HARRISON WOOD
AN ENERGY EFFICIENT
RESIDENTIAL AND RECREATIONAL
COMMUNITY

Architectural Thesis
planned by:
Doug Reddington
Dan Gerst
Eric Ernstberger

RESIDENTIAL
VOLUME BY

Doug Reddington
1977-1978
Abstract

The residential volume of this thesis project is intended to offer a viable solution in response to Louisville's housing demand. This volume consists of a logical sequence of events or supportive information leading to the final housing proposal. This proposal can then be used as a process to set precedent in housing design.

The introduction gives a general overview of the problem and some insight as to our (Dan, Eric, and myself) attitude toward this project. I have included explanations of those items I feel are required in health, viable, exciting residential designs.

My brief explains the various strategies or concepts required for a development of this type. Certain amenities are present here, which are not ordinarily present in resident developments in this area such as golf and water recreations. We organized our design to emphasize these amenities and allow for maximum participation.

The proposal itself starts with various alternatives and, then, logically pursues the most reasonable alternative. From this alternative I establish the area where the most major problems occurred. This area became the target for my thesis design. From the brief I drew the major concepts for this area and progressed to preliminary design stage. After the preliminary jury I modified the design in response to the
jury statements. My final design is representative of this entire year's work.
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Preface

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These references were very helpful in establishing format and giving direction to Harrison Wood. . . Moss Creek Plantation, by Team Plan, Inc.

Kiawah Island, Planned Development District, by Kiawah Beach Co., Charleston, S. C.
Proposal

This thesis proposal arises from my deep concern for architecture. The intent of this thesis is to define a problem, establish an approach, study precedents and propose a solution. The project is a development of an energy efficient residential and recreational community in Harrison County, Indiana. This project shall establish both my attitude toward architecture in general and toward my design process.

The project is titled Harrison Wood to emphasize both the natural site amenities and the location. Harrison Wood will be a Planned Unit Development offering a variety of housing environments and recreational activities. Recent predictions have indicated that Harrison County will soon become the fastest growing community in Indiana due primarily to the County's location and the new interstate highway that will link it to Louisville, Kentucky.

The site's major potentials are: the proposed lake, the forest covered hills and gently rolling plateau. The major constraints are: the sensitive forest and shoreline environments, the sink holes and the elevation changes. The character of the site is so pleasing it would be a crime to destroy it. Therefore, who must carefully integrate our built environment with the existing natural environment.
This community design was a joint effort on the part of Eric Ernstberger, Daniel Gerst and myself. Eric's thesis will cover the landscape architecture issues; Dan's thesis will cover the clubhouse and community issues; and my thesis will cover the residential planning issues. Our goals will be to establish a lively, viable community and recreational facility in response to the existing site.
INTRODUCTION
General Problem Description

This section will describe the site, the need, the approach and expected result. There are a set of basic statements which establish the design problem and prerequisites for the rest of the program.

The site is located some 15 miles south of Interstate Highway 65 in Harrison County, Indiana. Louisville, Kentucky lies 20 minutes from our site via I-65. Corydon, Indiana's first state capitol, lies 5 minutes west of our site via State Route 65.

The land itself, which once supported one of Indiana's major forests, Harrison Wood, is now partially farmed. However, the hilly region currently supports a mature forest with various kinds of vegetation and wildlife. This forest is a major asset not only for its beauty, but also for its pleasing environment. Therefore, we shall retain this forest and call the project "Harrison Wood". However, this forest presents a major problem in that it is highly sensitive. Our design must respond to this sensitive environment.

The Army Corps of Engineers has proposed the construction of a dam down stream on Indian Creek which runs through our site. The resulting controlled body of freshwater would split the site in two major parcels. This lake frontage adds another major asset. In support of this Army Corps of
Engineer's proposal, we will design as if the dam were built.

The third major site consideration is the plateau which lies on the southern parcel of land. This land is currently being farmed, and approximately 240 acres are free of trees. Although this land would not lend itself well to residential environments, it does lend itself to the development of a major recreation, golf, which would supplement the development's other major amenities.

