CROW'S NEST YACHT CLUB
and
CONDOMINIUM DEVELOPMENT

Syracuse, Indiana

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abstract

The contents of this book describe the development of a 'thesis' design. The book's organization stresses the conceptual development and design process more than the final product. The final design is simply a tool to help explain the concept.

The project itself is a yacht club condominium development on Lake Wawasee in North Central Indiana. Emphasis is placed on the condominium units each of which is occupied by members of the club. There are additional club members who do not occupy the residences. A restaurant for the general public is also included in the complex.

The origin of the design is developed through a study of the historic development of the lake. The causes and effects of previous design decisions are analyzed to form a base for the design concepts. The design developed from these concepts is representative of existing housing patterns except that the problems associated with the typical building type are eliminated.

The organization of the project is accomplished through the development of building systems. Three particular systems; wall, unit and roof, were designed individually. Each was then redesigned relating to the interface between itself and each of the other building systems. The systems were then overlaid producing a composite design. This design allows for several levels of organization, as well as dynamic intersections between systems.

The main purpose of this thesis book is to describe a design and a designer. The book's contents are merely a representation of the designer, his methods and ideas. By analyzing the book with this in mind, you will achieve a better understanding of design and designer.
In the development of this design, several areas will receive particular attention. These areas display either inherent problems with the building type, specific problems with this project and site or particular interests of this designer.

1. An inherent problem with condominium developments, and especially with such complexes on lake oriented sites, is one of privacy. Varying levels of privacy are desirable. A system for achieving these levels of privacy should be developed.

2. The sequence of entry into residences has, in the past, been an area frequently overlooked by designers around the lake. Zoning within these residences has prohibited an exciting entry sequence. This problem should be attacked and a sequence of entry into the site, the lake and the units be developed.

3. The yacht club is a seasonal facility being occupied during the summer months. It is therefore important, to this designer, that natural systems be used to supplement or eliminate conventional cooling systems.

4. Image is an important part of any yacht facility. The addition of another building type, residential units, requires special attention be paid to image. Since the residences comprise the majority of the complex’s area, a high level of cohesiveness between club and residence must be developed. This cohesiveness, however, should provide individuality between the units as well as a dominant position for the clubhouse.

5. Architecture is more than simply responding to problems. Coincident with this design, this designer intends to explore the theories concerning perception of wall and plane. This study will elaborate on the idea of wall as a divider and connector of space. I feel this project is ideal for this type of study because of the diversity of building types and the critical highervarchy of private areas desired.

When the phrase 'entry into the lake' is used here, it is meant to mean the lake area of the site, not the water itself.
schematic design

Taking three basic organizing systems and overlaying them to create variety and a sort of randomness.

the residential wall

The composite of the residential units and the clubhouse is designed as a residential wall. It is intended to be a divider between the street and the lake. This concept is not a new one. The residential development of the lake, in an effort to use to maximum efficiency the land available, naturally created such a wall. The advantage of using this type of organization in the development is that the complex acquires an inherent cohesiveness. The disadvantage is that unit individuality can easily be lost.
The simplest way to understand single unit organization is to look at existing residences on the lake. The most public areas are oriented toward the lake and service areas are positioned on the street side of the site. This works well with the exception of the entry sequence. Entry into the residence is through service areas progressing toward the lake to the living areas. Another way of looking at entry is to see it as a penetration through the residence. By looking at it in this way, a more exciting entry sequence can be developed. The first step of this sequence would be to penetrate the residence and experience the lake without entering the unit. Then one could enter the unit at the living areas, and progress through to more private spaces.

This sequence is what the wall provides. The wall is a high brick wall which acts as an envelope around the units. Every two units, it breaks creating a hall. It is through this hall that the user penetrates the residential wall. From this point, entry into the living area of the unit can be accomplished.

Another difficulty with condominium complexes is one of privacy. It is difficult to create truly private outdoor spaces. The wall provides this space quite easily. By manipulating the areas between the residence and the wall, outdoor courts can be created. Manipulation of systems such as this begins to set-up an important hierarchy of spaces.
The organization of the units is almost identical to the typical organization of residences on the lake. Each unit is zoned from public to private with the most public areas being toward the lake. Bedrooms are placed on the second level. What is different about these units is that they are contained within the wall and entered from the lake side.

