for secretarial assistance.

Dress

The subject of dress is frequently discussed at naturalists' meetings. To wear a uniform or not to wear a uniform is usually the question. The present casual mode of dress easily reaches the level of sloppiness with some. This is also the age of easy care, permanent press clothes which can be kept clean and trim looking with little effort. The Curator sees little excuse for a professional naturalist or any of the nature center staff to appear unkempt. A standardized uniform has merit in that it is identifiable, is a leveling factor between the fashion plate and the casual, and helps command a certain amount of respect and attention. There is never

any question about what to wear!

At present, the Blandford naturalists do not wear uniforms, although they frequently wear the official sleeve patch on their regular clothes. Maintenance men wear one of the standard work uniforms.

Just as "clothes don't make the man," a fresh appearance, warm, friendly attitude, and an enthusiasm to tackle whatever job that needs to be done, does make a good nature center employee. Individual skills are a must, but they cannot be appreciated if the other traits are missing. Visitors have commented about the warm, friendly atmosphere of Blandford Center too often to make it a casual remark. It is a feeling to cultivate and cherish if the vital work of nature centers is to grow.

JUNIOR AIDES

Figure 82. Blandford Center Sleeve Patch

Figure 83. Junior Aide Taking Young Raccoon on a Hunting Expedition

Figure 84. Sanding Beams in Interpretive Building During Construction

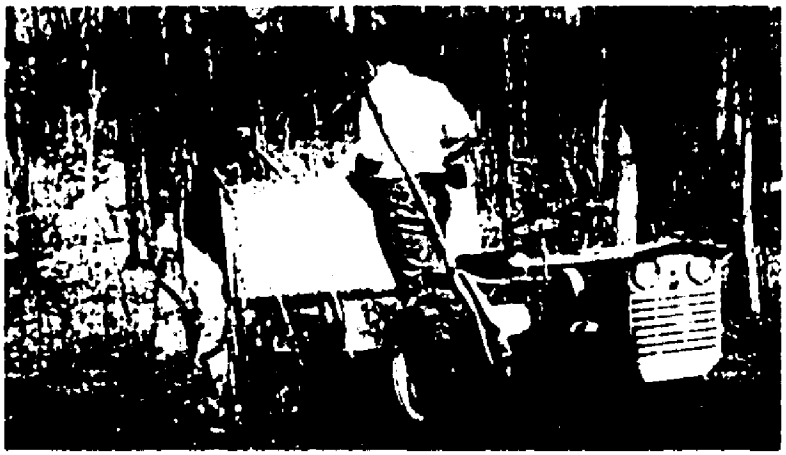

Figure 85. Spreading Wood Chips on Trails

Figure 86. Gathering Sap in Sugarbush

VOLUNTEER PROGRAM

Junior Aides

The use of volunteers at Blandford Nature Center did not begin with design nor in an organized manner. As mentioned in the introduction, the first volunteers were the Junior Aides--boys and girls who lived in the neighborhood and used the property as their playground. Curiosity about what was happening attracted them first when trails were being laid through the woods. More were drawn to the excitement of the construction of the interpretive building.

Most of these youngsters were eight to twelve years old. What they lacked in muscle they made up in enthusiasm. Their first jobs were shoveling and spreading wood chips on the trails, picking up trash, sweeping floors, and washing windows. They were asked to request visitors to stay on the trails and to answer basic questions about the nature center. Since the boys and girls represented several schools in the neighborhood, they frequently were not acquainted with each other. This led to conflicts when one group tried to "pull rank" on another. It was because of this conflict that one group of boys came up with the idea of an identifying badge. The screech owl was selected as the symbol because it was a species that lived on the property, it represented wisdom, and, well, it was "cute!"

The badges were distributed free to the first couple of hundred neighborhood children who expressed interest in helping. The staff viewed this as good public relations to reduce vandalism and give the kids a feeling of belonging to Blandford Center. The principal drawbacks were not enough jobs that the Junior Aides could handle, and their need for

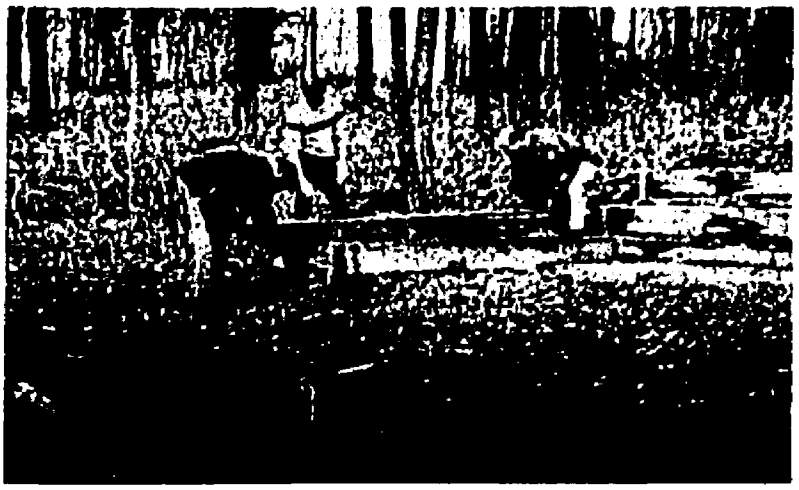

Figure 87. Junior College Forestry Club Members Building Outdoor Classroom

Figure 88. Horizon Club Girls Painting Tracks on Floor

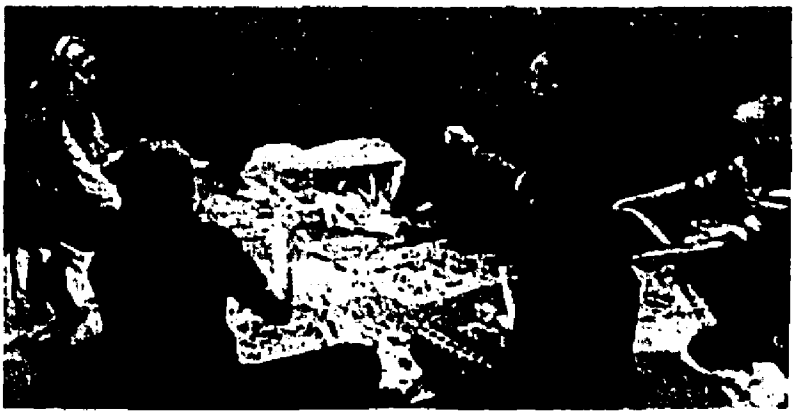

Figure 89. High School Student Conducting After School Class

continuous supervision and encouragement. Most were not regular in their appearance so it was difficult to assign specific duties. Lack of professional staff kept organized Junior Aide activities at a miniumum. They are still considered a vital link with the neighborhood, they keep vandalism at a minimum, and they take their casual ties with the Center seriously. A more organized group of Junior Aides is beginning to take form with the recent addition of college student assistance.

Each Junior Aide receives a seasonal newsletter which explains what is happening, projects to try or help with, cartoons and puzzles.

Youth Groups

Scouts and Campfire Girls working on community service and conservation oriented merit badges and honors have assisted with a variety of projects. It has been found that not more than three to a project is usually better than a large number getting in each other's way or becoming distracted. It isn't always possible to come up with a fitting project on the spur of the moment when a project seeker calls. Several of the following projects have met with success:

Larger Groups (6 - 35)

1. Planting multiflora rose hedge around 30 acres
2. Assisting with special projects, such as Pancake Supper

Small Groups (1 - 5)

1. Constructing Campfire Ring - seats and fireplace
2. Assisting with exhibits
3. Servicing trails
4. Cleaning debris from stream
5. Conducting after school children's classes through Center

6. Planting small numbers of shrubs and trees
7. Helping with Pioneer Heritage building restorations

Adult Aides

The adult volunteer program began as spontaneously and casually as did the Junior Aides. When the Center opened its interpretive building in the Fall of 1968, with only the Curator and Caretaker as staff, it was obvious that immediate assistance was a must! Only one class could be served at a time; no one was supervising the building, answering the telephone, or greeting casual visitors when the Curator was with a class.

