NORTHWOODS WILDERNESS EXCURSIONS
FLATHEAD LAKE • MONTANA
NORTHWOODS WILDERNESS EXCURSIONS:
A HUNTING/FISHING AND VACATION LODGE
FLATHEAD LAKE, MONTANA

by
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A thesis submitted in partial fulfillment
of the requirements for the degree
of
Bachelor of Architecture

APPROVED:

Thesis Advisor

Thesis Committee

Director, School of Architecture

MONTANA STATE UNIVERSITY
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Date 12 JUNE 87
This thesis is dedicated to my parents and family, without whose time, support and patience none of this would have been possible.
ACKNOWLEDGEMENTS

I would like to express my sincere appreciation and gratitude to the following people for their assistance on this project:

Robert Meeker and Bob Utzinger for their energy and efforts as my thesis advisors.

The "Do Little" Club -- Chris, Dave, Mike and Ong.
Montana is spectacle, contrast and contradiction. It is also big, the third biggest of the contiguous states, a fact that helps to account for its variety.

The westbound traveler, entering eastern Montana, will find his eye reaching, unimpeded, to the far kiss of earth and sky, reaching farther than he can comprehend, for the atmosphere allows penetration beyond belief. Proceeding, he will come unexpectedly on water courses, cut shallow or deep, and see, floating in the distance, the punctuations of buttes. Still farther on, by squinting to north or south, he will make out the clouds that are mountains and at last see, ahead of him, what appears to be the terminal -- the great, spiked barrier of the Continental Divide.

Abrupt on the east side, the wall allows entry through and over the spine of the continent to the gentler Pacific slope.

Wherever he travels, he will come upon grandeur, different in reach, height and coloration, but still grandeur....

As geography brings its surprises, so does climate. Winter can be bitter, though not as bitter as strangers imagine. The dweller on the east slope, his body and house pinched by cold, looks to the west and southwest, knowing that the warm Chinook wind will not fail him forever. Western Montana, stranger to the Chinook, does not need it, for there the climate is milder, milder by and large than that far to the east. It is elevation and elevation alone that often makes Butte or West Yellowstone the coldest spot in the nation. Few Montana communities are perched so high.

The variation of climate and altitude bring just as great variations of growth. Here are box elder and cottonwood and willow, there are aspen, pine, spruce and fir. The spring flowers of the plains, the cactus flowers
and wild flags, give way in the hills to balsamroot, gaillardia, wild roses, geraniums, lupine and—look low—to moss campion, forget-me-nots and phlox. The mountains offer asters, columbine, sego lilies, beargrass. The list everywhere is too long to recite.

Wildlife, east to west, changes, too— from sage hen and antelope and deer to grouse, elk and grizzly bear....

- A. B. Guthrie, Jr. -
PROJECT SYNOPSIS
THESIS STATEMENT

Northwoods Wilderness Excursions is a project that developed from my personal concerns for the Flathead Valley area, and my interests in smaller scale vacation/resort architecture. Northwoods is a vacation/hunting lodge that will be located on the east shore of the scenic Flathead Lake, at Yellow Bay. The lodge will operate as a "base camp" providing guide and outfitter services to the surrounding areas. Included within the program for the facility are numerous support building including a horse stable, boathouse and garage. The primary focus of this thesis will be on the main lodge building, guest rooms and cabins, and their relationship to the site and surrounding context.
PERSONAL INTENT

My intention throughout this thesis primarily will be to explore the interaction and relationship of the built environment with that of the natural environment. In the final execution, I hope to provide a model example of architecture in harmony with its site and physical surroundings. The site selected, located on the east shore of Flathead Lake, is both visually and physically prominent, a characteristic that will figure heavily in the final solution. This site, Yellow Bay, is the present-day location of the University of Montana's Biological Research Station.

I have selected a building type that I feel reflects my intentions and furthermore a type (or classification) that will surely be on the increase in the region, a vacation/hunting lodge.

Flathead Valley's prime natural resource, its scenic beauty, is the "calling card" for many of the valley's visitors. It is my main objective to show that architecture, when placed in the natural environment, does not have to detract from it.

Northwoods will provide a welcome alternative to the existing lodging facilities.
Flathead Valley is located in the upper northwest corner of Montana just southeast of Glacier National Park. As the park's name suggests, glaciers once slid through the region leaving behind giant ice sheets that would eventually melt, creating nationally renowned lakes such as McDonald and Flathead. In conjunction with the glaciers was the folding, buckling and uplifting of massive earth plates. The final result we today refer to as the Rocky Mountain Front, or simply the Rocky Mountains. The entire northwest portion of Montana is mountainous with the exception of one area -- Flathead Valley.

Flathead Valley runs north-south between the Salish Mountain Range to the east and the Swan Mountain Range on the west. To the north is Glacier National Park and at the southern end of the valley lies Flathead Lake. As well as being Montana's largest fresh water lake, it is the largest natural fresh water lake west of the Mississippi River. With a holding capacity of 18.8 million acre feet and 128 miles of scenic shoreline, Flathead Lake is truly a natural resource, one of the many attractions that draws visitors from across the nation to northwest Montana. Within the drainage of the Flathead ecosystem lie part of one national
park, three state parks, four wilderness areas, a national forest, three state forests, four national wildlife refuges, four state water fowl production areas, eleven state recreation areas and eighteen fishing access points and, of course, Flathead Lake. From the ridge of the Continental Divide down to the shores of Flathead Lake, Flathead Valley and surrounding areas offer a truly unique and pleasurable experience.