The design approach must be a direct response to the site amenities and the user needs. These needs are established by both the demand for housing and the current supply of housing. The demand was established by the number of building permits issued for housing in the Louisville area per year, (see the marketability section). This information along with a description of the existing market were obtained through Robert Zur Schmeide of the Riverhills Regional Planning Commission.

Robert Zur Schmeide's description of the existing market indicated a definite move of families out of the suburbs. However, this move did not localize itself in any one type of housing. The move did indicate that families were looking for something more than the suburbs could offer. Therefore, the design approach should respond to this need that suburbs could not provide.
The major elements of the design approach must constitute a response to: 1) the delicate systems existing on the site, 2) the opportunities the site affords, 3) the demand for something more in the housing environment, 4) current needs and trends in the housing market, 5) current self-sufficient design approaches and 6) local need for recreational facilities.

This design approach generates some basic criteria for evaluation of the final result. The design must respond to both the demand for housing and recreation in the existing market and the site's potentials. The lake environment, the forest environment, and the plateau environment generate a definite image of the potential quality of their respective environment.

Although the lake consists of some 500 acres of water, the shoreline ecosystem and the size of this lake would indicate the need for limited disturbance activities. This means the activities must be limited to small horse power motor boats, sail boats, row boats, canoeing, swimming and other shoreline activities. This image must also allow for a great visual and physical relationship with the water. Users at all levels from residential to recreation must be able to participate with the lake.

The forest gives the entire site both a physical environment and a visual element available from anywhere on the site. The environment within the forest area must maintain the existing natural systems supplemented with people systems; that is people must be able to participate in harmony with this natural environment.
The plateau must support a large amount of people participation. However, in the absence of trees and other objects, maintenance becomes quite easy. This maintenance will make the plateau a vast carpet of lush, well trimmed grass which will support a variety of activities.

This development will offer a variety of housing environments aimed at a diverse growing market in the Louisville area. User participation will be emphasized at all levels along with user responsibilities. Our final product must be a highly marketable residential and recreational community.
Design Approach

As individuals, Dan, Eric and I differ in our approach toward design. As a team, we shared a common feeling toward the design approach of this particular problem. This design approach shall be composed of those elements in which we all feel strong about. This explanation itself consists of both performance and issue statements. These statements shall establish precedent in terms of our approach to a given problem. Those elements of our approach shall be statements concerning: site, energy, housing, community, recreation, space planning and image.

Our approach to the site shall strongly emphasize the continued quality, maintenance and awareness of the existing natural systems. Our built environment must consist only of those structures which the land can support with minimal interruption of the natural environment. We must analyze the site in terms of maintaining the vitality of the existing natural amenities. Consequently, our management plan must emphasize participant awareness not only in respect of this environment but also in its maintenance.

The site itself is located on the fringe area of Louisville. Therefore, we shall rely on Louisville and nearby Corydon for our commercial needs. This project will be residentially and recreationally oriented. We do recognize
the potential for a future influx of people. This project shall support recreational needs beyond those of the immediate residences due to the site abundance of potential recreational areas.

The site amenities must act as a positive force not only for their pleasing qualities, but also for their potential environmental impacts. Specifically, this refers to energy conservation in all situations. We do realize that in some design situations, there is a need to compromise for the sake of other design issues. However, energy conservation must play a major role in the decision making issues.

It is our opinion that energy conservation is an issue which is too large to be handled at one level of participation. Therefore, our design must delegate some of the responsibility of conserving energy to the user. The user must become aware of the cost of energy. Today, energy is money and the user must know the cost of apathy; thereby, the user will become aware of the potential benefits of conserving energy, such as: a healthy, clean lifestyle.

The users of this project could be described as a highly mobile people. Generally, we can say that mobile people use a large amount of energy. However, our management plan should include some transportation suggestion and help implement these plans. Also, the master plan should emphasize other energy conserving forms of on site transportation both over land and water. These alternative on-site transportation
systems not only allows for a variety of special experiences, but will also stimulate activity and participation. These transportation systems will tie all of the elements together into a total environment.