The image of the project is important because it is a major scale development on the lake. It is also a yacht facility and as such should command a distinct image. To determine an image for this complex, several questions had to be analyzed.

The first question deals with what people expect a yacht club to look like. The answer to this question is simple yet quite difficult. Generally, people do not have an image for a yacht club. Images of yacht clubs are not of the club but of the sailboats in the bay or at the dock.

Another question of image concerns how people physically view the project. People see the project from three hundred feet to three miles away. While viewing the project they are typically moving by in a boat.

The third question concerns the existing image of residences around the lake. This was answered earlier when it was stated that houses around the shore form a kind of residential wall separating lake from street.

Taken together, these three observations form the basis for the image of the complex.
The unit image

The organization of the units is almost identical to the typical organization of residences on the lake. Each unit is zoned from public to private with the most public areas being toward the lake. Bedrooms are placed on the second level. What is different about these units is that they are contained within the wall and entered from the lake side.

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Taken together, these three observations form the basis for the image of the complex.
The complex is seen as a continuum of buildings forming a wall. It is then broken up by an element which adds individuality to the units. This element is the roof unit system. Without breaking the line of the residential wall, the roofs, being non-continuous, use positive and negative areas to break up the wall. This transparency is enhanced by rotating the roofs on an angle. It also adds a level of dynamism to the complex. As a person viewing the project moves by in a boat, the residential wall changes from a solid wall on both levels to a solid wall on the first level and a transparent wall on the second level.
design development

In the second phase of the design, a more regimented organization was laid down. To do this, the three organizing systems: wall, unit and roof, were looked at as three variables of a game. In this game, each system had its own set of rules. The goal of the game was to organize the systems into a cohesive, dynamic complex of systems. Each system was studied to determine exactly what the functions and characteristics of that system were to be.

This is the conclusion of that study.

WALL SYSTEM

) to divide public spaces from private spaces
) to order and define entry into the site and the units
) to establish a cohesive motif throughout the project

UNIT SYSTEM

) to provide an interesting, dynamic residence for members of the club.
) should provide a cooperation of constructability with variety of design

ROOF SYSTEM

) to provide all the typical functions required of a roofing system
) to provide individuality between units without destroying the cohesiveness of the residential wall
) to add a dynamic component to the club (sailing yachts are dynamic elements and I feel the club they represent should reflect that quality)

Tangent to these systems, several sub-systems were developed. One of these was the second level deck. The integration of this system will be explained in the next section.
Each system has its own variables and constants. These are listed under the rules.

The wall:

1) the portion of the wall defining the separation of parking and residence will be articulated only at points of entry.

2) the wall will be eight feet in height and constructed of brick. This is a variable as well as a constant, while the wall is eight feet high on one side it might be three feet high on the other side.

3) areas of the wall defining the residential wall penetrations will be articulated freely to provide a variety of entry sequences and sensations.

4) the wall in general should have a fluidness about its not being restricted in length or position. Walls around the site should be used to define space as well as direct views.
THE UNITS

1) unit orientation will be along the east-west axis only (this will strengthen similar orientation of wall systems)

2) the unit will be composed of similar stair/bath/kitchen etc. modules to provide a higher level of constructability. These modules, however, are to be combined in such a way as to develop many interesting and dynamic units.

3) each unit will be combined with a partner unit to form a duplex

4) each 20' by 50' unit of the duplex may shift in an east-west direction in an effort to create private courts and better defined outdoor spaces

5) the second level of the units will exist only where it can be covered by the primary roof system
THE ROOF

The primary roof system will consist of 40' by 40' units each rotated 22 1/2° counter clockwise of the east west axis.

There will be no intersection between roof units. There must be a transparent area between any two modules.

The height of the roofs will be consistent with respect to the grade at that point.

sub-systems

SECOND LEVEL DECKS

Throughout the design, there has been an effort to produce varying levels of privacy. One space type already created to achieve this is the ground level court. Each unit, however, a second level. It is important to create an outdoor space at this level. This is the function of the second level deck.

Decks will exist over areas of the first level without a second level directly above, they therefore will be filling the 'leftover' areas of the second level.

The decks will overhang areas of the first level where protection from the sun is necessary.
the interface of systems

So far, I have described the problems associated with the project, the goals desired in solving these problems and the systems used to accomplish these goals. The final phase is now to describe the product of the interface of these systems.

