ABSTRACT

I chose for my thesis project, the expansion of the B.P.O. Elks Lodge 396 in La Forte, Indiana. It is a country club with both social and athletic facilities contained in it. This report will contain a chronological sequence of events of the design process and progress I went through in completing this project. The report is divided into three main parts. The first is the program in which I briefly state the important facts needed to design the facility. Also contained in this section is the building type study, in which I loosely diagram the functional and philosophical premises for six examples of country clubs. The final portion of this section is devoted to the analysis of the site; and, more importantly, the synthesis of the site analysis.

The second main part of this report is the actual design of the building. This includes the three concepts, schematic design, design development, and the final design. Each of these sections contain written data, sketches, photos, and drawings.

The third main part of this report is the appendices. The first appendix is a more detailed look at the functions and spaces of the building. It expands on the data in the program section. It consists of charts and tables. The second appendix is the verbal explanation of each example in the building type study. It also contains some diagrams. The final appendix is a detailed site analysis.
INTRODUCTION

Approximately three years ago, I was approached by a member of the La Porte Elks Lodge 396. He had heard that I was a student of architecture and asked my opinion on a proposal for the expansion of the club facility. I gave my opinions and that was the end of it, until a year and a half later. I was to choose a project for my thesis, and that conversation came back to me and I decided to do the Elks Club for my thesis project.

The project is located in the northwest part of Indiana on a site with gently rolling hills and many trees. They have an existing facility, but they need one with an expanded athletic and social facility. The club membership is growing very rapidly, and although the new building was completed only seven years ago, it is already inadequate. The feasibility of a project of this magnitude in a city the size of La Porte (25,000) may be open to criticism but given the growth rate of the club, I feel that in a few years it will be large enough the utilize such a facility.

Data for the program section was furnished by then-Exalted Ruler Clarence Murphy and by acting manager and golf pro Bill Murray. I would like to take this opportunity to thank them for their assistance.

Douglas G. Buell
May 14, 1978
program
GENERAL PROBLEM DESCRIPTION

The project I have chosen for my thesis project is an expansion of the Elks Country Club in La Porte, Indiana. La Porte is located in the northwest corner of Indiana and is in La Porte County (see map 1). The site is located approximately 3 miles northwest of the central business district (see map 2). The site contains two existing structures plus 18 holes of golf (but only 10 greens). The site is going to be expanded to include a ±50 acre tract of land across Johnson Road (see map 3). This will contain the proposed new 9 holes of golf. The area can best be described as gently rolling hills beautifully accented with many trees of both the deciduous and coniferous species. The upper-middle class residential areas surrounding the site also enhance the area.

The expansion of the club will include dining, banquet, and athletic facilities (swimming pool, tennis, raquetball, and handball), along with the previously-mentioned 9 holes of golf. A brief look at the existing club facility will follow.
EXISTING FACILITY

The existing clubhouse was built approximately five years ago and they would like to maintain it. The building is located on the north side of the site on a rise so that it is very well seen from the road. The main entrance is on the north side of the building. The overall dimensions of the building are 80'x104'x15'. It is a simple rectangular form with a heavy panel and batten fascia (see photo and ill. on next two pages)

The structure of the building is 12x8x16 vertical scored (2 sides) concrete block bearing wall construction. All interior walls are stud construction, and the roof and floor construction is bar joists. It has a built-up roof system and an acoustical suspended ceiling system.

![Diagram](image)

The H.V.A.C. of the building is a roof mounted gas system with ceiling diffusers. The septic system is a 2,000 gallon septic tank with ±500' of drain tile. Water is supplied by a well and pump house located approximately 320' west of the building. The gas and electric service are obtained from Northern Indiana Public service lines running down Johnson Road. A more detailed analysis of
this will be seen in the site analysis section.

The pro shop, cart storage, and maintenance is housed in 2 metal buildings located approximately 320' northwest of the clubhouse. The existing golf is shown in the following illustration.
CLIENT DESCRIPTION

Before beginning a discussion of the client/users, there should first be a broad view of La Porte itself. La Porte county has a population of approximately 117,000 with the city of La Porte having a population of 24,400. The people are evenly distributed among the three major job markets: industrial laborers, agricultural, and professionals. It is a growing community as evidenced by a growth of 2,000 in the past six years.

The client, in this case, happen to also be the primary users of the facility. They are the members of the B.P.O. Elks Lodge 396 and their families.