The overall development will be divided into smaller communities organized around various site amenities such as the lake or the forests. These communities will be designed to respond not only to market demands, but also to respond to sensitive site situations and solar requirements. The emphasis in space planning must be on leisure living opportunities. If the community were facing the golf course, then much emphasis would be placed on that face. Transportation would play an important role in this type of situation. Golf cart access to the golf course would be required in this case.

Each community will have at least one major site amenity to enjoy. Each community will likewise respond to that amenity. The total environment must be rich, viable and leisurely oriented. Therefore, recreation must play an important role in the living environment of each community. If that particular area is located away from major recreations, then transportation must allow the user direct access.

Our site is not located close to urban Louisville. Our communities must recognize this fact and respond by providing for maximum leisure time living activities such as golf and boating.
BRIEF

HARRISON WOOD
AN ENERGY EFFICIENT RESIDENTIAL AND RECREATIONAL COMMUNITY

THESIS
E. ERNSTBERGER-L.A.
D. GERST-ARCH.
D. REDDINGTON-ARCH.

NO. 11
D.W.R.
COMMUNITY PLANNING
Development Goals

*To provide a quality residential and recreational community.¹

1. To allow variety and choice in recreation and residential environment.
2. To provide residential and recreational environments designed for various age groups and family unit composition as indicated in the market analysis.
3. To create various unique communities not only in image and character but also in terms of overall environment.
4. To orient all communities around existing natural and man made amenities.
5. To develop a land management plan which will preserve the existing natural environment.
6. To provide a high level of community services.
7. To create a community which can live in harmony with the existing natural surroundings.
8. To develop a quality golf course not only to serve Harrison Wood, but also the surrounding communities.
9. To visually unify the development in terms of image and character.
10. To develop a set of landscaping components which are not only similar in character but which compliment each other.

¹Moss Creek Plantation, p. 39.
11. To support viable alternative energy conserving strategies for supplying this community with basic human requirements such as water supply and waste disposal.

12. To develop a system of transportation which not only stimulate activities, but allow for a variety of special experiences to occur.

13. To develop a solution which will lend itself to phased construction.
Marketability

Our design must ultimately result in the sale of the housing units and user participation in our recreational amenities. This section shall explain some market demand indicators and describe how and why our product is marketable. We obtained our local market information from Robert Zur Schmeide of the Riverhills Regional Planning Commission and Eric Ernstberger who is from this area.

Through the use of building permits, we established that in 1977 there were approximately 135,000 new housing starts in the Louisville area. The information also indicated that about 9,000 of these new starts were $60 - 120,000 homes. Over 90,000 of the new starts were priced between $30,000 - 60,000. This development will be geared toward these two market ranges with more emphasis on the lower ranges.

Our target groups will be a diverse set of active people. We cannot describe these groups in terms of age, background, income, etc. However, we can describe these groups in terms of our final product. These users will have some association with our recreational facilities. This association could be participation or observation. These users will also have some association with our "design with nature" approach to design and planning. We can also describe our users according to the area on the site in which they choose
to live. Some areas are naturally set back in the woods away from the major recreations. Other areas are placed right in the center of the activities.

Aside from who our users will be, there is the issue of what are we offering these users? Because our site is some distance from Louisville, we must offer our users additional incentive to live here. We will offer them a variety of recreational activities the major ones being boating and golf. They will have a variety of natural settings to experience. They will be close to the Ohio River activities, yet far enough away from the hustle-bustle of Louisville itself. The major incentive shall be the maximum use of leisure time. We shall offer these users as much variety of leisure activity as possible. They will have the choice to sun themselves in the privacy of their sunporch or play tennis with friends. In other words, the development will allow several levels of socializing to occur (see Building Type study).

Although we do recognize the need for an extensive market study to determine exact market demands, our research has provided a basic description. Upon which a program for site and building design can be based.
This thesis is directed toward a specific parcel of land in Harrison County. However, we must recognize that this whole area will be in some way developed. We further recognize the need for extensive market and land use studies. My specific input into this overall plan is best suited along the lines of the development of one parcel of land. This is primarily due to the fact that my education has been in the field of architecture.