The residential wall is the largest scale element providing privacy for the complex. It divides people not associated with the lake from people who are part of the lake.

The sitting of buildings, built recreation, tree lines and grade changes add to the privacy of the project. The tennis area, for example, divides clubhouse from residence. Walls, mounds and trees define entry into various areas of the site. Grade changes on the lake side visually separate recreation from residence.

privacy

The wall system combined with the unit system creates another area of privacy: the back door court. This area is the most private in the complex still outside the unit. It allows the user to be totally separated from site activity.

The second level decks create privacy by dividing themselves vertically from site activity. From this vantage point one can view what is happening on the site but not be affected by it.

site section
The final sequence or sequences of entry into the site, the lake and the residence is a solution to the classic problem of entry into lake housing. Walls are used in key locations to define auto access into particular areas of the project. This sets up a relationship between wall and entry. At the units, the breaks in the wall start the entry sequence through the residential wall. This penetration is enhanced by special spaces created between the walls. Once through this you have entered the 'lake' and are now in a position to enter the public living area of the unit.
climate

Since the facility is used primarily during the summer months, climate control is weighted toward cooling rather than heating. Three basic cooling concepts are developed in the design.

First, the roof system is used like a solar umbrella, shading the units from direct sun.

Second, windows are used only where adequate roof overhang is provided. The windows are fixed in the center and operable at both top and bottom. This system provides better natural ventilation. In addition to the window system, ceiling heights are raised to ten feet. This allows for stratification of cool air in the living zone with hotter air rising up and out of the space.

Third, the orientation of the units, the walls, and the roofs allows air to flow freely around each unit.
the clubhouse
systems description

I have described the organization of three building systems and several sub-systems. Each of these systems are used to help organize and define the project. Their character gives the complex its image at both large and small scales. Since these systems play such an important part in the project, it would be unfortunate if the user were unaware of these systems.

There are many ways of describing the systems to the user. I feel, however, the best way is to subtly hint at the organization of one system from within the format of another system. This will allow the user to experience some of the same elements of discovery that the designer experienced. Some of these hints should be capable of being manipulated by the user. This will allow a certain amount of involvement between project and user.
within the units the orientation of furniture can define the rotation of the roof units. The orientation of fireplaces and clear stories can also describe the roof rotation.
the transparency between the roof units allows them to describe placement of the residences

the pattern of paving materials, particularly in the entry sequence, reinforces the wall and residence orientation

within the units, partial dropped ceilings are used to define space as well as provide a place for mechanical and lighting systems. Another function of these ceilings is, through their shape and orientation, to describe the organizing systems used in the complex.
conclusion

I would like to conclude this project by describing my feelings on design, the design process and the 'thesis' experience. Design is a process. This process is unique to each designer yet several basic elements are always present. Design is a progression from mystery to knowledge with the element of discovery being the interface between the two. Each individual discovery brings the designer closer to what is described as knowledge. These discoveries are not instantaneous. They are accomplished through careful study of the problems to be overcome and studious concentration on a solution to these problems. In order for this progression from mystery to knowledge to be accomplished, a fourth element, patience, must be included as a common character of this continuum. Le Corbusier said that design is a patient search. I must agree.

![Diagram: mystery → discovery → knowledge

I guess I should try to explain what this 'thesis' has been to me. Thesis is a six month design sequence beginning with project and program definition and ending with this book. Throughout the project, I was a little confused. I didn't know if thesis was a test of my ability or an opportunity to experience a more continuous learning sequence. I decided it was a learning experience where I could define my own problems and goals. It has been, for me, another stepping stone toward knowledge. I have learned much about design and the design process in the past six months. I am, however, ready for the next step.
appendix

site analysis
program
solar design
Site Analysis

- building type around the lake is similar for over 99% of the buildings
- residences are approx. 85% summer homes
- although these residences are summer homes, they are not cottages

Diagram:
- Lake
- 6 miles to town
- Largest condo development on lake
- Small shopping area

Scale: 1 mile approx.
sun, winds, utilities

Refer to solar information for more concise solar descriptions.

Existing electrical and telephone lines.

No sewer or water is available through municipal sources.

Sun angle at 3pm Mar 21-Sep 21.

Sun angle at 9am Mar 21-Sep 21.

Winter winds.

Lake.

Summer winds.