Early settlers came to the valley in the late 19th Century, with Jim Hill's Great Northern Transcontinental Railway, linking the area with the western and eastern regions. Today's visitors can still access the valley by train at the Amtrack station in Whitefish. A good road system provides access from both east-west and north-south by U.S. Highways 2 and 93, respectively. Glacier International Airport also provides access for thousands who wish to visit Flathead from greater distances. And visit they do. Two million people pass through the gates to Glacier annually, an ever-increasing number of them frequent the valley below. In the counties that comprise Flathead Valley tourism is the rising star.

In Flathead County the wood products industry is the largest base employer, but tourism and retail trade are the fastest growing sectors of the economy. Some recent developments include construction of new malls in Kalispell and Whitefish, the expansion of the Outlaw Inn and Levengoods
Motel, the development of Grouse Mountain Convention Center and Motel in Whitefish, development of Bigfork Harbor Marina and Condominiums, and the development of Eagle Bend Golf Course at Bigfork. A recent study for the Big Mountain Ski Resort, just outside the town of Whitefish, showed that skiers spend approximately $24 million a year in the Flathead. Big Mountain is planning a major expansion of their facilities which will further enhance revenue spent in the valley.

In Lake County, agriculture is the largest base employer and employs approximately 20 percent of the workforce. As with Flathead County, tourism and retail trade appear to be the major growth sectors of this economy. There are about 25 manufacturing operations of various sizes in Lake County. A new golf course is planned in Ronan and Polson hopes to expand their golf course to 18 holes. The Confederated Salish and Kootenai tribes manage timber resources on the reservation and operate a post and pole business in Dixon.

A site on Flathead Lake was recently chosen for the Mansfield Center for Pacific Affairs. This site is located on the west shore near Rollins at a location known as Painted Rocks. The Mansfield Center is to be a new international center for learning, dialogue and exchange, providing an enduring tribute to the public career of U.S. Ambassador to Japan Mike Mansfield. At this time, the
center is still being designed and no date has been set for construction.

The effects of tourism on Flathead and Lake Counties is easily visible with new construction aimed at attracting and accommodating visitors. Flathead Valley is reported to have the highest potential for recreational based development in the state. As the valley is developed it will surely attract more and more visitors.

Flathead Valley, surrounded by glacier carved peaks, is an area blessed with an unusual diversity of spectacular natural beauty and unparalleled natural resources. The native people, white explorers, fur traders and settlers were lured there by the bountiful wildlife and lush vegetation. Once called "the park between the mountains" by native Indians, Flathead Valley's visitors are enticed there by the same features. If tourism is to continue growing, efforts must be made to maintain these features.

Methods must be found, and in the very near future, for insuring the continued attractiveness of the basic resources which inspire the recreational and the residential use we have today.

-- U.S. Forest Service
Flathead District

Admittedly, maintaining the natural, scenic and unspoiled beauty of the Flathead region will involve cooperation and lengthy planning on the part of local, state and federal agencies -- well beyond the scope of a
thesis project. However, on an "architectural scale," the problems are no less significant.

At the present time no local regulations exist pertaining to building aesthetics. There are no restrictions on height, topographical alternations, or "clear cutting" of forested sites. Hopefully soon there will be regulations passed that will ensure the protection of visually significant areas and guidelines for developing them. Until then, it will be the responsibility of architects and developers.

REFERENCES:

• U.S. Forest Service East Shore Planning Unit, U.S. Forest Service, Flathead District
• Jerry Hanson, Jericho Realty
• Jerry Sorenson, Planning Office, Lake County
• Flathead Country -- Montana Magazine
THE NORTHWOODS SCENARIO

Nature has graciously provided the northwest corner of Montana with the best she has to offer. From the shoreline of Flathead Lake to the ridge of the Continental Divide, the Flathead Valley and surrounding areas offer a truly unique and pleasurable experience. Within the Flathead ecosystem there exists a national park, numerous state parks and national forests, as well as wilderness and designated scenic areas and, of course, Flathead Lake itself -- all comprising the "backyard" for Northwoods Wilderness Excursions.

John Whitney is a local outfitter with over 25 years experience, and will be the owner/operator of Northwoods Wilderness Excursions. Previously employed by Ram Mountain Outfitters, John and his wife Carla have decided to draw on their experience in the outfitting business as well as their knowledge of northwest Montana, and manage a lodge of their own. In contrast to other local outfitters, the Whitneys prefer to operate out of their own establishment rather than put their clients up in local hotels.

Northwoods was originally conceived as a small singular lodge building; however, the program has grown to include: stables, a boathouse, cabins for group lodging, a restaurant and gift shop (to be managed by Carla). In
addition to the above mentioned spaces, John would like to include a small conference/meeting room. It would be used to brief clientele and to attract small groups that would desire such a space for conferences and seminars. It is John's ambition to advertise Northwoods Wilderness Excursions nationally and internationally in the growing European and Japanese markets as both a vacation destination and outfitters lodge.