The members themselves are primarily of the professional category although representatives of the other types are also evident. The socio-economic classes of the individual members vary from the middle class to the upper class, with their ages varying from 21 to 70+ years of age. The age group 40-50 years contains 50% of the total membership, with 25% being less than 40 and the remaining 25% being over 50. Approximately 75% of the members are married and 80% of those have 2 or more children of various ages.

A second type of user that is not a client is the citizens of La Porte who will use the rentable banquet facilities. Their basic description has already been stated.

The third type of user (also not a client) is the visitors. They may be prospective club members or guests of members. They should be appropriately impressed by the club, the food,
and the service so that they will have positive things to say when someone asks them about the facility. Another user type is the employees of the club. They will be discussed in depth in a later section.

Some of the indirect users of the facility are the loan officers of the bank, other loan agencies, and the county commissioners. They become a crucial part of the project because of restrictions that they may impose.

CLIENT GOALS

There are 3 main goals that the client wishes to accomplish in this project. The first goal is to create a facility that better meets the needs of the family unit. This goal also includes getting less-involved members of the club to participate and to attract new members to the club. The second goal is to create a facility that is economically successful for the club. They want a facility that is useful to the public (pleasurable banquet space), and whose revenue will mean a better facility for the members, and more to help fund community service projects. The third major goal is to create a facility that the members and the community can be proud of.

LODGE PHILOSOPHY AND STRUCTURE

The lodge philosophy centers around four main principles: charity, justice, brotherly love, and fidelity. All lodge programming has these principles in their make-up. They are deeply involved in youth activities, sports, scholarship,
personal growth, and charitable community concerns. The following is a chart of the Elks organization:

EXALTED RULER
chief lodge officer
club business executive

administrative assistants to E.R.

LEADING KNIGHT       LOYAL KNIGHT       LECTURING KNIGHT

ORGANIST
ESQUIRE/CHAPLAIN/INNER GUARD/TILER- lodge officer only

SECRETARY- lodge business
TREASURER- lodge and club business
TRUSTEES- stewarts of all monies and responsible for grounds and buildings

STANDING COMMITTEES

Americanism
Membership lapsation
Youth Activities
National Foundations
Elks Memorial Committee
Flag and Flag Day
Social and Community Welfare
Membership Growth
Membership Indoctrination
Elk of the Year
Auditing
National Service
Visiting
Investigation
Greens Committee
House Committee

A different committee is formed for large projects, and that will be discussed in the Financial section.
FUNCTIONS

Club

Dining/dancing 350 cap. 5250 sq. ft.
Cocktail lounge 1050
Banquet 1 100 cap. 1500
Banquet 2 200 cap. 3000
Lobby/entry foyer 1485
Waiting lounge (for dining room) 800
Coat check 200
Manager’s office 200
Elks’ office 200
Elks’ meeting rooms #1 50 cap. 400
Elks’ meeting rooms #2 100 cap. 800
Kitchen 50% of dining
   meat preparation 105
   Veg., preparation 184
   cooking 315
   cold food 445
   serving pantry 368
   dishwashing 262
   circulation 500
   dry storage 394
   refrigerator 368
   receiving 252
   trash 252
Employee’s lounge 525
Chef’s office 150
Restrooms
   Men 450
   Women 450
General storage 1000
Furniture storage 500
Janitor’s closet 30

CLUB TOTAL 21,435
Athletic

<table>
<thead>
<tr>
<th>Service</th>
<th>Area (sq. ft.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pro shop</td>
<td>900</td>
</tr>
<tr>
<td>Office</td>
<td>100</td>
</tr>
<tr>
<td>Club storage and cleaning</td>
<td>500</td>
</tr>
<tr>
<td>Hand cart storage</td>
<td>80</td>
</tr>
<tr>
<td>Stock room</td>
<td>300</td>
</tr>
<tr>
<td>Power cart storage</td>
<td></td>
</tr>
<tr>
<td>- club owned carts</td>
<td>750</td>
</tr>
<tr>
<td>- privately owned carts</td>
<td>1500</td>
</tr>
<tr>
<td>Men's locker room</td>
<td>2500</td>
</tr>
<tr>
<td>- 200 lockers/ sauna/shower/r.r.</td>
<td></td>
</tr>
<tr>
<td>Women's locker room</td>
<td>2500</td>
</tr>
<tr>
<td>- &quot;</td>
<td></td>
</tr>
<tr>
<td>Handball/Raquetball courts (3)</td>
<td>3000</td>
</tr>
<tr>
<td>Maintenance</td>
<td>500</td>
</tr>
<tr>
<td>Grounds Machinery</td>
<td>1500</td>
</tr>
<tr>
<td>Janitor's closet</td>
<td>30</td>
</tr>
<tr>
<td><strong>ATHLETIC TOTAL</strong></td>
<td>14160</td>
</tr>
<tr>
<td><strong>CLUB TOTAL</strong></td>
<td>21435</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>35595</td>
</tr>
</tbody>
</table>