However, this thesis can be used to establish precedent in the area of potential housing solutions for this area. My thesis establishes a valid approach to this housing problem. In my Development Goals I establish the direction that housing must go in order to be a competitive solution. My final design will propose a feasible solution that will be competitive in the existing market.
Community Support

This section deals with those support services required to maintain a community. Ultimately, more study of existing conditions must occur in order for these services to be implemented. However, this section sets forth strategies upon which these services can be based.

Utilities: This development shall provide service for basic human needs such as pure water, sewage disposal, electric power, telephone, storm drainage, fire and police protection. These utilities will consider both on-site potential and existing local service.

Water supply: We are hopeful that a study of the local geological conditions will indicate the existence of subterranean streams. This water will be pumped to the surface and sent to an on-site water treatment station. After treatment the pure water will be stored in on grade storage tanks for domestic water. The rejected water from the treatment station will be stored in on grade storage tanks for fire protection and irrigation. Both systems shall utilize the higher elevations and be gravity fed. The lake itself must also be considered for pure water supply. However, studies must be made at a regional level to determine if this is feasible.
Sanitary sewer: Here too, regional studies must be conducted in order to determine how many users a sewage treatment plant needs to be feasible. We can say that the amount of sanitary waste generated by Harrison Wood alone does not constitute the building of a sewage treatment plant. However, when considering the total amount of development this lake area will generate, we can assume that a new sewage treatment plant will be feasible. Until that time, we must assume that we can tie into the existing system at Corydon, Indiana. The system shall be a gravity fed system by utilizing the higher elevations.

Electric Power: Electric power will be supplied by REMC. We will not use solar or wind produced electric power due to the current state of the technologies. However, we will suggest considering methane driven electric generators in the design of a sewage treatment plant. Management must remain aware of wind and sun power when and if it becomes economically feasible. Generally, all service cables shall be buried under the most economically convenient pedestrian circulation system. This will minimize the disruption of the existing natural systems and the other circulation systems in the event maintenance and repair work must be done.

Telephone and Cable Television: Telephone and cable television hook-ups will be offered to all units. Television antennas will not be prohibited but will be highly discouraged. Louisville will provide the cable television service. Bell
Telephone will provide telephone service. If economically feasible, this development could offer a community phone service. This would allow a resident of Harrison Wood to dial any other Harrison Wood resident with a minimum of a four digit number. In this way, we can further stimulate communication. All communication lines will be buried.

Fire Protection: This project will conform to all Indiana Fire Safety Codes. Because our site offers much interaction between people (potential fire hazards) and the natural vegetation (potential fuel for a fire), much emphasis must be placed on fire safety. I would not suggest automatic sprinkler systems for residential use, however, warning devices will be emphasized. Unit separation also becomes critical. Our site offers the potential for a virtually infinite supply of water. Aside from the above grade water storage, I would suggest an additional pump to collect lake water. At this point in time the existing fire protection occurs at the volunteer county level. Therefore, our management, our design and the users must recognize this constraint and accordingly accept part of the responsibility.

Police Protection: At this point most of the law enforcement responsibilities lie with the county agencies. However, with potential influx of development and people more manpower will be needed. The immediate response of this development must be to limit vehicular access and local high activity function adjacent to points of access.
Maintenance: The management should establish a maintenance department in order to maintain: the golf course, the controlled natural environment, the built environment and observe the uncontrolled natural environment. The design must respond to access and metering of the environmental systems such as water supply, sewage disposal, heat, etc.

Transportation: When considering the nature of the predicted highly mobile users of this community, the transportation systems become very critical. The transportation network is also intended to stimulate user participation. Vehicular transportation will be limited on the site to that which is required for maintenance, security and unit access. This road system will allow for easy access and parking to major modes throughout the site. The next level of transportation would include the small engine powered and muscle powered modes such as bicycle, golf cart, motorboat, sailboat, etc. This system will connect all major site amenities by land and water and allow for access to the residential communities. The last level of transportation is the pedestrian himself. This network will be an extensive system of walk ways, pathways and sidewalks. The landscaping component system of signage and lighting will further stimulate user participation and help the user to enjoy the variety of special experiences this system must offer. Access to the site will be another major consideration. The site is located some 20 minutes from Louisville, Ky., via I-64. This would imply that everyone will have and daily use his/her car for transportation
to work. We will consider setting-up some sort of community transportation daily to Louisville. This could be bus or automobile. In either case, transportation to Louisville must be handled on a community level to promote conservation.