The Grand Rapids Junior League members had been serving as Museum docents for several years and were about to phase out that project. The Curator investigated the possibility of a "get acquainted" day at the Center for League members who might be interested in this new project. The local newspaper ran a full page spread on the League's initial visit to the Center and added a plea for anyone who was interested to call or come. About two dozen women appeared--offering their services either in the building as hostesses, or with the classes as guide-naturalists. The Junior League expressed enthusiasm in serving as guides. Several mothers of young children and retired teachers joined them. The Curator gave them a broad introduction to the various habitats in the Center, supplied them with printed trail guides, opened her library to them, and urged them to accompany her with classes until they felt prepared to try it on their own. Each guide was assigned to a grade span she felt she would find most comfortable. Most of the early visits were requests for a general tour to acquaint the children and teacher with the Nature Center.

Figure 90. Guides on Compass Walk During Training

Figure 91. Preparing for Benefit Bazaar

Figure 92. Planting Fern Garden

At the end of the first year of operation, the Center's budget was expanded to include an assistant naturalist. Two young women who had volunteered many hours during the first year were each hired half time. At this point it was possible to set up seasonal training sessions as refresher courses for existing guide-naturalists and take in new ones.

During the spring and fall of 1972, one of the assistant naturalists conducted a six week course in the general ecology of the Center, along with an introduction to community air and water pollution problems. Visits were made to the local air pollution control center and the waste water treatment plant. The class met one morning a week for two hours.

With the beginning of the Pioneer Heritage program in the fall of 1972, prospective guides attended a workshop to acquaint them with the various skills which are part of the children's workshop. They were given a crash course in pioneer life seventy to one hundred years ago and instructed about the furnishings of the log cabin, items in the farmyard, and the Pioneer Plant Trail. Numerous supplemental handouts present the basic material that guides should know. They then adapt the information to each group, drawing out the students as they go along, and setting the tone for "pretending pioneer."

Enthusiasm runs high. At first many prospective guides are overwhelmed and say they could never "do it that way." Once they have mastered the basic material, they are encouraged to work with their groups in whatever way they feel they can do the best job. Some never get beyond the general tour. Others, with more background, initiative, or imagination, work into more advanced topics and older classes. Unfortunately, it is usually still necessary to provide only one guide for a class of 25-30. Ideally there should be two or three guides for that

number. The present policy of limiting numbers to one hundred each half day (four classes) necessitates having forty guides per week, including one staff naturalist. The Pioneer Heritage program requires at least four guides for each group of 40-60. Most guides can contribute a half day each week or every other week, although a few give a day each week. Obviously, additional guides are always welcomed!

Each guide is encouraged to plan a seasonal "rainy day' program that she can use in case her class is caught in a downpour or the day is extremely cold for a long stay outdoors.

The building hostesses each have a specific half day per week. Several have been coming since the building opened. Their principal job is to answer the telephone, greet visitors, sell items from the small nature shop, assist with mailings, and help out on numerous projects that continually arise. Many have become proficient at answering often asked nature questions -- a big help to the staff! If they cannot cover their day, they call an assistant hostess from their volunteer list. As their special skills or interests become known, they help with such jobs as typing, bookkeeping, signs, exhibits, and library cataloging. One who has proficient secretarial skills, spends at least two to three days a week on general secretarial work, including mimeographing and managing the nature shop. She also instigated a hand-made stuffed animal project to earn money for special projects. This has grown to an annual craft bazaar during one of the Center's special events, with many on the volunteer staff participating.

There is no volunteer "guild" as such. Most of those who come to help do not want a formal organization, although most are eager to help on special events and projects. This does not preclude a spirit of

togetherness or what has become known as the "we" attitude. Each volunteer feels a personal identity and closeness to the Center.

During the Christmas season the Center staff holds an appreciation coffee for all volunteers -- the only time many of them see each other. It is a time for progress reports and a sharing of suggestions as well as fun.

Each season one of the volunteers who has had newspaper experience gathers progress reports, news flashes, and teaching tips into a chatty newsletter that is sent to all adult volunteers.

Volunteers are also needed for Sunday afternoons when the regular staff is not on duty. One announcement at the annual meeting of the Grand Rapids Museum Association is usually enough to fill the Sundays of the following year. Most are husband and wife teams; some are two women teams. They usually sign up for three, four, or more Sundays per year. They are on duty from 2 - 5 p.m., ready to answer questions, man the phone, sell from the nature shop, and record the number of visitors. The Museum Association pays a college student to open and close the building.

The Association is also the chief source of volunteers for the annual Pancake Supper at the close of the sugarbush season. Over one hundred pairs of helping hands are needed to make this event a smooth-running success. Each special event requires its own crew of volunteers. (See Special Events, p. 78)

Each volunteer has a card on which he or she records the number of hours spent at the Center. At the beginning of the calendar year an acknowledgement card listing total hours is sent to them. Some volunteers forget or do not bother to record their hours as they feel that it is

simply a personal matter. Other than their own satisfaction, another benefit is being able to deduct mileage to and from the Center on their tax return. For those who come often or drive 15-20 miles each way this can add up in the course of a year. Deductions are also permitted for the sale price of articles donated for the craft bazaar, the profit from which go to the Center. The Museum Board of Directors uses volunteer hours as a talking point to the City Commission when discussing budget, services, and expansion plans.

Blandford Nature Center's volunteer program grew out of dire need, but it has been a unifying force which has succeeded in tying the salaried staff and the community together. People enjoy feeling needed. Some volunteers admit that their hours at the Center are their "therapy." Others complain they are not being worked hard enough. Hostesses, for instance, do not always feel that their mere dependable presence is essential to the smooth functioning of the total program. The staff's often hurried "thank you!" does not express the deep appreciation felt for the unique mark a volunteer makes.

STUDENT TEACHER PARTICIPATION

Through special arrangements with several area universities and colleges, Blandford Center is able to obtain the services of student teachers during part of their classroom experience. This has proved to be of mutual benefit for both the Nature Center and the students.

Western Michigan University

During the summers of 1970, 1971 and 1972, a Western Michigan University student teacher has spent the final six weeks of his or her classroom time either as an instructor in the children's summer program or in designing and carrying out special classes for neighborhood children and the general public. These classes have a popular ecological approach, emphasizing general awareness of nature and its processes.

Michigan State University

During the third year of the Michigan State Educational Intern Program, the participants student teach under the supervision of a classroom teacher. If, by the final month of this program, they are considered to be doing well, they can opt to spend that last month at Blandford Nature Center. These are obviously students who relate well to children and have at least an enthusiasm for working with them outside the classroom. Since this so far has been a small program with only one or two students at a time, they are given individual training during the first week to familiarize them with the Nature Center, its physical set-up and the variety of classes they will be responsible for. They observe similar classes and design their own approach. By the end of the first

week, depending upon the individual's natural science background, he is assigned a group in the morning and another in the afternoon.

His time before and after classes may be spent developing a unit on some area of outdoor education, helping to prepare nature center displays, or learning about the care and feeding of live animals in the classroom by working with the Center's animals. At least once during the student's stay, he prepares and takes a program to a Kindergarten class. (See Program, p. 59)

Students have consistently rated their Nature Center experience as extremely valuable in all aspects except that of classroom discipline. They agree that they would not hesitate to take a class outdoors and state that they have learned better how to integrate outdoor education into other areas of the curriculum.