Northwoods will function primarily as a "base camp" from which people can launch trips and outings to nearby attractions. Because of the lodge's size, 32 rooms and 4 cabins, John has chosen to hire summer help and engage other outfitters and guides in providing a quality outdoor experience for his clients. Restaurant and lodge staff will be hired from the local economy. The restaurant will be managed by someone other than John and Carla, as they know little about that business.

A site has been selected on the east shore of Flathead at yellow Bay. Covered in a dense growth of Douglas fir, the 160-acre site is more than adequate and will provide a removed, relaxed atmosphere. The water depth surrounding the site is 10-12 feet for the first 30 yards, dropping quickly to 160 feet in the bay and over 380 feet on the lake side. Swimming off the bay side of the shore will be provided as well as boat access to the deeper waters for Mackinaw fishing.
Overall, John describes Northwoods Wilderness Excursions in the following way...

I want Northwoods Wilderness Excursions to be an outfitters lodge that provides fine accommoda-
tions for outdoorsmen and vacationers alike. I want to attract more than just the trophy hunter. Montana has a lot to offer people, but most of them don't get the opportunity to see it. I want to provide that opportunity in a relaxed setting removed from the world and its problems. I want to give the average guy a chance to see some of the Bob Marshall on a day hike or a week excursion if he wants it. It's going to be the kind of place where you can order a steak or have the trout you caught earlier that day cooked to order.

— John Whitney
PROGRAM SUMMARY:
NORTHWOODS WILDERNESS EXCURSIONS

MAIN LODGE:

A. **Rooms** ................................................. 7,850
   - 20 Double Rooms...............@ 350 s.f.
   - 2 Suites.........................@ 425 s.f.

B. **Conference/Meeting Room** .................................. 400
   - 20 people

C. **Gift Shop** ............................................. 650

D. **Food and Beverage** ....................................... 3,700
   - Restaurant...........total 2250 s.f.
     - Dining...............1200 s.f.
     - Kitchen...............600 s.f.
     - Storage (Dry).........200 s.f.
     - Cold Storage........150 s.f.
     - Office...............100 s.f.
   - Lounge...........total 1000 s.f.
     - Lounge.................850 s.f.
     - Bar....................150 s.f.
   - Shared Spaces...........total 450 s.f.
     - Locker Room...........250 s.f.
     - Liquor Storage........200 s.f.

E. **Hotel Support** ........................................... 3,530
   - Foyer.......................150 s.f.
   - Lobby .......................350 s.f.
   - Main Desk ..................300 s.f.

   Management Offices
   - Manager ..................150 s.f.
   - Booking ..................120 s.f.
   - Secretary ..........120 s.f.
   - Waiting ............80 s.f.
   - Filing/Storage ......130 s.f.
<table>
<thead>
<tr>
<th>Sq.Ft.</th>
<th>Description</th>
<th>Square Feet</th>
</tr>
</thead>
<tbody>
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<td>60</td>
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<tr>
<td>680</td>
<td>Employee Lounge</td>
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</tr>
<tr>
<td>360</td>
<td>Bathrooms</td>
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<tr>
<td>320</td>
<td>Lounge</td>
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</tr>
<tr>
<td>200</td>
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</tr>
<tr>
<td>100</td>
<td>Linen Storage</td>
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<tr>
<td>250</td>
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<td>400</td>
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<tr>
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<tr>
<td>120</td>
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<td>900</td>
<td>STRUCTURE @ 5% net floor area</td>
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<td>4,580</td>
<td>CIRCULATION @ 25% net floor area</td>
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<tr>
<td>1,600</td>
<td>PARKING -- 40 spaces @ 400 s.f. ea.</td>
<td></td>
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SEPARATED GUEST ROOMS:

6 Double Room Units @ 1300 s.f. ea.

- 2 Double Occupancy Rooms @ 300 s.f.
- Living Room @ 150 s.f.
- Bathroom @ 100 s.f.
- Janitorial/Mechanical @ 50 s.f.

Total: 1,300
HVAC @ 10% net floor area .................. 130
STRUCTURE @ 5% net floor area .............. 65
GRAND TOTAL EACH UNIT .................. 1,500
PARKING -- 4 spaces @ 400 ea ................ 16,000
TOTAL FOR ALL UNITS ...................... 9,000

CABINS

4 Cabins .................. @ 1100 s.f.
• 3 Bedrooms .................. @ 150 s.f.
• Living Room .................. 200 s.f.
• Kitchen/Dining .................. 200 s.f.
• Bathroom .................. 80 s.f.
• Foyer .................. 60 s.f.
• Deck/Hot Tub .................. 120 s.f.
Total .................. 1,110
HVAC @ 10% net floor area .................. 111
STRUCTURE @ 5% net floor area .............. 55
GRAND TOTAL EACH CABIN .................. 1,276
PARKING -- 4 spaces @ 400 ea ................ 16,000
TOTAL FOR ALL CABINS ...................... 5,100

STABLES :

• 8 Horse Stalls @ 150 s.f .......... 1200 s.f.
• Hay Storage .................. 1000 s.f.
• Tack Storage .................. 250 s.f.
• Lavatory .................. 50 s.f.
• Grain Storage .................. 100 s.f.
• Cleaning Room .................. 100 s.f.
• Trailer Storage (3) .............. 450 s.f.
• Manure Storage .................. 100 s.f.
• Pasture Required = 12 acres
Total .................. 3,250
HVAC @ 5% net floor area.......................... 162
STRUCTURE @ 5% net floor area.................. 162
CIRCULATION @ 30% net floor area............... 975
GRAND TOTAL........................................ 4,550
PARKING -- 8 spaces @ 400 ea.................... 32,000

SHOP/GARAGE

- Vehicle Storage (4).................1200 s.f.
- Service Bay..............................400 s.f.
- Shop....................................400 s.f.