Most basic commercial needs can be satisfied at Corydon, a small town 5 minutes West of our site. A greater variety of shopping services can be found in Louisville. Both of these shopping needs can be satisfied within a short drive of the site. But, community transportation must be considered here also.

Both of these potential community efforts could have the effect of bringing the community together at another level. Commuting together becomes another level of socializing, waiting for the bus, and riding together afford the time for conversation. Day after day of this will produce many lasting relationships.

Transportation as a whole will become this community's major tie with the world. Although we are not trying to create a separate heaven, we do realize the separation which will exist due to the location of the site. Transportation will be the community's link to many needs not provided on the site. In the past, transportation has been realized in an energy consuming manner. We must create our network employing energy conservation technologies.

Services: This development must also recognize the need for certain support services in surrounding communities. The
services would include commercial services, schools, churches, post offices, etc. Corydon, which is five minutes to the west by automobile, will be the closest community which has such support services. Louisville, Ky., can also handle any of these needs and has much in the way of cultural pursuits.
The type of construction used in this project can best be described in terms of land sensitivity. I have divided this sensitivity in three categories:

1) highly sensitive
2) moderately sensitive
3) low sensitive

The highly sensitive land must have limited interruptions. This implies some sort of post and beam system. Typical wood post and beam systems can be used in the lower density ranges. Steel and concrete systems must be considered for the higher density ranges. The construction method and sequence must allow for the continued existence of the environment. Prefabrication techniques must be considered to lessen the on-site fabrication time.

The moderately sensitive areas can support typical above grade residential construction. Earth movement must be limited to that needed for footers, paved areas and utilities. Care must be given to maintain useable vegetation. Prefabrication should be investigated here also to reduce on-site fabrication time.

The low sensitivity areas can support major interruptions such as basements and berm conditions.
P.U.D. Conformity

Planned Unit Developments were initially utilized as an urban means of requiring open space in residential planning. This allowed various clustering strategies to be employed. However, today's housing market dictates the need for this level of planning in any successful residential development. Therefore, this development will conform to all major P. U. D. concepts.

Some of the advantages for people living in a Planned Unit Development are:

- Larger houses for less money
- More choice of house types
- Preservation of natural features like ponds and trees
- Community recreation space
- Safe pedestrian ways and safer streets
- More conveniently located schools and shops

Some of the advantages for the developer and builder are:

- Less land used for streets
- More efficient utility runs
- Better drainage, less grading and site preparation
- More varied house types that can reach a wider market
- More dwelling units and bigger houses
- The ability to include shops and stores

---

1 Planned Unit Development, p. 4.
Masterplan Activities

golf
driving range
practice putting green
tennis
swimming pool
lake marina - dock & loading
lake marina - dock
observation
park area (natural)
bike path
jogging path
nature trail
boating
eating
entertainment
picnicking/camping/cookouts
water sports
croquet
badminton
volleyball
basketball
gardening
people watching
sun bathing
playground/tot lots
hiking
nature photography
arts & crafts
wildlife observation
frisbee throwing & kite flying
RESIDENTIAL PLANNING
Residential Goals

1. To design the units in response to the predicted user group.
2. To allow the units to be energy conserving whenever economically feasible.
3. To offer the user highly flexible space with a variety of spatial experiences.
4. To establish a hierarchy of privacy levels both interior and exterior.
5. To encourage personalization of each unit and allow user self-expression.
6. To encourage participation with surrounding natural environment both spacially and visually.
7. To allow the changing seasons to be experienced throughout the unit.
8. Using existing technologies, to establish a set of building components or a building system which can be fabricated wherever economically feasible.
Checklist

edited from: Christopher Alexander and Serge Chermayeff

Community and Privacy.