plus 25% for mech., circulation, etc. 8900

**GRAND TOTAL** 44495 sq. ft.

Parking  50% of membership 100000

Outdoor pool 2000

2 tennis courts 2400

**NOTE** for a more detailed look at the different spaces of the facility, see Appendix A.
The financial status of the club dictates expansion on approximately the timing shown in the above graph. It is a rough estimate. The figure of $35/sq. ft. was obtained from the Dodge report for 1977. This doesn't take into account the inflation rate for the next ten years. It is assuming a medium economic budget for this building type.

By designing with this goal in mind, it is necessary to think very heavily about structural and mechanical systems that are capable of expansion with as little demolition as
possible.

The basis for the stages indicated is that the new banquet and enlarged dining areas will bring much more revenue to the club. This will, in turn, make it possible to put a big dent in the two following additions. By adding a pool in the second addition, there will be more revenue to finance the last major addition.
FINANCIAL

The financing of a project may be accomplished by the annual dues, which are $60.00/year/member. Approximately one half of the annual dues is used for charities and lodge administrative and affiliation expenses. The other half is used for improvements, depreciation and some social and local programs. They do also make special appeals for some charity work that they do which raises $6000-$7000 annually.

The financing of the existing clubhouse was accomplished by a "capital building fund" campaign which raised the necessary funds by way of pledges from members and the balance was obtained by bank loans. They are already anticipating forming a "capital improvement fund" campaign for this new addition.
BUILDING CODES

The structure comes under the heading of A-2 occupancy which is any assembly area of between 300 and 1000 people, and does not have a stage. Some codes that become critical in this type of structure include the following:

- 150' maximum from any point in a space to the nearest exit.
- 2 exits for every 50 persons in a space.
- The structure shall front directly upon or have access to a public street not less than 20' in width.
- The access to the public street shall be a minimum of 20' right of way unobstructed and maintained only as access to the public street. The main entrance shall be located on the public street or access way.
- Floors above the first floor with occupancy greater than 10 shall have a minimum of 2 exits.
- Each mezzanine used for other than storage purposes, if greater in area than 2,000 square feet or if greater than 60' in any dimension, shall have not less than 2 stairways to adjacent floors.
- Stairs: occupant load greater than 50 44" min.
- occupant load less than 50 36" min.
- occupant load less than 10 30" min.
- Every landing shall have a dimension measured in the direction of travel equal to the width of the stairs.
There shall not be more than 12 feet vertically between landings.

Aisles loaded on one side shall be at least 3 feet wide, if they are loaded on both sides they shall be at least 3 feet 6 inches.

Restrooms shall adhere to the following chart:

<table>
<thead>
<tr>
<th>Table 1: Fixtures and use ratios</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TYPE OF TOILET</strong></td>
</tr>
<tr>
<td>PARK</td>
</tr>
<tr>
<td>(and Colonnade)</td>
</tr>
<tr>
<td>R.R. TERMINAL (City center)</td>
</tr>
<tr>
<td>R.R. TERMINAL (Outskirts)</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>HOTEL (Restaurant, Bar, Lobby)</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>HOTEL (Ballroom)</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>THEATER (Continuus)</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>THEATER (Legitimate)</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>OFFICE BLDG.</td>
</tr>
</tbody>
</table>
building type study
SYNTHESIS OF BUILDING TYPE STUDY

These buildings were chosen at random from a large number of possible examples. These particular examples were chosen because of the difference in their geographic location. I also chose examples that were both private and public clubs. With this variety, I discovered that all of the buildings were separated into two main areas: the social and the athletic. (For a graphic description of each example see the following diagrams.) Some of the examples separated these two primary functions vertically; that is, they put social on one level and athletic on another level. The other examples had both functions on the main floor but separated them horizontally. The degree of separation varied from project to project. The public sources seemed to separate them less strongly than the private clubs.