Aquinas College

In the fall of 1972, Blandford Center began using students in the Aquinas College Work-Study program. Under this system, a student will spend thirty hours a week for one semester at the Center.

After initial, basic training to acquaint him with the general operation and programs of the Center, he is responsible for two classes every day, on a similar schedule as the Michigan State students. Each student keeps a log of his activities to present periodically to his advisor.

Senior High School Ecology Students

In the fall of 1972, about fifteen senior high ecology students from the Grand Rapids schools, received part of their class credit by volunteering their services about two hours per week to Blandford Center.

Thus far they have been used as guide-naturalists, presented Kindergarten programs in the schools, assisted with exhibits, and performed some minor grounds maintenance.

They are willing workers, but several have scheduling conflicts which make them unavailable during the time classes are visiting the Center. Neither they nor the staff appreciates the "make work" jobs that are sometimes assigned when a student appears at an odd hour and no really helpful or stimulating job has been planned for him. It would have been better if these students had selected another project that better fit their schedules. Or, during a less busy season, the staff naturally could spend more time planning a meaningful experience.

Student teachers bring a fresh, young approach to the Nature Center. Their innovative ideas and enthusiasm renew the spirit of discovery and wonder that may occasionally lag a bit for the professional naturalists in the midst of a fatiguing schedule. The naturalists, in turn, provide a new and stimulating learning medium and practical suggestions for the student teachers.

FUNDING

Budget and Salaries

Blandford Center, as a division of the Grand Rapids Public Museum, is tax supported, along with other City departments. Each year the Curator submits a budget request to the City Manager and Commission. Salaries, general operating and maintenance expenses, and some capital improvements and equipment are included in this budget. The fiscal 1972-1973 accepted budget was $47,059. $34,881 of that amount was for salaries.

Current salary ranges are:

Curator I (Director-naturalist)	$10,112 - $11,947
Curator II (Assistant Naturalist)	$ 8,496 - $10,570
Maintenance (Caretaker)	$ 8,125 - $ 9,260
Night Watchman and Maintenance	$ 7,404 - $ 8,496
Part time Educational Assistants (Summer Program staff, Sunday program director)	$2.39 per hour

The Center is using a 1968 station wagon which was transferred from the Museum. The only other major pieces of equipment acquired through the budget are a 12 H.P. tractor with plows, disc and mower attachments, a bench power saw, chain saw, gas post hole digger, welder, filing cabinets, slide and opaque projectors.

Contributions

Some of the land acquisition, the interpretive building and its furnishings, garage-workshop, log cabin, one room schoolhouse and most of the outdoor development have been accomplished through contributions

from individuals and groups. Money contributions are funneled through the Museum Association treasury, the Museum's philanthropic organization, to assure the donors of income tax deductions.

After the many contributions to the building fund, (See Introduction, p. 12), there remained a need for furnishings, equipment and funds for special projects. By this time, a good many organizations and individuals were aware of the Nature Center and made their interest known to the Center. The Downtown Kiwanis Club continued its contribution by supplying funds to carpet the auditorium and purchase one hundred chairs. Its Kiwaniqueen auxiliary contributed the drapes and twenty-five more chairs. The Quota Club purchased the furnishings for the Book Nook, while Grand Rapids elementary school children selected and provided funds for most of the books.

The Progressive Business and Professional Women furnished the kitchen, the Little Folks Welfare Society funded the construction of the waterfalls in the lobby, and numerous groups and individuals purchased or donated equipment such as:

Freezer for wildlife specimens
Laminating equipment
Lapidary equipment
16 mm. movie projector
Microprojector
Desks and chairs
Two way outdoor speaker
Portable public address system
Freeze-dry unit for preserving animal specimens
Binoculars
Tape recorders

Grounds development has also prospered from contributions. The Kent Garden Club donated $1000.00 for the Pot Pourri Trail for the physically handicapped. Periodic memorials have purchased most of the introduced plantings. The Woodland Overlook was a joint effort from