1. Efficient parking for owners and visitors: adequate maneuver space.
2. Temporary space for service and delivery.
3. Reception point to group, covered waiting area, provisions for mail, phone, information.
4. Provision of space for control and maintenance of public utilities.
5. Rest and conversation space.
6. Private entry to unit.
7. Stops against crawling and climbing varmits.
8. A view of arriving visitors.
9. Access points that can be securely barred.
10. Separation from moving pedestrians and moving vehicles.
11. Protection of drivers during transition from fast moving traffic to pedestrian world.
12. Fire barriers.
13. Clear boundaries within the semi-private domain.
14. Clear boundaries between semi-private and public domain.
15. Adequate illumination of circulation and entry.
16. Arrangements to protect the dwelling from noise.
17. Provisions for emergency access and escape: fire, ambulance.
18. Pedestrian access from auto to dwelling involving minimum possible distance and fatigue.

19. Garbage collection and control.
Density Description

The density ranges are a result of three criteria: 1) market requirements, 2) environmental requirements and 3) overall character requirements.

The market requirements are mainly profit oriented. Ultimately, the persons who develop this land will require a profit from their investment. Our studies indicate that most developers can reap a profit when their overall densities reach 8-10 units per acre.

The environmental requirements are oriented toward maintaining the environment in terms of overall character. Some areas are more sensitive to interruptions than others. We must assume construction techniques which maintain the viability of such areas.

The character must respond not only to existing adjacent areas but to predicted future growth. The densities must be similar to what is expected in the development of adjacent parcels of land. The density must also respond to the character of the site.

Acreage: 660 ac. total site

- 165 lake
  495
- 140 golf course
  355
- 100 recreation
  255
- 55 unbuildable
- 200 buildable acres
Distribution: developable area: 200 acres
average density: 10 units/acre
density ranges: 4-20 units/acre
total number of units: 2000

4-6 units/acre ... 300 units ... 50 acres
7-8 units/acre ... 500 units ... 65 acres
10-12 units/acre ... 500 units ... 50 acres
16-20 units/acre ... 700 units ... 35 acres
Building Type Study Conclusions

In the building type study I identified four published and financially successful developments. I established nine major housing issues, graphically diagram these issues and, then, rate the issue's importance and success (See matrix on following page). These are my conclusions:

1. Higher densities result in exterior private areas becoming a difficult problem.

2. The market accepts some prototypical units if there is the opportunity for personalization of the unit.

3. Hilly sites and adjacent recreational facilities attract a high degree of development because of their added marketability.

4. A variety of housing types are currently being successfully marketed.

5. Large developments need intense planning to establish various levels of socializing opportunities.

6. Circulation and physical unit orientation often become the major organizing elements.

7. Leisure activity is emphasized.

8. Flexibility and choice are important.

9. Many landscaped environments are being successfully marketed.

10. Total environment characters are emphasized.
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<td>Detached Housing</td>
<td>12t</td>
<td>2 3 2 1 1 1 2</td>
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### Key

- **Character of Development**
- **Function**
  - Int. - Ext. Privacy relationships
  - Entrance
  - Exterior Privacy levels
  - 3rd level Socializing
  - 2nd level Socializing
  - 1st level Socializing

### Density (units/acre)

- **Excellent**: 5
- **Good**: 4
- **Fair**: 3
- **Poor**: 2
- **Unsatisfactory**: 1
The problem analysis indicated that all of the major design problems occurred on the forested north facing slope. This parcel overlooks the lake and the golf course. All preliminary masterplan alternatives indicate the clubhouse will be adjacent to this area. The major road will run along the top of the slope. These are my conclusions:

1. The highly sensitive forest environment must be handled with care to allow for: drainage, maintenance of existing trees (as much as possible) and solar collection.
2. The slope poses parking and circulation problems.
3. Large tracks of green belts (limited or with no interruption) must be maintained to prevent erosion.
4. Density requirements indicate the units must consist of a stacked cluster.
5. Circulation paths through the forest and down the slope must minimize the interruption of the existing natural environment.
6. The boundary to the south (golf and major access) is critical. These are high activity areas with many different circulation systems coming together.
Site Analysis

by Eric Ernstberger

Soil # Upland Baker - Crider soils will support building foundations with greater depths on steep slope.