Total............................... 2,000

HVAC @ 10% net floor area...................... 200
STRUCTURE @ 5% net floor area............... 100
CIRCULATION @ 20% net floor area............ 400
GRAND TOTAL.................................... 2,700
PARKING -- 4 spaces @ 400 ea............... 16,000

BOATHOUSE

6 Slip Dock
3 Boat Storage

GRAND TOTAL ENTIRE DEVELOPMENT........... 50,000
PROJECT GOALS

Natural resources, limited in both quantity and quality, once exploited or damaged, take hundreds to thousands of years (if not more) to regenerate. Northwestern Montana is rich in natural resources, the most quantitative being its natural beauty. Unfortunately, natural beauty is the easiest to alter or destroy; all too often the damage done is irreversible. It is here that the built environment and the natural environment meet in confrontation.

The primary aim of this project is to develop the site without distracting from its natural scenic beauty, and at the same time answer to the needs of the program and users. Architecturally, the goals for Northwoods revolve around providing an alternative lodging facility that is more "in tune" with the activities and events the users are seeking. Due to the double role of hunting/fishing and vacation lodge, the activities and events for each user group vary. A second primary goal will be to afford individuals of any experience level the opportunity to enjoy Flathead Valley.
The nation behaves well if it treats natural resources as assets which it must turn over to the next generation -- and not impaired in value. . . .

- Theodore Roosevelt-
USER ANALYSIS
USER ANALYSIS

The users of Northwoods can be broken down into three major groups: those from the immediate vicinity, those from the regional area, and those from outside the regional area which will be called national users. Each group has a distinct set of needs and desires. What they expect from Northwoods, as well as how they use the facilities and services provided, vary from group to group. The only common denominator among all users is that they are there of their own free will. If return trips are expected, each user has to receive an enjoyable, quality experience.

**Users from Immediate Vicinity**

The immediate vicinity is an area within a 75-mile radius. It includes such cities as Missoula and Kalispell as well as many other small cities and townships. This user group will have the highest return use ratio, due primarily to the close proximity. Activities would include "weekend getaways," dining, and limited use of the outfitting and guide services. This group would also find use for the meeting/conference room for small groups.
Regional Users

The regional user group includes those from within a 300-mile radius. Within this radius lie the cities of Calgary, Couer d'Alene, and all of Western Montana. Within this group there is a higher vacation use — both for sightseeing and hunting/fishing purposes. This group would also find more use of the meeting/conference room for smaller-scale seminars. These users would also take advantage of the outfitting/guide services for hunting and fishing. Although most of the users in this group would drive to Northwoods, some may use the local airlines.

National Users

Although "national" implies only those that reside in the U.S., an international market does exist in both Europe and Japan. These international travelers would use Northwoods primarily for vacation lodging and perhaps some hunting and fishing.

Within the borders of the United States, however, this user group would have the largest use of the outfitter and guide services. Eastern clients would be seeking primarily hunting vacations due to the lack of big game in eastern states. Although this is the largest user group, most clients will be primarily "one time" users, some return
visits can be expected. During the summer months this user group will find Northwoods to be an excellent "base" from which their vacation can revolve.
ON OUTFITTING

In 1854, a self-styled European "gentleman hunter" crossed a region that we today call Montana. In doing so, he started what has grown to be a deeply entrenched tradition in Montana hunting -- outfitting. To be sure, it has changed a great deal since Sir George Gore and his expedition first hunted in Montana.

In fact, Sir George would have little in common with the hunter today who seeks an outfitted hunt. Sir George didn't exactly like to "rough it." He as accompanied by 41 men, four mule wagons, three ox wagons and 21 French wagons. One wagon carried nothing but the firearms that Sir George used -- 75 rifles, numerous pistols and a dozen shotguns. All toll, he took 105 bears, 2000 buffalo and elk, and some 1600 deer. He must have found game quite plentiful for he displayed a disinclination to actually "hunt" for it. Apparently, he got into a comfortable shooting position and an attendant handed him the rifle of his choice.

Today there are some 450 licensed outfitters in Montana, many of them part-time and some full-time operators. A fairly stable industry, it contributes $100 million annually to the state's economy.
The outfitted hunt serves a distinct need in the hunting fraternity. Many individuals have neither the time nor the inclination to "do it on their own." In turn, they engage an outfitter to give them a base to operate from. More often than not, this also includes the services of a guide to aide them in the hunt. A major factor behind the growth of outfitting has been success. Engaging the services of an outfitter doesn't guarantee a successful hunt; however, statistics show a high percentage of hunters who go afield with a guide do get their game.

Outfitters produce successful hunts for primarily two reasons: (1) they get their clients into high possibility areas, and (2) outfitted hunts usually spend more successive days hunting -- a tremendous advantage over those who can only hunt weekends or short trips. However, this all takes time and time exacts a price.