Figure 93. Stitchery Wall Panel

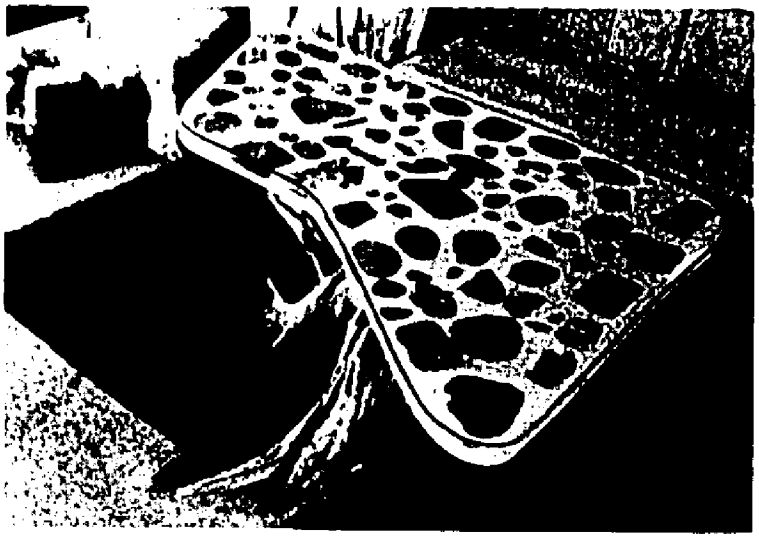

Figure 94. Michigan Rock and Mineral Table

GIFT CERTIFICATES

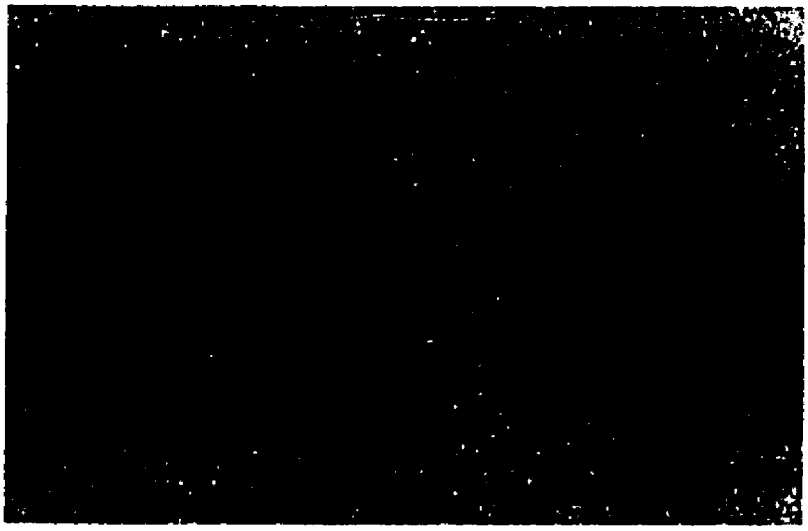

Figure 95. 8" x 10" Parchment

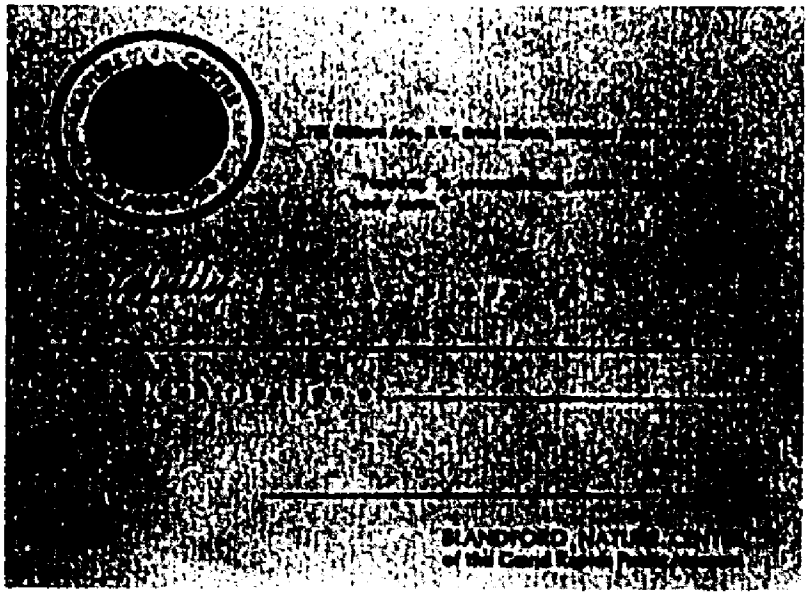

Figure 96. 4 1/4" x 5 1/4" Heavy Paper

the Town and Country Garden Club and the local Camp Fire Council.

A local couple paid for the moving and reconstruction of the log cabin. Another contributor funded the moving of the schoolhouse. Still another couple made available stock which was sold to purchase twelve acres of land.

The surfacing of the parking area was another joint effort, supervised by the Grand Rapids Street Department Director, with donations of funds from the local Dyer-Ives Foundation and the Izaak Walton League. The Coca-Cola Bottling Company gave 100 tons of glass for the experimental glassphalt top layer, paving and gravel companies contributed other paving materials and laid the base layer and glassphalt top surface.

Several small groups make annual contributions of $25.00 - $100.00 each. These are not solicited or planned. One organization makes a Christmas donation of feeder foods for our wildlife viewing area. It is not rare for a club to ask what needed item could be purchased with a specified donation.

Individuals and families have contributed their talents, collections and antiques to provide:

1. A creative stitchery wall hanging
2. A table top made with Michigan rocks and minerals imbedded in plastic
3. Large pieces of artistic driftwood
4. Barn beams and siding for benches, bridges and cabin restoration
5. A three dimensional mural of a cross section of a typical Western Michigan landscape
6. Furnishings for log cabin and schoolhouse
7. Herbs and herb wheel

All contributions are acknowledged with a gift card or certificate signed by the Curator and the Museum Director. Notes or cover letters frequently accompany these. The little extra time and expense involved in this gesture is not only worthwhile, but essential. Many contributors need a receipt for income tax purposes and they also appreciate the little extra recognition of their efforts. In the case of memorials, the donor and the heirs both receive acknowledgements.

There are times when inappropriate or duplicate items must be turned down. This is hopefully done with tact and "thank you for thinking of us."

Several families have requested that memorials for a deceased member be made to Blandford Nature Center. These may be as small as a book for the library to as much as $1,000.00.

Occasional catchy appeal bulletins to members of the Museum Association near the end of the year have raised as much as $1,000.00 for special projects. This alerts individuals who may want to add a bit more to their income tax contribution total. A labeled black kettle in the lobby focuses attention on continuing needs of the Nature Center for visitors who may drop in loose change or a dollar or two.

Federal Funding

Little attempt has been made to tap federally funded programs. There are various reasons for this. Some must be applied for through a school district, others were not being funded at the appropriate time, still others phase out after one to three years and continuing funds must come from another source.

Two applications have been made under the Federal Conservation

Education Act. One in 1971 was a proposal for funding an innovative environmental education program for secondary school students. The 1972 proposal was for a training program for laymen who would assist the Nature Center and the elementary schools in environmental education. Neither program was funded.

State Recreation Bond Fund

When the City of Grand Rapids began applying for funds from the 1968 Michigan Recreation Bond Issue, Mr. Glenn Gregg, then Director of Michigan Parks, suggested to the City Commission that Blandford Center be included in the application. Fortunately, he had seen the Center in its beginnings, recognized its potential and spoke up in time to have a $200,000 land acquisition request put in.

Legislative action was extremely slow, not passing the Blandford project until June, 1971. Friends of the Center sent letters to their state legislators in an effort to move the project along. The letters may not have speeded the process, but resulted in the legislators becoming very aware of the existence of the Nature Center!

The Michigan Department of Natural Resources office responsible for land acquisition began work on Blandford Center during the winter of 1972, with the first parcel of land - 30.7 acres of rolling meadow - purchased from Mr. Chris VanEss in July, 1972. At this writing, negotiations are moving ahead on approximately 55 more acres, which will give the Center virtually all of the undeveloped land adjacent to it. Under the bonding program, the State of Michigan purchases the property and then turns it over to the City for administration and management.

The budgets of City departments are frequently cut and hardly ever

provide for more than the bare essentials needed for operation. A Nature Center is classed as a fringe benefit when measured against water treatment, waste disposal, fire, and police protection.

Grandiose plans may be dreams, but dreams can become reality when a project captures the interest of a community which responds above and beyond the taxes levied.

Donations to Blandford Center have kept coming for over four years; however, a budget cannot be planned around their erratic appearance. There is always a list of projects and equipment waiting for funds!

Obviously, a privately financed nature center must have an endowment adequate enough to meet projected expenses for at least five years, with clear prospects for the future. During this time, a continuous search must go on for additional sources of income.

PUBLICITY, PUBLICATIONS AND PUBLIC RELATIONS

Timely, appealing publicity is a must in promoting nature center activities. A superior program can be developed, but it will not be supported or attended unless the public is aware that it is happening. Nature centers seem to pique the imagination of the news media who may frequently appear unannounced to cover a special feature or supplement a story on a related subject. For instance, the deep, water filled ruts in the muddy parking lot illustrated a story on signs of spring. This did no harm when the City later spent some of its own money and solicited donations for blacktopping the lot!

News Releases and Newsletters

Regular monthly news releases about all Museum events are sent to all metropolitan newspapers and radio and television stations. Information about specific news-worthy events is sent in detail to the larger papers and broadcasting companies. Sunday afternoon programs receive a small weekly notice in the major city newspaper. The Museum publishes a monthly calendar of events which is sent to all members of the Museum Association. Association members also receive a more detailed monthly newsletter from September through April. Blandford Center programs and requests are frequently featured.

School programs are publicized through a bimonthly sheet, the "Musette," which is sent to every teacher in the Grand Rapids public elementary schools through the free school delivery service, and one is mailed to each of the non-public schools. Once again, all Museum educational services are publicized, with occasional special attention given

to the Nature Center.

While the above are joint notices involving all the Museum programs, the Nature Center itself produces a standard multilithed brochure which gives directions to the Center, hours, charges, scheduling procedures, and program suggestions. These brochures are distributed to all teachers in the public elementary schools with several going to each high school and non-public school. They are also distributed to the public through the Museum and Nature Center information desks, the Grand Rapids Chamber of Commerce, and the West Michigan Tourist and Resort Association.

Seasonal newsletters, entitled "Trail Talk," are compiled by a volunteer and sent to all adult volunteers. This publication, usually two standard sized, mimeographed sheets, announces training sessions, special events and needs, Nature Center anecdotes, and teaching techniques.

Junior Aides also receive seasonal newsletters which include general news of the Nature Center, projects they can help with, cartoons, puzzles, and games.

Informational Brochures

Besides these regular publications, the Center provides condensed background material for the volunteer guide-naturalists. This is written by staff naturalists and pertains especially to the field trip experiences and programs being offered to school classes.