Having analysed the basic layout, I began looking at the site planning of the various clubs. All but one of the projects seemed to place the building a fairly large distance from the main roadway. The drive-way from the main road to the clubhouse was well landscaped and usually had a panoramic view of the golf course. The clubhouses were all placed to give the best views of the golf course. This seems only logical.

The structure is where the greatest variety was seen. It is obvious that different materials evoke different feelings in each of these buildings. Two of the buildings used only wood in the clubhouse. One of the buildings
was of concrete, one was of brick and stud construction,
one was of concrete columns and wood trusses, and one was
a re-use project.

Later in this report the reader will see how the use
of this building type study influenced my design. For more
details on each of these buildings see appendix B.
SPACE

WATERWOOD NATIONAL GOLF CLUB
LAKE LIVINGSTON, TEXAS

SPACE DETAIL

GOLF COURSE

LAKE

CLUBHOUSE

POOL

TENNIS

PARKING

VEHICULAR

PARKING

GOLF SUPPORT FUNCTIONS

PRO SHOP

LOCKERS

DINING

DINING LOUNGE

PRIVATE DINING

KITCHEN
SPACE

GOLF
PRO SHOP
LOCKERS

SOCIAL
DINING
KITCHEN

SPACE DETAIL

PALMETTO DUNES CLUBHOUSE
HILTON HEAD, SOUTH CAROLINA

SITE
Montauk Golf & Racquet Club
Montauk Point, Long Island, N.Y.
site analysis
SITE ANALYSIS

This section contains a brief look at the La Porte area, the area immediately adjacent to the site, and amenities of the site itself. These areas are shown by a series of photos that are indexed on the map on the next page. That will be followed by a drawing that shows some of the more critical issues that influenced the design of the Elks Club. That drawing will be followed by a section titled Synthesis of Site Analysis. This consists of a series of statements that were brought about by a study of the site analysis and critics’ responses to that analysis.

NOTE........for a detailed look at the complete site analysis see Appendix C.
PHOTOS #27, 28, 29, 30 were taken at various places around La Porte
SYNTHESIS OF SITE ANALYSIS

1) Existing entrance is extremely awkward. Other areas along Johnson Road would be better. Johnson Road is a key route.

2) Flexibility in changes to the golf course and retention or elimination of the existing clubhouse must be allowed to insure the best possible solution. Don't box yourself in.

3) A bridge should occur at some point along Johnson Road because a cross-walk is out of the question because the road is too busy. This bridge may become a part of the structure or an entity in itself or a bit of each.

4) The views section dictates that certain functions should be given views onto the courses. Some of these include dining, perhaps bar, banquet rooms. Some functions are best suited to the man-made views or no views at all. Those which do not require views are kitchen, restrooms, mechanical, machine storage, etc.

5) The topo of the proposed course area is such that they will and can enhance the golfing experience (not only the contours but also the hedge rows).

6) Orientation of tennis courts should be considered. Low angle sun can cause problems if not treated properly.

7) Orientation of dining and bar and other public areas should take into account the bright setting sun or consider screening devices (trees, etc.).

8) Orientation should take into account the best location to insure an energy efficient building.
9) There should be parking on both sides of Johnson Road to accommodate the golfers.

10) Because of the bend in the road care should be taken in the placement of the entry and/or exit areas because of visibility problems.

11) Main directing element of this project is the circulation.
concepts
DISCUSSION OF THE THREE CONCEPTS

Having completed the program, building type study, and synthesis of the site analysis, it is now necessary to formulate three potential concepts of my facility. These concepts are nothing more than three different ways of organizing the different elements of the building on the site. The following photos show the drawings for each concept and is accompanied by a brief explanation of each.
The first concept involved spanning the road with the building. There must be a bridge of some type, as seen in the site analysis, so this concept incorporated the building into the bridge. In this concept the athletic and social areas of the building are separated vertically, with the bridge itself being the social area. This example separated the two functions fairly drastically. The circulation is primarily linear with some vertical circulation. The existing building is eliminated in this concept.
The second concept is a linear one. The circulation is obviously linear also. This concept utilizes the existing facility in the social area of the building. In this concept the social and athletic areas are separated horizontally. This concept has the most drastic separation of the social and athletic functions. The linear concept allows for views from the parking through the building to the golf course whereas the others do not.
The third concept is a doughnut concept. There is a central circulation spine with semi-circular artery circulation areas into each of the two main functions: social and athletic. This concept separates the two functions horizontally, and is the least strong of the three concepts in terms of this separation. This concept affords the most panoramic views of the course because of its geometry.
DISCUSSION OF SCHEMATIC DESIGN

This stage of the design process required that I make a decision on which concept I would use for the project. Each of the concepts had very positive aspects that could be developed into a very functional design. I chose concept 2. The reason I did not choose number 1 was because it did not center its attention on the golf course but on the road that separated the two sides of the course. Number 3 was not used because it was more centered on itself than on the course. Number 2 was the best choice, in my opinion.