Costs vary from outfitter to outfitter, but the going rate runs from $150-250+ a day. To these costs the hunter also adds license fees, transportation, meat processing, taxidermy and other costs. The payoff, however, is the quality of the hunt and game taken.
Services

Before a hunting and/or fishing trip is booked, one must take time to develop a clear picture of what it is he or she wants to do. Outfitters and guides provide a wide range of possibilities to choose from. Most individuals who are unfamiliar with the area and who lack the proper equipment generally book a fully outfitted excursion. The outfitter provides all necessary equipment to place the hunter in an area suitable to fill the tag. The outfitter will provide all services -- lodging, food, and upon shooting he will field dress and pack the animal out. On the other end of the scale, the outfitter can be hired to simply bring the client up to the hunting grounds and then bring him back out after a predetermined time. In this case, the client provides most of his own equipment and food.

The distinction between an outfitter and a guide is a clear one. Outfitters provide the access and equipment to hunt, fish or engage in a desired activity. Guides, on the other hand, provide their expertise and knowledge of an area and activity. The best example is the river boat guide hired for floating rivers; he knows what to fish with, where to fish, and how to fish it. Although most outfitters double as guides, not all guides are outfitters.
The Future

Montana is well known for its excellent hunting and fishing as well as its scenic beauty and recreational opportunities. With continued management, outfitters can depend on a steady demand for their services. The popularity of Montana with out-of-state hunters can easily be seen in the sale of hunting licenses. In 1985, all 1700 available licenses were sold in four days at a cost of $300 each. In past years legislation has been introduced, unsuccessfully, to require all out-of-state hunters to engage the services of an outfitter or guide. If and when such legislation is passed, it will guarantee outfitters even more business in the fall months.

At the present time, many full-time operators now offer services that attract a wider range of clients. Pack trips into wilderness areas, scenic river trips, and mountain retreats, allowing more and more people to enjoy the splendors of Montana.

References:

ACTIVITY

- General hunting season
- Bow hunting season
- Special seasons
- General waterfowl
- Upland game birds
- Bear season
- General fishing season
- Lakes
- Streams
- Ice fishing
- Salmon spawning fun
- Glacier National Park
- Eagle migration
- Downhill skiing
- Cross country skiing
- Kataking (mad mile)
- General boating
- Rock climbing
- Hiking (Bob Marshall)

Legend:
- Peak
- Moderate
- Blank: Limited or none
MONTANA SITE ANALYSIS

NORTHWOODS WILDERNESS EXCURSIONS
FLATHEAD LAKE • MONTANA

SITE ANALYSIS
SITE ANALYSIS

The 160-acre site is located on the east shore of Flathead Lake at Yellow Bay. The topography of the site is dominated by a peninsula which extends off of the southern end of the site forming Yellow Bay. The Peninsula rises approximately 100 feet above the lake and is high visible from both the lake and Highway 35, as well as from the Yellow Bay State Recreation site. Because of the peninsula's high scenic value, efforts will be made to minimize construction on or near the crest, as well as the eastern face (Yellow Bay side).

Dominated by ponderosa pine, the site does contain a few cottonwoods around the lake's edge and at the mouths of Lolo and Yellow Bay Creeks. Yellow Bay Creek cuts through the lower southeast corner of the site after passing through the recreation access area. With continuous yearly flow, the small creek is "tapped" on the east side of Highway 35 for irrigation. Lolo Creek runs diagonally from the upper north east corner down to a point 500 feet below the site's northern boundary. Both creeks experience runoff flows. The peak flow is in the spring and there is often a second runoff in the fall due to early snows in the Mission Mountains or heavy fall rains.
Although the site is dominated by thick stands of timbers, thin sections do exist. At the base of the peninsula the timber affords views both east, to the Mission Mountains and Inspiration Pass, and west, across the lake to painted rocks. The base of the peninsula is the lowest area on the site as well as the flattest. The site slopes gently down from the north and rises quickly on the peninsula to the south. With careful thinning of the timber, views along the western edge of the site could be opened up and the visual integrity of the site maintained.

Access to the site is afforded along Highway 35. Although a road presently exists for use to the recreation site, northbound travelers engage an extremely tight turn to access it. Redesigning the intersection would make access to this recreation site and building site less hazardous. In this case site access would take place in the lower southeast corner affording a view of the bay as one drives through the site.

Adjoining the site to the north is a 16-acre cherry orchard, and another cherry orchard exists east of the highway. The southeast corner of the site joins the Yellow Bay State Recreation site. The recreation area is for both day and night use. The area provides a boat ramp and is popular with local fishermen. Its heaviest use occurs during the summer months, although winter use is high when the bay is not frozen.
CLIMATIC DATA
CLIMATIC DATA

Climate on the east shore of Flathead Lake is described as a modified north Pacific Coast type. Winters and summers are relatively mild, winds are seldom severe, and humidity is high enough to cause many cloudy days.

Average annual precipitation, more than half of which occurs as snow, ranges from 15 inches at the edge of the lake to 55 inches at the crest of the Mission Range due east of Yellow Bay. Snowfall ranges from 25-30 inches at the lake's edge and 400 inches in the Mission Range.

The climate in general is very favorable when compared with other areas within a 300-mile radius. It is much more favorable when compared to areas outside a 300-mile radius. The cool nights and bright, warm, sunny days of summer help in attracting people from hot climates.