When numerous requests are made for information on a particular subject, the naturalists prepare brochures to be distributed to the public. Some popular ones are:

Protected Plants

How to Build a Terrarium

Bird Houses and Feeders

Key for Identifying Common Rocks

Pioneer Recipes

Sugarbush

Public Relations

Enough cannot be said about the public image of a nature center. Word-of-mouth publicity is extremely important. It is impossible to please everyone and some criticism is bound to come. A nature center must set up as sound and reasonable a program and policies as possible in view of the site, available funds, and the people to be served.

The extra moment taken with a child who wants a precious rock identified or with someone who has what is to him a pressing wildlife problem, will pay off one hundred fold in good will. Naturalists are expected to be on twenty-four hour call and should not be surprised or outwardly annoyed if the inquiring public appears after hours or seeks him out at home. If the naturalist preaches a return to an ecological consciousness, he must be willing to accept the growing public interest.

This upsurge in interest in ecology and nature in general, makes naturalists prime targets for club programs and after dinner speeches. These are additional opportunities to spread the word of the nature center, recruit volunteers, stimulate donations and above all, help to foster better public relations. Most groups realize that few programs are free nowdays and are willing to make a small contribution to the nature center or pay the speaker for his presentations.

LIVE ANIMALS AND USE OF DEAD SPECIMENS

It is only natural that the public will turn to a nature center with its wildlife problems and inquiries. To most people, their particular need seems unique, even though nature center personnel have heard the same story dozens of times. A great deal of tact and sympathy are required. A few extra minutes with each person is magnified several times each day, but these instances can educate as well as create much good will.

It is the policy of some nature centers to refuse all live animals and keep none, even as part of their educational program. It is not the intention of Blandford Nature Center to coop up large numbers of animals, nor keep any uninjured or mature creature that seems discontented.

Acceptance Policy

For many years the Museum has been a haven of help to those who have found a fallen nest of birds or accidentally raked up some hidden baby rabbits. Birds killed by hitting picture windows have become mounted specimens for displays and loan to schools. It didn't take long for people to begin calling the Nature Center about animal problems. It is easy enough to say, "Leave it alone, let Nature take its course." The soft hearted person on the other end of the phone or with the box of rabbits in his hand is not going to settle for that kind of an answer!

Blandford Center has set the following policy:

1. Encourage people to "look, love and leave" wildlife they find.
2. Urge callers to put the animals back where they found them if at all possible. Assure them that most animals who have adapted to living close to man are not easily chased from their nests and parent animals are

probably nearby.

3. Remind callers that it is unlawful to keep most native birds and mammals in captivity except under permit from the State Department of Natural Resources. Recommend releasing creatures such as reptiles and amphibians after a month or so -- or sooner if they refuse to eat.

4. Take only those animals mature enough to feed themselves; give care and feeding directions to persons with baby animals.

5. Accept only native Michigan species -- no hamsters, goldfish, or white mice unless it is acceptable to the donor that they be used to feed other members of the menagerie.

6. Have an understanding with the donor of an injured animal that its disposition must be left to the judgment of the Center staff.

7. Large or potentially dangerous animals (coyote, fox, raccoon, deer) are not accepted except on a very brief and limited basis and then released in a suitable wild area where they will not become involved with people. Even the most tame and lovable raccoon cannot be trusted to run free with thousands of strangers using its habitat. Nature centers with several hundred acres can more readily absorb some of these animals. A small area with an abundance of close neighbors cannot. There comes a time, even on a large tract, when releasing more rabbits, squirrels, chipmunks, turtles, snakes, etc. than an area can support will result in a weakened species and damaged habitat. Make it clear to the public that the Nature Center is not a dumping ground for all rescued wildlife!

Care of Animals

Most of the animals are kept in makeshift cages of varying degrees of suitability. This will be remedied when an animal room is constructed.

Figure 97. Screech Owl Animating Mural

Figure 98. Large Cage for Injured Songbirds and Visitors Getting Acquainted with Fanny Ferret

LIVE ANIMALS

Figure 99. An Unforgettable Experience

Figure 100. Orthopedic School Children Enjoying Young Squirrel

Figure 101. Sparrow Hawk Ready for Release

Figure 102. Volunteer Skinning Salvaged Muskrat

If animals are going to be permanent residents, they have exercise wheels, branches to climb, or as natural a habitat as possible. Those that are tame enough are allowed the freedom of the building periodically. Examples of permanent residents are:

1. "Fanny" Ferret - confiscated from a hunter by the DNR. Not a native species, but cannot be released. It is used in the educational program--has endeared itself to many visitors.
2. "Minnie and George" White-footed Mice -- easily kept, abundant small mammals with no physical problems.
3. "Winks" Screech Owl -- massive injuries left it blind in one eye and with uncertain wings. It is free in the building all day and has become a well-loved educational attraction for two and a half years at this writing.
4. Assorted songbirds with permanent wing injuries are kept in a large cage built especially for this purpose.
5. A constant but changing variety of snakes, turtles, frogs, and salamanders.
6. Assorted fish from local streams.

Children in visiting classes frequently name the animals and return to school to write stories and letters about them. These creatures are used to supplement the outdoor interpretation program. Guides with large classes cannot always be sure of seeing many birds, mammals, or even reptiles along the trails; so the animals in the lab provide a warm, living link with the story as it unfolds outdoors.

It has been a continuous policy that the major cleaning and feeding is done by adult staff members the first thing in the morning. Periodic checks and supplemental cleaning and feeding during the day are sometimes

delegated to older Junior Aides. Even cages that are not thoroughly satisfactory appearance and care wise, can be kept neat and odor free by systematic cleaning at the beginning of each day before public visiting hours.

Reserve a place in the budget for animal food and veterinary fees. Some food and consultation will no doubt be donated, but certain staples and most surgical assistance will require payment.

Blandford Center provides a wildlife feeding area where the public can watch a variety of birds and small animals at close range. The animals come and go as they would at a home feeder. It is stocked with ears of field corn, wild bird seed, sunflower seed, and suet.

Basic foods for the caged animals are:

Cat and dog kibbles -- ferret, raccoons, opossums, skunks

Canned dog food -- raccoons, opossums, skunks, young & meat-eating songbirds, fish

Baby chicks or white mice (Blandford Center keeps a frozen supply of day old baby chicks donated by a hatchery) -- owls, hawks

Wild bird mix and sunflower seeds -- seed eating songbirds, mice, chipmunks, squirrels

Misc. fruits, especially apple -- fruit eating songbirds, mice, chipmunks, squirrels

Graham crackers -- squirrels, mice, chipmunks

Mealworms -- ground squirrels, turtles, some to salamanders, frogs, toads, small snakes

Earthworms -- turtles, frogs, toads, salamanders, small snakes

Toads and frogs -- hognose, garter, water snakes (some snakes will accept toads or frogs that have been frozen and thawed)

General Suggestions to Public on Animal Care

Emphasize feeding frequency -- every 1/2 hour for baby birds, every

2 - 3 hours for mammals.

Baby Birds -- Blended mixture of canned dogfood, cooked egg yolk, and bread, mixed with enough water to allow it to easily drop off a spoon. Periodically mix a bit of sand with the food. Lower spoon bit by bit until bird is able to peck food by itself and has been introduced to its normal adult diet.

Most Baby Mammals -- Similac with iron baby formula fixed according to directions. Feed with medicine dropper or doll's bottle. Gradually introduce to natural foods as the animal is weaned.

Special Note -- Baby animals chill quickly! Place cage on a constant low source of heat such as a heating pad, or invert a light bulb over box or cage.