Slope # Slopes range from 8 - 25% on this portion of the site and will impose problems in beating roads and flat areas for parking. Foundations and structural systems for buildings must conform to slope accepting methods (role const. etc.) slaks will be extremely difficult to work with due to the grading & disruption of the slope.

Vegetation # mixed hardwoods and dense understory will tolerate moderate building with careful construction processes. Consideration must be given to plant removal to prevent sheet erosion. Moderate densities with adequate spacing will prevent this. The forest floor should remain in its natural state to aid in this erosion control also.

Hydrology # Steep slopes (10 - 25%) on this site carry surface runoff by way of small rock & sand lined hills. The area surrounding these hills is sensitive to building and should be avoided. The soil conditions allow good percolation in
the majority of instances and sheet erosion should not be a problem. Surface runoff from paved areas should not be added to this condition. These waters will be carried by subsurface system.

**Orientation #** North facing slopes will receive strong cold winds in the winter & will not receive optimum sun. For these reasons housing will require special consideration in the areas of resident entry and efficient solar design during the winter months. The slopes will offer excellent views to the lake in the winter but will not in the summer.

**Wildlife #** Squirrel, fox, rabbit, & other resident species occupy these slopes. The introduction of buildings will influence the populations but not significantly. Areas of undisturbed vegetation must be boated adjacent to built areas to receive displaced species.
SCHEMATIC DESIGN

HARRISON WOOD
AN ENERGY EFFICIENT RESIDENTIAL AND RECREATIONAL COMMUNITY

THESIS
E. ERNSTBERGER-L.A.
D. GERST-ARCH.
D. REDDINGTON-ARCH.

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D.W.R.
Masterplan Alternatives

The major variable throughout the master planning phase was the location of the marina. The higher density residential communities located themselves adjacent to these major recreational facilities. The plateau area that has been cleared to farm will become the golf course area. Furthermore, the sink hole areas (unbuildable areas) will become additional golf and recreation area. Each community will be defined in terms of density and existing site character. Minor nodes are located according to existing site amenities. The clubhouse remained in same location throughout the presentation because of the ideal location at the high point on the site. This point was chosen because:

1) visible from adjacent avenues of approach
2) overlooks the lake
3) centered in golf course area

Concept 1: This alternative locates the clubhouse and marina adjacent to each other. The clubhouse lies on the highest point on the site. The marina lies down the hill from the clubhouse along the shoreline. Pedestrian circulation will occur between these points. A major beach/picnic area lies directly across the lake from this. The highest densities (16 - 20 units/acre) are located on the forested slopes either adjacent to the clubhouse/marina or look across the
lake on to this activity. The forested plateau areas which look onto the golf course will support densities of 7 - 8 units/acre (maximum allowed in this area due to sink hole activity). Densities of 10 - 12 units/acre are located on the forested slope which look onto the lake inlet. This inlet also has a nature/observation center on the shoreline. Another node is located on the peninsula separating the highest density acres from the 10 - 12 units/acre community. Across the inlet is the lowest density community of 4 - 6 units/acre. This area is completed forested and slopes gently toward the lake.

Concept 2: This alternative locates the marina at the mouth of the inlet and leaves the clubhouse at the high point on the site. Another major community area was placed across the lake to serve the residences there. Higher densities were located adjacent to these major community spaces while lower densities were located adjacent to natural amenities such as lake, golf, wood, etc. This concept also introduced more people participation with the lake. An extensive system of lake-side circulation and lake front community areas was introduced. This concept remained as part of our final design. However, the location of the marina had certain drawbacks with access and launch requirements.

Concept 3: This alternative locates the marina across the lake from the clubhouse in a small natural inlet. Access is directly off of St. Rt. 64. This concept allows both sides of the lake to identify with a major recreational element. Density ranges again are distributed according to
high density adjacent to major recreation. This concept incorporates use of lake-side circulation and lake front community areas. The plateau supports the lowest density housing, although in the final design some higher densities are placed by major recreations.