RUNOFF

Peak flows on the East Shore occur in June. A secondary peak often occurs in late fall due to early snows or fall rains.
NORTHWOODS WILDERNESS EXCURSIONS
FLATHEAD LAKE • MONTANA

SPACIAL ANALYSIS
□ SPACE
□ ZONING
□ SQ FOOTAGE
□ ADJACENCY
□ ACTIVITY
□ INDOOR OUTDOOR
□ NO. USERS
□ CHARACTER
□ CIRCULATION
□ VIEWS
□ NOTES

INDIVIDUAL CABIN
PRIVATE
1100 sf EACH

SLEEPING, PREPARING MEAL ENTERTAINING
EXTENDED DECKS PROVIDE OUTDOOR SPACES
6-8 PEOPLE, 6 BEDS AND A SOFA SLEEPER.

MAINTAIN CHARACTER OF LODGE, SHOULD BE PRECEIVED AS AN ISOLATED UNIT.

VIEWS ARE WESTWARD TO FLATHEAD LAKE.

MECHANICAL SPACE WILL BE LOCATE IN ROOF ABOVE BATHROOMS

GUEST USING CABIN WILL HAVE LIMITED USE OF LODGE FACILITIES AS THE CABIN FUNCTIONS AS AN ISOLATED UNIT.

DIAGRAM

VIEW OUT TO LAKE
GLARE OFF OF LAKE-EVENING

SITE SLOPE
SITE SLOPE

N
NOISE
ROAD

A - LIVING ROOM
B - BEDROOM
C - KITCHEN & BATHROOMS
D - BEDROOM
E - BEDROOM
F - DECK
SEPARATED GUEST ROOM
6 DOUBLE UNITS
PRIVATE

1500‡ DOUBLE UNIT

SLEEPING, RELAXING, VISITATION

ENTRY DECK ACTS AS TRANSITION BETWEEN SPACES

2-4 PEOPLE PER SIDE - 2 BEDS & SOFA SLEEPER

MAINTAIN CHARACTER OF MAIN LODGE, HEAVY ROOFS, WOOD & STONE

MAJOR VIEWS FROM LIVING ROOM TO LAKE AND FROM ROOMS TO LAKE

PARTY WALL BETWEEN ROOMS MUST REDUCE SOUND TRANSMISSION BETWEEN UNITS.

ONE MECHANICAL SPACE WILL SERVICE BOTH UNITS.
HORSE STABLES

PUBLIC

3250 ft² & 8 HORSES

ADJACENT TO GARAGE

RIDING AND HORSE PREP

PROVIDE EASY ACCESS TO BRIDAL PATH, PASTURE

VARIES

UTILITARIAN NATURE

VIEWS ARE DIRECTLY SOUTH TO THE LAKE

HORSE STABLES ARE NON-INSULATED STRUCTURES AS WELL AS THE HAT & GRAIN STORAGE PINS.

DIAGRAM

A: HAT & GRAIN STORAGE
B: HORSE STALLS
C: TACK CLEANING & STORAGE

MANURE STORAGE

TO PASTURE AND BRIDAL PATH

CORRAL

COVERED HORSE TRAILER STORAGE (S)

MAJOR ACCESS
**Diagram**

- To Rooms
- Noise from Hall
- To Lobby

**Conference/Meeting Room**
- Private/Semi Private/Public
- Adjacent to Rooms, Lobby, Offices (Management)

- Both public and private use. Conference, Display, Seminar.

**Space**
- Conferences/Meeting Room

**Zoning**
- Private/Semi Private/Public

**Square Footage**
- 480 sq ft

**Adjacency**
- Lobby, Offices (Management)

**Activity**
- Both public and private use. Conference, Display, Seminar.

**Indoor/Outdoor**
- Both public and private use. Conference, Display, Seminar.

**No. Users**
- 20+

**Character**
- Open, lofted, heavy timber, stone, smooth surfaces

- Provide open circulation to accommodate different arrangements

- Out easternly to yellow bat.

**Circulation**
- Provide projection equipment and screens as "build ins"

**Notes**
- View to yellow bat

- A - Entrance
- B - Storage
- C - Conference/Space

- View to Yellow Bat
□ SPACE
□ ZONING
□ SQ FOOTAGE
□ ADJACENCY
□ ACTIVITY
□ INDOOR
□ OUTDOOR
□ NO. USERS
□ CHARACTER
□ CIRCULATION
□ VIEWS
□ NOTES

DIAGRAM

VIEW THROUGH LOUNGE

LOBBY

PUBLIC

350 ft

ROOMS, MAIN DECKS, LOUNGE, RESTAURANT, GIFT SHOP

RELAXING, SOCIALIZE

VIEWS TO EXTERIOR THROUGH LOUNGE, RESTAURANT, ENTRY

OPEN, HIGH, HEAVY WEIGHTED LOOK AND FEEL

OPEN - ACTS AS DIVIDING POINT BETWEEN USES

THROUGH OTHER SPACES

LOBBY AND ROYAL SET THE CHARACTER AND FEEL FOR THE REST OF THE BUILDING

EXTENSIVE USE OF WOOD & STONE, duS TO HIGH TRAFFIC

MATERIALS SHOULD BE EASILY CLEANED AND MAINTAINED

VIEW THROUGH ENTRY
WASTE WATER
WASTE WATER TREATMENT

In recent years growing concerns have been expressed over water pollution in the Flathead region, primarily Flathead Lake. Studies conducted by local agencies showed high levels of phosphorous contaminates; phosphorous speeds up the natural process of lake succession. In an effort to reduce phosphorous pollution, detergents, the largest contributor, were removed from shelves and replaced with non-phosphorous detergents. It was believed at the time that residential septic fields along the lakeshore and river banks were responsible for the phosphorous. Although phosphorous detergents are still banned for local sale, it is understood that the highest levels of phosphorous are coming from farming operations on the north fork of the Flathead River and lakeshore orchards.