Salvaged Specimens

Blandford Center has a salvage permit from the Michigan Department of Natural Resources to keep road and window killed animals for educational purposes. Injured and immature animals are kept until they are able to fend for themselves. A record of animals received and their disposition is annually sent to the DNR and the permit is renewed.

The Center had a freezer donated to hold dead specimens until they can be made into study skins or mounted for educational displays. Volunteers and student teachers prepare most study skins, while the mounted specimens are hired done by a retired Museum taxidermist.

A high school student is presently building a freeze-dry unit with the Center providing donated funds for parts. He will use the unit for a science project. While it is preferable to use living specimens for most teaching purposes, study skins and mounted specimens make it possible

for visitors to handle animals that they would never otherwise be able to touch. The freeze-dry method provides a quick, easy and inexpensive way to prepare most animals when the services of a highly skilled taxidermist are not available. Admittedly, a commercial freeze-dry unit is an expensive piece of equipment -- Blandford Center could not justify such an expense, even for the resulting preserved specimens.

It is the feeling of the Blandford Center staff that the use of live and salvaged wildlife is a valid and stimulating facet of the Nature Center's program -- well worth the extra time and effort.

Figure 103. Schoolhouse with Protective Fiberglas Shutters in Place

Figure 104. Garbage Gobbler

VANDALISM

Vandalism is to some degree a fact of life at all nature centers. It has become a more serious problem as the population increases and has greater mobility. The overly curious, idle or unthinking person can cause frustrating hours of costly repair.

One of the purposes of a nature center is to foster a deeper appreciation and enjoyment of living things and a greater regard for the intricate complex of factors - including man - that influeneces them. A stimulating program and friendly atmosphere help to discourage vandalism. Blandford Center's continuous neighborhood public relations efforts, especially among the young, have helped to keep vandalism lower than in adjacent areas.

Stout Fiberglas shutters on the lower windows of the interpretive building during the night, make entry more difficult and ward off blows from stones and pellet guns. Both the garage and the interpretive building have been broken into once with little damage.

In the fall of 1972, an electronic security and fire detection system was installed in all buildings. The cabin had proved to be an attractive nuisance from the very beginning, with a break-in at least once a week. Nothing was damaged or taken, leading the staff to believe it was the work of curious neighborhood children. The security system has not yet proved this assumption.

Three inch cedar posts, numbered on top and set in concrete, helped solve the problem of uprooted trail markers. Trail damage now consists principally of occasionally loosened steps, dislodged trail curbing, stolen chain and broken posts on the pond boardwalk, and carved

beech trees.

It is suspected that a night maintenance man, hired through the Federal Emergency Employment Act in the spring of 1972, has helped cause the near elimination of youthful beer parties in the parking lot.

The unfenced, easily accessible nature of the Center makes looted cars, stolen bicycles, and lifted billfolds from unwatched purses, constant problems. Signs and personal admonitions warn, but are not always heeded.

Although picnicking is discouraged, neighborhood children sometimes eat lunches on the premises, leaving pop cans and papers. After school youth groups are asked to feed the "Garbage Gobbler" their candy wrappers and apple cores before they go outside. Anti-litter campaigns and slogans seem to be catching on - perhaps a greater respect for life and property is on its way!

THE INTERPRETIVE BUILDING EXPANSION

The original plan for the initial ten acre gift of land did not call for any type of building. As the Curator led an increasing number of field trips to the property, it became apparent that there was a growing need for teaching outdoors and much more could be accomplished on this site if at least some restrooms and a roofed shelter could be built. Plans for a more elaborate structure took shape about the time the Grand Rapids Museum Association accepted the task of raising funds to construct it. (See Introduction, p. 12)

The building was designed to make it possible for a limited staff to keep an eye on most of the activities from a central point. That point is the Curator's office, which has a view of the front door and lobby, the Book Nook, and the woodland trails. The room is directly below the auditorium and most childhood games of hide-and-seek and tag are easily detected. Only the laboratory is out of the range of sight and sound. Since its original use as a lab preordained that a staff member or teacher would be with the class, it seemed that all areas could be easily supervised.

Almost immediately, the laboratory became a multipurpose room. A row of cutting and polishing machines turned it into a part-time lapidary shop. The public began its humane plea for the staff to mend or raise injured and immature wildlife. Makeshift cages lined up along the lab counters. (See Live Animals, p. 126) The room was opened to the general public who enjoys the residents of "the convalescent ward," as one person dubbed the room. Most visiting classes asked to see the animals even if they were not naturally a part of their requested program. The

lab became a busy place!

It was not long before other building growing pains became evident, and the list grew with staff, services, and use. One end of the upstairs storage space was made into an office, a downstairs closet became a shop where natural history items and books are sold, the Curator's office became volunteer headquarters, larger and more frequent groups of physically handicapped could not reach the upstairs auditorium, summer program classes, visiting classes and college extension classes vied for space in the lab and auditorium, exhibits in preparation had to be whisked under cover when classes arrived. Volunteers had no quiet corner to relax between classes, study, or even hang their coats. Plans began to take shape for an addition to the exisitng interpretive building.

At this writing, rough plans have been drawn for the addition to be attached to the northwest end of the present building on the upper level, with a breezeway on the lower level where the Woodland Trail begins. The existing roofline and outer appearance of the original building will be carried through the addition and the outside stairway modified to also serve the addition. The new structure will have approximately the same square footage as the original and will contain:

First Floor

1. Auditorium to seat 60
2. Classroom for 30
3. Preparation Room and Staff Workshop (including freeze-dry unit for animal mounts, mimeo equipment, laminating machine)
4. Restrooms equipped for physically handicapped
5. Laboratory for 30
6. Mechanical and service room

Second Floor

1. Two offices
2. Volunteers' Room
3. Storage

Only the major partitions will be installed initially, to allow for flexible use. The preparation area or small classroom may be moved upstairs depending upon the extent of use involving the Grand Rapids Board of Education's new curriculum plan. (See Program, p. 71) Youth headquarters, lapidary shop, and darkroom originally proposed for the addition will be placed in the recently acquired one room schoolhouse.

When the addition becomes a reality, the present laboratory will be remodeled as a live animal room. This will keep the animals close to the hub of general activity in the building where they can be better supervised. Much as most visitors enjoy just looking at the animals and reading the captions on their cages, there are occasionally those who, intentionally or not, disturb or possibly injure them. (See Live Animals, p. 127)

While storage areas do not appeal to the public in a fund raising campaign, they are a vital part of the building and should be considered carefully at the planning stage. Extra chairs and collapsible work tables need a spot where they can quickly and easily be moved into the classroom or auditorium. Re-usable seasonal exhibits need racks and shelves where they can be stored systematically without becoming dusty and dog-eared. This holds true for future exhibit and demonstration materials. Maintenance supplies and slop sinks should be located close to restrooms and other areas that need daily cleaning.

Financing the Addition

Raising funds for the addition is in itself an enormous job, but in the case of Blandford Nature Center, certain procedures must take place before any additions can be made. Once the needs for the addition were realized, the Curator presented a written recommendation to the Director of the Museum and the members of the Art and Museum Commission. If they judge the addition to be necessary, they will present the plan to the City Commission, who will decide if private funds can be raised to add to a building owned by the City. This body will question the increased financial support required to maintain and staff the addition. If the Curator's report justifies the need and indicates a reasonable expense, the Commission may grant permission for the project.