55°
RESTAURANT

The restaurant is to be used as a source of income for the club. It is owned by the club but run by a hired professional. It will also provide banquet facilities for the club. In all other respects it will be independent of the club. The restaurant should be in some way oriented to the public. It is an interface between club and public and should be positioned accordingly.

list of spaces

| a. main dining room | 1500 sq. ft. |
| b. bar room         | 750          |
| c. exterior dining  | 600          |
| d. food service and distribution | 24 |
| e. lobby            | 250          |
| f. truck access and delivery | 100 |
| g. perishable food storage | 100 |
| h. cooler           | 100          |
| i. cold storage     | 100          |
| j. liquor storage   | 70           |
| k. dry goods storage| 100          |
| l. salad preparation| 50           |
| m. cooking          | 300          |
| n. wash-up          | 200          |
| o. manager's office | 160          |

NET SQUARE FOOTAGE 4400

Circulation (90%) 880

GROSS SQUARE FOOTAGE 5284 sq. ft.

CLUBHOUSE

| a. lounge | 1000 sq. ft. |
| b. bar    | 80          |
| c. porch  | 600         |
| d. recreation room | 900 |
| e. locker rooms | 300 |
| f. delivery |               |
| g. bathrooms |              |

NET SQUARE FOOTAGE 2880

Circulation (20%) 576

GROSS SQUARE FOOTAGE 3456 sq. ft.
RESIDENTIAL

The housing units are the largest part of the complex. The image of these units is therefore important to the overall image of the club. The scale of these units should be sensitive to other structures on the site.

The location of housing on the site is a key to the success of the project. The housing should not create a wall between lake and recreation.

The type of people using the residential units will have a strong influence on the individual characteristics of the units. The members of the club are here to relax and enjoy the club. They do not want to work around the yard.

List of spaces

<p>| | |</p>
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>a. bedroom</td>
<td>235 sq. ft.</td>
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<tr>
<td></td>
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</tr>
<tr>
<td>15 two bedroom units</td>
<td>7050</td>
</tr>
<tr>
<td>10 three bedroom units</td>
<td>7050</td>
</tr>
<tr>
<td>b. living room</td>
<td>320</td>
</tr>
<tr>
<td>c. kitchen/dining</td>
<td>225</td>
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<tr>
<td>d. bathroom</td>
<td>50</td>
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<tr>
<td>e. porch</td>
<td>80</td>
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NET SQUARE FOOTAGE 30975

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<td>GROSS SQUARE FOOTAGE 30975 sq. ft.</td>
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OUTDOOR RECREATIONAL FACILITIES

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<tbody>
<tr>
<td>a. pool</td>
<td>2400 sq. ft.</td>
</tr>
<tr>
<td>b. tennis courts</td>
<td>14400</td>
</tr>
<tr>
<td>c. volleyball</td>
<td>3000</td>
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<tr>
<td>d. children's play area</td>
<td>2500</td>
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<tr>
<td>e. boat docks</td>
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<tr>
<td>f. swimming docks</td>
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NET SQUARE FOOTAGE 22300

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<tr>
<td>circulation (30%) 6600</td>
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<td>GROSS SQUARE FOOTAGE 28990 sq. ft.</td>
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PARKING

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<tr>
<td>a. residential</td>
<td>60 cars..13920 sq. ft.</td>
</tr>
<tr>
<td>b. restaurant/clubhouse</td>
<td>50 cars..11600</td>
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<tr>
<td>NET SQUARE FOOTAGE 23520</td>
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<tr>
<td>circulation (30%) 7656</td>
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<td>GROSS SQUARE FOOTAGE 5284 sq. ft.</td>
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I feel it is important to, at this time, define my personal views of design with respect to passive solar design.

Passive design is something which should, to at least some level, be required of every designer. The energy situation today is such that every small savings is a large gain. If these mean only more concern placed on design, I feel there is absolutely no reason to ignore passive design. I conclude that every designer as well as every design should be energy conscience.

Now we come to the energy extreme. As with most new developments, the first to advocate a new idea often develop tunnel vision. This means simply that they tend to see and think only in terms of their newly developed system and forget what they know of other systems. This is all fine and well but know it is about time to start looking at energy design as a constraint or as a means to an end instead of as an end in itself. Energy design is possibly more important than certain other design constraints, but it must be willing to compromise some of its efficiency for the good of the whole.
passive solar

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