Waste water treatment will have to be done on site due to the fact that no hookup to treatment facilities is available. There are, however, three possibilities for treatment: (1) private on-site treatment, (2) group treatment, and (3) on-site septic field.

(1) Private On-Site Treatment

This option would involve installing an on-site treatment facility to treat the waste water and discharge it at acceptable EPA levels. Due to the estimated discharge
levels -- peak 9000 gallons per day -- the cost of installation makes the process inefficient.

(2) **Group Treatment**

Group treatment is presently being pushed by the local planning offices in an effort to handle the waste water of new developments. Basically, it involves the cooperative efforts of new developments to install a larger treatment center to handle the waste water from all the groups' members. Cost are divided and some handle "outside" waste water to reduce costs further. Unfortunately, no other new developments are planned for the Yellow Bay area.

(3) **Private Septic Field**

This option is the most feasible for the site selected and anticipated discharge levels. The septic field would have to be located in the upper northeast corner of the site, which would mean all waste water would have to be pumped uphill from the buildings below. Discharge levels would be further replaced through the use of water-conserving toilets and fixtures.

Reference:

- Jerry Sorensen, Lake County Land Services, Polson, MT.
BUILDING REGULATIONS

County

Unfortunately, neither Lake County nor Flathead County have established local building codes for aesthetic purposes. In fact, very little of the lakeshore area has any zoning; the areas that are zoned were done so "after the fact."

U.B.C.

Due to the fact that there are no other local building codes, the United Building Code will be used as a standard.

Lakeshore Regulations

In August of 1980, Lake County adopted lakeshore regulations for the built environment in an effort to protect the scenic and environmental qualities of the Flathead and other watersheds. Adjoining Flathead County also adopted lakeshore regulations in August of 1983.

Following is a distillation of the regulations as they pertain to the Yellow Bay site which lies in Lake County.
Design Standards (Section 5-3):

(A) Docks, Wharves, and Piers

(1) Policy Considerations

(a) Open docks and floating docks which allow complete water transfer beneath the dock are preferred. Open docks have an insignificant impact on the lake, lakebed, and lakeshore.

(b) Partially open docks which provide for restricted water transfer may be allowed.

(c) Solid concrete, piling, plank, or crib docks which essentially block the transfer of water beneath the dock are not permitted.

(d) Docks, wharves, and piers have a high potential to interfere with public navigation and public recreation. The property owner has a riparian right to lack access; the public has a right to navigation and recreation on public waters. A balance of these two rights is arrived at by consideration of the water depth at a given location and the distance a structure extends into the public waters.

(2) Standards

(a) Docks shall not exceed fifty (50) feet in length if there is approximately five (5) feet of water depth at the end of the dock when the lake is at its mean annual high water elevation, except where special circumstance requires additional water depth.

(b) No dock shall exceed one hundred (100) feet in length as measured from the mean annual high water line to the furthest extension of the dock into the lake.

(c) No solid portion of a dock extending waterward from the shoreline shall exceed twenty-five (25) feet in length.

(c) No solid portion of a dock extending waterward from the shoreline shall exceed twenty-five (25) feet in length.
(d) For partially open docks, the free water area shall be at least eight (8) feet wide and the distance between free water areas shall be at least eight (8) feet, unless another design which provides substantial free water area(s) is reviewed and approved.

(e) Partially open docks shall meet the following standards:

<table>
<thead>
<tr>
<th>Dock Length (feet)</th>
<th>Standards</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-50</td>
<td>One or more openings which incorporate at least one-third (1/3) of the total length and side wall area as free water area(s).</td>
</tr>
<tr>
<td>51-75</td>
<td>Two or more openings which incorporate at least one-third (1/3) of the total length and side wall area as free water area(s).</td>
</tr>
<tr>
<td>76-100</td>
<td>Three or more openings which incorporate at least one-third (1/3) of the total length and side wall area as free water area(s).</td>
</tr>
</tbody>
</table>

(B) Boathouses

(1) Policy

(a) Boathouses are essentially land-based structures and if built waterward of the shoreline they amount to extension of human activities into an aquatic environment.

(b) Boathouses are more appropriately located landward of the high water line.

(2) Standards

(a) Boathouses shall be located landward of the mean annual high water line.

(b) The shoreline and lake bottom shall not be evacuated or dredged in order to provide channels and suitable water depth for boating access into the structure.
(c) Boathouses shall be designed and constructed with materials which are non-reflective and of natural colors which blend with the background landscape.

(C) Retaining Walls

(1) Policy

(a) Retaining walls significantly alter shoreline characteristics. They create a totally unnatural shoreline which causes alteration of wave actions, beach dynamics, and shoreline erosion patterns. Retaining walls should be constructed only to stop shoreline erosion.