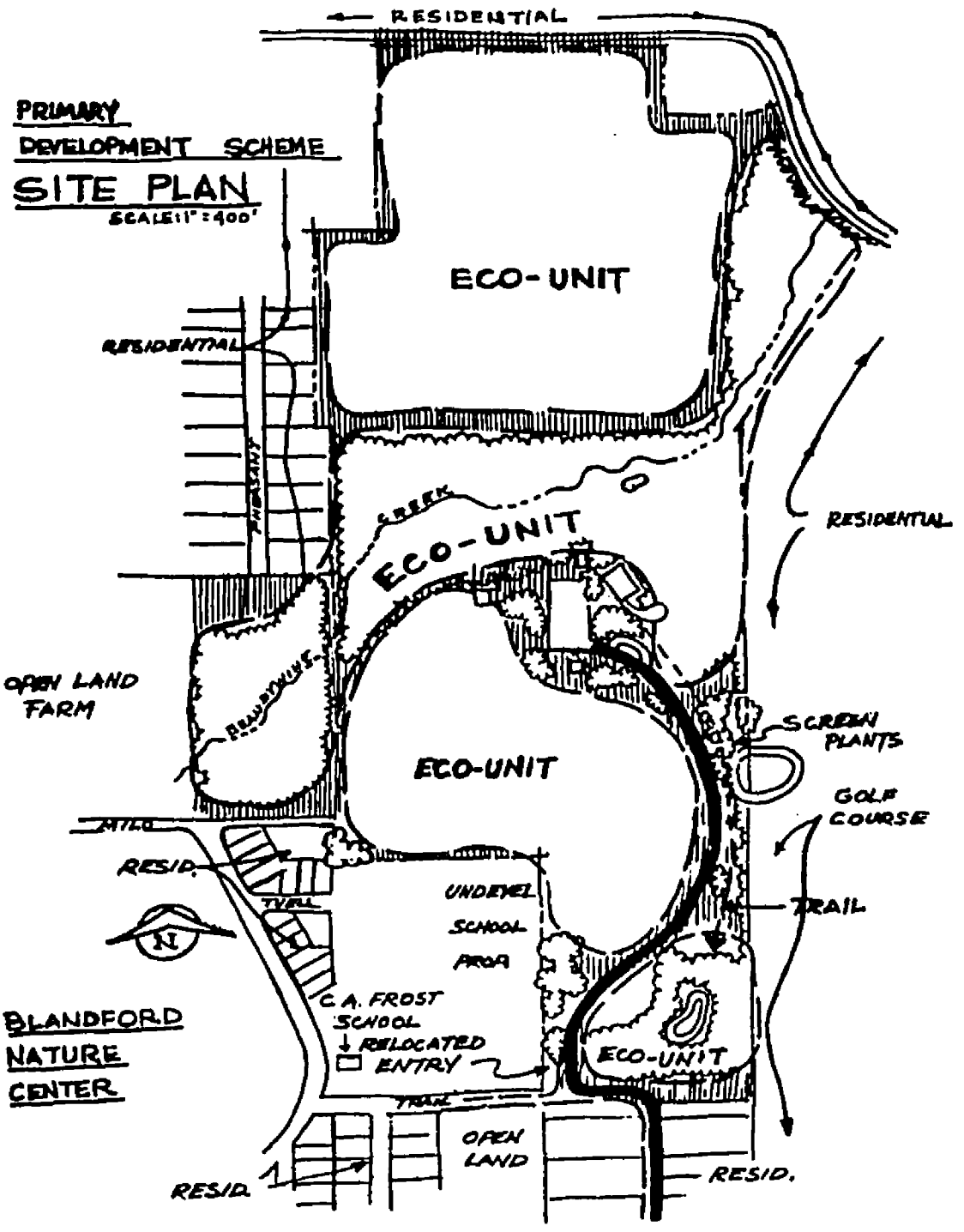

Figure 105. Relocation of Entry Road to Consolidate Habitats

SUMMARY AND CONCLUSIONS

A nature center is not to be undertaken lightly or without basic goals and adequate financial support. Many unforeseen events can slow or speed its development. In the case of Blandford Nature Center, the sudden elimination of city funds for this new division of the Grand Rapids, Michigan, Public Museum, resulted in unexpected public support. Continued voluntary assistance and contributions have resulted in greater and more rapid growth and diversity than the Curator ever envisoned.

Careful selection of salaried, voluntary and student staff have provided a broader program, more rapid development, greater internal harmony, and good public relations - all essentials for a small, growing facility.

This thesis is a record of some of the trials and triumphs encountered in establishing a community oriented, urban-edge nature center. As has been mentioned, its development is not unique in most of its approaches, but is rather an amalgamation of many programs and ideas considered by its Curator to be useful to the community it serves. The Blandford Center natural areas of field, edge, mature forest, second growth, ponds, and stream are all within easy reach of an urban population of about 200,000. These existing habitats are being managed to keep them in their present state or improve them. Trails have been established to guide visitors past interesting features and also preserve as much of the natural surroundings as possible. Some less fragile areas have been designated for more free exploration by classes, under the guidance of a staff or volunteer guide-naturalist.

The main thrust of the Center's educational program is toward school classes - especially from the first through the sixth levels. Activities are designed to supplement and reinforce the several science curricula presently used in the area schools. Teachers are encouraged to use the Center's facilities to supplement studies that span the entire curriculum, not just science.

A varied, stimulating program attempts to reach not only students and the already interested, but those like the family that stood one day in the Center's lobby and one member said, "My, you have a beautiful place - too bad it's stuck 'way out here in the woods."

Blandford Nature Center was established with the sincere belief that generally people are not aware of their relationships and responsibilities toward the earth's natural resources. In the boxed, bagged and canned economy of the 20th century, a person has often lost virtually all physical and philosophical connections with the native earth. Without a basic awareness and concern for his natural environment, he cannot and will not make intelligent decisions about it.

Blandford Center is not an environmental center where the public is presented formulae for jousting with the power structure to effect change in the physical environment. However, the staff is ready and willing to assist members of the community in their search for information about problems and will offer suggestions for solutions. But there will be no action until the people know and care about their environment.

The planning and present facilities of Blandford Nature Center is Phase One of four fundamental areas of development. In Phase One, the basic physical and philosophical foundations have been laid. This is

not the time and place for the staff to rest on its oars with the thought that "We have arrived!" The current surge of interest in a quality environment and the promise of more leisure time make a nature center more than just a fringe benefit in a community. It is a place where citizens can literally get their feet back on the ground.

Future phases of development depend upon the availability of funds, both from the city budget and the City of Grand Rapids, as well as contributions from the public. This may make some of the phases somewhat fragmented in reality, with parts of more than one in progress at a time. The anticipated phases of the master plan of development are as follows:

Phase Two calls for closer cooperation with the Grand Rapids Board of Education's science and social studies departments. The first steps in the Pioneer Heritage program, begun in the fall of 1972, with the third level students, will be expanded. More preliminary and follow-up materials will be available and evaluation forms will be sent to each class.

On Sunday afternoons during warm weather, costumed volunteers will demonstrate a variety of pioneer skills in the log cabin and around the farmyard.

After the one-room schoolhouse is placed on a permanent foundation and utilities are installed during the summer of 1973, third and fourth level classes throughout the district may schedule the building for a day and experience school as it was a century ago. Guidelines will be set up by the Center staff, but activities will be conducted by the classroom teacher.

During summers, the schoolhouse will be the headquarters for the

Center's vacation program for children. Expanded classes in gardening, pioneer life, and outdoor survival will be among those making use of the log cabin and pioneer farmyard complex. The basement of the schoolhouse will contain permanent facilities for youth and adult lapidary and research projects.

Included in Phase Two will be garden plots for fifth level students in the Grand Rapids schools. Each student will plant, cultivate and harvest his own crops. The land planned for the gardens will become part of the Center by early 1973. Since the gardening project is a future step in the Grand Rapids Board of Education's Cooperative program, its implementation is based primarily on the availability of school funds.