After having chosen the concept, I began looking at the placement of the building on the site in terms of contours and access. The location I chose had two main reasons for its being chosen. First the entering and exiting of the site wanted to be at the midpoint between the angle of the road and the fork in the road. Putting it there made it easier to see oncoming cars and also afforded a better view of the building from the road. The second reason was because of the bridge that was needed to cross the road. At this point I decided that the bridge should become an element of the design.

I then began looking more closely at the contours of the site. This is when I thought of adding water to the site. There was a natural low point right where I wanted to place the building, so I decided I would flood the low area and span the resulting lake with the building, and this made for a very strong separation between the athletic
and social areas of the building, which I liked very much. (see sketch 1) This then led to an analysis of the circulation paths of the building. I traced the path, by way of a scenario, of each type of user and I ended up with the drawing seen in sketch 2.

I then began placing the various spaces using the circulation paths as a base. Sketch 3 shows the preliminary attempts. This method of using scenarios as a base was used throughout the design process.

The building began taking on a geometry that responded to the road (30° from horizontal) and the land contours, and the circulation. (see sketch 4)

Also, during this schematic stage some problems were found in the program. One space was omitted. The game room is an important space for the Elks Club. It is the smoky room where the men go to play poker, pool, etc. There should be a bar or portable bar in that room and should be acoustically separated from everything. It should not be viewed from other spaces. It should have views to the outside. This space produces noise and odors and is not sensitive to anything.

A snack bar area was also found to be necessary. This area would accommodate the swimmers, handball and tennis players, and the golfers could use it as a 19th hole.

Using these criteria a schematic design was developed, as is seen in the following.
ADD 9 HOLES

EVERYTHING LANDING

USING CONCEPT #2

EPWICE ACROSS ROAD

JOHNSON ROAD

ATLANTIC

LINK SOCIAL

FLOOD THIS AREA

SINCE THERE ARE NO WATER AREAS EXISTING ON THE SITE, ADD THEM.

CONNECT EXIST 18 TO 9

SKETCH 1
ENTER AT POINT.
VISTA FANS OUT.
REVERSE FUNNEL...
CENTRAL AREA ... KEY NOTE

SKETCH 2
To 10th Tee Across Road

To 1st Tee

From 9th Gr.

Circulation Organizing Element.

Sketch 3
RESPOND TO ROAD AND LAND CONTOURS DO IT LOOSELY...
design development
DISCUSSION OF DESIGN DEVELOPMENT

The jury for schematic design brought out only a couple of problems. The first was that the over-riding geometry of the project was violated by one small area on the south side of the building. (see model photos) It was stated that the formal geometry should remain pure. The second problem was that the circulation should be looked at again. These were the topics of concern for the remainder of the quarter.

Since I had a schematic that worked, it was time to design the golf course. I took the existing 18 hole course and eliminated nine on the tees and renumbered the remaining holes to best fit the circulation system set up by the building. By juggling the holes I needed to remove only one green and add one green on the clubhouse side of the road to accomplish a very workable nine holes of golf. (see golf course site plan in Final Design Section for a detailed look at the course)

The remainder of the quarter was devoted to deciding on structure and materials and developing the building further. The structural system chosen was laminated wood beams supported by double wood columns. Wood trusses spanned between the beams and supported the t&g wood decking. This conveyed the character I was trying to achieve, that of a natural, rustic, earthy type building. I also chose brick as an infill element below the beams where needed. (see sketches for more design decisions)

At this point in time another problem was found in the
program. The areas of concern were the meeting rooms for the club and banquet rooms. Through discussions with my critics, the following changes were implemented. First, the meeting rooms became 2 @ 100 capacity as opposed to 1 @ 50 and 1 @ 100. Secondly, the two banquet rooms were reduced to 1 @ 200 capacity.