(b) Retaining walls which do not follow the natural contour of the shoreline have a high probability of effecting erosion of neighboring properties and adverse impacts to the lake and lakebed.

(c) Log retaining walls, including logs adequately pinned to a concrete foundation, are preferred to concrete retaining walls.

(2) Standards

(a) Retaining walls shall not be permitted in areas where active erosional processes are not evident.

(b) Retaining walls shall be constructed at or above the mean annual high water elevation whenever possible, and they shall conform as close as possible to the contour of the shoreline.

(c) New retaining walls shall be constructed no more than three (3) feet waterward of the existing mean annual high water line.

(D) Boat Shelters and Shore Stations

(1) Policy

(a) Boat shelters and shore stations generally have an insignificant impact on the lake, lakebed, or shoreline.
(b) Boat shelters and shore stations can detract from or block scenic views from neighboring properties.

(2) Standards

(a) Boat shelters and shore stations shall be located no further waterward of the mean annual high water line than is necessary to provide adequate dockage when the lake is at full pool. Boat shelters and shore stations shall not be located further than fifty (50) feet from the mean annual high water line of the lake.

(b) Boat shelters shall be designed and constructed with materials which are non-reflective and of natural colors which blend with the background landscape.

(E) Dredge and Fill

(1) Policy

(a) Dredging of a lake bottom can have serious effects due to suspension of fine materials, exposure of stable lakebed sediments to unstable conditions, removal of lakebed armament, and creation of steep beach areas.

(b) Filling of a portion of a lake has serious effects due to complete destruction of an aquatic environment, loss of habitat for fish and wildlife, loss of water storage capacity, creation of an unnatural shoreline, creation of steep beach areas, and alteration of current flows and wave actions.

(c) Filling of wetlands has serious effects due to complete destruction of an aquatic environment, loss of habitat for fish and wildlife, loss of water storage capacity, and loss of the natural storm runoff cleansing functions and the natural nutrient entrapment functions of wetlands.

(2) Standards

(a) Dredging for the purpose of increasing the water depth of an area or creating an artificial harbor or lagoon is not permitted.
(b) Dredging for the purpose of removing accumulated silt, sand, or gravel behind an existing dock or within the confines of an existing structure may be permitted, provided all excavated materials are removed entirely from the lake and lakeshore areas and deposited so as to prevent their re-entry into the lake, and the finished elevation of the lakebed is not lowered from its natural level.

(F) Living Quarters

(1) Policy

Living quarters represent concentrations of human activities. Such activities are essentially land based with people entering the aquatic environment only for relatively short periods of time for recreational purposes. Living quarters are potentially harmful to the lake and lakeshore through intrusion of a non-aquatic land use into an aquatic environment, creation of impervious surfaces, increasing surface storm runoff into the lake, concentrating human activities on the shoreline, obstruction of scenic views, and probable sewer line leakage.

(2) Standards

No permanent or temporary living quarters shall be constructed waterward of the mean annual high water line or within the shoreline protection zone.

References:

- Lakeshore Protection Regulations, Lake County, MT.
- Jerry Sorenson, Lake County Land Services, Polson, MT.
BIBLIOGRAPHY SOURCES
SOURCES

(1) Architects Design Group
Taylor-Thon-Thompson-Peterson, AIA
Kalispell, Montana

(2) Ken Dupui
Flathead Bureau of Indian Affairs

(3) Jerry Hanson
Jericho Realty
Whitefish, Montana

(4) Tom Johnson
Regional Planning Office
Kalispell, Montana

(5) Jerry Sorensen
Lake County Land Services, Planning Division
Polson, Montana

(6) U.S. Department of Fish, Wildlife and Parks
Regional Office
Kalispell, Montana

(7) U.S. Forest Service
Flathead District
Kalispell, Montana
BIBLIOGRAPHY


Lakeshore Protection Regulations. Document from Lake County Land Services, Planning Division, Polson, Montana, 1981.


Montana Outdoors Magazine, various issues. Published by Montana Department of Fish, Wildlife and Parks, Helena, Montana.


NORTHWOODS WILDERNESS EXCURSIONS

FLATHEAD LAKE • MONTANA

THESIS 1
PRESENTATION
ORGANIZATIONAL DIAGRAMS
**Observations/Implications**

- Diagram shows three major divisions: building should reflect this.
- Two major zones, public and semi-public, will demand better views — priority given to rooms.
- Stable should be isolated from main building — perhaps placed visible.
- Boat house and cabins — distance from central building? (walk or drive?)

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**ZONING A**

**ORGANIZATION**

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**ZONING B**

**ORGANIZATION**
FUNCTION

ORGANIZATION

OVERALL

ORGANIZATION
FUNCTION

ORGANIZATION

OVERALL

ORGANIZATION

OBSERVATIONS/IMPLICATIONS

- THREE ZONES SHOULD BE EASILY SEPARATED.
- LOBBY/FOYER 'KNUCKLE' FOR CIRCULATION TO OTHER FUNCTIONS.
Observations/Implications

- Two distinct zones: public & private—building should reflect this.

- Dining, lounge area can from one area, reinforcing divisions.

- Because conference room will not be in constant use, direct connection to kitchen would not be needed.

Zoning

| Organization |

- Public
- Semi-Private
- Private

Overall Organization