The development of a barnyard animal program for first level students and demonstration gardening programs for the public are planned for this phase of the Center's progress. These two steps will require substantial funding and will begin very simply - hopefully by 1975. The Museum Association has recently entered into a land contract with the farm owners, with the agreement that they may remain in residence during most of 1973.

An alternative education program for gifted sixth level students is another step in Phase Two. This will enable the Center and cooperating institutions to try some innovative techniques in outdoor education which would not be possible in the average classroom.

With the acquisition of additional property, increasing the total size of the Nature Center from sixty to about one hundred fifteen acres, some habitat consolidation and restoration can be made in Phase Three of the Center's development. At the time the access road was extended to the interpretive building, it was necessary to follow the

most direct and already established route. This necessitated bisecting a muskrat pond and an expanse of open meadow. When funds become available, the road will be rerouted to sweep gracefully around the pond and unite the divided meadow. The introduced curves will create a more pleasing approach and could help to slow traffic.

In Phase Four, a proposed addition to the interpretive building will provide much needed space for the expanding educational program, as well as include necessary facilities which had to be left out of the original structure.

To date, most of the children visiting Blandford Center, have not been part of an integrated curriculum planning program, nor have they followed a regular program schedule. The validity of statistical measurements directed toward detecting genuine attitudinal changes in children resulting from a trip or even several trips to the Center, would seem to the writer to be very doubtful. The City of Grand Rapids, like any metropolitan center, produces children from extremely varied social and economic backgrounds and physical environments. Most of them, at best, are exposed to a nature center program once or possibly twice a year. If, however, one were to make an extended study of some of the planned programs mentioned, or a study fifteen to twenty years hence; this would undoubtedly have both value and validity. The time covered by this thesis has not permitted the Curator the years necessary to make such a study.

Public enthusiasm, acceptance and community backing are not easily measurable; likewise voluntary comments of visitors are not readily adaptable to statistical charting, but they probably are an indication of whether the Center is effectively communicating.

"NOTHING IS ACCOMPLISHED UNLESS SOMEBODY CARES"

Figure 106. The Theme Underlying the Total Story of Blandford Nature Center

During the Curator's twenty-three years of experience in presenting nature interpretive programs, she has had numerous spontaneous responses from adults whom she instructed as children. It is astonishing to hear some of the long term carry-over. Facts are frequently recounted, but by far the majority of the comments are those of attitude - a positive, caring attitude toward one's environment, a desire to find out more, and an interest in sharing similar experiences with their families.

It is from such intangibles that Blandford Nature Center moves ahead; its staff searching for new approaches and better ways to bring man and the land closer together. To refresh his spirit, set him to wondering, and move him to act with an ecological conscience.

LIST OF REFERENCES

LIST OF REFERENCES

In preparing a plan for the development of Blandford Nature Center, the Curator investigated several nature centers and related facilities and participated in teacher and youth leader training programs. Numerous publications have proved helpful in developing the site, program and general philosophy.

Nature Centers and Similiar Institutions Visited or Consulted

Connecticut	Flanders Nature Center, Woodbury Greenwich Audubon Center, Greenwich Sharon Audubon Center, Sharon
Delaware	Delaware Nature Education Center, Rockland
Illinois	Forest Park Nature Center, Peoria Lincoln Gardens, Springfield
Indiana	Hayes Arboretum, Richmond Indianapolis Children's Museum, Indianapolis
Massachusetts	Drumlin Farm Wildlife Sanctuary, Lincoln
Michigan	Ann Arbor Public Schools Outdoor Program Battle Creek Schools Clear Lake Camp, Dowling Chippewa Nature Center, Midland Cranbrook Institute Nature Center, Bloomfield Hills DeGraaf Nature Center, Holland Ella Sharp Museum, Jackson Fenner Arboretum, Lansing Kalamazoo Nature Center, Kalamazoo Kensington Park Nature Center, Brighton Nankin Mills Nature Center, Livonia Sarett Nature Center, St. Joseph Seven Ponds Nature Center, Dryden Stony Creek Nature Center, Rochester Woldumar, Lansing
New York	High Rock Park Nature Center, Staten Island

Ohio	Antioch College Outdoor Education Center, Yellow Springs Aullwood Audubon Center, Dayton Cincinnati Nature Center, Milford Columbus Metropolitan Parks, Columbus Dayton Museum of Natural History, Dayton Emerald Necklace Parks, Cleveland Stark Wilderness Center, Wilmot
Pennsylvania	Schuylkill Valley Nature Center, Philadelphia
Texas	Fort Worth Children's Museum, Fort Worth

Teacher and Youth Leader Training Programs Attended

Association of Interpretative Naturalists Workshops (5)
Michigan Conservation Education Association Workshop
Michigan Conservation Schools at Chatham and Higgins Lake
National Audubon Camps in Maine, Wisconsin, Wyoming

Organizational Memberships Which Provided Information

Association of Interpretive Naturalists
Michigan and National Audubon Societies
Michigan and National Conservation Education Associations

Useful Publications

Site Planning

A Nature Center For Your Community, (Booklet) National Audubon Society
Planning A Nature Center, (Booklet) National Audubon Society
Trail Planning and Layout, (Booklet) National Audubon Society
Wildlife Habitat Improvement, (Booklet) National Audubon Society

Program and Philosophy

Acclimatization (Booklet) - Richard Van Matre - American Camping Association, 1972
Adventuring in Nature (Booklet) - Betty Price - National Recreation Association, 1954
A Place to Live (Urban Ecology) (Booklet) - National Audubon Society, 1971
Conservation (Booklet) - Camp Fire Girls, Inc.
Curriculum Enrichment Outdoors (Book) - John Hug and Phyllis Wilson - Harper-Row, 1965
Field Book of Nature Activities and Conservation (Book) - William Hillcourt - Putnam, 1961

Integrating Conservation and Outdoor Education into the Curriculum (K-12) (Booklet) - William Stapp - Burgess, 1965
Interpreting Our Heritage (Book) - Freeman Tilden - University of North Carolina, 1967
Manual of Outdoor Conservation Education (Booklet) - National Audubon Society, 1964
Natural History Guide (Book) - H. Charles Laun - Alsace Books and Films, 1967
Nature Recreation (Book) - William Vinal - McGraw-Hill, 1940
Open Land For Urban America (Book) - Joseph Shomon - Johns Hopkins, 1971
Outdoor Activities For Environmental Studies (Booklet) - Clifford Knapp - Instructor Publications, 1971
Outdoor Education (Book) - Julian Smith and Others - Prentice-Hall, 1963
Reading the Landscape (Book) - May Watts - MacMillan, 1957
Sand County Almanac (Book) - Aldo Leopold - Oxford Press, 1970
Steppingstones to Nature (Book) - R. O. Bale - Burgess, 1960
Teaching Conservation Through Outdoor Education Areas (Booklet) - U. S. Forest Service, 1970
Teaching in the Outdoors (Book) - Donald Hammerman and William Hammerman - Burgess, 1967
Techniques For Teaching Conservation Education (Book) - Robert Brown and Gilbert Mouser - Burgess, 1966
Tips and Tricks in Outdoor Education (Booklet) - James Swan and Others - Interstate Publications, 1970
Web of Life (Book) - John Storer - Devin-Adair, 1953

Miscellaneous Publications

Directory of Nature Centers and Related Environmental Education Facilities, National Audubon Society, 1972

1972 - '73 Directory of Natural Science Centers For Youth, Natural Science For Youth Foundation

This is by no means an exhaustive list. Of the many publications consulted, these provided the greatest assistance.